

Dear Colleagues,

It is a great pleasure as well as an honor for me to welcome you in “**4th Congress of Update in Cardiology and Cardiovascular Surgery (UCCS)**” which will be held between the dates of 28th November - 2nd December, 2008 in Sungate Port Royal Hotel in Antalya, Turkey.

This year UCCS Congress will include an **International Academia of Interventional Cardiology** and **International Forum of Arrhythmia** in its traditional and well received format. In this regard, our congress will run in two separate halls as an **ultra interactive** congress with live transmissions of interventional cardiological procedures and cardiovascular operations from national & international cath-labs and ORs enriched by interactive presentations with key pads.

In addition, a two-days of an ESC Adult Congenital Heart Disease Training Course will be presented by the most prominent European cardiologists in the field of Grown Up Congenital Heart Disease in conjunction with our congress. Besides cardiologists and cardiovascular surgeons, internal medicine specialists and family physicians are wellcome to attend and to have a certificate at the end of this course.

Cardiac Morpholgy Course and other courses that have been organized in the previous years will also take place in their advanced versions in UCCS 2008 Congress.

It is a special honor for me to publish all accepted surgical abstracts in HSF once again. I would like to thank cordially both to the scientists who submitted their abstracts and to the Editorial Board of HSF to make this UCCS tradition happened.

We wish you a fruitfull congress and a pleasant stay in Antalya.

With my warm regards,



Prof. Oztekin Oto, MD, FESC, FACC

President of the Congress

President, Heart and Health Foundation of Turkey

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ORAL PRESENTATIONS

TECHNICAL ADVANCES IN CARDIAC SURGERY

INT-OP 01 - OPEN HEART OPERATIONS UNDER THE CONDITIONS OF AUTO-OXYGENATION (EXPERIMENTAL STUDY)

Chkhaidze Z. A.¹, Sologashvili T. J.³, Partsakhashvili D. D.², Khodeli N. G.¹

¹Scientific-Training Center of the Experimental Surgery, Al. Natishvili
Institute of Morphology, Tbilisi, Georgia

²Department of Topographical Anatomy and Operative Surgery, Iv.
Javakhashvili Tbilisi State University, Tbilisi, Georgia

³Department of Cardiac Surgery, Jo Ann Medical Center, Tbilisi,
Georgia

BACKGROUND: Traditionally, heart-lung bypass machine used during the open-heart operation substitutes functions of not only the injured heart, but also of the intact lungs. Attempts by specialists to use uni- or biventricular bypass did not lead to clinical usage due to a high risk of embolism in closed perfusion system, high associated cost and the operating difficulty of equipments. The objective of current work is the experimental development of perfusion method that substitutes the heart function only on the example of prosthetics of mitral valve.

MATERIALS-METHODS: The research is based on experiments conducted on 15 mongrel dogs weighing 15-20 kg. Experiments with animals were conducted in compliance with EU applicable laws on animals protection and their use for experiments. For biventricular bypass we used roller pumps, pediatric cardiotomy reservoirs, arterial filters and standard cannulae and tubes of appropriate sizes. We measured pressure and blood flow volume in aorta and pulmonary artery, and monitored central venous pressure and electrocardiography. We carried out sternotomy, pericardiectomy, installation of drainage tube in left pleural sinus, and cannulation of pulmonary trunk, venae cavae and aorta. Cannulae and drainage tube were connected to the artificial biventricular system through blood reservoir. In this manner, we created an open perfusion system. We used hypothermic, high potassium cardioplegia.

After aorta cannulation, we opened left atrium from the apex of left auricle to the ostium of bottom left pulmonary vein, and blood from lungs flowed in the left pleural sinus. We carried out intensive blood evacuation by using drainage tubes. After cutting out mitral valve, we attached onto its place a valve prosthesis. After sawing up of left atrial wall and conducting prophylactic measures to prevent embolism, blood flowed naturally from left ventricle into the artificial system.

RESULTS: Time interval from skin incision to start of biventricular bypass did not exceed 42 minutes. Hypothermia was 32-34° of Celsius and duration of cardioplegia was 25-30 minutes. Mean pressure in aorta and pulmonary arteries during biventricular bypass was 65±5,4 mm.Hg. and 24±3,5 mm.Hg., respectively. The attachment of the valve was carried out using continual, spiral stitching method in all cases. Heart function was revived independently in 7 cases and by defibrillation in 6 cases. Due to damage in the technical part of system, embolism of pulmonary artery occurred in 1 case, and irreversible embolism of coronary vessels also occurred in 1 case. In both of these cases complications could not be liquidated and experiments were terminated.

CONCLUSION: Biventricular bypass using open perfusion system and active blood drainage makes it possible to conduct an open heart surgery under the condition of auto-oxygenation.

KEYWORDS: Biventricular bypass, Perfusion, Active drainage

INT-OP 02 - ACUTE PULMONARY EMBOLCTOMY FOR MASSIVE PULMONARY EMBOLISM

Dimitrakakis G., Bosanguet D., Von Oppell U., Kulatilake N., Okeefe P.

Department of Cardiothoracics, University Hospital of Wales, Cardiff, United Kingdom

BACKGROUND: Acute pulmonary embolism (PE) usually carries a high rate of mortality especially if it is not diagnosed early and treated aggressively. Thrombolytic therapy is used as definitive treatment in the vast majority of cases. Emergency surgical embolectomy is often reserved as a definitive treatment when all other methods have failed or the patient is in cardiogenic shock. A review of our experience is presented in this retrospective case study.

METHODS: From March 2001 to January 2008 8 patients (6 male, 2 female) aged 17 to 79 years (median 55) underwent emergency Pulmonary Embolectomy (2 salvaged). 7 patients were NYHA Class III or IV functional status and 1 patient NYHA Class II prior to surgery. All patients had symptoms of congestive heart failure. PA pressure ranged from 20 to 80 mmHg (mean 48.75 +/- 24.89 mmHg). The diagnosis was established primarily by clinical symptoms along with spiral Computerized Tomography or Transesophageal Echocardiography. Follow up was complete with an average of 14 to 86 months (mean 43+/-34).

RESULTS: 6 patients (75%) survived and were discharged from hospital. 2 patients died intraoperatively (operative mortality 25%). The first patient had salvage operation and died on the 3rd post-operative day due to multiple organ failure and DIC secondary to intracranial bleeding. The second patient had a massive pulmonary embolus and died the 3rd post-operative day despite ECMO support. All the procedures were performed with cardiopulmonary bypass and one combined with Total Circulatory Arrest (24 minutes). Cardiopulmonary bypass time ranged from 14 to 159 minutes (mean 62.7+/-45.3 minutes). 3 patients (37.5%) were operated on without cross clamping (beating heart). The remaining patients were operated on with cross clamping; clamp time ranging from 6 to 59 minutes (mean 39.4 +/- 20.7 minutes). 1 patient required re-intubation and ventilation for further support, and was eventually extubated on the 8th post operative day. Hospital stay ranged from 5 to 62 days (median 11 days) and ITU stay ranged from 1 to 29 days (median 3 days). Follow up was complete ranging from 14 to 86 months (mean 43+/-34).

1 patient died late (9 months following discharge; from other causes) and the other 5 (62.5%) are alive with no complications to date.

CONCLUSION: Acute pulmonary embolism is a serious cardiovascular disease and despite diagnostic and therapeutic advances, the mortality and morbidity are still high.

Early surgical pulmonary embolectomy with the use of cardiopulmonary bypass is an acceptable option of treatment for acute PE, with very promising results both short and mid term. We believe that the surgical treatment of acute PE should be considered as one of the initial treatment methods and not as a last resort.

KEYWORDS: Pulmonary Embolism, Acute Pulmonary Embolectomy

INT-OP 03 - NEW TYPE OF PUMP FOR THE HEART-LUNG BYPASS SYSTEM

Khodeli N. G.¹, Shengelia O. S.², Chkhaidze Z. A.¹, Partsakhashvili D. D.³, Sologashvili T. D.⁴

¹Scientific-Training Center of the Experimental Surgery, Al. Natishvili Institute of Morphology, Tbilisi, Georgia

²Department of Technological Researches, Branch Office of Philips Corporation, Tbilisi, Georgia

³Department of Topographical Anatomy and Operative Surgery, Iv. Javakhishvili Tbilisi State University, Tbilisi, Georgia

⁴Department of Cardiac Surgery, Jo Ann Medical Center, Tbilisi, Georgia

BACKGROUND: Complications arising from roller pump usage in modern heart-lung bypass (HLB) systems are widely known. Alternative to rolling pumps has existed for years as various pulsating-pump devices, which do not find use in HLB systems due to their high costs and operational difficulties. This work is dedicated to developing new, considerably simpler and less expensive pump device for HLB systems, which provides maximally physiological pulsating blood flow.

MATERIAL-METHODS: A device developed by us (Patent N P 3975, Georgia) was used as base model for the pump, which unites the functions of blood injection and accumulation in solid, hermetic blood chambers. We used pediatric cardiotomy reservoirs of HLB systems as blood chambers, with 1000 ml. capacity. Two such reservoirs were placed in front of the oxygenator, with their in-flow tubes connected to the venous blood tubes, and the outflow tubes – to the entry to the oxygenator. In each reservoir, 2 air outlets tubes were connected to pneumo-receivers of positive and negative pressure. We filled up one of the reservoirs with closed of exit blood tube by creating negative pressure in it. Simultaneously, with closed entry blood tube of the second reservoir, we ejected blood from it by created positive pressure. On the exit of oxygenator we placed external pulsator. The operating system provided synchronized and by turn filling and emptying of blood chambers. The system included unit to control liquid level in reservoirs. Perfusion system was assembled on vertical stand, which enabled its placement close to the object of perfusion.

RESULTS: In stand testing under re-circulation regime, productivity of the device was 12.5 liters/minute. Pressure on exit blood pump was within 0 to 300mm.Hg. The pump operating system enabled laminar, as well as pulsating flow of liquid, with frequency of 0-200 pulses/minute. Research is based on experiments conducted on 14 mongrel dogs weighing 20 kg. Experiments with animals will be conducted in compliance with EU applicable laws on animal protection. Standard methodology was used to cannulate Venae cavae and aorta, and to connect perfusion system to body. Duration of complete HLB reached 2 hours. Systolic pressure was maintained within 120-130mm.Hg.; diastolic - 70-80mm.Hg. (Average pressure in femoral artery during perfusion did not fall below 75mm.Hg.). Velocity of blood flow in the aorta arc fluctuated within 950-1100 ml/min; in the femoral artery – within 60-80 ml/min.

CONCLUSIONS: Preliminary tests of the new pump indicate that its hemodynamic characteristics are maximally approximated to physiological ones.

In comparison to modern machines, a perfusion system with new pump type has minimal volume of fill-up and does not damage formative elements of blood.

The pump device and the entire perfusion system are distinguished by simplicity of construction and easy operation.

KEYWORDS: Heart-Lung bypass, Pulsatile flow, Blood pump

INT-OP 04 - MINIMAL INVASIVE EXTRACORPOREAL CIRCULATION FOR INTRAATRIAL TUMOR THROMBECTOMY

Bergonzini M.¹, Eusebio A.¹, Citterio E.¹, Maugeri O.², Giusti G.², Cortis G.³, Basciu A.¹, Settepani F.¹, Tarelli G.¹, Omaghi D.¹, Gallotti R.⁴, Graziotti P.²

¹Cardiac Surgery Unit, Istituto Clinico Humanitas, Rozzano MI, Italy

²Urology Unit, Istituto Clinico Humanitas, Rozzano MI, Italy

³Cardiac Anesthesia Unit, Istituto Clinico Humanitas, Rozzano MI, Italy

⁴Independent cardiac surgeon, Pavia, Italy

OBJECTIVE: To our knowledge, we present the initial clinical report of standard radical nephrectomy associated with minimal invasive extracorporeal circulation for renal cell carcinoma with tumor thrombus extending into the inferior vena cava up to the right atrium.

METHODS: From January 1997 to November 2007 7 patients with renal cell carcinoma and tumor thrombus extending into the right atrium underwent radical nephrectomy with tumor thrombus extirpation in our Center. Extracorporeal circulation with deep hypothermic arrest was accomplished with a minimally invasive technique, using an Endoclamp® catheter. The clinical presentation, laboratory and imaging investigations, extent and level of caval involvement, operative details, and estimated blood loss, as well as the postoperative course, morbidity, and actuarial and disease-free survival were analyzed.

RESULTS: Patient population consisted of 3 males and 4 females, with a mean age of 65,1 years (range 37 to 79). Mean operative time was 250,7 minutes (range: 4 to 5 hours). Mean ECC time was 102,5 minutes. Mean DHCA time was 53,3 minutes. Conversion to standard sternotomy was necessary in one case, due to tumor thrombus fracture. Mean intensive care unit and hospital stay were 2 and 9,7 days respectively. One patient experienced prolonged ventilatory support (> than 48 hours). One patient died 32 days after the operation for massive bowel infarction due to a lately diagnosed HIT. Two patients with progressive disease are alive after a mean follow-up of 44 months (36-52) and 1 is alive free of disease after 17 months.

CONCLUSIONS: In case of patients in which the thrombus is suitable for retrograde extraction through caval incision, minimal invasive extracorporeal circulation can be associated to standard urologic techniques to resect renal masses with level IV thrombi. This technical strategy minimizes respiratory impairment and can improve early recovery, reducing significantly the huge invasiveness of this surgical procedure.

KEYWORDS: Tumor thrombectomy, Renal cell carcinoma, Minimal invasive extracorporeal circulation, Endoclamp,

INT-OP 06 - EFFECTIVENESS OF POST CARDIAC SURGERY DRAINAGE WITH REDON DRAINS AND CLOSED SYSTEM (BELLOVAC®) VS TUBE DRAINS AND CLASSICAL SYSTEM (PLEUREVAC®): A RANDOMIZED STUDY

Giovannelli A.¹, Alessandri G.², Perotti A.¹, Lepince P.¹, Alessandri N.², Pavie A.¹, Gandjbakhch I.¹

¹Service de Chirurgie Cardiovasculaire et Thoracique, Hôpital La Pitié-Salpêtrière, Paris, France

²Cardiology Department of University "La Sapienza" of Rome, Latina, Italy

AIM: To compare the effectiveness of 18F redon drains with low negative pressure (Bellovac®) vs 24F tube drains with classical) for post cardiac surgery pericardial™ aspiration (Pleurevac drainage).

PATIENTS: After they underwent cardiac surgery, 467 patients (mean age: 63 ± 14 years) were randomized to either redon drains and Bellovac® (group R, n = 234) or tube drains and Pleurevac® (group T, n = 233). In the mean time, 53 patients were excluded from the study due to surgeon decision. Pre and per-operative data were similar between both groups. Eleven percent of the patients had previous operation. Effectiveness was analyzed on: persisting pericardial effusion at discharge, reoperation for pericardial effusion and rate of tamponade.

RESULTS: Effectiveness was similar in both groups: reoperation for pericardial effusion (R: 5.5 %, T: 4.7 %; p > 0.05), rate of tamponade (R: 0.8%, T: 0.4 %; p > 0.05), moderate to severe pericardial effusion at discharge (R: 7.7 %, T: 3.8 %; p > 0.05). Drainage volume a 24 hours was significantly lower in group R: 335 ± 225 ml vs 499 ± 316 ml. Redon drains were removed significantly earlier than tube drains: 2,2 ± 0,7 D vs 2,8 ± system because of™1,2 D. In group R, 3 patients had to be switched to pleurevac undiagnosed pulmonary leak.

CONCLUSION: After cardiac surgery, pericardial drainage with redon drains and low negative pressure is as much efficacious as tube drains with classical aspiration. Moreover, redons cost is lower and patients autonomy is better.

KEYWORDS: Redon drains - tube drains

INT-OP 07 - FACTORS INFLUENCING THE RATE OF MEDIASTINITIS IN ADULT OPEN HEART SURGERY

Pour Abbasi M., Givtaj N., Ghafari R., Omrani G.

Cardiovascular surgery department, shahid Rajaee heart center, Iran university of medical sciences, Tehran, Iran

OBJECTIVE: Mediastinitis is a rare but potentially lethal complication after open heart surgery. Its prevalence is about 0.5-4 % after median sternotomy and a mortality of about 40% follows this complication, but proper and early diagnosis and management highly decreases mortality, this needs recognition of incremental risk factors for adverse outcomes in mediastinitis.

METHODS: In a case control retrospective study, 66 patients with mediastinitis were compared with 154 patients without mediastinitis (control group). All the necessary data were extracted from medical records of patients.

RESULTS: We studied 220 patients in this study. 66 patients (30%) had mediastinitis and 154 patients (70%) were without infection. 55% were male and 45 % were female. Mean age was 53.25(16-77). 26% of patients had Diabetes. 34% had hypertension. 2.7% had COPD. 25% were smoker. Mean BMI of the patients was 26.04(12.91-41.66). 87.3% of operations was elective and the others was urgent. In 92% of the patients LIMA was used. Mean ICU stay time was 5.08 days(2-57). Mean intubation time 30.24 hours(2-1368). Mean time to the diagnosis of mediastinitis was 16.05 (3-45 days). Mortality of mediastinitis in our study was 21.2 %. There were statistically significant correlation between mediastinitis and DM, BMI, CPB time, cross clamp time, urgent operation, usage of LIMA, usage of IABP, Age, duration of intubation, there were no significant correlation between mediastinitis and COPD, smoking, hypertension.

CONCLUSION: Different incremental risk factors for mediastinitis were assessed and analyzed (odd ratio and 95 % confidence interval). These are: 1. Age 2. diabetes mellitus 3. body mass index (higher) 4. emergency operation 5. cardiopulmonary bypass (CPB) time and aortic cross clamp time. 6. harvesting LIMA 7. using intraaortic balloon pump 8. prolonged tracheal intubation

KEYWORDS: Mediastinitis, Open Heart Surgery, CABG

INT-OP 82 - DOES IMPAIRED LEFT VENTRICULAR FUNCTION INCREASE THE OPERATIVE RISK OF CONCOMITANT COX-CRYOMAZE?

Cheema F.H.¹, Murtaza G.², Kimbro B.³, Malik N.¹,
Mehmood M.¹, Green R.A.³, Crowe B.³, Brezing R.A.³,
Roberts H.G.³

¹Columbia University College of Physicians and Surgeons and New York Presbyterian Hospital, New York, United States

²Harlem Hospital Center affiliated with Columbia University College of Physicians and Surgeons, New York, United States

³South Florida Cardiovascular Surgical Associates, Plantation, United States

OBJECTIVES: To compare short-term outcomes in patients with impaired or normal LVEF undergoing cardiac surgery with a concomitant Cox-cryomaze.

METHODS: 124 patients underwent Cox-cryomaze [Age: 71±12 years; BMI: 28±6.8 kg/m²; Males: 52%; LVEF: 38.1±13.5%; Cardiac re-operation: 29%] between March '04 and September '07. Following lesions were created using argon-based cryoablation [probe temperature: -80°C; duration: 8.2±0.9 (range: 2-16) minutes]: Full left side + right isthmus lesions (89.5%), full left side (8.1%), full left side + full right side (1.6%), and right isthmus lesion only (0.8%).

RESULTS: 72 patients (59%) had LVEF equal to/less than 40% (mean: 28.9±9.2%) and 50 (41%) had LVEF >40% (mean: 51.2±5.3%). Compared to normal, patients with impaired LVEF were significantly older [73.9±10 vs. 67.4±13.2 years (p<0.01)], more males [64% vs. 34%; p<0.01], a higher pre-operative functional class [NYHA III/IV class: 94.3% vs. 77.6%; p<0.01] and a higher prevalence of ischemic disease [57.4% vs. 24.4%; p<0.01]. However, there was no difference in BMI [28.2±6.6 vs. 28.1±7.1 kg/m²; p=0.92], history of previous cardiac operations [29.2% vs. 30%; p=0.92], AF duration [27.2±32.2 vs. 42.1±60.6 months; p=0.09] and type [permanent AF: 66.6% vs. 72.9%; p=0.47]. Significantly higher average procedures per patient were performed on the impaired LVEF group [2.7 vs. 2.1 (p<0.001)]; three or more concomitant procedures = 65.3% vs. 32.6% in impaired vs. normal LVEF groups respectively]. CPB-time (169±70 vs. 157±58 minutes; p=0.36) and X-clamp-time (113±49 vs. 106±43 minutes; p=0.46) were slightly longer in the impaired LVEF group. None of the post-operative complications were significantly different in either group [stroke: 2.8% vs. 4.0% (p-value: 0.71); respiratory failure: 9.7% vs. 14% (p-value: 0.47); renal failure: 16.7% vs. 8.0% (p-value: 0.16); peri-operative MI: 2.8% vs. 0% (p-value: 0.24); re-operative bleeding: 2.8% vs. 4.0% (p-value: 0.71); permanent pacemaker: 15.3% vs. 16% (p-value: 0.91); length-of-hospital-stay: 15.2 vs. 15.4 days (p-value: 0.89); 30-day mortality: 6.9% vs. 0% (p-value: 0.06) in impaired vs. normal LVEF groups respectively]. Success, defined as freedom from significant AF burden by physician assessment at follow-up, showed no statistical difference: 89.8% vs. 84.6% (p=0.42) on the last follow-up and 94.7% vs. 87.5% (p=0.42) at 6 months or beyond for impaired vs. normal LVEF groups respectively.

CONCLUSIONS: In the absence of a statistically significant difference in short-term outcomes between groups, concomitant Cox-cryomaze can be safely offered to patients with AF undergoing cardiac surgeries with impaired LVEF.

NOVEL TECHNIQUES IN CARDIAC SURGERY

INT-OP 08 - MINIMALLY INVASIVE CARDIAC SURGERY IN SHARIATI HOSPITAL (2000-2008)

Sarzaeem M. R., Mandegar M. H., Jebelli M.

Department of Cardiovascular Surgery, Tehran University of Medical Sciences, Tehran, Iran

BACKGROUND: Minimally invasive cardiac surgery (MICS) includes any technique avoiding cardiopulmonary bypass or mid-sternotomy or both. MICS may decrease postoperative pain, hospital stay and sternotomy related complications and improve cosmetic outcome of surgery.

MATERIALS-METHODS: From 2000 march to 2008 march 126 MICS operations were performed in cardiovascular surgery department of Shariati Hospital. The demographic and clinical features of patients, mortality and postoperative complications of different surgical techniques are described.

RESULTS: MICS operations included 53 (28 none video assisted and 25 video assisted) minimally invasive direct coronary artery bypass (MIDCAB) and 73 minimally invasive valve or congenital operations (67 none video assisted and 6 video assisted). Mean age in MIDCAB cases was 56 years, and male/female ratio was 1.9/1. The mean EF in MIDCAB cases was 37%. Postoperative intensive care unit (ICU) and hospital stay 2 and 4.5 days respectively. Only one mortality was seen (< 2%). Atrial fibrillation was reported in 16.8% of cases. Mean number of grafts per patient was 1.25. In two cases stem cell transplantation was performed along with MIDCAB. Mean age in none coronary MICS operations was 25.2 years with male /female ratio of 1.3/1. No mortality was seen in none coronary cases. Postoperative intensive care unit and hospital stay 2 and 3.1 days respectively.

CONCLUSION: MICS is a safe and reproducible technique with low mortality and morbidity and short hospital and ICU stay. These techniques can be safely used for high risk patients. Video assistance may extend applications of MICS, improve the cosmetic outcome and decrease the postoperative pain.

KEYWORDS: Minimally Invasive Surgery, Cardiac, Complications

INT-OP 09 - AN ANIMAL MODEL FOR TOTAL ENDOVASCULAR AORTIC ARCH RECONSTRUCTION

Arbatli H.¹, Numan F.², Cikirikcioglu M.³, Pektok E.³, Bruszewski W.⁴, Mafi M.⁴, Kalangos A.³, Walpoth B.³, Fasel J.⁵, Sonmez B.¹

¹Department of Cardiovascular Surgery, Memorial Hospital, Istanbul, Turkey

²Interventional Radiology, Cerrahpasa Medical Faculty, Istanbul University, Istanbul, Turkey

³Department of Cardiovascular Surgery University Hospital of Geneva, Switzerland

⁴Endovascular Innovations, Medtronic CardioVascular, Santa Rosa, CA, USA

⁵Department of Anatomy, University Hospital of Geneva, Switzerland

AIM: Open repair of aortic arch pathologies poses a great risk because of the extensive type of surgery and the comorbidities of these patients. Endovascular approach for aortic arch reconstruction may become a useful tool for this vulnerable group of patients. An experimental animal model was developed for endovascular repair of total aortic arch by using a cerebral circulatory support system.

MATERIALS-METHODS: Eleven Yorkshire pigs were used for the experiments. A 10 mm Dacron graft was anastomosed to the abdominal aorta and was used for stent graft access. Bilateral carotid, left subclavian and right femoral arteries were exposed. Right femoral to right carotid bypass circuit was established with a roller pump. The off-the-shelf Valiant stent graft was used to cover the entire aortic arch. Balloon centered and anchored needle and radiofrequency (RF) plasma catheter were used for in-situ fenestration of the stent graft through the contralateral carotid and the left subclavian arteries in retrograde route. Covered stents were implanted into the fenestrations to complete the reconstruction.

RESULTS: Total arch reconstruction was accomplished in 9 of the animals without hemodynamic insult in this acute study. The left subclavian artery could not be passed in two of the animals due to the sharp angulation of the artery, and one animal collapsed due to a pump circuit failure in the early phase of the study.

CONCLUSION: This novel endovascular arch reconstruction technique may become an alternative way of therapy for patients with aortic arch pathologies. Cerebral circulatory support with a roller pump seems to be a useful adjunct for endovascular approach in the animal model.

KEYWORDS: Endovascular, ascending aorta, aneurysm, animal model

INT-OP 10 - COMBINED BONE MARROW LASER REVASCULARIZATION AND OFF-PUMP TOTAL ARTERIAL BY-PASS

Prapas S.¹, Protogeris D.¹, Tzanavaras T.¹, Chandrinou E.², Kotsis V.¹, Panagiotopoulos I.¹, Linardakis I.¹, Tsiorva A. A.¹, Danou F.³

¹Department of Cardiac Surgery, Henry Dunant Hospital, Athens, Greece

²Department of Hematology, Henry Dunant Hospital, Athens, Greece

³Department of Anesthesiology, Henry Dunant Hospital, Athens, Greece

BACKGROUND: We present a combined technique for total myocardial revascularization to treat patients with refractory angina and ischemic areas with no suitable targets for conventional types of revascularization (CABG, PTCA), consisting of bone marrow laser revascularization (BMLR) and off-pump, aorta non-touch total arterial bypass grafting (OPCAB).

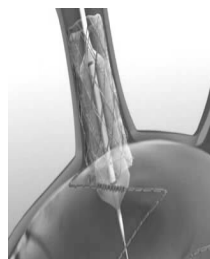
METHODS: After obtaining coronary angiography, myocardial Thallium scintigraphy and echocardiography, we select areas with adequate targets for off-pump, aorta non-touch total arterial grafting (OPCAB) and ischemic zones in which classic coronary revascularization cannot be performed. Five patients (2 females, 1 Redo) with refractory angina preoperatively and NYHA class II or III, underwent OPCAB and BMLR revascularization in one year. BMLR consists of transmyocardial laser application and injection of autologous mononuclear bone-marrow cells using the Phoenix © hand-piece. We followed up the patients for angina, quality of life (QOL) and myocardial perfusion at 3, 6 and 12 months.

RESULTS: All patients reported better QOL according to the SF-36 module and tended to decrease, at least one class, on NYHA classification. At the SPECT analysis there was no evidence of ischemic areas. On the other hand there was a significant increase on the ejection fraction.

CONCLUSIONS: Off-pump, aorta non-touch total arterial revascularization combined with BMLR relieves angina, improves QOL and results in better cardiac function and perfusion. BMLR is a safe, easy and reproducible technique that benefits patients with no option areas for classic revascularization.

KEYWORDS: BMLR

Figure 1



Implantation of the covered-stent-graft through the punctured endovascular stent-graft within the aortic arch

Figure 2



Flaring of the tip of the covered stent-graft

INT-OP 11 - NUMERICAL ANALYSIS OF SURGERY INDUCED BLOOD FLOW PATTERNS IN ASCENDING AORTA BASED UPON CLINICAL FINDINGS

Mizerski J. K.¹, Szpakowski E.¹, Szumbariski J.², Trykozko A.³

¹ICM – Interdisciplinary Centre for Mathematical and Computational Modelling, Poland

²The Faculty of Power and Aeronautical Engineering Warsaw University of Technology, Poland

³The Cardinal Stefan Wyszyński Institute of Cardiology, Poland

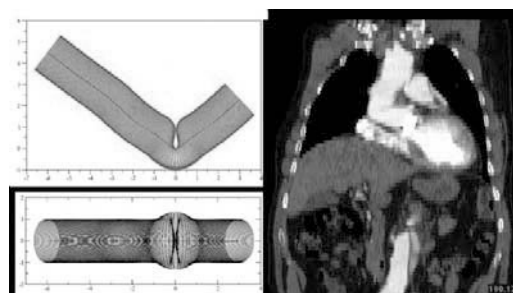
Surgery of the ascending aorta and aortic arch is quite common procedure in modern clinics of cardiovascular surgery. Sometimes it happens that distorted native arteries can provide surgeon with false judgment of the geometry of prosthetic replacement vessel. Distorted geometry of the prosthetic ascending aorta may exert very profound influence on flow pattern not only in ascending aorta but also along further parts of the main artery.

The aim of the study was to determine the characteristics of the basic flow pattern in distorted ascending aortic prosthesis.

MATERIAL-METHODS: To obtain the realistic geometry of the ascending aorta we have performed a visual reconstruction and analysis of the postoperative CT scans taken from the patients who underwent surgical procedure. Analysis was done by means of the commercially available MED-CAD software. The results and measurements were incorporated into theoretical parametric model of the geometry which was meshed than. The final step of the modeling process consisted of series of numerical experiments performed by the means of computational fluid dynamics.

RESULTS: The distorted geometry of the prosthetic ascending aorta turned out to be very complex. The parametric model needed to be extended with parametric spline feature to get the most realistic geometry representation. The flow visualization gave us insight into the very complex characteristic of the secondary flows formation over the distorted part of vascular prosthesis. The downstream propagation of these flows influenced the flow characteristic along the whole model. The narrowing provoked pressure buildup and initiated turbulent flow with Reynolds number locally exceeding value of 4000. From the practical surgical point of view this can create the milieu for thrombi formation and propagation.

KEYWORDS: aortic aneurysm, computational fluid dynamics, vascular wall mechanics

Geometry of the numerical model

INT-OP 13 - INTRAOPERATIVE TRANSESOPHAGEAL ECHOCARDIOGRAPHY FINDS UNDETECTED INTRACARDIAC ABNORMALITIES

Tsukui H., Pellegrini R. V., Lucas D. M., Medich G. E., Vayansky C., Jones D. A.

University of Pittsburgh Medical Center Passavant, United States

BACKGROUND: Evolution of intraoperative transesophageal echocardiography (TEE) has made cardiac surgery safer for the last decade. TEE performed by a skillful anesthesiologist provides information about undetected intracardiac abnormalities including patent foramen ovales (PFOs), atrial septal defects (ASDs), tumors, and thrombus in addition to providing information about cardiac function, valve anatomy, and residual air in the heart post-bypass. Detection of undetected intracardiac abnormalities by TEE may help to prevent postoperative adverse events including transient ischemic attack or stroke.

METHODS: A total of 410 patients (Mean age: 67.1 years old; range: 23-93, male: 276 [67%]) had intraoperative TEE performed by an anesthesiologist during cardiac surgery at our institute in 2007. Fifty-two percent of patients had coronary artery bypass grafting (CABG), 23% had valve repair/ replacement, 18% had CABG and valve repair/ replacement, 5% had aortic surgery, and 2% had others. Routine TEE evaluation include cardiac function, valve anatomy, cardiac defect, tumor, and thrombus. A PFO/ ASD was detected by bubble study. The medical record was reviewed and the benefit of intraoperative TEE was evaluated.

RESULTS: Seventeen intracardiac abnormalities (4.1%) that were not detected prior to surgery were found by intraoperative TEE (mean age: 64.5 years old, 12 male [71%]). Eleven patients had PFOs, 2 had ASDs, 3 had thrombus on the prosthetic aortic valve, left atrium, and inferior vena cava, and 1 had a fibroelastoma on the aortic valve. Demographics are shown in Table 1. All the abnormalities were repaired at the same time without any complications. Postoperative anticoagulation therapy was applied to patients who underwent patch PFO/ ASD closure or thrombectomy even though they had no valve repair/ replacement or atrial fibrillation.

CONCLUSIONS: Meticulous TEE inspection during cardiac surgery had great benefit to repair undetected intracardiac abnormalities. Tumor or thrombus removal certainly could prevent stroke. In addition, as PFO has been identified as potential risk factors for stroke, its repair may contribute to prevent stroke. TEE with skillful anesthesiologist is helpful, however, the skill of TEE depends on each anesthesiologist. Cardiac surgeons should pay attention to intraoperative TEE information to prevent postoperative stroke.

KEYWORDS: intraoperative echocardiography, patent foramen ovale, tumor in heart

Demographics

Intraoperative TEE findings	Original procedure	Numbers
Patent foramen ovale	CABG	5
	AVR	3
	AVR+MVR	1
	MV repair	1
	MV repair+ TV repair+ Myxomars resection+ Maze	1
	Root replacement	1
Atrial septal defect	CABG	1
	MV repair + Maze	1
Thrombus on aortic valve	CABG	1
Thrombus in left atrium	AVR+ CABG	1
Thrombus in inferior vena cava	MV repair+ CABG	1
Fibroelastoma on aortic valve	CABG	1

AVR: aortic valve replacement, CABG: coronary artery bypass grafting, MV: mitral valve, MVR: MV replacement, TV: tricuspid valve

CONGENITAL HEART DEFECTS: SURGICAL HOPES

INT-OP 14 - TOTAL CAVOPULMONARY CONNECTION TO ONE LUNG. SURGICAL OUTCOME AND FOLLOW UP IN 5 PATIENTS

Borches D.¹, Sanchez J.¹, Villagra F.¹, Burgueros M.², Del Cerro M. J.²

¹*Pediatric Cardiovascular Surgery, "La Paz" Hospital, Autonoma University, Madrid, Spain*

²*Pediatric Cardiology, "La Paz" Hospital, Autonoma University, Madrid, Spain*

BACKGROUND: This study examined the results of a total cavopulmonary connection in patients with single-ventricle physiology and acquired hypoplastic or atresia of one main branch pulmonary artery.

METHODS: We presented the data for 5 patients identified as having a hypoplastic or atresia of one main branch pulmonary artery after one or more palliative procedures. Before completing total cavopulmonary connection they had previously undergone a creation of an arteriovenous fistula. 6 months or more after AV fistula, in all of them we completed the total cavopulmonary connection and take-down the AV fistula, without mortality.

Hemodynamics, surgical, clinical, and follow-up data were compared with those for 10 patients with continuous pulmonary arteries who underwent a completion Fontan operation.

RESULTS: No significant differences were found preoperatively with respect to right atrial pressure, pulmonary artery pressure, aortic saturation, ventricular end-diastolic pressure, pulmonary vascular resistance. In the first 24 postoperative hours, there were no significant differences in heart rate, urine output, systemic venous pressure, or pulmonary venous pressure. Also, data regarding hospitalization length, effusions, and mortality were similar between the two groups. Postoperative systemic arterial saturation was lower in the "one lung" group, but all were fenestrated. There were no postoperative mortality, and the long-term follow-up was 2 to 7.5 years (mean 5 years). All are en I or II NYHA.

CONCLUSIONS: Despite the approach generally used, acquired hypoplasia or atresia in a pulmonary main branch, is not itself contraindication to total cavopulmonary connection successfully completed.

KEYWORDS: Fontan operation, Total cavopulmonary connection.

INT-OP 15 - RESULTS OF AORTO-PULMONARY WINDOW REPAIR, A 15 YEARS EXPERIENCE

Pour Abbasi M., Givtaj N., Salehi S., Baghaee R.

Department of Cardiovascular Surgery, Shahid Rajaee Heart Center, Iran University of Medical Sciences, Tehran, Iran

INTRODUCTION: Aorto-pulmonary window is a very rare Malformation which accounts for about 0.15% of cardiac anomalies.

METHODS: We reviewed our cases From 1992 to 2007..We evaluated demographic information of the 30 patients. The approach for AP Window repair was ligation without CPB in two cases, division and suturing using CPB in one patient, trans-window in 19 (PTFE patch in 18; Dacron in 1), trans-aortic in 9 (in 8 PTFE patch, in one simple suturing) and trans-pulmonary in 2 (both with PTFE). Among 15 patients with associated cardiac anomalies, 13 underwent single stage repair with the IAA repair was the most common (2 cases).

RESULTS: in among 30 patients male to female ratio was 2:1. Mean age of the patients was 28 ± 9 months (2-90), weight 8.6 ± 4.6 ; (2-17). Morphology of Ap windows was type I (87%, n=26), type II (10%, n=3) distal and one type III (3%). Preoperative EF was 0.66 ± 0.07 which increased to 0.75 ± 0.07 post-operatively. 19 (63%) of patients had associated cardiac anomalies most frequently Aortic stenosis (23%) followed by interrupted aortic arch. The overall in-hospital mortality was 10%. The mortality was no different among patients with or without associated anomaly. Among the 27 survivors, the mean ICU stay was 4.4 days, and the mean post-operative hospital stay was 10.7 days. Early complications were bleeding (two cases), pneumonia (one) and CVA (one). Mean follow-up was 49 months (range 2 – 280 months) and there was no re-operation or late death. There were 4 cases of residual AP Window detected by echocardiography; none of them required re-intervention. Among patients with residual AP Window two cases were seen with banding technique (100%) one with trans-aortic patch repair (11%) and one case with trans-window patch repair (5%).

DISCUSSION: Using multivariate analysis, we assessed the effects of (1) patient related factors (age, sex, weight and type of aorto-pulmonary window) and (2) procedural factors (type of approach) on post-operative course (ICU stay, Post-operative hospital stay, duration of ventilator support and post-operative EF). Age, sex and weight had no clear impact on post operative course. As mentioned earlier the overall in-hospital mortality was 10% (3 patients). The reported mortality among other series ranged from 7.6% to 27%. The mortality was no different among patients with or without associated anomaly (3%). Also there was no difference among various methods of repair in respect of morbidity, ICU stay; ventilator support and post operative EF.

CONCLUSION: Trans-aortic repair of APW is the procedure of choice for all APWs, except in the case of large defects where anterior sandwich patch technique (trans-window repair) may be done. In our view, simple ligation without CPB should be avoided due to the possibility of residual APW and distortion of pulmonary artery.

KEYWORDS: Aortopulmonary Window, Interrupted aortic arch

INT-OP 16 - MUSCULAR VENTRICULAR SEPTAL DEFECTS CLOSURE: A NOVEL APPROACH VIA MINIMALLY INVASIVE TECHNIQUE

Ismail F.¹, Musa A. F.², Dillon J.³, Alwi M.⁴

¹*Department of Cardiothoracic Surgery, Serdang Hospital, Malaysia.*

²*Department of Clinical Sciences, School of Medicine and Health Sciences, Monash University, Malaysia*

³*Department of Cardiothoracic Surgery, National Heart Institute, Kuala Lumpur, Malaysia*

⁴*Department of Paediatric Cardiology, National Heart Institute, Kuala Lumpur, Malaysia*

INTRODUCTION: Surgical repair of muscular ventricular septal defects (VSD) has been associated with significant morbidity and mortality especially if the defects are closed via left ventriculotomy. Hence minimally invasive techniques are currently in use to close these defects. This report describes our initial experience with intraoperative device closure of muscular VSD without cardiopulmonary bypass in six consecutive patients.

METHODS: A median sternotomy was performed. Under continuous transesophageal echocardiographic guidance, the right ventricle free wall was punctured, and a wire introduced across the largest defect. The Amplatzer (AGA Medical Corporation, Golden Valley, Minn) muscular VSD occluding device (a self-expandable double disk device) was used. An introducer sheath was fed over the wire, with the sheath tip positioned in the left ventricle cavity. The device was then advanced inside the sheath and deployed by retracting the sheath.

RESULTS: The initial six patients are presented with a median age of 12 months. Cardiopulmonary bypass was not needed in any patient for placement of the device. No complications from using this technique occurred. There were no early or late deaths, no episodes of heart block and no significant residual ventricular septal defects. Discharge echocardiograms showed no significant shunting across the ventricular septum.

CONCLUSIONS: Periventricular device closure of muscular VSD is feasible, safe and effective. This minimally invasive technique can avoid ventriculotomy and division of intracardiac muscle bands. We believe that this could become the treatment of choice for any infant or child with muscular VSD.

KEYWORDS: muscular ventricular septal defects, intraoperative device closure

INT-OP 17 - OUTCOMES OF VENTRICULAR SEPTAL DEFECT REPAIR IN VARIOUS ANOMALIES, A SINGLE INSTITUTE EXPERIENCE AND LITERATURE REVIEW

Gholampour Dehaki M., Salehi S., Mali S., Alizadeh Ghadidel A., Baharestani B., Nakhaeezadeh R.

Cardiovascular Surgery, Shahid Rajaie Heart Center, Tehran, Iran

AIM: This is a single institute retrospective study (from 2007 to 2008) to evaluate how patient related factors (age & weight) and type or anatomical location of Ventricular Septal Defect could affect outcome of surgery.

MATERIAL-METHODS: Patients with any diagnosis who had undergone Ventricular Septal Defect repair (a total number of 252 patients) from 2007 till early 2008 at "Shahid Rajaie Heart Center" were evaluated retrospectively for factors which might be responsible for developing Residual Ventricular Septal Defects and Heart block. Data analyzed through univariate and multivariate analysis tool.

RESULTS: There were 2 deaths among 252 patients (0.8%). The incidence of post-operative residual Ventricular Septal Defect was $28.2\% \pm 2.8$ (71 of 252), but only 3 of them (4.2%) needed reoperation. Neither Patch material ($P=0.572$), nor type ($p=0.349$) or size ($P=0.599$) of Ventricular Septal Defect had any effect on this complication. mean age and weight of patients who had residual Ventricular Septal Defect compared to those who did not, although were somewhat lower (4.7 ± 0.7 versus 5.2 ± 0.4 years, and 15.4 ± 1.7 versus 17.9 ± 1.1 kg, respectively), but differences were not statistically significant ($P=0.537$ and $P=0.222$ respectively). There were 5 patients (2.0%) with post-operative complete heart block (CHB) and again it was independent of patients' age, weight and type of approach (Trans atrial or Trans ventricular). Patients with history of previous BT shunt proved to have more common post-operative bleeding (13%, 6 of 46) than patients who had not (3.4%, or 7 of 206, $P=0.009$). Also in patients with history of BT shunt compared to those without it, post-operative pericardial effusion (6.5% versus 1.5%, $P=0.04$) and pneumonia (4.3% versus 0.5%, $P=0.025$) were more common.

CONCLUSION: It seems that there are no such limitations as weight or age to proceed with the definitive surgery. Also the incidence of complications is independent of type of anomaly or approaches for closing the defect. Finally, BT shunt has its own complications which are neither rare nor minor so it is advisable to proceed with the definitive surgery at the first time to avoid the complications associated with BT shunt.

KEYWORDS: Ventricular Septal Defect, Residual shunt, complete heart block

INT-OP 18 - POLY-TETRAFLUOROETHYLENE VALVED CONDUIT - A NEW HANDMADE CONDUIT IN RIGHT VENTRICULAR OUTFLOW TRACT RECONSTRUCTION

Subramaniam K. G.¹, Dave D.², Agarwal R.², Bhat K.², Cherian K. M.²

¹Sydney Childrens Hospital, Randwick, NSW, Australia

²Frontier Lifeline Hospital, Chennai, Tamil Nadu, India

BACKGROUND: An ideal conduit for right ventricular outflow tract reconstruction remains elusive. We propose of a new PTFE valved conduit which is easy to construct and economical. We present the results of handmade PTFE valved conduits used in the reconstruction of right ventricular outflow tract (RVOT).

METHODS: We implanted 20 patients with PTFE valved conduits ranging from size 14mm to 24 mm between Jan 2006 - May 2007. The median age was 10.96 yrs (range 10 months - 38 years). The mean weight 28.5 kg (5- 60 kg). The indication for its use was for replacement of stenotic or regurgitant previously implanted homografts and xenografts, Tetralogy of fallot with hypoplastic pulmonary arteries or absent pulmonary valve, or left anterior descending artery crossing RVOT. The follow-up is complete with mean duration of 20.6 months (12 months - 30 months). The patients have been placed on low dose aspirin.

RESULTS: There was one early death in a child with truncus arteriosus with severe pulmonary hypertension, which was not directly related to the conduit. There were no late deaths. All conduits were functioning satisfactorily with mean gradient of less than 10 mm Hg and no to mild regurgitation. No patient required reintervention for conduit related problems.

CONCLUSION: Handmade - PTFE trileaflet valved conduit with PTFE membrane as leaflets show acceptable results. They can be easily prepared and serve as good alternative for homografts and xenografts.

KEYWORDS: congenital heart surgery, Valved conduits, PTFE conduits.

INT-OP 20 - PATTERN OF PERICARDIAL DISEASES IN HUMAN IMMUNODEFICIENCY VIRUS POSITIVE PATIENTS AS SEEN IN UNIVERSITY COLLEGE HOSPITAL IBADAN, NIGERIA

Umar A., Olodapo A. P., Olawole A. A., Victor A. O., Emeka K. B., Kelechi O. E.

Division of Thoracic and Cardiovascular Surgery University College Hospital Ibadan, Nigeria

RATIONALE: The number of cases of HIV positive patients with pericardial diseases has been reported to be on the increase in Africa. Pericarditis was reported as the most common cardiac complication of HIV disease followed by pericardial effusion.

METHODS: A retrospective review was conducted of all patients (n= 42) that are HIV positive and were treated for pericardial diseases between August 2003 and July 2008.

RESULTS: There was male preponderance with M: F of 2.8:1. Pericardial effusion 20(47.7%) was the commonest mode of presentation. Pericardiostomy 15(35.7%) was the commonest surgical intervention.

CONCLUSION: Although not commonly looked for clinically, cardiac involvement in HIV positive patients is a reality with pericardial effusion being the commonest mode of presentation in our environment. We advocate that patients with pericardial effusion be investigated for HIV infection.

KEYWORDS: Pericardial diseases, HIV infection

**CARDIOMYOPATHIES:
MEDICAL AND SURGICAL
ASPECTS**

INT-OP 21 - DOES MITRAL VALVE REPAIR FOR ISCHEMIC AND IDIOPATHIC DILATED CARDIOMYOPATHY IMPROVE PATIENTS' OUTCOME?

Ribeca C., Concistrè G., Corsini B., Passerone G., Martinelli L.

Dipartimento di cardiocirurgia, Ospedale San Martino, Genova, Italy

OBJECTIVES: Mitral valve repair for mitral regurgitation in patients with dilated cardiomyopathy is controversial because of its high operative risk and poor prognosis. We report our experience considering a selected subset of patients with III type mitral regurgitation.

METHODS: Between April 2000 and January 2008 65 patients (mean age 66,1±9,9 years) with impaired LV function (left ejection fraction<30% in 46,15% patients, mean left ventricle ejection fraction 40,02±14,2%, preoperative NYHA functional class III-IV in 72,3% patients) and ischemic (47) or idiopathic (18) end-stage dilated cardiomyopathy mitral regurgitation underwent mitral valve repair at our hospital. The group comprised 50 males (76,9%) and 15 females (23,1%). Coronary artery bypass was performed in all patients with ischemic cardiomyopathy, in 2 patients (3,07%) was performed the resection of a LV aneurism. In all patients an annuloplasty with small ring was performed. The mean follow-up was 36,6±25,3 months.

RESULTS: In ischemic dilated cardiomyopathy overall hospital mortality was 14,89% (7 patients), while all patients with idiopathic dilated cardiomyopathy are surviving free from hospital readmission. At follow-up NYHA functional class decreased in all survivors, and mitral regurgitation was well controlled (70,7% patients with minimal regurgitation). Left ventricle ejection fraction (P=0,8453), end-systolic volume (P=0,53) and stroke volume (P=0,6) didn't improved after the intervention neither in patients with ischemic or in patients with idiopathic dilated cardiomyopathy.

CONCLUSIONS: Mitral valve repair is accomplished with acceptable operative risk and offers durable symptomatic improvement in idiopathic end-stage dilated cardiomyopathy; neither in patients with ischemic or in the ones with idiopathic dilated cardiomyopathy it offers improvement in LV function and its geometry.

KEYWORDS: mitral valve repair, dilated cardiomyopathy

INT-OP 23 - RIGHT HEART MYOPATHY SURGERY

Alhamoud A. M.

Damascus University, Cardiovascular Surgery, Heart Myopathy Cal Centre, Syria

INTRODUCTION: many causes of right heart myopathy primary [infective, carcinoid syndrome, infarction, Ebstein's anomaly, ...] and secondary [from pressure overload & volume overload] or unknown [Lüth's syndrome]

METHODS: surgery to invert 2 ventricles → 1

2 → 1 ½ for example: young female 16 years old, echo gave us: severe low contractility; RA: [12.63 cm 7.97 cm] no gradient on pulmonary v&t.v

we have video film showing how we did the surgery:

- Glenn anastomosis

- T.v plasty

- reconstruction R.A

- with beating heart

CONCLUSION: By the end of the film we see the difference in size & how we made the right ventricle more comfortable and now after 18 months the patient is still doing well.

KEYWORDS: right heart

DISEASES OF AORTA: SURGICAL OPTIONS

INT-OP 26 - COMPLEX AORTIC VALVE ENDOCARDITIS: LONG TERM FOLLOW-UP WITH HOMOGRAFT REPLACEMENT

Giovannelli A.¹, Alessandri G.², Perotti A.¹, Nappi F.¹, Acar C.¹, Alessandri N.², Pavie A.¹, Gandjbakhch I.¹

¹*Service de Chirurgie Cardiovasculaire et Thoracique, Hopital La Pitié-Salpêtrière, Paris, France*

²*Cardiology Department of University "La Sapienza" of Rome, Latina, Italy*

OBJECTIVE: Aim of this study is to evaluate the results at 8 years in aortic endocarditis treatment on native valves and on prosthetic devices with aortic homografts for aortic valve replacement (AVR).

METHODS: 42 patients AVR operated for aortic incompetence (AI). Mean age 41.41±17.94 years, 31 M (73,8%) and 11 F (26,2%); in 32 cases (76,2%) endocarditis were on native aortic valve and in 10 cases (23,8%) was endocarditis on prosthetic valve; in 19 patients (45,3%) the hemoculture at the operation time was positive and pathogen agent was St. Aureus (n.7, 16,6%), Streptococcus (n.3, 7,1%), St. Bovis (n.1, 2,4%), 1 St. Alactoly, 1 Enterococcus, 1 Pneumococcus, 1 Aspergillus, 1 St. Gordonnii, 1 St. Faecalis, 1 St. Epidermidis, 1 Enterococcus faecalis, in 23 cases (54,7%) hemoculture was negative. Mean NYHA functional class was 2.34±0.85, mean grade of AI was 3.63±0.48 with a mean gradient of 18.37±10.23 mmHg. EF 56.15±12.7%, EDLVD 62.44±8.67 mm, ESLVD 39.41±9.47 mm, Ascending Aorta 36.93±6.91 mm, an associated MI grade 2.07±0.64, which requested surgical treatment in 11 cases (26,19%); in 13 patients (30,95%) an abscess of aortic annulus was found. Surgical treatment was mini root technique (n.24, 57,14%) and free hand technique in 18 (42,85%); aortic homograft size was 19 mm (n.3, 7,14%), 20 mm in 1 (2,4%), 21 mm in 9 (9,42%), 22 mm in 6 (14,28%), 23 mm in 6 (14,28%), 24 mm in 3 (7,14%), 25 mm in 7 (7,66%), 26 mm in 3 (7,14%) and 27 mm in 3 (7,14%). CEC mean time was 133.83±58.11 min; 105.84±32.79 min the mean cross-clamping time.

RESULTS: Immediate results in operatory room were satisfying with residual AI of 0.48±0.16 and no need to convert to AVR with prosthesis. Thirty day long mortality was 7,14 % (3 patients). Six (14,28%) transitory low output syndrome, reverted only with medical treatment; 1 (2,4%) reoperation for bleeding; 4 (9,52%) prolonged respiratory assistance (12>h>24). First follow-up at 5 years shown an AI grade 1.03±0.64, mean gradient 15.55±6.42 mmHg, EF 58.5±8.4%, EDLVD 54.94±7.02 mm showing an optimal ventricular remodelling. Eight years follow-up shown an AI grade 0.91±0.48, mean gradient 18.33±9.37 mmHg, EF 62.8±7.7%, EDLVD 52.76±4.9 mm. Four (9,52%) reoperation for replacement of the aortic homograft: in 3 cases (7,14%) it was due to relapse of endocarditic process and 2 (4,76%) for detachment of homograft at 2.8±2.6 years distance after the first intervention: 1 surgery other 2 times, the first and the second time he received an homograft, the third time a Bentall operation was performed.

CONCLUSIONS: AVR with homograft presents an undoubted advantage in patients affected by infective endocarditis. Aortic homograft is the best choice on native valve and on prostheses, even in patients with an associated pathology mitral valve, in terms of early mortality and long term follow-up at 8 years.

KEYWORDS: Homograft - Aortic valve - Endocarditis

INT-OP 27 - REDO SURGERY FOR AORTIC VALVE REPLACEMENT AFTER PREVIOUS CORONARY ARTERY BYPASS GRAFTINGGiovannelli A.¹, Alessandri G.², Perrotti A.¹, Alessandri N.²¹*Service de Chirurgie Cardiovasculaire et Thoracique, Hopital La Pitié-Salpêtrière, Paris, France*²*Cardiology Department of University "La Sapienza" of Rome, Latina, Italy*

AIM: The aim of this study was to assess operative risks following aortic valve replacement after previous coronary artery bypass grafting and to determinate if some criteria from the first procedure could select patients at risk for redo surgery.

METHOD: Between January 1992 and July 2003, a consecutive series of 31 patients (mean age 70.2 ± 1.4 years) underwent aortic valve replacement after previous coronary artery bypass grafting (mean time interval 8.1 ± 0.7 years, range 4 – 16 years). In 3 patients (9.7 %) the aortic valve surgery was for aortic incompetence and in 28 for aortic stenosis (90.3 %). 22 patients (71 %) was in FC NYHA III or IV and 7 (23 %) with EF < 40 %.

RESULTS: There was 1 death (3.2 %) in the hospital period. Postoperative complications were: low cardiac output in 4 patients (12.9 %) treated with prolonged inotropic support, 3 TIA (9.7 %), 2 prolonged ventilation > 48 h (6.4 %) and 1 severe renal failure (3.2 %) treated with temporary dialysis. The retrospective echocardiographic study of the first operation time proves a damaged aortic valve and a mean gradient > 10 mmHg in 11 patients (35.4 %); this group underwent aortic valve replacement sooner than the others (5 ± 1.8 years vs 9 ± 2.3 years, p < 0.05).

CONCLUSION: We can conclude that, though the mortality and the morbidity in these patients are very low, it's allowed to use more elastic and flexible principles of prophylactic aortic valve replacement at the same time of coronary artery bypass grafting.

KEYWORDS: Redo surgery - Aortic valve replacement - Coronary artery bypass grafting

INT-OP 28 - MINIMAL ACCESS AORTIC VALVE REPLACEMENT USING MINIMAL EXTRACORPOREAL CIRCULATION

Kloppenborg G., Yilmaz A.

Department of Cardiothoracic Surgery, St Antonius hospital, Nieuwegein, The Netherlands

OBJECTIVES: Minimal access aortic valve replacement has been demonstrated to be beneficial over standard median sternotomy. Similarly, minimal extracorporeal circulation has been shown to have less deleterious effects than conventional cardiopulmonary bypass. We report a series of patients who underwent minimal access aortic valve replacement utilizing minimal extracorporeal circulation.

METHODS: St. Antonius Hospital has performed 667 open heart cases utilizing minimal extracorporeal circulation, over the past 12 months. We prospectively collected data on 50 patients who underwent minimal access aortic valve replacement utilizing minimal extracorporeal circulation. Temporary Cordis Ventricle ventricular pacemaker and external defibrillation pads were placed at induction. A J-shaped partial upper sternotomy ending in the third intercostal space was performed. Canulation was performed in the groin using Seldinger technique. A vent was introduced directly in the pulmonary artery. Warm blood cardioplegia and carbon dioxide field flooding were used.

RESULTS: Operating time was 140 ± 15 minutes, cross-clamp time 62 ± 11 minutes and perfusion time 81 ± 14 minutes. There were no conversions to median sternotomy. The mean postoperative haemoglobin drop was 1.43 g/dl. Only one patient had intra-operative blood transfusion. Average time to extubation was 8 hours and mean length of ICU stay 2.2 days. Postoperative complications included a permanent pacemaker, pneumothorax, superficial wound infection and excessive postoperative blood loss requiring mediastinal exploration. Renal failure and major cerebral accidents did not occur. There was a 100% survival at three months follow up.

CONCLUSION: This series of patients have demonstrated that minimal access aortic valve replacement utilizing minimal extracorporeal circulation is a feasible technique with excellent cosmetic results and the same clinical outcomes as conventional aortic valve replacement.

KEYWORDS: AVR, MECC, partial sternotomy

Three weeks postoperative

INT-OP 29 - THE USAGE OF CRYOPRESERVED AORTIC HOMOGRAFTS IN CARDIAC SURGERY. EARLY AND MID TERM RESULTS AT A SINGLE UNIVERSITY CENTRE

Dimitrakakis G., Bosanquet D., Von Oppell U., Mehta D., O'keefe P.

Department of Cardiothoracics, University Hospital of Wales, Cardiff, United Kingdom

BACKGROUND: Aortic root replacement can be performed in selected cases with cryopreserved aortic homografts with acceptable hospital morbidity and mortality and very good short and mid term results. An evaluation of our experience is presented in this retrospective analysis of outcome.

METHODS: From June 2002 through March 2008, 27 patients (18 male, 9 female) aged 26 to 73 years (mean 44.7 $\pm$ 13) underwent aortic root replacement with cryopreserved aortic homografts. 11 patients (37.03%) were NYHA III or IV functional status prior to surgery, 12 (44.44%) were NYHA II, and the rest NYHA I.

16 patients (59.25%) had symptoms of congestive heart failure. 5 patients (18.51%) had emergency operations, 10 (37.03%) had urgent operations. 5 procedures (18.51%) were combined (CABG, MVR, modified MAZE, hemiarth replacement). 7 patients (25.92%) had undergone previous cardiac surgery and 3 (11.11%) were re-operations.

The cause of aortic disease included acute endocarditis (13 patients, 48.14%), degenerative disease (6 patients, 22.22%), congenital disease (4 patients, 14.81%) and rheumatic disease (4 patients, 14.81%). EuroSCORE ranged from 1 to 16% (median 5.5%) and Logistic EuroSCORE ranged from 1.51 to 62.21% (median 4.64%). Follow up was complete ranging from 3 to 69 months (mean 27.16 $\pm$ 18.15).

RESULTS: There were two (7.4%) intraoperative deaths, associated with acute infective endocarditis, ARDS and re-operation. 2 patients (7.4%) had re-exploration for bleeding and 1 patient required emergency postoperative laparotomy due to splenic rupture. Duration of extracorporeal circulation ranged from 109 to 454 minutes (median 175, mean 193 $\pm$ 71). Aortic cross clamp duration ranged from 96 to 308 minutes (median 149, mean 158.6 $\pm$ 49.5). Total circulatory arrest was required in 9 patients (30%), ranging from 2 to 21 minutes (median 8.3). Hospital stay ranged from 4 to 59 days (median 13) and CITU stay ranged from 1 to 51 days (median 2).

4 patients (14.81%) required permanent pacemaker insertion (indications: modified MAZE procedure with RF, 3rd degree heart block and preoperative history of ventricular fibrillation). ARDS occurred in 2 patients (50% mortality). No structural valve failure was observed during the follow-up period. One patient died in the 52nd post-op month due to recurrence of infective endocarditis. Follow-up with echo in 22 out of 24 patients (91.66%) showed absence of stenosis of the homografts in all patients (100%), nil or trace aortic valve regurgitation in 13 patients (59.01%) and mild regurgitation in 9 patients (40.9%). Anticoagulant related bleeding and thromboembolic events were not reported. All patients were in NYHA class I or 0.

CONCLUSION: Aortic root replacement with cryopreserved homografts can be performed safely for various and complex pathological conditions involving the aortic valve and root in selected cases. In order to prove long term durability in the cryopreserved homografts a longer follow up will be necessary.

KEYWORDS: Aortic root replacement, cryopreserved aortic homografts

INT-OP 30 - COMBINED MITRAL-AORTIC VALVE DISEASES: PROBLEM SOLVED AND UNSOLVED

Popov V.¹, Popova A.², Andrievskaya S.³

¹National Institute of Cardiovascular Surgery named by M. M. Amosov, Kiev, Ukraine

²National Medical University named after O. O. Bogomoletz, Kiev, Ukraine

³State Medical University, Odessa, Ukraine

OBJECTIVE: To analyzed main problems in surgery of combined mitral and aortic valve diseases (CMAVD).

MATERIALS: 1297 adult patients (pts) with CMAVD were consecutive operated from 01.01.1981 till 01.01.2006 yy in Institute. Predominant genesis of CMAVD was rheumatism. 31 pts (2,4%) were in II NYHA class, 317 (24,4 %) pts were in III class and 949 (73,2%) pts in IV class. The average age was 46,4 $\pm$ 8,1 (14 - 69) yy. The following procedures were performed: MVAR (n = 903), MVR + plastic procedure on AV (n = 194), AVR + plastic procedure on MV (n = 173), plastic procedure on both valves (n = 27). Previous closed mitral commissurotomy (CMC) was marked in 110 (8,5 %) pts, constrictive pericarditis in 101 (7,8 %), thromboses of LA in 75 (5,8%) pts. Only mechanical valves were used in any position: in the most cases are monodisc, at the last period - bileaflet. Concomitant tricuspid valve disease was corrected by De Vega's operation (plus tricuspid commissurotomy in organic disease) in 258 (19,8 %) pts. Preservation of MV's apparatus during MVR was in all cases of mitral incompetence, especially with ESVI >75 ml/m.q.. All operations were performed with CPB, moderate hypothermia (28-32 C), in the most of cases in combined ante-retrograde St. Thomas crystalloid cardioplegia.

RESULTS: The hospital mortality (HM) at the last 6 years (2000-2006 yy) was 7,1%. HM was higher for double valve replacement than in cases with plastic procedure on one valve. The value of HM depends of following main factors: IV NYHA class, small cavity of LV - end-systolic volume index of LV (ESVI) < 15 ml/m.q. (especially for combined MS + AS and using prostheses 29 mm), LV's ejection fraction < 0,35, systolic pressure in pulmonary artery > 90 mm.Hg, massive thromboses of LA (thrombotic masses more than 1/3 of volume), constrictive pericarditis, previous CMC, calcification on both valves + 3, ESVI > 110 ml/m.q. (especially for combined MI +AI), organic tricuspid valve diseases, triple stenoses, cross-clamping time of aorta more than 180 minutes.

CONCLUSION: Excellent results of CMAV's correction (HM less than 2 %) were marked preferably in cases without complicated forms - in II or III NYHA class and using bileaflet mechanical valve (Saint Jude, Carbomedics, On-X, Edwards-MIRA). The combination of described risk-factors increases value of HM.

KEYWORDS: combined mitral-aortic valve disease, complicated forms of mitral-aortic valve disease

INT-OP 32 - HOMOGRIFT REPLACEMENT OF THE AORTIC VALVE: EIGHT - YEARS RESULTS

Giovannelli A.¹, Alessandri G.², Perrotti A.¹, Nappi F.¹, Alessandri N.², Acar C.¹, Pavie A.¹, Gandjbakhch I.¹

¹Service de Chirurgie Cardiovasculaire et Thoracique, Hopital La Pitié-Salpêtrière, Paris, France

²Cardiology Department of University "La Sapienza" of Rome, Latina, Italy

OBJECTIVE: The objective of this study is to assess whether the aortic homograft represents a valuable advantage for aortic valve replacement in aortic valve incompetence.

METHODS: Since 1992 to 1997, 112 patients underwent aortic homograft replacement surgery for aortic valve incompetence. Mean age was 38,34±16,53 years (14-78 y), 83 men (74,1 %) and 29 women (25,9 %). The cause of aortic valve incompetence was complex infective endocarditis involving the aortic valve and the root in 42 patients (37,5 %), in this group 18 patients had active endocarditis at the time of operation and 24 patients had non active endocarditis; in the others, 56 patients (50 %) had rheumatic disease, dystrophic disease in 9 (8,03 %) and aortic valve bicuspid disease in the last 5 cases (4,46 %); 11 patients (9,82 %) underwent homo-AVR in non-native valve (redux aortic valve replacement). All the patients had severe aortic valve regurgitation (mean 3,46 ± 0,83) and NYHA FC was 3,26 ± 0,74. 13 patients (11,6 %) also presents mitral valve disease with regurgitation (mean 2,07 ± 0,64) that need surgical treatment. The EDLVD was 69,84 ± 10,23 mm. The procedure was mini-root replacement in 61 patients (54,46 %) and subcoronary reimplantation (free hand technique) in 51 patients (45,53 %).

RESULTS: The mean follow-up is 8 years. Overall hospital mortality was 4 patients (3,57 %). There was 1 late death (0,89 %) but for non cardiac events. There wasn't early reoperation (< 1 months) but 8 late reoperations (7,14 %) whom 1 patient two times. Early postoperative aortic regurgitation by transthoracic echocardiographic control was 0,48 ± 0,16, without homograft failure. There were 11 early complications (9,82 %): 6 patients (5,35 %) had low cardiac output, 4 patients (3,57 %) had pulmonary infection and 1 patient (0,89 %) bleeding. There were homograft late complications correlated in 5 patients (4,46 %): 4 patients (3,57 %) had endocarditis with prosthetic infection, whom 1 operated during active endocarditis, and 1 patient (0,89 %) had homograft dysfunction; the mechanism of homograft failure was leaflet rupture and calcifications. In these five patients aortic valve replacement was performed by 1 homograft, 3 mechanical prostheses and 1 Bentall operation. At 8 years-follow up by transthoracic echocardiographic control, mean peak pressure gradient is 18,33 ± 9,37, homograft regurgitation grade is 1,15 ± 0,8 and EDLVD is 52,76 ± 4,9 mm. Freedom from major cardiac events is 100% and NYHA FC is 0.94 ± 0.49; 3 patients (2,67 %) had TIA.

CONCLUSION: Our work shows good late results for aortic valve replacement with homograft and risk of valve-related death, recurrent endocarditis or others complications is low at long term follow up.

KEYWORDS: Homograft - Aortic Valve

INT-OP 33 - MODIFIED PERFUSION CONCEPT FOR THE SURGERY OF TYPE A AORTIC DISSECTION

Ates S. M.¹, Kurtoglu M.¹, Duvaran I.¹, Bakhtiyar F.², Dogan S.², Aybek T.¹

¹Department of Cardiovascular Surgery, Guven Hospital, Ankara, Turkey

²Thoracic and Cardiovascular Surgery, University of J.W.Goethe, Frankfurt, Germany

BACKGROUND: Treatment of acute type A aortic dissection remains a surgical challenge due to prolonged operative times, bleeding complications and a considerable risk of neurologic morbidity and mortality. The following study investigates clinical results following modification of perfusion technique for cardiopulmonary bypass (CPB) as well as temperature management.

METHODS: Between January 2000 and August 2008, 132 consecutive patients underwent repair of acute type A dissection. Selective antegrade cerebral perfusion via the right subclavian artery combined with mild systemic hypothermia (30-32 °C) was used in all patients.

RESULTS: Mean CPB time was 132±50 minutes and mean myocardial ischemic time was 90±49 minutes. Isolated cerebral perfusion was performed for 24±10 minutes. Mean core temperature amounted to 30.5±2.0 °C. Chest tube drainage over the first 24 hours was 520±210 ml. Mean ventilation time was 46±22 hours. Elevation of serum lactate levels at 1h, 12h, 24h postoperatively rose to 22±14, 18±11 and 19±8 mg/dl respectively. We observed new postoperative permanent neurologic deficits in 5 patients (3.7%) and temporary neurological deficit in 3 patients (2.2%). The 30 day mortality rate was 4.5% (n=6). After a mean follow up period of 3.1 years, 116 patients (88%) were still alive.

CONCLUSIONS: Antegrade cerebral perfusion in combination with mild hypothermia offered sufficient neurologic protection in our patient cohort, provided adequate distal organ protection, and reduced perioperative complications in surgery for type A dissection. This perfusion strategy may help reducing perioperative complications in this particular patient population.

KEYWORDS: cardiovascular surgery, aorta, cerebral perfusion

INT-OP 34 - SURGICAL CORRECTION OF POSTSTENOTIC ANEURYSM OF ASCENDING AORTA

Popov V.¹, Bolshak O.¹, Popova A.², Andrievskaya S.³

¹National Institute of Cardiovascular Surgery named by M. M. Amosov, Kiev, Ukraine

²National Medical University named after O. O. Bogomoletz, Kiev, Ukraine

³State Medical University, Odessa, Ukraine

PURPOSE: To determine possibilities of correction of poststenotic aneurysm of ascending aorta (PAAA) by means of different methods.

MATERIAL: During 1999-2007 yy 112 patients (pts) with aortic stenoses (AS) and PAAA were operated in Institute. The average age was $57,2 \pm 6,3$ (21 - 71) yy. At all group 41 (36,6%) pts were in III NYHA class and 71 (63,4%) pts - in IV. The following operations were performed: aortic valve replacement (AVR) + wrapping of AA - 54 (63,5%) pts (group A), AVR+resection of AA + wrapping of AA 16 (18,8%) pts (group B), AVR + resection of AA+plasty of sinotubular junction (STJ) in zone of noncoronary cusp+wrapping of AA 12 (14,1%) pts (group C), AVR + plasty of STJ + wrapping of AA 3 (3,5%) pts (group D). In all cases group A-D after AVR nylon tape (diamener 1 cm) was wrapping AA by 5-7 tours and fixation between them and in proximal and distal part of AA. Control group E is 39 pts with PAAA (diameter of AA > 5,5 cm) was performed Benthal operation and Wheat operation in 3 pts. All operations were performed with CPB, moderate hypothermia (28-34 C), retrograde St. Thomas cardioplegia.

RESULTS: No hospital deaths among group A-D in hospital period and during remote period (average $4,2 \pm 0,9$ yy). Echo examination of diameter of AA for group A: preoperative $4,9 \pm 0,5$ cm, postoperative (6-7 dd) $4,0 \pm 0,4$ cm, remote period $4,1 \pm 0,3$ cm; for group B: preoperative $5,2 \pm 0,6$ cm, postoperative - $3,8 \pm 0,3$ cm, remote period $3,9 \pm 0,4$ cm; for group C: preoperative $5,4 \pm 0,5$ cm, postoperative - $3,7 \pm 0,4$ cm, remote period $3,8 \pm 0,3$ cm; for group D: preoperative $5,4 \pm 0,4$ cm, postoperative $3,9 \pm 0,5$ cm, remote period $4,0 \pm 0,2$ cm. In group E: hospital mortality -7,6% (n=3/39) for Benthal operation and 1 (2,9%) death at remote period ($p < 0,05$). Cross-clamping time $74,4 \pm 9,2$ minutes (group A-D) and $114,4 \pm 19,2$ minutes (group E) ($p < 0,05$). Blood loss $274,4 \pm 39,4$ ml (group A-D) and $645,4 \pm 79,2$ ml (group E) ($p < 0,05$). Staying in ICU $54,4 \pm 6,4$ hours (group A-D) and $84,4 \pm 9,2$ hours (group E) ($p < 0,05$).

CONCLUSION: On the basis of clinical experience we recommend the expedient method of complex reconstruction of PAAA during AVR without prostheses of AA. Reconstruction of AA with PAAA by wrapping technique is safe and should be better performed in cases with diameter of AA 4,5-6,5 cm.

KEYWORDS: poststenotic aneurysm, complex reconstrucion of ascending aorta

ATRIAL FIBRILLATION AND MITRAL VALVE SURGERY

INT-OP 35 - ATRIAL FIBRILLATION AFTER CORONARY ARTERY BYPASS SURGERY: A RETROSPECTIVE REVIEW OF A SINGLE CENTRE EXPERIENCEMusa A. F.¹, Dillon J.², Omar R.³¹*Department of Clinical Sciences, School of Medicine and Health Sciences, Monash University, Malaysia*²*Department of Cardiothoracic Surgery, National Heart Institute, Kuala Lumpur, Malaysia*³*Department of Cardiology, National Heart Institute, Kuala Lumpur, Malaysia*

BACKGROUND: Though complication rates following coronary artery bypass grafting (CABG) have dropped significantly with modern perioperative care, atrial fibrillation (AF) continues to be the most common complication. AF can result in haemodynamic instability, thromboembolic events, need for antiarrhythmic therapy and increased resource utilization. The purpose of the study was to investigate the incidence, predictors, morbidity, and mortality associated with postoperative AF and its impact on intensive care unit (ICU), high dependency unit (HDU) and postoperative hospital stay in patients undergoing cardiac surgery at our centre.

METHODS: The study population consisted of 1052 patients who underwent open cardiac surgery between January 2005 and December 2005 at the National Heart Institute Kuala Lumpur. There were a total number of 1052 patients, 83.2% of them were males with a mean age of 58.2±8.8 years. Operations included CABG (98.7%) and CABG with valve procedures (1.3%). The majority of cases (97.6%) were done on-pump whereas off-pump cases constitute only 2.4%.

RESULTS: The incidence of postoperative AF was 17.5% with a mean onset of 59.9±91.5 hours post operatively. Multivariate logistic regression analysis of factors found significant on univariate analysis showed the following predictors of postoperative AF: Malay race, advancing age, documented preoperative arrhythmia, atrial dilatation, concurrent valve surgery, prolonged cross-clamp time and increasing bypass time ($p<0.05$). Off-pump CABG (OPCABG) showed a strong trend though not statistically significant ($p=0.05$) with the peak of incidence observed on the 2nd POD (39.9±12.8 hours). Postoperative mean ICU, HDU and hospital stay were higher in AF group ($p<0.001$). Morbid events and hospital mortality were also noted to significantly higher in the AF group ($p<0.001$).

CONCLUSION: Atrial fibrillation after cardiac surgery occurs in approximately one fifth of patients and is associated with an increase in adverse events in all-measurable outcomes of care and increases the use of hospital resources and therefore, the cost of care. We found a strong trend in AF incidence in OPCABG with different timing of occurrence of AF in the two groups suggesting different AF triggering factors. Strategies to reduce the incidence of AF after cardiac surgery should favourably affect surgical outcomes and reduce utilization of resources and thus lower cost of care.

KEYWORDS: atrial fibrillation, coronary artery bypass grafting surgery, OPCABG, predictors, outcomes

INT-OP 37 - MITRAL VALVE SURGERY WITH CONCOMITANT ABLATION OF ATRIAL FIBRILLATION ON A PERFUSED BEATING HEART: DO NORMOTHERMIA AND A NON-ISCHAEMIC MYOCARDIUM FACILITATE SUCCESS ?

Banerjee A., Agarwal S., Singh H., Narang S., Muppuri V., Mukerjee K., Tempe D.

G.B. Pant Hospital, Maulana Azad Medical College, Delhi University, New Delhi, India

OBJECTIVE: Of late, mitral valve(MV) surgery along with ablation of atrial fibrillation(AF) by applying surrogate Cox-Maze lesions, with the help of radiofrequency or other energy sources has gained popularity. Universally, such operations are performed in a cold cardioplegic heart. We have performed MV repair or replacement along with AF ablation on a normothermic, perfused beating heart to determine whether it influences the outcome in achieving freedom from AF.

METHODS: Out of 364 cases of MV repair or replacement performed on a perfused beating heart since 1999, 86(23.6 %) were subjected to AF ablation using various energy sources. The Maze protocol comprises standard biatrial lesion sets along with amputation of left and right atrial appendages. The whole procedure is performed on a beating heart by perfusing the aortic root with normothermic blood. Intraoperative TEE is used in all cases. The cardiac rhythm is carefully monitored to identify any changing character. Reduction of left atrium is carried out wherever deemed necessary.

RESULTS: All the patients have got relief from AF. Seventy-nine(92 %) patients registered termination of AF during the application of left sided lesions. In the remaining patients, it took up to three months for the AF to disappear. Sixty-four(74.4 %) patients are in sinus rhythm. The rest have a regular atrial or junctional rhythm. None of the patients required pacing at any stage. There was no mortality.

CONCLUSION: Biatrial ablation with concomitant MV surgery on a normothermic beating heart achieves an instantly visible, and almost guaranteed freedom from AF.

KEYWORDS: Arrhythmia, atrial fibrillation, mitral valve, ablation

INT-OP 38 - HOSPITAL AND MID-TERM RESULTS OF SURGERY FOR MITRAL VALVE REGURGITATION IN PATIENTS WITH SEVERE SYSTOLIC DYSFUNCTION OF LEFT VENTRICLESetina M.¹, Pazderkova P.², Pospisilova H.², Sulda M.², Mokracek A.²¹Department of Cardiac Surgery, University Hospital Motol, Prague, Czech Republic²Department of Cardiac Surgery, Ceske Budejovice Hospital, Ceske Budejovice, Czech Republic

INTRODUCTION: Preoperative ejection fraction (EF) of left ventricle (LV) is the most important prognostic factor for surgery for mitral regurgitation (MR). The indications for surgery in patients with MR and severe dysfunction of LV remains controversial. The aim of the study was to evaluate the short- and mid-term results of surgery for mitral regurgitation in patients with severe dysfunction of LV (defined as EFLV $\leq 30\%$).

MATERIAL-METHODS: From January 2002 to March 2006 we performed mitral valve surgery in 601 consecutive patients. Based on retrospective analysis we have identified 40 patients, 30 men, 10 women, age 65.7 ± 9.4 years, who fulfill the criteria of significant MR and EF $\leq 30\%$ ($27.9 \pm 12.3\%$). We have investigated etiology and preoperative clinical and echocardiography parameters - these were also evaluated after surgery during hospitalization, 30 days and 1 year after the operation. We have observed 1- and 2-years survival rate as well.

RESULTS: Preoperative Logistic Euroscore was 20.6 ± 11.6 . Ischemic etiology was the cause of MR in 32 patients (80%). Mitral valve repair was performed in 37 (92.5%) patients and replacement in 3 ones. Hospital mortality was 10% (4 patients). Thirty days, one- and two-year survival was 90%, 87.5% and 85%. ECHO parameters: before surgery, 1 month and 1 year after the surgery - EF (%) - 27.9 ± 2.3 , 30.6 ± 6.8 , 37.6 ± 12.5 , LV end-systolic diameter (mm) - 55.9 ± 10.3 , 53.5 ± 8.9 , 50.6 ± 10.9 , LV end-diastolic diameter (mm) - 68.0 ± 8.8 , 65.6 ± 8.5 , 62.9 ± 9.7 , MR grade - 2.9 ± 0.5 , 0.2 ± 0.4 , 0.4 ± 0.9 . All the differences in all of the above presented parameters reached the statistical significance. Two patients had MR grade 3 in one-year follow-up, one of them was in NYHA class III and was successfully reoperated (valve replacement by bioprosthesis). The other one was in NYHA class II and refused reoperation. For the overall group, the mean NYHA fell down from preoperative 2.8 ± 0.8 to 1.6 ± 0.6 ($p < 0.01$).

CONCLUSIONS: Even in this high-risk group of patients, the operative and mainly mid-term results are surprisingly good. The overall mortality is acceptable and the quality of life has improved considerably. We observe early reverse remodeling and significant improvement of LV function.

KEYWORDS: Mitral valve regurgitation, Left ventricular dysfunction

INT-OP 39 - MASSIVE THROMBOSES OF LEFT ATRIUM FOR ISOLATED MITRAL VALVE DISEASE: PROBLEMS SOLVED AND UNSOLVEDPopov V.¹, Knyshov G.¹, Popova K.²¹National Institute of Cardiovascular Surgery named by M. M. Amosov, Kiev, Ukraine²National Medical University named after O. O. Bogomoletz, Kiev, Ukraine

OBJECTIVE: To analyze main problems in surgery of mitral valve diseases (MVD) complicated by left atrium's massive thromboses (LAMT) (thromboses more than 1/3 of left atrium's volume).

MATERIALS AND METHODS: 224 adult patients (pts) with MVD complicated LAMT were consecutive operated from 01.01.1984 till 01.10.2007 yy in Institute. Predominant genesis of MVD was rheumatism. Mitral stenoses was marked in all pts and all of them were in IV NYHA class. There were male 117 (52.2%) and females 107 (47.8%). The average age was 49.2 ± 7.6 (19 - 69) yy. Calcification of MV was in 147 (70.3%) pts. Previous closed mitral commissurotomy (CMC) was marked in 39 (16.8%) pts. Previous episodes of emboli were in 48 (21.8%) pts. The following procedures were performed: mitral valve replacement (MVR) ($n = 157$), MVR + plastic procedure on TV by De Vega ($n = 31$), OMC ($n = 29$), OMC + plastic procedure on TV ($n = 7$). Only mechanical valves were used: in the most of pts - monodisc, bileaflet were only last 6 years. All operations were performed with CPB, moderate hypothermia ($27-32^\circ\text{C}$) using St. Thomas crystalloid cardioplegia.

RESULTS: The hospital mortality (HM) at the period (1994-2007 yy) was 3.9% ($n = 5/125$) for MVR (including TV's correction) and 0% ($n = 0/25$) for OMC. The reasons of deaths were: heart failure ($n = 2$), brain damage (thrombemboli) ($n = 2$), bleeding (traumatic rupture of LA's posterior wall during removing of LAMT) ($n = 1$). In all group ($n = 224$) traumatic rupture of LA's wall during radical removing of LAMT was marked in 4 (1.5%) pts. Thrombotic events were marked in 5.8% ($n = 12/188$) during MVR and 2.9% ($n = 1/36$) during OMC ($p < 0.05$). The value of HM depends of following factors: small LV's volume - ESVI $< 15 \text{ ml/m}^2$ (for prostheses' size 29 mm and more), systolic pressure in pulmonary artery $> 90 \text{ mm.Hg}$, previous CMC, giant LA, calcification of MV + 3. At the remote period (average 14.2 ± 3.8 yy) mortality in three time and thrombotic lethal events in two times were higher for MVR's group ($n = 91$ pts) than in OMC's group ($n = 25$ pts) ($p < 0.05$).

CONCLUSION: To perform correction of MVD with LAMT should be better without MVR as soon as possible. Thrombotic events at postoperative period is specific complicated factor for this pathology. Contraindication of operation is combination of 3 and more risk-factors.

KEYWORDS: massive thromboses, isolated mitral valve disease

INT-OP 40 - HOMOGRAFT REPLACEMENT OF THE MITRAL VALVE: EIGHT YEARS RESULTS

Giovannelli A., Perrotti A., Proietti P., Nappi F., Acar C., Pavie A., Gandjbakhch I.

Service de Chirurgie Cardiovasculaire et Thoracique, Hopital La Pitié-Salpêtrière, Paris, France

OBJECTIVE: The objective of this study was to assess whether the mitral homograft represents a valuable alternative for complete or partial mitral valve replacement.

METHODS: Since 1993, 104 patients underwent mitral homograft replacement surgery. The mean age was 38 ± 15 years. The aetiology of mitral valve disease was: rheumatic disease (n=76), infective endocarditis (n=24) and others (n=4). Sixty five of these procedures were total homografts while 39 were partial homografts.

RESULTS: The mean follow up was 52 months + 35 months (maximum:117 months). Overall peri-operative mortality was 4/104 (3.8%) and was 2.5% versus 8.7% for non-endocarditis and endocarditis patients respectively ($p < 0.19$). There were nine late deaths (cardiac: 4 non cardiac:5). There have been 5 early (<3 months) and 10 late reoperations. Of the remaining 77 patients, NYHA class was: I (n=61), II (n=14) and III (n=2). Four patients suffered endocarditis and 5 had an ischemic or haemorrhagic event. Reoperation free survival was $71 + 6\%$ at 8 years (partial: 81% vs total 63% $p < 0.19$). Among patients with a total homograft, reoperation free survival was $61 + 9\%$ and $85 + 8\%$ in patients below and above 40 years of age respectively ($p = 0.09$).

CONCLUSION: Early reoperations were most frequently secondary to a mismatch between the homograft and the recipient's valve. Beyond that stage, the mitral homograft carries a risk of early failure, however overall eight year results are comparable to those of bioprostheses in the same age group. The durability could be further improved by respecting the contraindications which have now been identified and by changing the sizing technique.

KEYWORDS: homograft - mitral valve

INT-OP 41 - MITRAL VALVE REPAIR VS REPLACEMENT IN ISCHEMIC MITRAL VALVE REGURGITATION

Giovannelli A.¹, Alessandri G.², Perrotti A.¹, Proietti P.¹, Alessandri N.²

¹*Service de Chirurgie Cardiovasculaire et Thoracique, Hopital La Pitié-Salpêtrière, Paris, France*

²*Cardiology Department of University "La Sapienza" of Rome, Latina, Italy*

OBJECTIVES: This study was undertaken to evaluate the impact of mitral valve repair with the "undersizing mitral annuloplasty technique" versus mitral replacement as treatment for ischemic mitral regurgitation in presence of left ventricular dilatation.

METHODS: From 2000 through 2001, a total of 67 patients with ischemic mitral regurgitation underwent to mitral valve surgery with the "undersizing mitral annuloplasty technique". In all cases the undersizing mitral annuloplasty was the technique of choice and the annuloplasty size was 26 mm. A second homogeneous group with the same patients number, risk factors, characteristics, variables and statistical parameters underwent to mitral valve replacement with mechanical prosthesis by the same surgical equipe is considered as comparison group. The pre and perioperative variables were used for multivariate analysis.

RESULTS: No patient dead during the procedure. 1 patient with mitral valve repair failure was treated with mitral valve replacement. The survival rate after mitral valve repair and replacement was 100% at one year follow-up. Freedom from repair failure at one year was 100%.

CONCLUSIONS: Mitral valve repair with the under sizing mitral annuloplasty is effective in the treatment of ischemic mitral regurgitation. The midterm good results in terms of survival rate and repair failure would be conserved to extend use also in emergency status.

KEYWORDS: ischemic mitral valve - mitral valve repair

Results

	Valve Repair	Valve Replacement
Age	67,9 + 3,4	64,8 + 9,2
Male	51	56
Female	16	11
NYHA FC I	3	4
NYHA FC II	14	12
NYHA FC III	44	47
NYHA FC IV	6	4
Mitral Regurgitation	2,89 + 0,73	2,75 + 0,52
EF	32,65 + 5,26	35,12 + 8,19
Emergency	22	19
Grafts/Patient	2,2	2,4
Mitral Regurgitation at 1 year	0,67 + 0,3	0
NYHA FC at 1 year	0,83 + 0,39	0,91 + 0,48
Total	67	67

INT-OP 42 - MITRAL VALVE REPLACEMENT ON BEATING HEART WITH COMPROMISED VENTRICULAR FUNCTION

Mohamed N. A., Ghaffar T.G.A., Bahie El din H.H.

National Heart Institute, Cardiac Surgery Department, Giza, Egypt

BACKGROUND: Cardioplegic arrest of the severely compromised ventricle may make weaning from cardiopulmonary bypass problematic (1). To avoid damage of myocardial ischemia, myocardial hypoxia, and reperfusion injury, we present mitral valve replacement in beating heart (2) with normothermic blood.

METHODS: Between April 2006 to April 2007, twenty cases of mitral valve disease with compromised left ventricle (LVESD $\geq$ 4.5) had beating heart mitral valve replacement, the beating heart technique with continuous, warm, antegrade oxygenated blood perfusion, the ascending aorta was clamped

RESULTS: The age of twenty patients was (20-50 years). 12 females and 8 male, the preoperative LVESD $\geq$ 4.5 cm. the cardiopulmonary bypass (CPB) time was (60 ± 15 minutes), the intensive care study 1-2 days, no morbidity, no mortality, left ventricular function was improved by echocardiography after six months.

CONCLUSION: The primary aim of the beating heart technique is to avoid ischemic-reperfusion injury in patients with poor ventricular function and little cardiac reserve. So, beating heart mitral valve replacement has a role in high risk patients with compromised left ventricular function.

KEYWORDS: MVR, MITRAL VALVE REPLACEMENT

NEW HORIZONS IN MITRAL VALVE SURGERY

INT-OP 43 - ARTEFICIAL COAPTATION SURFACE IN MITRAL VALVE REPAIR

Biocina B.¹, Unic D.², Baric D.², Gasparovic H.¹, Oertel F.³, Beyer M.³

¹Department of cardiac surgery, University hospital centre "Rebro", Zagreb, Croatia

²Department of cardiac surgery, Clinical hospital "Dubrava", Zagreb, Croatia

³Department of cardiac surgery, Klinikum Augsburg, Augsburg, Germany

Mitral valve repair is the current treatment of choice for patients with mitral valve dysfunction. Repair is generally preferred over valve replacement due to important and well-documented patient benefits. Despite these known patient benefits, barely a third of diseased mitral valves are repaired, owing largely to the many surgical/technical challenges inherent in the procedure. Three basic parts of the mitral valve are the hinge (annulus), suspensory mechanism (chordae and papillary muscles) and the coaptation surface (leaflets).

Conventional approach to mitral valve repair was based on presumption that, apart of the arteficial support of the annulus with a ring, all other parts of the valve should be natural (e.g. tailored). As arteficial support of the suspensory apparatus with Gore-Tex chordae emerged recently as equally efficient if not better than conventional chordal repair, the need for arteficial coaptation technique in mitral valve repair became obvious. In this work the theoretical background of the arteficial coaptation surface technique in mitral valve repair is presented, also with review of clinical results of implantation of more than 70 cases worldwide

KEYWORDS: mitral valve, repair, cardiac surgery, valve surgery

INT-OP 45 - A NEW COMPLETELY FLEXIBLE RING FOR MITRAL ANNULOPLASTY: "RAMA - VALVULOPLASTY - RING". 5 YEARS PITIÈ SALPETRIERE EXPERIENCE

Giovannelli A.¹, Perotti A.¹, Alessandri G.², Alessandri N.², Rama A.¹, Gandjbakhch I.¹

¹Service de Chirurgie Cardiovasculaire et Thoracique, Hôpital La Pitié-Salpêtrière, Paris, France

²Cardiology Department of University "La Sapienza" of Rome, Latina, Italy

BACKGROUND: The objective of this study was to analyze the effects about use of a new completely flexible ring for mitral annuloplasty, the "Rama-Valvuloplasty-Ring"

METHODS: From 1998 to 2003, 182 patients with mitral valve incompetence underwent mitral reconstructive surgery with the "Rama-Valvuloplasty-Ring". This group was made up of 117 men (64,3%) and 65 women (35,7%). Mean age was 62,51±8,2 years (range 19-87). Mean NYHA FC was 2,9±1,7: 65 patients in I-II FC (35,72%), 104 patients in FC III (57,14%), 13 patients in FC IV (7,14%). The preoperative Echography has shown a MR degree II (46,15% n.84), degree III (29,12%, n.53), 24,72% (45 patients) degree 4. Mean EF: 42,8±9,7%, EDLVD: 57,7±9,7 mm. The causes of mitral valve insufficiency were degenerative disease (141 patients, 77,47%), post-ischemic disease (n 21, 11,53 %), rheumatic aetiology (11 patients, 6,05%) and 9 patients (4,95 %) had infectious endocarditis. Ring sizes most commonly used were 30 mm and 32 mm, respectively in 92 patients (50,55%) and 41 patients (22,54%), followed by 28 mm (43 patients, 23,62%), 34 mm (5 patients, 2,74%), 36 mm (1 patient, 0,55%). The surgical act was valve quadrangular resection in 103 patients (56,60%), triangular resection in 57 patients (31,32%) and no valve resection in 22 pt (12,08%). In 89 patients (48,90%) was necessary associated intervention: 44 patients (24,18%) had ischemic cardiomyopathy, so it was necessary coronary revascularization: 18 patients (9,89%) were operated with single by-pass, 21 patients (11,54%) with double by-pass, 5 cases with triple by-pass (2,75%); aortic valve replacement in 42 cases (23,07%) and aorta repair in 3 patient (1,65%)

RESULTS: Early postoperative mortality was 2,19% (4 patients). Early postoperative echocardiographic control shows MR grade 0 in 142 patients (79,78%) and grade I in 36 (20,22%) with mean grade 0,4±0,12 and no patients with grade III or IV. So, there was not mitral annuloplasty failure that necessitated MVR. During follow-up there were 12 late deaths (12 patients, 6,74%). Only 1 death was valve related (thrombosis) and the others 11 patients non cardiac death correlated (subdural frontal haematoma, septic shocks). Postoperative transthoracic echocardiogram data were available in 166 patients at 5 years: the presence of postoperative MR was evaluated and severity was graded as mild in 33 patients (19,88%), moderate in 18 patients (10,84%), severe in 3 (1,81%) patients. There was nothing MR in the others 112 patients (67,47%); EDLVD was 49,4±6,5 mm, EF was 51,8±4,3 %. Mean NYHA FC was 0,8±0,4. Only one patient was reoperated during the follow-up for mitral annuloplasty failure with MVR.

CONCLUSION: Mid-term 5-years follow up is good for patients operated with the new completely flexible Rama-Valvuloplasty-Ring for mitral annuloplasty. This study has also verified the advantage about the Rama-Valvuloplasty-Ring use in the preservation of native valve apparatus.

KEYWORDS: mitral annuloplasty - flexible ring

INT-OP 47 - POSTERIOR EXTENSION TECHNIQUE WITH PERICARDIAL PATCH FOR MITRAL VALVE REGURGITATION

Tsukui H., Pellegrini R. V., Wei L. M., Lucas D. M., Medich G. E., Vayansky C., Jones D. A.

University of Pittsburgh, Medical Center Passavant, Pittsburgh Pa, United States

BACKGROUND: The posterior leaflet extension technique with a pericardial patch is indicated for mitral valve regurgitation (MR) with a retracted posterior leaflet in rheumatic and ischemic MR patients, however the follow-up outcome is not been well known.

METHODS: Four patients (mean age: 58.5 [44-66], 2 male) with severe MR (rheumatic: 3, ischemic: 1) had mitral valve repairs with the posterior leaflet extension technique using autologous (3 patients) or bovine (1 patient) pericardial patches. The indication for this technique is a remarkable retraction of posterior leaflet (Type III in Carpentier's functional classification) caused by rheumatic disease or tethering induced by ischemia. Significant anterior leaflet fibrosis or calcification is a contraindication for this procedure. Commissurotomy was performed at first when necessary. The posterior leaflet was incised 2 mm away from the annulus. Then the subvalvular apparatus was examined. The tethering effect of the secondary chordae to posterior leaflet must be corrected. If secondary chordae attach to the annulus posteriorly, they should be retained to provide support to the corresponding part of the left ventricle. Oval-shaped pericardium was sewn into the defect with 3 or 4 running suture of 4-0 braided polyester suture to augment the posterior leaflet. The pericardial patch should extend from the junction of P1 and P2 to mid portion of P3 at a minimum. The height of the patch needs to be 12 to 15 mm to provide adequate extension of leaflet for coaptation to the corresponding portion of the anterior leaflet. Also, the patch needs to provide sufficient tissue for attachment to native annulus of the posterior leaflet. An annuloplasty ring or band was inserted when necessary. The size of the annuloplasty ring or band was determined relying on the size of anterior leaflet. Patients who did not have a ring inserted had moderately severe mitral annular calcification and the native annulus was felt to be "fixed". Intraoperative and follow-up echocardiography evaluation was performed.

RESULTS: There were no hospital deaths. Concomitant procedures include coronary artery bypass grafting in 2 patients and aortic valve replacement (AVR) in 1 patient. Mean cardiopulmonary bypass and ischemic times were 192 and 152 minutes, respectively. The size of pericardial patch was 30- 40 X 11- 30 mm. Two patients had annuloplasty rings, one patient had an annuloplasty band because of concomitant AVR, and one patient had neither ring nor band due to small annulus size (28mm). Intraoperative and follow-up echocardiography showed none to trace MR without systolic anterior movement.

CONCLUSIONS: The posterior leaflet extension technique with a pericardial patch is reproducible and has an acceptable outcome for both rheumatic and ischemic MR patients although the number of our experiences is limited. Careful follow-up echocardiography will confirm whether this technique improves long-term outcome.

KEYWORDS: Mitral valve repair, posterior leaflet extension technique

INT-OP 48 - MITRAL VALVE REPAIR: REDUCING POSTERIOR LEAFLET AMPLITUDE: THERE MUST BE A SIMPLER WAY TO DO IT

Smolinsky A. K.

Assuta Medical Center, Tel- Aviv, Israel

INTRODUCTION: Reducing posterior mitral leaflet amplitude to prevent post- op SAM, is needed in some of the mitral valve repair operation. Most techniques employed to achieve it involve cutting, sewing and distorting the posterior leaflet, which leave areas of reduced strength. More over, the expected reduction is not precise. A technique which combines simplicity and precision is described.

TECHNIQUE: Flail segments of the posterior leaflet are repair according to one's regular experience. In our institute mostly artificial chordae or triangular resection. The amplitude of the posterior leaflet is ignored at this stage. The annuloplasty ring or band is measured according the anterior leaflet, as usual. One then draws an imaginary line along the posterior leaflet, parallel to its free margin, leaving only 12-15 mm between it and the free margin. All the posterior sutures of the posterior part of the ring/ band are pledgeted square mattress. Every stitch is started from 2-3 mm away from the leaflet - atrium line, in the atrial side, the needle points into the LV, and back up through the posterior mitral leaflet on the imaginary line on the posterior leaflet. The distance between the pledget and the back penetration of the needle is exactly the part of the posterior leaflet one would like to reduce. These posterior pledgeted suture once used to tie the ring in place, plicate the part of the periphery of the posterior leaflet precisely as planned. They give as well an excellent support to the ring on the posterior mitral annulus. The pledgets may be thrombogenic in the early post-op period, but these patients receive warfarin anyhow for three months, and by then the ring and the pledgets will endothelialized.

CONCLUSION: This technique stands up to all it's promises: It is extremely simple and easy to perform, accurate in predicting how much the posterior leaflet amplitude will be reduced, the TEE picture is good, and no SAM occurred whenever it was employed.

KEYWORDS: mitral valve repair, posterior leaflet, SAM

INT-OP 49 - MITRAL VALVE REPAIR WITH DOUBLE-BREASTED TECHNIQUE: A TEN YEARS' EXPERIENCE

Ribeca C., Corsini B., Concistrè G., Conte O., Parodi E., Passerone G.

Dipartimento di cardiocirurgia, Ospedale San Martino, Genova, Italy

OBJECTIVES: The double-breasted repair of the posterior leaflet of the mitral valve is a technique for correction of mitral regurgitation. It avoids the distortion of the posterior annulus, systolic anterior motion and coronary artery injury due to traditional technique. We report our experience considering as predictors of durability of the repair freedom from reoperation and late death.

METHODS: Between July 1998 and April 2008 370 patients with mitral regurgitation underwent mitral valve repair at our hospital, and 178 of them with degenerative mitral regurgitation underwent mitral valve repair with double-breasted technique. The group comprised 131 males (73,6%) and 47 females (26,4%), with a mean age of 64,7±10,8 years. Coronary artery bypass was performed in 23 patients (12,9%), tricuspid valve repair in 6 patients (3,37%), aortic valve replacement in 6 patients (3,4%), ascending aorta replacement in 8 patients (4,5%). In 176 patients (98,87%) double-breasted repair was performed with annuloplasty ring. The mean follow-up was 48±30,4 months.

RESULTS: Overall hospital mortality was 1,68% (3 patients). One month after repair survival was 97,7%, one year after 96,1%, five years after 94,4%, ten years after 93%. One year after repair freedom from reoperation was 98,24%, five years and ten years after 97,61%. Freedom from mitral regurgitation was 92,7% at 1 month, 88,2% at 5 years, 75% at 10 years. Recurrent regurgitation depends on anterior leaflet prolapsed, thickening and calcification.

CONCLUSIONS: Double-breasted mitral repair with annuloplasty ring is a good technique with low operative risk, guarantees a long survival free from reoperation and good quality of life.

KEYWORDS: mitral valve repair, double breasted technique, annuloplasty ring

INT-OP 50 - RETROGRADE CARDIOPLEGIA FOR ISOLATED MITRAL VALVE REPLACEMENTPopov V.¹, Gyrtovenko O.¹, Popova V.², Knyshov G.¹¹National Institute of Cardiovascular Surgery named by M. M. Amosov, Kiev, Ukraine²National Medical University named after O. O. Bogomoletz, Kiev, Ukraine

OBJECTIVE: To present analysis of retrograde cardioplegia during isolated mitral valve replacement (MVR).

MATERIALS AND METHODS: During 2000 – 2008 yy 1787 patients (pts) with pathology of mitral valve (MV) were operated in Institute. There were 679 (36,8%) males, 1108 (63,2%) females. Patients' age was 18 – 73 years (mean 57,3±11,6 yy). NYHA class in all group were followings: II class – 51 (1,3%), III class – 497 (25,2%), IVclass – 1239 (73,5%) pts. The reasons of MV were: rheumatism, lipoidoses, atherosclerosis and others. Following methods of surgical treatment were used: MVR (n = 1451), MVR + correction of tricuspid valve (n = 336). Concomitant CABG was performed in 57 (3,6%) pts. 295 (15,6%) operations were performed after previous closed mitral commissurotomy. Systemic hypothermia 27-34 C, CPB, St Thomas cardioplegic solution were occurred in all pts. In 1254 cases myocardial protection was achieved with the use of ante-retrograde St. Thomas cardioplegia (group A), in 460 pts only retrograde way of supply with low pressure (below 5 mm.Hg) St. Thomas cardioplegia with addition 22% blood was used (group C). In group B (n= 73 pts) also retrograde way at the St. Thomas cardioplegia was used with mixed with perfitoran for better myocardial protection in doses 200-300 ml. Perfitoran was added by 100 ml to 350 ml of St.Thomas cardioplegic solution.

RESULTS: At whole group hospital mortality was 3,1% (n=64/1787). Respectively group A - 4,7% (n=59/1254), group B – 0,7% (n=3/460) group C – 2,7% (n=2/73) (p <0,01). The reasons of deaths: heart failure (n = 43), brain damage (n = 7), bleeding (n = 5) pneumonia (n = 4), others (n = 5). Lethal heart failure wasn't marked in group B and C only in group A (3,4% - n= 43/1254).

CONCLUSION: Improved myocardial protection by using only retrograde cardioplegia (group B -C) lead to better results and low risk of postoperative heart failure than in group A.

KEYWORDS: retrograde cardioplegia, perfitoran

INT-OP 51 - PARTIAL VERSUS COMPLETE CHORDAL PRESERVATION IN MITRAL VALVE REPLACEMENT

Abdel Aal K. M., Mokhtar E. A.

Cardiothoracic Department, Sohag Faculty of Medicine, Sohag University, Egypt

INTRODUCTION: Mitral valve replacement is indicated mainly for advanced disease with severe destruction or calcification of the valve. Preservation of the mitral subvalvular apparatus has been demonstrated in several studies to improve postoperative left ventricular (LV) systolic performance in patients with mitral valve replacement. The aim of our study is to investigate and compare the influence of partial and complete chordal preservation on left ventricular size and function after mitral valve replacement.

Patients and METHODS: This study was conducted on 30 patients, from January 2004 to December 2005 including follow up period at 2 weeks and 6 months postoperatively. They were divided into two groups: Group I for whom mitral valve replacement was done with preservation of the posterior leaflet of the mitral valve and Group II (15 cases) for whom mitral valve replacement was done with preservation of both leaflets of the mitral valve.

RESULTS: There was significant improvement in the patient NYHA functional class in both early and late postoperative period. -In group I, LVEDD decreased from 60.86 ± 7.29 mm preoperatively to 53 ± 7.05 mm 2 weeks postoperatively and 48.13 ± 7.02 mm 6 months postoperatively ($P=0.001$ i.e. significant reduction).

-In group II, LVEDD decreased from 62.33 ± 8.49 mm preoperatively, to 50.53 ± 9.98 mm 2 weeks postoperatively ($P=0.001$ i.e. significant reduction) and 46.46 ± 5.11 mm 6 months postoperatively ($P=0.0001$ i.e. significant reduction) in diameter compared with the preoperative one. This occurred in nearly all other echocardiographic parameters.

CONCLUSION: Postoperative clinical and echocardiographic examination demonstrated that although beneficial effects were evident in both groups, but complete preservation of the subvalvular apparatus during mitral valve replacement resulted in improved ejection performance and smaller chamber dimensions.

KEYWORDS: Mitral valve, chordal preservation, mitral valve replacement

SURGICAL TREATMENT OF CORONARY ARTERY DISEASE: NEW PERSPECTIVES

INT-OP 52 - CORONARY ARTERY BYPASS SURGERY VS DRUG ELUTING STENTSHiyasat B. A.¹, Borger M. A.²¹Department of Cardiac Surgery, Queen Alia Heart Institute, Amman, Jordan²Department of Cardiac Surgery, Herzzentrum Leipzig, University of Leipzig, Germany

There is Growing uncertainty over role and value of PCI in Multivessel and/or Left Main Stem disease in elective patients who are eligible for CABG. Large databases (80,000 patients) show survival benefit for CABG over PCI because:

- CABG treats both the culprit lesion and future culprit lesion(s) of any complexity
- CABG places grafts to mid vessel thereby protecting whole zones of vulnerable proximal myocardium against culprit and 'de novo' lesions
- PCI only deals with 'suitable' localised proximal culprit lesions and has no prophylactic benefit against new disease.

PCI is unlikely to ever match the results of CABG for LMMVD. All available evidence from large databases show that PCI impairs survival vs CABG and increase reintervention by X7. In contemporary practice survival for patients with 3-vessel coronary artery disease is better after CABG than PCI, an observation that patients and physicians should carefully consider when deciding on revascularization strategy. Drug eluting stents have no survival advantage compare with bare metal stents. There is a trend towards an increased risk for overall mortality with DES compared with BMS from 2nd to 4th year of follow-up, non cardiac mortality seemed to be higher amongst patients treated with DES. Meta-analyses of PCI vs medical therapy show no improvement in survival, no reduction in myocardial infarction, no reduction in repeat intervention. In patients with chronic stable coronary artery disease PCI (with or without stents) does not offer any benefit in terms of death, myocardial infarction or subsequent revascularization. SYNTAX as a unique opportunity to catch-up with clinical practice. It will allow to further assess the clinical risk/benefit profile in lesions and patients not studied yet. Ethical considerations demand that patients with multivessel disease be informed of the documented mortality benefit of the coronary bypass graft surgery.

KEYWORDS: CABG, PCI, DES, SYNTAX**INT-OP 53 - USE OF SHELHIGH NO-REACT BOVINE INTERNAL MAMMARY ARTERY FOR VASCULAR ACCESS IN CHRONIC HEMODIALYSIS PATIENTS: LONG TERM RESULTS**

Cetingok U.

The implantation of a vascular graft is choice of the treatment for vascular access in patients with chronic renal failure. Bovine internal mammary artery grafts was fixed with glutaraldehyde and treated No-React process. From 2003 until 2008, the Shelhigh No-React Bovine Internal Mammary Artery graft was implanted in 74 patients for vascular access. Primary graft implantation was performed in 14 patients. Implantations were performed with topical anesthesia. Graft localisations were to the basilic vein from the radial or ulnar artery, to the basilic vein from the brachial artery and to the saphenous vein from the superficial femoral artery. Hemodialysis was performed from the grafts in 24-48 hours after operations. Mean follow-up is 34 months. The most common complication was thrombosis (29%); infections occurred in 2.7%. Hemorrhage, biodegradation manifested by aneurysms and ectasia, arterial steal syndrome and venous hypertension or edema were not occur. Primary patency was 71% and seconder patency was 83% during follow-up. Bovine Internal Mammary Artery graft can be successfully used in vascular access.

KEYWORDS: vascular access, graft, hemodialysis**INT-OP 54 - PREOPERATIVE NT-PROBNP IS PREDICTIVE OF ATRIAL FIBRILLATION IN PATIENTS UNDERGOING CORONARY BYPASS SURGERY**

Gasparovic H., Kopjar T., Biocina B.

Department of Cardiac surgery, University Hospital Rebro, Zagreb, Croatia

OBJECTIVE: To evaluate the clinical utility of preoperative and postoperative NT-proBNP, transcoronary lactate gradient (TCLG) and C-reactive protein as predictors of atrial fibrillation (AF) in the patient population undergoing CABG.

METHODS: One-hundred and ninety-seven consecutive patients (76% male, EuroSCORE 3.4±2.4) undergoing CABG were prospectively analyzed. Pre and postoperative NT-proBNP and CRP values were documented. The TCLG was obtained by subtracting the radial artery lactate content from the coronary sinus values, prior to the institution of cardiopulmonary bypass (CPB), as well as 5 and 10 minutes after completing the revascularization.

RESULTS: Fifty patients developed AF (25%). The preoperative NT-proBNP values were 282±356 and 496±651 pg/ml in the sinus rhythm (SR) and AF groups, respectively ($p<0.0001$). The postoperative NT-proBNP values were 3167±3767 in the SR and 4892±5924 pg/ml in the AF group ($p=0.02$). The TCLG rose from the preoperative -0.06 ± 0.37 mmol/L to 0.41 ± 0.46 mmol/L ($p<0.0001$) 5 min after completion of the procedure in the SR group. Similarly, the TCLG rose from the preoperative -0.00 ± 0.28 mmol/L to 0.46 ± 0.47 mmol/L ($p<0.0001$) 5 min after completion of the procedure in the AF group. There were no significant differences observed between the two groups with respect to the TCLG dynamics. The CRP values increased from the preoperative 6 ± 14 to 166 ± 90 mg/L on postoperative day two ($p<0.0001$) in the SR group, while the observed increase in the AF group was from 5 ± 15 to 165 ± 107 mg/L ($p<0.0001$). The variations in CRP serum concentrations did not differ between the groups. Patients who developed AF were older than those who did not (66 ± 7 vs. 60 ± 9 years). The mortality in this cohort of patients was 2% (4/197).

CONCLUSIONS: Both preoperative and postoperative NT-proBNP values were significantly higher in the group of patients that subsequently developed AF indicating that this biomarker could be useful in early identification of patients at greater risk of developing AF. The amplitude of coronary ischemia evaluated by TCLG did not differ substantially between the AF and SR groups, and was, in our series, not predictive of AF. Other predictors of AF were age, EuroSCORE and, marginally, the duration of CPB.

KEYWORDS: brain natriuretic peptide, atrial fibrillation, ischemia, inflammation

INT-OP 55 - CORONARY ARTERY BYPASS GRAFTING IN PATIENTS WITH SEVERE LEFT VENTRICULAR DYSFUNCTION.... EXPERIENCE AT THE NICVD

Khan S. R.

National Institute of Cardiovascular Diseases, Karachi, Pakistan

INTRODUCTION: Coronary artery bypass grafting for patients with Ischemic left ventricular dysfunction (ILVD) remains superior to medical therapy. Although patients with severe ventricular dysfunction have improved long-term survival times after coronary bypass procedures, operative morbidity and mortality rates remain high.

OBJECTIVE: The present study was conducted to evaluate our experience with coronary artery bypass grafting in patients with severe left ventricular dysfunction.

METHODS: This is a retrospective study in which 84 patients were evaluated from November 2004 to May 2005. Patients were considered as having severe left ventricular dysfunction if their ejection fractions were found to be between 20-30% on Echocardiography. The male to female ratio was 5:1 (67 men, 17 women). Patients undergoing combined procedures as CABG with valvular surgery, left ventricular aneurysm resection, surgery for arrhythmias, octogenarians, LV clots, cardiomyopathies and patients having a base line ejection fraction of <20% on echocardiography were excluded from the study. Angiograms showed triple vessel disease in 77 (80 %) patients, severe LM disease in 18 (19 %) patients. Total number of grafts was 298. Mean number of grafts per patient was 3.4 (range 2–5). The average time on bypass was 83 minutes (standard deviation ± 41 minutes) with a mean cross-clamp time of 46 minutes (standard deviation ± 28 minutes).

RESULTS: The hospital mortality rate was 21.4%. The main cause of death was cardiac or multi-organ failure. Low cardiac output syndrome and supraventricular, ventricular dysrhythmias were the most common postoperative complications. Left ventricular ejection fraction (assessed postoperatively) improved from 14.6% to 24.2% postoperatively ($p < 0.001$). Diabetes mellitus, female gender, COPD, reopening and pre-operative functional class status were the main predictors of operative and post operative outcomes.

CONCLUSION: Coronary artery bypass grafting can be performed safely with relatively good early survival. The internal mammary artery can be safely used as a conduit. The use of coronary artery bypass grafting is encouraged for this group of patients and may provide a viable alternative to transplantation in selected patients

KEYWORDS: poor lv, severe lv dysfunction, CABG, lv dysfunction,

INT-OP 57 - EFFECT OF TRAINING ON EARLY AND MID TERM OUTCOME IN CORONARY ARTERY BYPASS GRAFTING SURGERY

Dimitrakakis G., Bosanquet D., Rao P. S., Luckraz H., Szafraneck A., Okeefe P.

Department of Cardiothoracics, University Hospital of Wales, Cardiff, United Kingdom

BACKGROUND: There is a growing difficulty to balance the quality of the services provided by cardiac surgeons with the need for surgical training in junior doctors. The aim of this study is to assess the effect of training on outcome in patients undergoing coronary artery bypass grafting surgery (CABG). We also compare the number of procedures performed by Trainee Surgeons during the last year after the implementation of the Working Time Directive for Doctors in Training.

METHOD: Between January 2000 and December 2003, 1862 consecutive patients underwent isolated CABG. 1364 patients (73.3%) were operated on by consultant surgeons (group A) and 498 patients (26.7%) by trainee surgeons (group B). Comparisons of clinical characteristics, operative and mid-term mortality plus morbidity were made between the two groups. All data was retrospectively entered into a database. Mean follow up was 2120.2 days (SD 422.9). We also make comparison with the number of cardiac cases performed by trainees in 2007.

RESULTS: The patients operated on by consultants surgeons had a higher Parsonnet score (7.3 (SD 6.1) vs. 6.8 (SD 5.5) ($p=0.044$)), additive EuroSCORE (4.0% (SD 3.2) vs. 3.7% (SD 2.8) ($p=0.026$)) and logistic EuroSCORE (5.2% (SD 8.1) vs. 4.1% (SD 6.6) ($P=0.005$)). However their patients were younger (63.6 year old (SD 9.2) vs. 64.5 (SD 8.8) ($p=0.029$)) and more likely to be male (1132 (83%) vs. 396 (79.5%) ($p=0.042$)). Trainee surgeons were less likely to operate on patients who had undergone previous cardiac surgery (61 patients in group A (4.5%) vs. 13 patients in group B (2.6%) ($p=0.034$)), with poor ejection fraction (115 patients (8.4%) vs. 29 patients (5.4%) ($p=0.03$)) or with preoperative IABP (78 patients (5.7%) vs. 7 (1.4%) ($p<0.001$)). Patients in group A had more grafts per patient (3.3 (SD 0.9) vs. 3.0 (SD 0.7) ($p<0.001$)), shorter cardiopulmonary bypass time (89.1 minutes (SD 34.9) vs. 95.6 (SD 27.7) ($p<0.001$)) and longer ITU stay (2.3 days (SD 3.1) vs. 1.7 (SD 0.9) ($p=0.002$)).

There were no other differences in postoperative period. Operative mortality (in hospital) was 2.6% vs. 1.8% ($p=0.15$) and the mid term mortality of 6.5% vs. 5.9% were also comparable. During the last year (2007) only 12.5% (93/754) of cases were performed by trainees vs. 26.7% from the previous years.

CONCLUSIONS: Our study indicated that there is no significant difference in the early and mid term outcome of patients undergoing CABG surgery by trainee surgeons.

The implementation of the Working Time Directive for Doctors in Training has resulted in a significant decreased in the number of operations performed by junior doctors in our department.

KEYWORDS: Surgical training, Working Time Directive

INT-OP 58 - EFFECT OF COMPLETENESS OF REVASCULARIZATION ON OPCAB MID-TERM OUTCOME

Agostini M.¹, Torchio P.², Fino C.¹, Bertora M.¹, Digregorio V.¹, Vado A.¹, Grossi C.¹

¹Cardiovascular Department Ospedale Santa Croce, Cuneo, Italy

²Medical Statistics, University of Turin, Italy

BACKGROUND: Despite the widespread use of off-pump coronary artery (OPCAB) surgery, concerns still remain regarding the low completeness of revascularization achieved with this technique.

OBJECTIVE: The aim of this study was to evaluate the OPCAB mid-term results in a single surgical unit, assessing the impact of completeness of revascularization.

METHODS: Three hundred and twelve patients underwent OPCAB between August 2000 and January 2005 at S. Croce Hospital. Completeness of revascularization was assessed through three definitions: 1) complete anatomic revascularization (grafting of all the significantly stenotic coronary vessels), 2) functional complete revascularization (reperfusion of all ischemic myocardial territories without revascularization of old transmural infarction areas) and 3) traditional complete revascularization (all diseased arterial systems receiving at least one graft insertion). The completeness of lateral wall revascularization was assessed through the number of graft/ diseased vessels on the lateral wall.

RESULTS: Five-year survival was 0.88 (0.02 SE). Complete anatomic revascularization was protective for mid-term major adverse cardiac events (HR = 0.3, 95% CI 0.1-0.7). The incomplete revascularization of the lateral wall predicted the recurrence of ischemia (HR = 4.0, 95% CI 1.6-8.3) and repeat revascularization for OPCAB failure (HR = 6.8, 95% CI 2.6-18.1).

CONCLUSIONS: Our study suggests a benefit on mid-term outcome from complete anatomic revascularization and complete revascularization of the lateral wall.

KEYWORDS: Coronary artery bypass grafts, off-pump.

INT-OP 59 - RADIAL ARTERY HARVESTING - A MINIMALLY INVASIVE TECHNIQUE

Gaur A., Sinha S., Singh D., Dhareshwar D.

Department of Cardiothoracic surgery, Jupiter Hospital, Mumbai, India

HARVESTING TECHNIQUE: Below antecubital fossa a skin incision of about 2 inches long is made and RA is dissected using a low power diathermy. Papaverine diluted with normal saline is frequently sprayed over the artery to prevent spasm. The dissected artery is covered with warm papaverine soaked gauze after dissection. Then another skin incision is made 2-4 inches from the previous one. From this incision, the artery is dissected with the aid of mastoid and cats paw retractors under the bridge created. Very minimal dissection is done under the bridge in order to preserve maximum tissue vascularity. Due to this, all major subcutaneous and muscular branches of the RA are spared. A third incision is also made as described above and required length of the artery is dissected. After this, the RA is then disconnected from distal end just before the palmar bifurcation (to maintain palmar arch circulation) and a bulldog is applied at the distal end.

Blood from the dissected artery is collected in a bowl. To this 2 units phenoxybenzamine and 5000 IU of heparin is added. After 3 minutes, the radial artery is disconnected proximally and the dissected segment is kept for use in warm blood bath containing phenoxybenzamine.

After thoroughly washing with a solution of normal saline and gentamycin, the hand is closed in layers with vicryl and monocryl leaving romovac drain insitu.

RESULTS: We have harvested more than 1000 radial arteries using bridge technique. This technique leaves a thin cosmetic line scar. Subcutaneous ecchymosis is the only uncommon complication encountered which can be treated by applying crepe bandage.

So far, no patient had limb ischemia, wound infection or compartment syndrome.

Post operatively wound healing is much better and faster as compared to open technique because of maintained and continuation of tissue vascularity in bridges. Patient comfort is also excellent.

CONCLUSION: Radial artery harvesting using bridge technique has numerous advantages. By continuous practice and improvisation, this technique can safely replace the endovascular laser harvesting.

I have been trying to distinguish a technique by which a single horizontal cut is made in distal arm above crest and radial artery is dissected out. The sheath of radial artery is visualized and is freed from radial artery. Then a 16 fr foley catheter is inserted between the sheath and radial artery and radial artery is freed from the tissue using 16 french foley s catheter by intermittent infusing and sucking the water in and out to inflate and deflate the balloon bulb. Branches can be clipped by using long liga clip applicators.

KEYWORDS: radial artery, minimally invasive, papaverine, phenoxy benzamine

INT-OP 60 - COMPARATIVE RESULTS OF CORONARY ARTERY BYPASS GRAFTING VS. PERCUTANEOUS CORONARY INTERVENTION IN PATIENTS WITH ACUTE CORONARY SYNDROME

Sultan M. W., Zbanov I. V., Abugov C. A., Molochkov A. V., Shabalkin B. V.

National Research Centre Of Surgery named in honor of academician B. V. Petrovsky, Russian Academy Medical Science, Moscow, Russian Federation

OBJECTIVE: The optimal variants of surgical treatment and its effectiveness in patients with acute coronary syndrome (ACS) remain controversial.

METHODS: retrospectively 92 patients who had undergone CABG (n=39) and PCI (n=53) during the period of 1999 to 2005 were analyzed. Demographic datas of the patients undergone CABG (1st group) and PCI (2nd group) were compared. Average age of patients in groups were 57±8 vs. 56±10 (p>0.05), male gender 85% vs. 87% (p>0.05), prior MI 69% vs. 68% (p>0.05), EF<0.5 in 31% vs. 30% (p>0.05), peripheral vascular disease (PVD) 28% vs. 15% (p>0.05), previous CABG 8% vs. 17% (p>0.05), diabetic type II in 46% vs. 28% (p>0.05), left main coronary artery disease (LMCD) evaluated in 26% vs. 8% (p<0.05) respectively. According to clinical form of ACS they were divided into none 'ST' elevated ACS (NSTEMI) 95% and 'ST' elevated ACS (STEMI) 5%. Further the patients were stratified in higher (51%) and lower (49%) risks of unfavorable coronary events (UCE). Higher risk of UCE observed in 68% vs. 38% (p>0.05) and lower risk of UCE in 32% vs. 62% (p<0.05) respectively. In accordance with the timing of operations in contingent with higher risk of UCE urgent operations conducted in 88% vs. 63% and early operations in 12% vs. 37% respectively. Likewise, patients with lower risk of UCE urgent operations conducted in 25% vs. 52% and early invasive strategy in 75% vs. 48% respectively. In our trial 2.2% of patients had undergone hybrid revascularization. Index revascularization in groups comprised of 3.71±0.9 vs. 1.9±0.2 respectively.

RESULTS: Early clinical results and effectiveness of operations were analyzed on the basis of following criteria and shown in table 1: Perioperative myocardial infarction, lower cardiac output (CO) syndrome, recurrence of angina, early clinical success, postoperative stroke and hospital mortality. There were no significant changes in variables when the groups are compared except in lower CO syndrome 23% vs. 2% (p<0.05) and recurrence of angina which was significantly frequent in PCI group 0% vs. 11% (p<0.05) respectively.

CONCLUSIONS: PCI preferred as a prior method in attaining coronary reperfusion within a moment in patients with ACS. In patients with higher risk of UCE its necessary to conduct CABG or PCI in an urgent manner except concomitant and redo CABG procedures which in turn increases it's initial risk. CABG in higher risk patients with ACS must be conducted with prophylactic IABP. Hybrid revascularization in multiple vessel disease (MVD) is relatively indicated in patients with an acute ongoing myocardial ischemia and conducted by means of PCI of Infarct-related artery (IRA) with an aim to stabilize the condition of patients before CABG.

KEYWORDS: acute coronary syndrome, risk stratification, emergency and urgent operations, myocardial revascularisation, CABG, PCI, hybrid revascularisation, prophylactic IABP.

Early Clinical Results

criteria	CABG(n-39)	PCI(n-53)	p
Perioperative MI	4(10%)	3(6%)	>0.05
Syndrome lower CO	9(23%)	1(2%)	<0.05
Recurrent angina	0%	6(11%)	>0.05
Early clinical success	35(90%)	50(94%)	>0.05
Hospital mortality	3(8%)	1(2%)	>0.05

Early clinical results and effectiveness of operations were analyzed on the basis of following criteria

HOT ISSUES IN SURGICAL TREATMENT OF CORONARY ARTERY DISEASE

INT-OP 61 - ADEQUACY OF MULTISLICE CT ANGIOGRAPHY AS THE SOLE DIAGNOSTIC CRITERIA FOR CABG - A COMPARISON WITH CONVENTIONAL ANGIOGRAPHY

Bedi H. S.¹, Gill J. S.², Singh S. S.²

¹Ludhiana Medcity, India

²Delta Heart Centre, Ludhiana, India

BACKGROUND: Rapid advances in multislice computed tomography (MSCT) have facilitated increasingly accurate noninvasive coronary imaging. The present study was designed to assess the accuracy of the 64 slice MSCT scanner with conventional coronary angiography (CCA) and to conclude whether or not MSCT angiography alone could give sufficient and accurate information to proceed with coronary artery bypass grafting (CABG).

METHODS: 50 stable patients with proven severe CAD on CCA for elective CABG underwent MSCT prior to CABG. The MSCT images were compared with CCA and the accuracy, sensitivity and specificity of detecting significant stenosis cross checked.

RESULTS: An excellent correlation was found between the two modalities. Comparing the maximal percent diameter luminal stenosis by MSCT versus CCA, the Spearman correlation coefficient between the two modalities was 0.99 ($p < 0.0001$). Bland-Altman analysis demonstrated a mean difference in percent stenosis of $0.6 \pm 2.3\%$ (95% confidence interval 5.1% to -3.9%). 93.4 % of the observations were within ± 1.96 standard deviation. Anomalous and intramural coronary arteries were easily picked up by MSCT.

CONCLUSIONS: MSCT is a valuable tool for the cardiac surgeon. It helps in precise planning of the CABG especially off-pump CABG and in prejudging the length of the conduit required. On the basis of our findings we recommend MSCT as a sole criteria for proceeding for CABG without CCA in selected cases.

KEYWORDS: CT Angiography, Conventional Angiography

INT-OP 63 - EFFECT OF DIFFERENT PREOPERATIVE PATIENT CHARACTERISTICS ON CORONARY SURGERY OUTCOME, A COMPARATIVE STUDY BETWEEN A DEVELOPING AND A DEVELOPED COUNTRY

Sayed S. A.¹, Fischer S.², Karck M.³, Hassouna A.⁴, Haverich A.⁵

¹Prince Salman Heart Center (PSHC), Riyadh, Saudi Arabia

²Hannover medical school, Hannover, Germany

³Heidelberg university Hospital, Heidelberg, Germany

⁴Ain Shams University Hospital, Cairo, Egypt

⁵Hannover Medical school, Hannover, Germany

OBJECTIVES: To evaluate the impact of the pre-operative patient characteristics on the results of coronary surgery in a developing country compared with a developed.

PATIENTS AND METHODS: Pre-operative risk factors for coronary artery disease, intra-operative and immediate post-operative variables for coronary surgery were compared. Sixty patients operated at Ain Shams University in Cairo (Egypt) between March and September 1999, compared with 60 patients at Hannover medical school (Germany) operated between March and September 2001. By using univariate analysis and multivariate logistic regression model predictors for hospital mortality were determined.

RESULTS: Groups were comparable regarding majority of risk factors except age, diabetes, chronic obstructive pulmonary disease (COPD), and hypertension. 70% of the Egyptian patients presented in NYHA class III, whereas 50% of the German patients were in NYHA class II. 53% of the German patients showed LVEF > 60%, whereas 52% of the Egyptian patients had LVEF between 40-59%. Diabetes (56, 6%), COPD (43, 3%) are the major predictors of hospital mortality among the Egyptian patients as proved by high odds ratio (4, 6 and 3, 4 respectively). Egyptian patients required prolonged mechanical ventilation, extended ICU and hospital stay. Hospital mortality was 6, 7% in the Egyptian versus 1,7% in the German group.

CONCLUSION: Diabetes mellitus, COPD and prolonged mechanical ventilation are the major predictors of hospital mortality in Egypt. This study underlines problems of CABG surgery in different populations.

KEYWORDS: Coronary Surgery- Risk factors- Outcome

INT-OP 64 - EARLY OUTCOME IN PATIENTS WITH ISCHEMIC CARDIOMYOPATHY UNDERGOING CABG

Rezk A.

King Fahad Military Hospital, Cardiac Surgery Department, Khams Mushyat, Saudi Arabia

BACKGROUND: There is an increasing prevalence of severe ischemic LV dysfunction in patients referred for CABG because of increased operations in patients with recent acute MI, and widespread use of thrombolysis, and angioplasty, which may delay surgical intervention until coronary arteriosclerosis is more extensive and LV dysfunction more severe, which means these surgical patients are at much higher risk than before. Coronary artery bypass grafting (CABG) has been safely extended to these patients with ischemic cardiomyopathy (ICM).

METHODS: We retrospectively analyzed 30 consecutive patients with ICM (ejection fraction < 35%) with or without anginal symptoms who were selected for CABG. Perioperative results were compared with similar number of cases having EF >35% (NICM). Perioperative mortality and MI were the primary endpoints.

RESULTS: The 30-day mortality was 3.3% among the ICM group and 0.0% in the NICM group. Perioperative MI was encountered in 2 cases (angina free with EF <25%) in the ICM group (6.6%) in both cases the left ventricular end-diastolic pressure (LVEDP) was 25 mm Hg or more with markedly elevated PAP. In both cases, intraaortic balloon pump was inserted intraoperatively before starting operation.

CONCLUSIONS: CABG alone yields good early outcome in patients with ICM. However, associated diastolic impairment, reflected by elevated LVEDP, could predict higher perioperative MI in spite of the use of IABP and combined retrograde/ante grade blood cardioplegia.

KEYWORDS: CABG, ischemic cardiomyopathy

INT-OP 65 - EFFECTS OF INTRAOPERATIVE AND EARLY POSTOPERATIVE ENOXIMONE ADMINISTRATION ON THE OVERALL OUTCOME OF IHD PATIENTS WITH LOW EJECTION FRACTION UNDERGOING CABG SURGERY

Mansour S. A.¹, Elfiky M. M.², Al Okda H. E.², El Sebaie A. A.², El Helw M. A.²

¹Department of cardiothoracic surgery, MRI, manchester, United Kingdom

²Department of cardiothoracic surgery, Ain shams university, cairo, Egypt

OBJECTIVE: Enoximone is a type III phosphodiesterase inhibitor that cause increase in cardiac output through combined positive inotropic and vasodilatory effects. We studied the post Coronary artery bypass grafting (CABG) outcomes of ischemic heart disease (IHD) patients with ventricular dysfunction when they receive intravenous continuous infusion of Enoximone shortly before weaning from cardiopulmonary bypass.

METHODS: Sixty patients undergoing isolated coronary artery bypass graft surgery were included in this study were randomized into two groups: group A comprised of thirty patients who received the Enoximone and group B comprised of thirty patients who did not receive Enoximone (control group). All patients did not have any valvular lesions and the exclusion criteria were hemodynamic instability, severe systemic co-morbidities (renal and hepatic failure, cancer, autoimmune disease).

RESULTS: There was no significant statistical difference ($p > 0.05$) between the 2 groups regarding the intra-operative use of intra aortic balloon pump, grafts done to the patients, types of conduits used, and the need to perform more grafts than planned.

On the other hand the operative data reported that there was significant statistical difference ($P < 0.05$) between both groups as regards easy weaning of patients from cardiopulmonary bypass which was easier in group (A) than group (B), in addition there was highly significant statistical difference ($P < 0.001$) between both groups as regard to the administration of noradrenaline which was more in group (A) than in group (B).

There was statistically highly significant difference ($P < 0.001$) between both groups regarding the need for inotropes (adrenaline) which was more evident in group (B) than group (A), also there was highly significant statistical difference ($P < 0.001$) between both groups regarding the use of nitroglycerin which was more in group (B) than in group (A).

As regarding postoperative results, there was no significant statistical difference ($p > 0.05$) between both groups in duration of intensive care unit stay, duration of mechanical ventilation, duration of hospital stay and echo postoperative changes.

It was found that there was highly significant difference ($P < 0.001$) between the two groups as regard central venous pressure (CVP) that was lower in group (A) than the other group. In addition to that it was demonstrated that there was a highly significant difference ($P < 0.001$) between both groups regarding mean arterial blood pressure which was much less in patients in group (A) than those in group (B).

CONCLUSION: It can be concluded from our results that administration of Enoximone in IHD patients with poor function i.e. EF < 35% who underwent CABG reduced their need for other inotropes (adrenaline) and nitroglycerin with easier weaning from CPB and better hemodynamic status in form of reduced heart rate and mean systemic arterial pressure, however no statistical significant difference was recorded for intra aortic balloon counterpulsation or echo postoperative changes.

KEYWORDS: Enoximone, ejection fraction

INT-OP 66 - BILATERAL INTERNAL MAMMARY ARTERIES IN PATIENTS OLDER THAN 70 YEARS DOES NOT INCREASE EARLY MORTALITY AND MORBIDITY

Nawaytou O., Baghai M., Chaubey S., Desai J.

Department of cardiothoracic surgery, King's college hospital, London, United Kingdom

OBJECTIVES: The use of bilateral internal mammary arteries (BIMA) in patients older than 70 years is not well established. The aim of this study was to investigate whether there is any increase in early mortality or morbidity with the use of BIMA as compared to SIMA in this cohort of patients.

METHODS: Data were collected prospectively on 577 patients undergoing CABG by a single surgeon over a 12 year period. Demographic information was used to obtain propensity scores. The scores were grouped and conditional logistic regression undertaken, conditioning on the grouped propensity scores, for specific outcome measures. The risk factors of age, sex, BMI, diabetes, smoking, LV function and hypertension were also included in the conditional logistic model.

RESULTS: There were 365 and 212 patients in the BIMA and SIMA group respectively. There is no significant increase in the odds of mortality with the use of BIMAs (3.7% v 3.8%; SIMA v BIMA). There was also no significant increase in sternal complications, renal complications, use of inotropes, length of hospital stay or arrhythmias.

CONCLUSIONS: The use of BIMA in patients older than 70 years appears to be as safe as using a SIMA. In time the benefits in using more arterial grafting in this older cohort of patients may result in less ischaemic complications requiring re-hospitalisation, increase medication and re-intervention.

KEYWORDS: Bilateral Internal Mammary Arteries, Elderly, CABG

INT-OP 67 - CORONARY-CORONARY BYPASS GRAFT: AN ARTERIAL CONDUIT SPARING PROCEDURE

Giovannelli A.¹, Alessandri G.², Perrotti A.¹, Alessandri N.², Nottin R.²

¹*Service de Chirurgie Cardiovasculaire et Thoracique, Hopital La Pitié-Salpêtrière, Paris, France*

²*Cardiology Department of University "La Sapienza" of Rome, Latina, Italy*

OBJECTIVE: The Internal Mammary Artery (IMA) is already known as the best arterial graft for coronary artery bypass grafting since many years. Often the bilateral use of IMAs is limited because the right IMA (RIMA) do not possess an adequate length to be directed to the posterolateral myocardium. We have studied the quality of the IMAs and the radial artery for the coronary-coronary bypass graft (C-C bypass) between two segments of the same coronary artery or two different coronary arteries.

METHODS: From May 1989 to December 1999, 167 patients (138 M and 29 F, mean age 63,7 + 10,2 years) underwent total arterial myocardial revascularization using the technique of C-C bypass in addition to other bypass grafts: 159 patients (95,2%) underwent 1 C-C bypass and 8 (4,8%) 2 C-C bypass for a total of 548 distal anastomoses (3,2 + 0,8 for patients). C-C bypass was chosen for the following reasons: calcified ascending aorta, inadequate length of IMA for in situ graft, stenosed or occluded subclavian arteries or in case of impossibility to use the saphenous vein as a graft. The arteries used for all the patients were RIMA in 129 patients (77,2%), left IMA (LIMA) in 28 patients (16,8%) and radial artery (RA) in 10 patients (6,0%). C-C bypass was performed totally on 175 cases and exactly on right coronary artery in 158 cases (90,3%), on the circumflex artery in 6 cases (3,4%), on the left anterior descending coronary artery in 6 cases (3,4%) and between two different coronary arteries in 5 cases (2,9%). Mean aortic cross clamping time was 83,6 + 27,8 min and mean cardiopulmonary bypass time was 130,8 + 43,2 min.

RESULTS: The actual survival is 97,0% (n = 162): 3 patients (1,8%) died of myocardial infarction and 2 patients (1,2%) died for non cardiac causes; 2 patients (1,2%) underwent reoperation. Early postoperative angiography (8,7 + 0,6 days) showed a patency rate of 99,2% of cases and the angiography was repeated in 62,8% of patients (n = 105) after a mean period of 5,7 + 2,8 years which proved the patency of the grafts in 94,6% of cases. Results of exercises testing were normal at 2 months in 97% of patients, at 1 year in 96%, at 3 years in 93% and at 6,8 + 3,1 years in 90,4% (n = 151) the result was negative for myocardial ischemia.

CONCLUSION: The coronary-coronary bypass graft provides excellent results with a variety of conduits and allows the expanded use of arterial grafts, particularly the internal mammary artery. This can lead to a sparing of arterial conduit and allows complex myocardial revascularization with a liberal use of internal mammary arteries and radial artery.

KEYWORDS: coronary-coronary artery bypass

INT-OP 68 - CORONARY BYPASS SURGERY IN OCTOGENARIANS: POST-OPERATIVE OUTCOME AND MID-TERMS RESULTS

Giovannelli A.¹, Perotti A.¹, Alessandri G.², Alessandri N.², Pavie A.¹, Gandjbakhch I.²

¹Service de Chirurgie Cardiovasculaire et Thoracique, Hôpital La Pitié-Salpêtrière, Paris, France

²Cardiology Department of University "La Sapienza" of Rome, Latina, Italy

OBJECTIVE: The age of the patients referred for coronary bypass surgery is getting older progressively. Consequently we have evaluated disease, surgical and early and midterm postoperative outcome of octogenarians to determine the feasibility of cardiac surgery at this age.

METHODS: A prospective consecutive series of 46 patients aged 80 years and older (mean age 82.4 ± 2.8) underwent isolated coronary artery bypass grafting during a 2 years period (from 2001 to 2002) was analyzed. Seven operations (15.2%) were urgent. There were 37 men (80.4%) and 9 women (19.6%), 29 patients (63.1%) had unstable angina, 11 (23.9%) had left main coronary artery disease, 6 patients (13.1%) in CF NYHA IV, mean FC NYHA 2.9 ± 0.9, with Ejection Fraction 32.4 ± 5.8 %, 14 diabetic patients (30.4%), 7 with renal failure (15.2%), 3 (6.5%) with history of stroke and 8 (17.4%) with previous cardiac surgery.

RESULTS: There were performed 2.8 ± 1.1 anastomoses, with 1 LIMA in 11 cases (23.9%) and bilateral IMA in 31 patients (67.4%). There were no deaths in the hospital or within 30 days of operation (0%). Postoperative complications were: intraaortic balloon pump for low cardiac output in 6 patients (13.1%), 4 (8.7%) reexplorations for bleeding, 3 (6.5%) were presented prolonged ventilation, 1 sternal wound infections (2.1%); mean postoperative hospital stay was 9.4 ± 5.8 days. During 1 year follow-up period 1 patient dead (2.1%) but for no cardiac causes, myocardial infarcts were not observed and freedom from angina was 94.3% (43 patients). Four patients (8.7%) of the survivors suffered from depression. We have compared these results with those of a standard patient population underwent same operation with the same risk factors but an inferior mean age and we have observed no differences statistically meaningful.

CONCLUSION: We can conclude that, in patients over eighty years of age suffering from ischemic heart disease, coronary artery bypass grafting can be performed safely with acceptable morbidity, an acceptable quality of life and good mid-term results and so the advanced age isn't a major risk factor.

KEYWORDS: Octogenarians - coronary bypass surgery

CHALLENGES IN CARDIOVASCULAR MEDICINE: FROM BENCH TO BEDSIDE

INT-OP 70 - POSITIVE INFLUENCE OF TREATMENT WITH "CYTOFLAVIN" ON NATURAL HISTORY OF INTERMITTENT CLAUDICATION IN PATIENTS WITH PERIPHERAL ARTERIAL DISEASE

Bogomolov M. S., Sedov V. M., Lukyanov Y. V., Edovina L. N., Parusova E. V.

Faculty surgical clinic, Saint-Petersburg Pavlov's State Medical University, Saint-Petersburg, Russia

OBJECTIVES: To assess whether "Cytoflavin" (combination of succinic acid, inosine, nicotinamide and riboflavin), improves treadmill walking ability and ankle-brachial index (ABI) in patients with intermittent claudication resulting from peripheral arterial disease (PAD).

PARTICIPANTS: Patients' (n = 10) mean age was 63.3 +/- 2.8, and they had a history of PAD for 6 months or longer and an ABI of 0.80 or less. Patients were recruited from outpatient ambulatory medical care facilities.

INTERVENTION: intravenous infusion of 20 ml of Cytoflavin for 10 days.

MEASUREMENTS: ABI; maximal walking distance (MWD); pain-free walking distance (PWD) on a graded and constant-load treadmill.

RESULTS: Mean ABI at the baseline was 0.56. Just after the treatment ABI increased in average on 12.1% (from -27.1% to +104.7%). Positive dynamic of ABI was registered in 70% of the patients and in that subgroup average improvement of this parameter was 29.3%. Control tests, performed 3 months later, demonstrated that only in 2 of these patients ABI decreased insignificantly (2.8% and 3.8%). In the rest of the patients increasing of ABI in 3 months after treatment was moderate or significant – from 13.2% to 39.6% (mean – 16.7%).

Mean MWD at the baseline was 150.8 meters. Just after the treatment MWD increased in average on 20.9% (from -32.8% to +121.6%). Negative dynamic of MWD was registered only once. Control treadmill tests, performed 3 months later, demonstrated that only in 1 of these patients MWD decreased insignificantly (0.9%). In the rest of the patients increasing of MWD in 3 months after treatment was moderate or significant – from 11.1% to 48.9% (mean – 34.4%), and in one of the patients increasing of MWD was very significant – up to 834.0%.

Mean PWD at the baseline was 65.7 meters. Just after the treatment PWD increased in average on 24.9% (from -50.0% to +88.6%). Negative dynamic of PWD was registered in 3 patients. Control treadmill tests, performed 3 months later, demonstrated moderate decreasing of PWD (11.4%) in 1 of these patients. In 50% of the patients increasing of PWD in 3 months after treatment was significant – from 37.0% to 205.0% (mean – 111.7%). In the rest of the patients changes of this parameter were insignificant (from -4.5% to +9.1%).

CONCLUSIONS: In this analysis of our preliminary trial, the large number of patients with documented symptomatic PAD appeared to derive moderate or significant benefit from therapy with "Cytoflavin".

KEYWORDS: intermittent claudication, conservative treatment

INT-OP 71 - USING OF A NEW DRUG "CYTOFLAVIN" FOR ACCELERATION OF HEALING OF ISCHAEMIC AND NEUROISCHAEMIC ULCERS IN PATIENTS WITH DIABETES

Bogomolov M. S., Sedov V. M., Lukyanov Y. V., Edovina L. N., Pravosudova Y. S.

Faculty Surgical Clinic, Saint-Petersburg Pavlov's State Medical University, Saint-Petersburg, Russia

OBJECTIVES: The prevalence of foot ulcers in patients with diabetes in developed countries is approximately 4–10%. The annual incidence of foot ulcers in older individuals with type 2 diabetes 5–10%. The risk of amputation is 10–15 times higher in diabetic than in nondiabetic patients. The most common cause of amputations in diabetic patients is ischaemia: gangrene or nonhealing foot ulcer is the cause of amputations in 60–70% of patients with diabetes. In case of development of ischemic infected deep ulcers these patients become candidates to major amputation.

AIM OF THE STUDY: to describe the results of conservative treatment of 21 diabetic patients (mean age 61.8 +/- 5 yrs) with 36 ischaemic or mixed neuroischaemic ulcers and occlusion of the tibial arteries of the same leg that were followed during 9 months or more.

METHODS: To achieve the best results we have developed the following protocol of treatment: aggressive cleaning, irrigation and debridement (sharp surgical debridement of the hyperkeratotic rim and ulcer base, with removal of surface debris and necrotic material) of the ulcers and the surrounding tissues, regular application of antiseptics and wound healing stimulators (Hyaluronic acid); administration of antibiotics and vasodilators. Some of the patients were treated using infusions of "Cytoflavin" (combination of succinic acid, inosine, nicotinamide and riboflavin). All of the patients were divided on two groups: Subgroup A - 15 patients, who received standard conservative treatment and Subgroup B - 6 patients, who received standard conservative treatment and 10 everyday infusions of Cytoflavin. In both of these subgroups average age, period of previous existence and size of the ulcers were comparable at baseline.

RESULTS: In spite of the fact that in all of the patients the Ankle-Brachial Index was below 0.7, in 19 of the 21 (90.5%) patients the ulcers were healed. In the subgroup A 19 of 21 ulcers were completely healed. In the subgroup B all of the ulcers were completely healed. Average time of treatment: 3.74 months and 2.7 months, accordingly. Average speed of ulcer healing 0.33 cm² per months in the subgroup A and 0.39 cm² per months in the subgroup B.

CONCLUSIONS: Our results show that this complex multidisciplinary approach allows to get good results in patients who otherwise would have undergone amputation. Initial results of using of Cytoflavin for treatment of the diabetic foot patients seem to be very promising.

KEYWORDS: Diabetic foot

INT-OP 74 - SURGICAL TECHNIQUE TO REDUCE HEART ISCHEMIA IN ORTHOTOPIC BI-CAVAL TRANSPLANTATION

Deac R. F., Suci H.

Clinic of Cardiovascular Surgery, Mures Heart Institute, Targu Mures, Romania

OBJECTIVE: With the current technique of heart preservation, the ischemic time of the transplanted heart is limited to 4-5 hours. In order to reduce the ischemic time we explored the possibility of anastomosing first the aorta and reperusing the heart while the rest of the reimplantation is performed.

METHOD: The reinsertion of the donor heart began with the anastomosis of the aorta as a primary step, instead of anastomosis of the left atria (LA) as in the original technique of orthotopic bi-caval heart transplantation. The LV was vented through the LA appendage. The aortic clamp was released and the heart resumed contractions after a short reperfusion. With gentle retraction of the aorta, situated anteriorly, the anastomosis of LA was initiated on the left side. The suture is facilitated if it is performed from inside LA cavity at the inferior margins. The anastomoses of SVC, IVC and the pulmonary artery were performed last. The entire reinsertion procedure took less than 60 minutes, thus reducing total ischemia by nearly 1 hour.

RESULTS: The technique was successfully applied (2006-2008) in 10 patients with a graft ischemia under 3 hours, even with distant procurement. All patients survived the operation. A second group of 15 patients, operated upon (1999-2006) with the original orthotopic bi-caval technique had an ischemia time over 4 hours. In this group, 3 patients died with early graft failure.

CONCLUSIONS: Orthotopic bi-caval heart transplantation performed with a primary aortic anastomosis and shorter ischemic time produced better survival in cases with distant heart procurement. This is our technique of choice in clinical heart transplantation.

KEYWORDS: Bi-caval heart transplantation, aortic anastomosis first.

INT-OP 78 - NOVEL PERFUSION TECHNIQUES - REDEFINING CARDIOPULMONARY BYPASS

Merkle F.

Academy for Perfusion, Deutsches Herzzentrum Berlin, Germany

Cardiopulmonary Bypass (CPB) has undergone a process of evolution since it was first used for cardiac surgery in 1953. This evolution includes improvements in biocompatibility, miniaturization of equipment and the development of new applications for CPB.

Concerns have been raised about the biocompatibility of CPB, and whether the use of CPB is advisable for all kinds of cardiac procedures in adult patients. Also, the use of techniques associated with traditional CPB, such as cardiotomy or vent blood retransfusion, have been re-evaluated.

The development of miniaturized extracorporeal circuits has fuelled interest in feasibility studies. Currently, these miniaturized circuits are used not only for aortocoronary bypass procedures, but increasingly for other types of procedures as well.

For pediatric cardiac surgery, the use of miniaturized extracorporeal circuits may open up the possibility for transfusion-free cardiopulmonary bypass, as the degree of hemodilution is now comparable to that of adult patients even for small neonates. Priming volumes of 100 ml are now reality for the smallest circuits.

New surgical techniques, such as hybrid operations and interventional valve replacements, require adaptation of the conventional CPB equipment.

Cardiopulmonary Bypass and related techniques have developed into safe and reliable components of cardiac surgery. Today, refinements in the application of these tools are necessary to further improve patient healthcare.

KEYWORDS: cardiopulmonary bypass, biocompatibility, miniaturization

INT-OP 79 - PERFUSIONIST'S ROLE IN VAD THERAPY

Merkle F.

Academy for Perfusion, Deutsches Herzzentrum Berlin, Germany

Ventricular assist devices (VAD) or total artificial hearts (TAH) require a dedicated team to manage both patients and technically related aspects of cardiac support therapy. At the Deutsches Herzzentrum Berlin (DHZB), a team of cardiovascular perfusionists and other personnel take care of the patients on cardiac support. Until 07/2008, a total of 1264 VAD or TAH systems were implanted, including 97 VAD in children.

The cardiac assist systems used may be characterized by implant mode (extracorporeal, paracorporeal, implantable, uni- or biventricular), pumping action (pulsatile or continuous flow) or anticipated support period (short term, long term). Indications for long-term cardiac support include bridging to transplantation and bridging to recovery in both adults and children as well as definite therapy.

The cardiac support team needs to be available 24 hours per day for a variety of tasks. These tasks may be related to hospitalized patients in the pre-implant period, during the implantation procedure, acute post-implant period, chronic post-implant period and during the out-of-hospital period. A number of tasks need to be mastered, including technical issues such as choosing the correct device, initializing and maintaining proper device function, handling device malfunction, assistance during patient mobilization, training of patients and relatives as well as patient transport.

VAD and TAH cardiac support is an interesting area within the scope of practice of cardiovascular perfusionists. Successful management of an extensive cardiac support programme however is a team effort involving not only cardiovascular perfusionists, but also other medical and technical personnel.

KEYWORDS: ventricular assist device, total artificial heart, perfusionist

INT-OP 80 - TRAINING CARDIOVASCULAR PERFUSIONISTS - CHANGE OF PARADIGMS AND CLINICAL NEEDS

Merkle F.

Academy for Perfusion, Deutsches Herzzentrum Berlin, Germany

BACKGROUND: The professional education of cardiovascular perfusionists and the expertise required for successful practice have not often been studied. Here the status of professional education of perfusionists in Europe, the necessary skills and relevant developments in the health care professions are described.

METHOD: The prerequisites for the practice of the profession, expected future developments and the question of the positioning of a future professional perfusionist training within the educational system were discussed with ten experienced German and European perfusionists. These individuals were interviewed in a semi-standardized fashion following an interview manual and the interviews were evaluated within the scope of qualitative research. Additionally, relevant literature on the training of perfusionists was examined.

RESULTS: Current trends in the health professions include persisting differentiation and specialization of existing professions, academic upgrading of the health care professions, establishment of new professions and the professionalization of new fields of activity. The professional skills currently required of perfusionists correspond to the list of activities published by various national perfusion societies. New areas are knowledge of management and, increasingly, social competence and self-management skills. Future tasks for perfusionists will be more diversified than at present.

CONCLUSION: Training for perfusionists should be made broader than it is today. The current restructuring taking place in the profession makes interdisciplinary orientation and increased emphasis on practical training necessary. Academic level education is both feasible and desirable.

KEYWORDS: perfusion education, competences, health professions

CURRENT PERSPECTIVES IN MOLECULAR AND EXPERIMENTAL BASIS OF CARDIOVASCULAR DISEASE

OP 001 - THROMBOELASTOGRAPHY BASED TRANSFUSION ALGORITHM REDUCES BLOOD PRODUCT USAGE IN PATIENTS AT LOW RISK FOR REQUIRING BLOOD TRANSFUSION AFTER CARDIAC SURGERY

Ak K.¹, Adademir T.¹, Gursu O.¹, Tekeli A.³, Atalan N.⁴, Tetik S.², Isbir S.¹, Arsan S.¹

¹Department of Cardiovascular Surgery, Marmara University, Istanbul, Turkey

²Department of Biochemistry, Marmara University, Istanbul, Turkey

³Department of Cardiovascular Surgery, Medicana Bahcelievler Hospital, Istanbul, Turkey

⁴Department of Anesthesia and Reanimation, Medicana Bahcelievler Hospital, Istanbul, Turkey

OBJECTIVE: Bleeding and allogeneic transfusion remain constant problems in cardiac surgical procedures. In this study, we aimed to test the role of a routinely applied simple thromboelastography (TEG) based algorithm on bleeding and transfusions in patients at low risk for bleeding after coronary artery bypass grafting (CABG).

METHODS: Patients (n=224) undergoing elective CABG with cardiopulmonary bypass were prospectively randomized to two groups. In the clinician-directed transfusion group (group 1) perioperative transfusion management was based (CDT, n=110) both the clinician's discretion and coagulation tests including platelet count, activated clotting time, prothrombin time and activated partial thromboplastin time. In group 2 (TEG, n=114) kaolin activated (k) TEG guided perioperative transfusion management was used. Transfusion rate, blood loss and outcome data were recorded.

RESULTS: There were no differences in consumption of packed cell units, blood loss, reexploration for bleeding and early clinical outcome between the groups. Consumption of fresh frozen plasma (FFP) and thrombocyte suspension (TS) was significantly reduced in the TEG group compared to the group 1 (16.6% versus 28.1%, p= 0.038 and 26.3% versus 14.9%, p=0.033, respectively; median 2(range 1-3 Unit) median 3 (range 2-4 Unit), respectively, p=0.001). The need for tranexemic acid was significantly diminished in the TEG group compared with the other group (10.3% versus 19%, respectively, p=.007). The negative predictive value of the TEG algorithm in the bleeders was found to be 100%.

CONCLUSION: Routine use of a kTEG guided algorithm reduces the consumption of blood products in patients at low risk for bleeding. Adopting such an algorithm into routine management of these patients may help to improve clinical outcome and reduce the costs after CABG.

KEYWORDS: Thromboelastography, transfusion algorithm, blood product, blood transfusion

OP 002 - THE EFFECT OF ISCHEMIA-REPERFUSION INJURY ON STEM CELLS AND THE ROLES OF CYTOKINS AND GROWTH FACTORS

Ulus A. T.¹, Parlar A. I.¹, Turan N. N.², Balci M.³, Yilmaz S.³

¹Department of cardiovascular Surgery, Turkey Yuksek Ihtisas Hospital, Ankara, Turkey

²Department of Pharmacology, University of Gazi, Ankara, Turkey

³Department of Hematology, Turkey Yuksek Ihtisas Hospital, Ankara, Turkey

AIM: The presence of progenitor cells has been demonstrated in the systemic circulation thus raising the possibility to induce therapeutic angiogenesis for ischemic arterial disease. There are numerous factors to let these cells into the circulation, colonization and differentiation, but it is not clearly known that which factors and when they were act. In this experimental study, we wish to search the relation between the ischemia-reperfusion effect and the progenitor cells which were appear into the circulation and the factors that were effect them.

MATERIAL AND METHODS: Forty wistar rats were randomly divided into the groups as control group, one or two extremity ischemia groups, one or two ischemia and reperfusion groups. Femoral arteries were ligated following the anesthesia. G-CSF, GM-CSF, VEGF, IL-3, IL-6, IL-10 and TNF- α were measured from the blood. The samples were drawn as baseline, 30th min, 6th hour and 24th hour. Additionally CD34 (+)/CD45(-) cellular ratios were also calculated from the blood circulation by flow cytometry.

RESULTS: Although one or two extremity ischemia were let the raise of CD34 (+)/CD45(-) cells in the blood circulation, especially the ischemia-reperfusion injury of the two extremity is caused the highest CD34 (+)/CD45(-) ratio according to all groups at the end of the 24th hour. The GM-CSF and G-CSF values were increased in the study groups according to the control group. IL-6, IL-10 and TNF-alpha values were increased specially in the ischemia-reperfusion groups. VEGF was not significantly increased according to control group.

CONCLUSION: Ischemia-reperfusion injury highly increases the CD34(+)/CD45(-) cells in the circulation when compared with the ischemia injury alone. This situation is closely related with the severeness of the injury. The G-CSF, GM-CSF, IL-6, IL-10 and TNF-alpha were significantly increase in ischemia-reperfusion groups and related with the severeness of injury.

KEYWORDS: Stem cell, cytokins, growth factors, ischemia-reperfusion

OP 003 - ASSESSMENT THE EFFICACY OF THE BIO-ABSORBABLE POLYLACTID FILM FOR PREVENTION OF POSTOPERATIVE PERICARDIAL ADHESION IN THE RABBIT MODEL

Bicer M.¹, Gurbuz O.¹, Bayram A. S.¹, Kumtepe G.¹, Ang E.¹, Yerci O.², Senkaya I.¹, Ozdemir B.³, Cengiz M.¹, Saba D.¹

¹Department of Cardiovascular Surgery, Uludag University, Bursa, Turkey

²Department of Pathology, Uludag University, Bursa, Turkey

³Department of Cardiology, Uludag University, Bursa, Turkey

OBJECTIVES: Postoperative retrosternal and intrapericardial adhesions lead to serious mediastinal tissue injury that can cause mortality and morbidity during reoperation. In order to reduce pericardial adhesions there are studies on different materials and methods. In this study, we aimed to evaluate the effects of bio-absorbable polilaktid film on postoperative pericardial adhesions.

MATERIALS-METHODS: Forty New Zeland rabbits were divided into four groups containing 10 rabbits in each. In group 1 and 2 (control groups), 2x2 cm pericardium was excised and left open. In group 3 and 4 pericardial defects were replaced with of bio-absorbable polilaktid film. Group 1 and 3 were sacrificed tree weeks, group 2 and 4 were sacrificed six weeks, after surgery.

RESULTS: Bio-absorbable polilaktid film was completely absorbed completely 3 weeks after the surgery. No significant difference was noted when the control and the treatment groups were compared in terms of adhesion, inflammatory reaction, and fibrious reaction scores. Significant differences were noticed in the treatment arm in mesothelial like cell layer development.

CONCLUSION: No significant effect of bio-absorbable polilaktid film was demonstrated in reducing and preventing pericardial adhesion.

KEYWORDS: Cardiac surgery, Pericardial adhesions, Bio-absorbable polilaktid film

OP 004 - CAN DANTROLENE PROTECT SPINAL CORD AGAINST ISCHEMIA/ REPERFUSION INJURY? AN EXPERIMENTAL STUDY

Kocogullari C. U.¹, Emmiler M.¹, Cemek M.², Sahin O.³, Aslan A.⁴, Ayva E.¹, Tur L.², Buyukokuroglu M. E.⁵, Demirkan I.⁶, Cekirdekci A.¹

¹Department of Cardiovascular Surgery, Afyon Kocatepe University, Medical Faculty, Afyon, Turkey

²Department of Chemistry, Afyon Kocatepe University Arts and Science, Afyon, Turkey

³Department of Pathology, Afyon Kocatepe University Medical Faculty, Afyon, Turkey

⁴Department of Neurosurgery, Afyon Kocatepe University Medical Faculty, Afyon, Turkey

⁵Department of Pharmacology, Afyon Kocatepe University Medical Faculty, Afyon, Turkey

⁶Department of Surgery, Afyon Kocatepe University Veterinary Faculty, Afyon, Turkey

The aim of this experimental study was to investigate the possible protective effect of dantrolene on neuronal injury induced by aortic ischemia/reperfusion (I/R).

METHODS: Nineteen rabbits were divided into three groups: sham (group 1, n = 5, no I/R), control (group 2, n = 7, only I/R) and dantrolene (group 3, n = 7, dantrolene + I/R). Abdominal aortic occlusion between the renal arteries and iliac bifurcations was carried out for 30 min. The spinal cord functions of the subjects were assessed using the Tarlov Scale. Blood and cord tissue samples were taken for biochemical and histopathological evaluation.

RESULTS: Tarlov scores in group 3 were significantly higher than in group 2 ($p < 0.05$). In group 3, the MDA levels of the spinal cord decreased significantly compared to those of group 2 ($p < 0.05$). In rabbits with I/R (group 2), the GSH levels of the spinal cord decreased significantly compared to those of group 1 ($p < 0.01$), but dantrolene pretreatment significantly prevented a decrease in GSH levels. Histopathological examination showed that group 3 had less vascular proliferation, hemorrhage, edema and neuron loss than group 2.

CONCLUSIONS: It was concluded that dantrolene applied after ischemia might help protect the spinal cord against ischemia/reperfusion injury.

KEYWORDS: aortic disease, cardiovascular surgery, aortic surgery

OP 005 - MELATONIN DOES NOT REDUCE LIPID PEROXIDATION THROUGH REGULATION OF OXIDATIVE-ANTIOXIDATIVE STATUS IN DIABETIC RAT HEART

Okutan H.¹, Uz E.², Yilmaz H. R.², Kiris I.¹, Ozcelik N.²

¹Department of Cardiovascular Surgery, Suleyman Demirel University Medical School, Isparta, Turkey

²Department of Medical Biology and Genetics, Suleyman Demirel University Medical School, Isparta, Turkey

AIMS: Increased oxidative stress plays important role in the development of cardiovascular complications diabetes mellitus. In the present study, we aimed to demonstrate the effect of melatonin (MEL) on the oxidative-antioxidative status of cardiac tissue in streptozotocin (STZ) induced diabetic rats.

METHODS: Twenty-five rats were randomly divided into three groups: group I, control non-diabetic rats (n=9); group II, STZ-induced, untreated diabetic rats (n=7); group III, STZ-induced, MEL-treated diabetic rats (n=9), which were injected daily with MEL (10 μ mol kg⁻¹ day⁻¹) intraperitoneally after 3 days STZ treatment. Eight weeks after start of the MEL treatment, the levels of malondialdehyde (MDA) and the activities of superoxide dismutase (SOD), catalase (CAT), and glutathione peroxidase (GSH-Px) in the cardiac tissues of all groups were analyzed.

RESULTS: In untreated diabetic rats, MDA markedly increased in cardiac tissue compared with control rats ($p < 0.05$). However, MDA levels were not found to be significantly different between untreated diabetic rats and MEL-treated group. The activities of SOD and CAT were higher in untreated diabetic group than in the control group ($p < 0.05$). Rats in the MEL-treated diabetic group had reduced activity of SOD in comparison with the untreated diabetic group ($p < 0.05$). There were no significant differences in the activity of CAT between untreated diabetic rats and MEL-treated diabetic rats. Also, there were no significant differences in the activity of GSH-Px between untreated diabetic rats and control rats. But, the activity of GSH-Px was increased in MEL-treated diabetic rat compared with both control and untreated diabetic rats ($p < 0.05$).

CONCLUSION: These data suggest that diabetes mellitus increases oxidative stress in cardiac tissue and MEL does not reduce lipid peroxidation through regulation of oxidative-antioxidative status in diabetic rat heart.

KEYWORDS: Melatonin; diabetes mellitus; heart; malondialdehyde; catalase; superoxide dismutase; glutathione peroxidase.

CONGENITAL HEART DISEASES: ARRHYTHMIAS, SURGERY, PROGNOSIS

OP 028 - EFFECTS OF CARDIOPULMONARY BYPASS ON B TYPE NATRIURETIC PEPTID LEVELS IN CHILDREN WITH CONGENITAL HEART DISEASES

Tannikulu N., Yurtseven N., Yalcin Y., Zeybek C., Canik S.

Department of Anesthesiology, Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Hospital, Istanbul, Turkey

OBJECTIVE: The cardiac natriuretic hormones are important regulators of extracellular fluid volume and blood pressure. They induce natriuresis, diuresis and vasodilation and counteract the effects of the renin-angiotensin-aldosterone system. B type natriuretic peptide (BNP), a recently discovered natriuretic hormone, is secreted from the ventricular myocytes in response to ventricular wall stress either from pressure or volume overload. BNP has been shown to be useful in diagnosis, risk stratification and management of the adults with congestive heart failure, dilated cardiomyopathy and myocardial ischemia. Although the significance of BNP in children with structural heart disease, rheumatic fever and primary pulmonary hypertension has been postulated recently, the exact role of BNP in children with structural heart disease undergoing CPB has not been fully understood, yet.

This study was designed to evaluate the possible effects of CPB on natriuretic hormone system, the relationship between BNP levels and pathology of the disease, and the predictive value of BNP on postoperative course of patients.

METHOD: A total of 25 patients (7 male, 18 female) with congenital heart disease undergoing corrective surgery were enrolled in the study. Study subjects were divided into two groups. Group I consisted of patients identified to have congenital heart disease with volume overload; such as septal defects and total abnormal pulmonary venous drainage. Group II consisted of patients with pressure overload; such as cyanotic congenital heart diseases having pulmonary stenosis. Plasma BNP levels were measured in all patients just before conduction of CPB (T0) and in postoperative 2nd (T1) and 24th (T2) hours.

RESULTS: There was no difference in plasma mean BNP concentrations between group1 and group2 in preoperative (11.43 ± 6.2 and 10.3 ± 6.2 pg/ml respectively, $p>0.05$), postoperative second hour (14.4 ± 7.5 and 14.5 ± 2.3 pg/ml respectively, $p>0.05$) and postoperative 24th hour (21.2 ± 8.0 and 22.0 ± 5.8 pg/ml respectively, $p>0.05$). Plasma BNP concentrations increased after CPB in all patients. ($p<0.05$) There was no difference in mortality between groups ($p>0.05$).

CONCLUSION: Our results suggests that, plasma BNP levels do not depend on the type of cardiac pathology, whether volume or pressure overload. BNP levels do not predict postoperative morbidity and mortality in children with congenital heart disease undergone CPB.

KEYWORDS: B Type Natriuretic Peptid, Congenital Heart Diseases

OP 029 - LONG TERM FOLLOW UP RESULTS OF SURVIVAL, ARRHYTHMIA, AND HEART FAILURE IN SURGICALLY TREATED ATRIAL SEPTAL DEFECT CASES

Oto O.¹, Sariosmanoglu N. O.¹, Metin K. S.², Karaarslan K.¹, Paytoncu S.³, Aslan O.⁴, Ugurlu B. S.¹, Celik M.², Ozmen O.², Saylam G. S.⁵, Hazan E.¹

¹Dokuz Eylul University, Faculty of Medicine, Department of Cardiovascular Surgery, Izmir, Turkey

²Ege Saglik Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

³Ege Saglik Hospital, Department of Pediatric Cardiology, Izmir, Turkey

⁴Dokuz Eylul University, Faculty of Medicine, Department of Cardiology, Izmir, Turkey

⁵Dokuz Eylul University, Faculty of Medicine, Department of Pediatric Cardiology, Izmir, Turkey

Atrial septal defects (ASD) may result in volume overload of the right heart, and can cause heart failure, elevated pulmonary vascular resistance and arrhythmias. Closure of an ASD is mandatory to avoid those complications. Transcatheter occlusion of the defects is a newer technique, which has been popularized as an alternative to surgical approach. Although there are papers reporting some residual shunts after "device closure", evolving technology supports innovations in this era.

Surgery is still the method of choice for many ASDs. Surgical correction of an ASD has very satisfying early postoperative results without mortality. Minimally invasive incisions and fast track anesthesia techniques are supporting the comfort of the surgery. Despite good results of short and mid-term follow up, exercise capacity, cardiac functions and arrhythmias during late follow up periods have not been widely documented.

We have planned to examine our surgically treated ASD cases during their mid- and late postoperative period according to the above mentioned complications.

MATERIAL-METHOD: Patients operated with an ASD between 1989 and 2006 are included in this study. Oral and written communication has been established with 176 cases of all 202 cases and 121 cases have accepted the invitation for a follow up exam. A cardiac examination including medical history, physical examination, electrocardiography (ECG), Holter ECG and transthoracic echocardiography has been performed. Interpretation of those tests has been made by adult and pediatric cardiologists.

RESULTS: Transthoracic echocardiography has been performed in 110 of 121 cases (%91), where ECG has been performed in all the cases and Holter ECG in 82 (68%) of them. Fifty two percent of echocardiographically examined cases have been interpreted as "normal". Slight right heart dilatation was the second leading finding, followed by tricuspid insufficiency and mitral insufficiency. Main finding of Holter ECG was sinusual arrhythmia in 85 cases (70%). Atrial extrasystoles have been observed in 61% of the patients, ventricular premature systoles in 45%. One patient, operated at his 41 years of age, had sustained ventricular tachycardia attacks. Almost two thirds of all examined cases had incomplete right bundle branch block on standard 12-lead ECG examination.

DISCUSSION: Short and mid-term results of postoperative follow up in surgically treated ASD patients are excellent. Surgical approach is a safe method for ASD closure in every age group. Minimally invasive techniques have further improved its efficacy and safety in addition with better comfort and wearing. Cardiac incisions and timing of the operation may affect the postoperative electrophysiology and architecture of the heart, which indicates that earlier operations result in better outcome. Older patients in our group had more arrhythmias and heart failure in comparison to younger cases.

KEYWORDS: atrial septal defect, surgery, arrhythmia

OP 030 - DO ARRHYTHMIA AND VENOUS OBSTRUCTION INCIDENCES INCREASE IN PARTIAL ANOMALOUS PULMONARY VENOUS RETURN SURGERY WHICH IS PERFORMED VIA CLASSIC RIGHT ATRIOTOMY INCISION?

Ustunsoy H., Atik C., Burma O., Ozcaliskan O., Kork I., Arslanoglu Y., Kuran C., Guzel G.

Gaziantep University, Medical School Cardiovascular Surgery Department, Gaziantep, Turkey

INTRODUCTION: We aimed to present mid and long-term outcomes of the patients who were operated due to Partial Anomalous Pulmonary Venous Return (PAPVR) via classic right atriotomy and single patch technique according to arrhythmia and venous obstruction.

MATERIAL-METHODS: Totally 12 cases who had PAPVR accompanying ASD were operated between October 2005 – January 2008. Mean age was 16.7±4.4 (3-28) and 7 of the patients were male, remaining 5 patients were female. PAPVR was diagnosed by echocardiography, echocardiography and catheterization, and intraoperatively in 3, 5, and 4 patients, respectively. There was severe tricuspid valve insufficiency in 1 case. All of the operations were performed under CPB. Pulmonary venous return was directed to left atrium in addition to high VCS cannulation, classic right atriotomy incision, and ASD closure with single patch technique. Care was taken not to narrow pulmonary vein and vena cava superior. Postoperative arrhythmia incidence, pulmonary venous and vena cava superior obstruction findings were evaluated.

FINDINGS: Atrial septal defects were high venosum, secundum, and VCI type in 6, 5, and 1 cases, respectively. Pericardium which is acted with glutaraldehyde was used in 5 patients and bovine pericardium was used in 7 patients. Tricuspid Kalangos ring annuloplasty was performed in 1 patient. Temporary complete AV block and 1st degree AV block were seen in early period in 1, and 2 patients, respectively. These 3 patients returned to sinus rhythm. Any postoperative pulmonary venous and VCS obstruction findings were not determined by either conventional or color Doppler USG imagines.

DISCUSSION: We observed in our cases that surgical repair of PAPVR via classic right atriotomy incision and single patch technique is not increasing arrhythmia and venous obstruction incidence.

KEYWORDS: Arrhythmia, Pulmonary venous return surgery

OP 031 - RISK FACTORS AND SURGICAL OUTCOME IN VENTRICULAR SEPTAL DEFECT CLOSURE UNDER 1 YEAR OF AGE

Ozkan S., Ozkan M., Atay H. T., Ozcobanoglu S., Aslamaci S.

Department of Cardiovascular Surgery, Baskent University, Ankara, Turkey

BACKGROUND: Risk factors and surgical outcome of 265 patients under 1 year of age who had undergone surgical closure of ventricular septal defect between March 2001 and March 2007 are evaluated.

METHODS: Patients who had atrial septal defect, patent ductus arteriosus, coarctation of the aorta, vascular ring, subaortic membrane in addition to ventricular septal defect except for ones who had pulmonary stenosis were enrolled in the study. Mean age of patients was 7.2±3 months and mean body weight was 5.6±4 kg.

RESULTS: Nineteen patients (7.2%) died after 269 surgical procedures done in the given period. The most common reason for death was pulmonary hypertensive crisis. Temporary atrioventricular block (4.5%) and pulmonary hypertensive crisis (4.1%) were common postoperative complications. Age, multiple defects, atrial septal defect, cardiopulmonary bypass time, use of circulatory arrest were found to be risk factors affecting mortality.

CONCLUSION: Surgical correction before one year of age especially in 6 months is suitable for infants with ventricular septal defect and pulmonary hypertension.

KEYWORDS: Ventricular septal defect, Infant, Risk factors

OP 032 - M BT SHUNT OVERFLOW: EARLY RECOGNITION THAN SURGICAL RESIZING

Hatemi A., Ceviker K., Canikoglu M., Cetin G., Kansiz E.

Istanbul University, Institute of Cardiology Department of Cardiovascular Surgery, Istanbul, Turkey

Systemic to pulmonary artery shunt is an emergency life-saving procedure in a hypoxic child like as tetralogy of fallot with hypoxic spell. Since the determination of a subclavian to pulmonary artery shunt by Blalock and Taussig in 1945 than modified in 1975 and 1981. Palliative shunts may lead to excessive shunt blood flow causing cardiac failure or pulmonary vascular disease, inadequate shunt flow with no improvement in oxygen saturation, unilateral (preferential) shunting to one lung. The problem of pulmonary temporary over-circulation was recognized by Chikada et al. When the pulmonary flows are excessive this is manifested as pulmonary edema and can be diagnosed by chest radiograph. The physical examination with excessive pulmonary blood flow is characterized by tachypnea, a hyperdynamic precordium, bounding pulses, rales, and occasionally poor systemic perfusion like as in our case. The incidences of pulmonary edema and congestive heart failure are very low after the surgically created a modified Blalock-Taussig (mBT) shunt. This is a serious complication requiring appropriate early intervention. Occasionally, early or late shunt revision may be necessary. Hirshberg et al reported similar circumstances. They were treated to supportive. Okita et al presented two patient developed acute pulmonary edema after mBT shunt placement. One patient was treated with supportive care, next patient was managed surgically. At reoperation shunt flow was discovered to have doubled since the original procedure, and the shunt was revised. In our case, we were urgently re-operated and shunt resized by controlling diastolic pressure decrease with the range of 5-7 mmHg. After resizing shunt murmur was sensing vigorously. More than one-third of that patients who died a week after placement of a shunt, there was evidence of acute excessive pulmonary blood flow in the postmortem series. This complication is rare after mBT shunt placement. Early recognition and aggressive intervention are important in reversing potential morbidity-mortality and improving outcome. Bove and Dubini et al working on use of mathematic modeling to compare and predict hemodynamic effects of the mBT shunt. That will be determine how to avoid such problems with consistency.

KEYWORDS: Blalock-Taussig shunt, pulmonary edema, shunt complication

OP 033 - SURGICAL TREATMENT AND RESULTS OF HYPERTROPHIC OBSTRUCTIVE CARDIOMYOPATHY

Mataraci I.¹, Aydin C.¹, Buyukbayrak F.¹, Tuncer E.¹, Cevirme D.¹, Fedakar A.¹, Goksedef D.², Keles C.¹, Onk A.¹, Kirali K.¹, Erentug V.¹, Yakut C.¹

¹Kartal Kosuyolu High Graduate Education and Research Hospital, Istanbul, Turkey

²Department of Cardiovascular Surgery, Cerrahpasa Medical Faculty, Istanbul, Turkey

OBJECTIVE: Hypertrophic obstructive cardiomyopathy is a primary heart muscle disease which has no definitive etiology and is characterized by altered systolic and diminished diastolic function and decreased left ventricular cavity. In our study we evaluated early and late results of the patients whom had surgical treatment for hypertrophic obstructive cardiomyopathy.

MATERIAL-METHOD: Twenty nine patients had surgical treatment with a diagnosis of hypertrophic obstructive cardiomyopathy between 1985 - 2008 in our clinic. Twelve patients were male and ages for all patients were between 7 and 68. Chest pain, palpitation and shortness of breath were the most common symptoms of these patients. All patients were evaluated with echocardiography before and after the surgical intervention and 24 patients were evaluated additionally with cardiac catheterization as well. All patients had septal myectomy procedure under general anesthesia. Two patients had mitral valve repair, 6 patients had mitral valve replacement, 2 patients had aortic valve replacement and 1 patient had both aortic valve replacement and coronary bypass procedure concomitantly.

RESULTS: Three patients died in early postoperative period. Complete heart block was seen in 4 patients and all had permanent pacemaker implantation. Two patients are now on follow up because of rhythm disorder and congestive heart failure.

CONCLUSION: Although mortality and morbidity may increase with concomitant procedures, septal myectomy procedure can be done with acceptable morbidity and mortality rates for during hypertrophic obstructive cardiomyopathy when pharmacological therapy modalities fail.

KEYWORDS: Hypertrophic, Cardiomyopathy, Septal Myectomy

OP 035 - MYXOMA CLINICAL EXPERIENCE OF INSTITUTE OF CARDIOLOGY IN 22 YEARS

Hatemi A. C.¹, Gursoy M.¹, Tongut A.¹, Servet E.¹, Uzunhasan I.², Kucukoglu S.², Cetin G.¹, Kansiz E.¹

¹Department of Cardiovascular Surgery, Institute of Cardiology, Istanbul University, Istanbul, Turkey

²Department of Cardiology, Institute of Cardiology, Istanbul university, Istanbul, Turkey

INTRODUCTION: Primary tumors of the heart are rare, with an incidence between 0.0017 and 0.19 percent in unselected patients at autopsy. Three quarters of the tumors are benign. Approximately half of the benign heart tumors are myxomas. We herein report our institutional experience with 24 patients who underwent open heart surgery for cardiac myxoma between 1985 and 2007.

MATERIAL-METHODS: We retrospectively reviewed 9756 consecutive cases of open heart operation patients performed in our institution. In this 22 years; 0.24% (24/9756) of open heart operations were performed for cardiac myxomas and myxomas were 77.4% of our intracardiac mass cases (24 myxoma, 6 fibroelastoma, 1 organized thrombi). In our serie, 7 patient were male(29.1%), 17 patients were female (70.9%). The mean age was 46 +18.8 years. Myxoma was diagnosed with transthoracic echocardiography in 22 patiens with angiography in one and one rest was diagnosed intraoperative. Myxomas were originating from left atrium in 15 cases(62.5%), mitral valve leaflets in 3 cases(13%), right atrium in 2 cases(8.6%), right atrium and right ventricle in 2 cases(8.6%), right ventricle in 1 case (4.3%) and left ventricle in one case(4.3%). All patients were operated via median sternotomy and under cardiopulmonary bypass. In 11 cases myxoma was resected through a right atriotomy(45.8%).In 7 cases, biatrial approach was used. In 5 cases myxoma was resected via left atriotomy and in one case we removed myxoma with left atriotomy and left ventriculotomy simultaneously. In all patients but one postoperative course was uneventful. One died in eighth postoperative day due to low cardiac output and multiorgan failure.

DISCUSSION: Myxomas are rare and benign characterized cardiac tumours and generally presents with symptoms of intracardiac obstruction, hemodynamic alteration, cerebral and/or peripheral embolism, syncope or sudden death(due to complete obstruction of mitral valve or coronary artery emboli) or constitutional symptoms; fever, weight loss, general fatigue, appetite loss, anemia. Embolization is one of the most serious complication of myxomas and various embolization rates were reported in literature; in our serie, 3 patients had had embolization(12.5%) 2 of them cerebral and one remain had had femoral artery embolus. Size, weight and morphology are important determinant of prognosis, polypoid nature is considered as a major risk factor for embolus. Intracardiac obstruction is an another and potentially lethal feature of myxomas. In conclusion, although myxomas are benign masses, its potentially lethal complications cause surgical indication, and myxoma resection is safe, simple surgical procedure with excellent long term results.

KEYWORDS: myxoma, surgical treatment, clinical experience

OP 036 - OUTCOMES OF DR.SAMI ULUS CHILDREN'S HOSPITAL CARDIOVASCULAR SURGERY CLINIC WITH ARISTOTLE SCORING SYSTEM

Kutsal A.¹, Koc M.¹, Ulsan V.³, Nebigil R. M.¹, Disli O. M.¹, Bolat A.¹, Surer S.¹, Isik O.¹, Surer S.¹, Ocal B.², Orun U. A.², Senocak F.²

¹Department of Cardiovascular Surgery, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

²Department of Pediatric Cardiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

³Department of Anesthesiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

Quality control is difficult to achieve in Congenital Heart Surgery (CHS) because of the diversity of the procedures. The Aristotle project, involving a panel of expert surgeons, started in 1999 and included 50 pediatric surgeons from 23 countries, representing the EACTS, STS, ECHSA and CHSS.

METHODS: The complexity was based on the procedures as defined by the STS/EACTS International Nomenclature and was undertaken in two steps: the first step was establishing the Basic Score, which adjusts only the complexity of the procedures. It is based on three factors: the potential for mortality, the potential for morbidity and the anticipated technical difficulty. A questionnaire was completed by the 50 centers. The second step was the development of the Comprehensive Aristotle Score, which further adjusts the complexity according to the specific patient characteristics. It includes two categories of complexity, the procedure dependent and independent factors. After considering the relationship between complexity and performance, the Aristotle Committee is proposing that: Performance = Complexity x Outcome.

The complexity scoring, based on the primary procedure (from the EACTS-STS International Nomenclature Procedures Short List), estimates complexity through three factors: mortality potential, morbidity potential, and technical difficulty.

RESULT: We made 464 congenital cardiac surgical prosedures in our clinic. We used basic and comprehensive aristotle scoring system all of them and the measured median basic complexity score is 5,5 and median complexity level is 1.

CONCLUSION: The comprehensive Aristotle score allows much more precise complexity stratification, including all patient characteristics. Allowing accurate evaluation of surgical performance in congenital heart disease, the Aristotle score is a powerful vector of communication between patients, surgeons, cardiologists and health care payers. Evaluating the predictive values of the Aristotle method is in progress to confirm the validity of the method.

KEYWORDS: congenital cardiac surgery, scoring system, aristotle score

OP 037 - OUR CONGENITAL SURGERY APPLICATIONS

Manduz S., Katrancioğlu N., Karahan O., Kilic A. T., Sanrı U. S., Atahan E., Dogan K.

Cardiovascular Surgery Department Of Medical Faculty, Cumhuriyet University, Sivas, Turkey

In this study, we aimed to discuss the diagnosis and results of therapies in patients with congenital heart disease. Records of 104 patients with heart disease admitted to and treated in the Department of Cardiovascular Surgery at Medical Faculty, Cumhuriyet University, between April 1995 and June 2008 were analyzed retrospectively. Patients were divided into two groups according to their age as Group I (≤ 16 years) and Group II (>16 years). Demographic parameters, frequency of pathologies, and therapy results were compared in each the two groups. There were 50 patients in group I and 54 patients in group II. Twenty-five (50%) of the case subjects in group I were male and 25 (50%) female, and mean age was 8.06 years. Of the patients in group I, 12 had atrial septal defect (ASD), 9 ventricular septal defect (VSD), 4 ASD+VSD, 6 tetralogy of fallot (TOF), 7 patent ductus arteriosus (PDA), 2 pulmonary stenosis, 1 coronary arteriovenous fistul, 1 sub-aortic stenosis, 1 single ventricle, 1 Ebstein's anomaly, 2 total atrioventricular duct defect, and 1 aortic coarctation (AC) and patent ductus arteriosus (PDA). On the other hand, 27 (50%) patients of group II were male and 27 (50%) were female, and mean age was 29.62 years. Of the patients in group II, 35 had ASD, 7 VSD, 4 ASD+VSD, 1 pulmonary arteriovenous fistul, 8 AC, 1 sub-aortic stenosis (SS), 1 VSD+SS, and 1 TOF. Three patients died during early postoperative stage. The number of male and female patients in each group was observed to be equal. Our results contradict with the guidelines reporting that the most frequently observed pathology in child is VSD and the second most frequent is ASD. While various complex anomalies were detected in group I, group II had such isolated single pathologies as ASD, VSD, AC.

KEYWORDS: congenital heart disease, age, surgery

CARDIOVASCULAR PHARMACOTHERAPY: WHAT ELSE DO WE NEED?

OP 038 - FUROSEMIDE INFUSION PREVENTS ACUTE KIDNEY INJURY REQUIRING RENAL REPLACEMENT THERAPY AFTER CARDIAC SURGERY

Tekeli Kunt A., Akgun S., Atalan N., Bitir N., Arsan S.

Medicana Hospitals Bahcelievler, Istanbul, Turkey

OBJECTIVE: Acute kidney injury (AKI) is a devastating complication following cardiac surgery. The ideal management of this complication is still controversial. This prospective study analyzed the renoprotective effects of furosemide infusion and intermittent furosemide bolus therapy administered with dopamin infusion in cardiac surgical patients.

METHODS: Between August 1, 2007 and July 31, 2008, 100 adult patients undergoing elective isolated coronary artery bypass grafting (CABG) surgery with normal renal function (baseline serum creatinine value < 1.4 mg/dl) were enrolled in the study. The patients were randomized for the comparison of the renoprotective effects of intermittent (Group I, n=50, 1mg to 3mg/kg of furosemide intravenously) and continuous infusion of furosemide (Group II, n=50, 10mg/ml) in conjunction with renal doses of dopamine. AKI was interpreted according to RIFLE classification (RIFLE: Risk, Injury, Failure, Loss and End-stage kidney disease). The renoprotective regimen was started according to the urine output criteria of RIFLE (urine output less than 0.5 ml/kg/h within 6 hours after surgery).

RESULTS: RRT was used in 5% of patients (all patients were in group I, p=0.028). RRT was started 40 to 55 hours after surgery (mean 46.25 ± 6.75 h) and used for 5.7 days. The 30-day mortality was 5% (all deaths were in group I, p=0.028). The mean creatinine level was 1.49 ± 0.71 mg/dl prior to hospital discharge and only 2 patients became hemodialysis dependent in group I. Group II patients showed a continuous and higher urine output postoperatively than group I (p=0.000). Both groups had significant increase in peak postoperative serum creatinine values (p=0.000 in both groups) however peak postoperative creatinine-clearance following surgery was significantly lower in group I (p=0.000).

CONCLUSIONS: AKI necessitating RRT makes a small percentage of patients undergoing cardiac surgery and if RRT is not required the survival of these patients with AKI is excellent. Continuous infusion of furosemide seems to be effective in promoting diuresis and decreasing the need for RRT. However further multicenter studies with larger number of patients and different doses of furosemide are required to confirm these results.

KEYWORDS: Furosemide, acute kidney injury, renal replacement therapy

OP 039 - ENDOTHELIN RECEPTOR ANTAGONISM BY TEZOSENTAN ATTENUATES LUNG INJURY INDUCED BY AORTIC ISCHEMIA-REPERFUSION

Kiris I.¹, Narin C.², Gulmen S.¹, Yilmaz N.³, Sutcu R.³, Kapucuoglu N.⁴

¹*Department of Cardiovascular Surgery, Suleyman Demirel University Medical School, Isparta, Turkey*

²*Department of Cardiovascular Surgery, Selcuk University Meram Medical School, Konya, Turkey*

³*Department of Biochemistry, Suleyman Demirel University Medical School, Isparta, Turkey*

⁴*Department of Pathology, Suleyman Demirel University Medical School, Isparta, Turkey*

OBJECTIVE: Tezosentan is a novel dual endothelin receptor antagonist. The purpose of this study was to examine the effect of tezosentan on lung injury induced by abdominal aortic ischemia-reperfusion (IR) in rats.

METHODS: Thirty two Wistar-Albino rats were randomized into four groups (eight per group) as follows; Control group (sham laparotomy), Aortic IR group (120 min ischemia and 120 min reperfusion), Aortic IR + tezosentan group (a bolus intravenous injection of 10 mg/kg tezosentan before ischemia plus continuous intravenous infusion of 1 mg/kg/hr tezosentan during 120 min ischemia and 120 min reperfusion) and Control + tezosentan group. Blood and lung tissue samples were obtained for biochemical analysis. Protein concentrations in bronchoalveolar lavage fluid and lung wet/dry weight ratios were measured. A histological evaluation was also done.

RESULTS: Aortic IR significantly increased (p < 0.05 vs control group) whereas tezosentan significantly decreased (p < 0.05 vs aortic IR group) the plasma level of tumor necrosis factor-alpha, the lung tissue levels of malondialdehyde, catalase and myeloperoxidase, and protein concentration in bronchoalveolar lavage fluid and wet/dry lung weight ratio. A histological evaluation showed that tezosentan attenuated the morphological changes associated with lung injury.

CONCLUSIONS: The results of this study indicate that tezosentan attenuates lung injury induced by aortic IR in rats. We propose that this protective effect of tezosentan is due to (i) reduced systemic inflammatory response, (ii) reduced oxidative stress and lipid peroxidation in lung tissue, (iii) reduced pulmonary microvascular leakage and (iv) inhibition of leukocyte infiltration into lung tissue.

KEYWORDS: tezosentan, endothelin-1, abdominal aorta, ischemia-reperfusion, lung

OP 042 - THE USEFULNESS OF INSULIN CARDIOPLEGIA AND GLUCOSE-INSULIN-POTASSIUM SOLUTIONS (GIK) FOR MYOCARDIAL PROTECTION IN CORONARY ARTERY BYPASS GRAFT SURGERY

Yigun M. K.¹, Yurtseven N.¹, Tuygun A. K.², Savaskan D.¹, Canik S.¹

¹Department of Anesthesiology, Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Hospital, Istanbul, Turkey

²Department of Cardiovascular Surgery, Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Hospital, Istanbul, Turkey

INTRODUCTION: In this study, the aim was to determine the hemodynamic and metabolic effects of glucose insulin potassium (GIK) solution and high dose insulin cardioplegia on postoperative recovery in coronary artery bypass surgery.

MATERIAL-METHODS: 120 patients with ejection fraction > % 40 and has no history of diabetes were randomly divided into three groups. In group 1 and 2 patients (n = 40 for each group), after cross clamp placement, the cardioplegia was prepared with addition of 10 IU / L of crystalized insulin whereas, in group 3, standard cardioplegia was administered. In addition, GIK solution was started to the patients during cross clamp in group 2. The blood samples from arterial and coronary sinus were collected 10 minutes before cross clamp and 0, 5, 10 and 15 minutes after cross clamp. Arterial blood lactate and glucose levels were drawn from all patients. Hemodynamic parameters were measured at the time settings of 30 minutes after pump, 1 and 24 hours after surgery, postoperatively. At the same time settings; arterial lactate and glucose levels were drawn. The data that were recorded also includes; postoperative insulin necessity, the frequency of defibrillation, the need for inotropic support and intraaortic balloon pump, as well as postoperative arrhythmias, extubation times, stay in intensive care unit and in hospital. Blood cardiac isoenzyme levels were collected.

RESULTS: The demographic data of three groups were statistically similar in age, sex and associated risk factors. The comparison of hemodynamic data revealed no statistically significant difference. During pump period, the blood levels of arterial and coronary sinus lactate levels were significantly lower in group 2 compared to group 3. However, in postoperative period there is no significant difference in lactate levels. The blood glucose levels were significantly higher in group 3 compared to group 1. In group 1, the incidence of postoperative arrhythmias and need for inotropic support was less observed compared to group 2 and 3 (p < 0.05).

CONCLUSION: In coronary artery surgery, the goal of myocardial protection is to provide energy substrates to the myocardium in the reperfusion period which follows the ischemic period. The persistent release of lactate demonstrates that the aerobic myocardial metabolism recovery was diminished and myocardial protection was unsatisfactory. In this work, GIK solution that is used with insulin cardioplegia decreases the myocardial lactate level, development of arrhythmias, and inotropic support. The administration of insulin cardioplegia with GIK is suggested on patients undergoing elective coronary artery bypass graft surgery.

KEYWORDS: Insulin Cardioplegia, GIK Solution, Coronary Artery Bypass Surgery

OP 045 - LOCAL ANAESTHETIC FLUSH FOLLOWING GREAT SAPHENOUS VEIN STRIPPING, LESS PAIN AND BETTER COSMETIC RESULTS

Uguz E., Oz B. S.

Department of Cardiovascular Surgery, Maresal Cakmak Asker Hastanesi, Erzurum, Turkey

INTRODUCTION: Postoperative pain, haematoma formation, bruising has long been recognized as complications of greater saphenous vein (GSV) stripping, and it has been suggested by some authors as the major determinants of patient satisfaction in the early postoperative period. The rate and severity of these complications reported in the literature are extremely variable, with no study adequately addressing the effect of these complications on patient quality of life. We undertook this study to observe the effect of local anaesthetic flush through the great saphenous vein tunnel on postoperative pain, total analgesic consumption and haematoma formation following GSV stripping operations. Instead of comparing two different patient groups, to get more objective results from subjective visual analogue pain scores, we carried out this prospective, randomized study in patients who were operated bilaterally and compared two extremities in one patient that are operated with two different techniques, conventional stripping and stripping followed by local anaesthetic flush.

MATERIALS-METHODS: All twenty patients underwent bilateral classical surgery, ligature and section at the sapheno-femoral junction and collateral veins, with saphenectomy and distal phlebectomies. Forty extremities of twenty patients were randomized to receive 20 ml of local anaesthetic (bupivacaine + adrenaline) or saline control flush through GSV tunnel after stripping. Visual analogue pain scores calculated by visual analogue scale were used to measure postoperative pain daily for the 1st week, then at 4th week and 8th week. Patients were examined during the 1st, 4th and 8th weeks for haematoma formation.

RESULTS: 30% of the extremities developed a haematoma in the GSV tunnel during the first week in the control group compared to 6% in the LA group (p<0.001, Mann-Whitney U test).

In the control group the median postoperative pain score measured with a visual analog scale was 4 (range 1-7) in the immediate postoperative period compared to a median of 2 (range 1-4) in the LA group (p<0.001). The median pain score on day-4 was 3 (range 1-6) (control) vs. 1 (range 0-3) (LA group) (p<0.001) and on day-6 it was 1 (range 0-5) (control) vs. 0 (range 0-3) (LA group) (p<0.001). As expected, there was a significant difference in the early postoperative days. Pain scores decreased in both groups in a similar fashion postoperatively after the first week.

A significant increase in the total number of analgesia tablets consumed was also found in the control group in the first postoperative week.

CONCLUSION: Flushing of the GSV tunnel with local anaesthetic significantly reduces postoperative pain and haematoma formation without any obvious drawbacks in patients undergoing GSV stripping for varicose veins. Avoiding pain and haematoma formation might provide better results in terms of patient satisfaction and might also shorten the recovery period to return to daily activities.

KEYWORDS: local anaesthetic, saphenous vein, stripping, bilateral

CARDIOLOGIST AND SURGEON CONSENSUS IN THE TREATMENT OF CORONARY ARTERY DISEASE

OP 075 - DOES EARLY TRANSIT TIME FLOW MEASUREMENT GIVE THE EXACT VALUE?

Gunay R., Cimen S., Demirtas M. M.

Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Center, Istanbul, Turkey

INTRODUCTION: Several studies has been published in the recent years about flow measurement of coronary artery bypass grafting (CABG). Transit time flow measurement (TTFM) was reported to be a suitable method for quick and reproducible intraoperative assessment of graft function. Although many studies validate the usefulness of TTFM, the exact flow value of grafts are not well established because of early graft flow measurements were reported. However, graft flow measurement is affected by several factors that all interact, such as arterial pressure, coronary artery resistance, residual antegrad coronary flow, type of graft, microvascular tonus, length and diameter of grafts and coronary artery, hematocrit, temperature, anastomosis quality, kinking and twisting of graft. Any changes in one of these parameters will affect flow measurements.

Clinical Summary: Herein we represent a 55-year-old, male patient who underwent CABG surgery and revised for bleeding in the early postoperative period. After median sternotomy, left internal thoracic artery (ITA) harvesting was performed as a pedicle. Diluted papaverine solution was poured on the ITA to prevent spasm and wrapped with papaverine embedded gauze until usage. Free ITA flow was measured as 120 ml/min before cardiopulmonary bypass was commenced.

After weaning cardiopulmonary bypass and during the revision, all graft measurements were performed by flowmeter. Left ITA to left anterior descending (LAD) artery and saphaneous vein graft to right coronary artery flows with pulsatility indices in paranthesis were 41 ml/min (3.7) vs 114 ml/min (1.7) and 37 ml/min (2.5) vs 73 ml/min (2.3), respectively.

DISCUSSION: Goal of CABG is to increase perfusion pressure of poststenotic coronary artery to increase myocardial O₂ supply. Previous studies have reported that preoperative mean flow measurements were about 40 ml/min. Increase in graft flow during early postoperative period has not been demonstrated reliably by any means of measurement methods. We demonstrated that graft flow increased in the early postoperative period. This finding may be related to changes in graft spasm as well as coronary resistance. In our case, ITA flow increased about three times and saphaneous vein flow increased two times than the previous measurement. Therefore, in the immediate postoperative period coronary perfusion may still be dependent on native flow.

Conclusion: We believe that graft flow measurements has improved the knowledge of the physiologic aspects of coronary surgery. Graft spasm leading to diameter discrepancy seems to be the main cause of low flow value and also low perfusion pressure in the early period of operation. If flow measurements are incorporated with coronary pressure measurements, we believe graft flow competitions and anastomosis quality can be evaluated more precisely and reliably.

KEYWORDS: flow measurement, coronary artery surgery

OP 078 - IMPACT OF PREOPERATIVE ANEMIA ON CLINICAL OUTCOME AND MORTALITY IN PATIENTS UNDERGOING CORONARY ARTERY BYPASS GRAFTING

Ak K.¹, Adademir T.¹, Isbir S.¹, Gursu O.¹, Tekeli A.², Atalan N.², Arsan S.¹

¹Marmara University, School of Medicine Department of Cardiovascular Surgery, Istanbul, Turkey

²Bahcelievler Medica Hospital Cardiovascular Surgery, Istanbul, Turkey

OBJECTIVES: Impact of preoperative anemia on clinical outcome after cardiac surgery is still a debated issue. In this study we aimed to relate the presence of preoperative anemia and postoperative clinical outcome and mortality in patients undergoing coronary artery bypass grafting (CABG).

STUDY DESIGN: One hundred sixty-three consecutive patients undergoing elective CABG were retrospectively reviewed. The mean age was 64.3±4.1 years and 64% of the patients (n=103) were male. Preoperative anemia was defined as a preoperative hemoglobin level was less than 12.5 mg/dl in females (for both males and females). Forty percent of the patient (n=67) revealed preoperative anemia. Both early perioperative variables (including ventilation time, intensive care unit stay, perioperative myocardial infarction, mediastinal drainage, transfusion requirement, wound infection, mediastinitis, acute renal dysfunction and early mortality) and late mortality were recorded.

RESULTS: Both groups were similar in demographics and preoperative variables. Presence of preoperative anemia did not create a significance in terms of early mortality (1.4% in the anemic versus 1% in the nonanemic patients, p>0.05). Patients with preoperative anemia had significantly higher ventilation times (p=0.01), transfusion of packed red blood cells requirement (p=0.037) and acute renal dysfunction (p=0.02). There was no difference in the risks of increased mediastinal drainage, wound infection and mediastinitis. In the long term, the mean follow up time was 36.3±14.1 months and 32% of the cases were lost to follow up. Preoperative anemia did not create significance in terms of late mortality (1.5% versus 2.1%).

CONCLUSION: Our results demonstrate that preoperative anemia is a significant predictor of prolonged ventilation time, transfusion of packed red blood cells and acute renal dysfunction. Preoperative control of anemia patients may help to improve clinical outcome in elective CABG.

KEYWORDS: preoperative anemia, coronary artery bypass grafting, clinical outcome and mortality.

OP 080 - REOPERATION OF PATIENTS WITH PATENT IMA GRAFTS

Yilmaz O., Arbatli H., Ardal H., Yagan N., Tukenmez F., Sonmez B.

Department of Cardiovascular Surgery, Memorial Hospital, Istanbul, Turkey

AIM: Cardiac reoperation in patients with patent IMA grafts is a major challenge for cardiac surgeons. Any trauma to the patent coronary bypass grafts, especially to the internal mammary artery (IMA) which usually is anastomosed to the left anterior descending coronary artery (LAD) is a major risk factor increasing morbidity and mortality of such patients. While dissection of the IMA is a risk, sufficient myocardial protection is another essential concern. We hereby report the results of our experience in reoperation of patients with a history of previous CABG surgery, and a patent IMA graft.

PATIENTS AND METHODS: In our institution, in between April 1995 and June 2008, 36 patients who had a cardiac reoperation had a patent IMA graft. There were 30 male and 6 female patients with a mean age of 64.3 ± 8.9. In all these patients, the IMA was not redissected at all, considering the previously described risks. Myocardial protection was achieved via low-moderate hypothermia, intermittent antegrade and retrograde aspartate-glutamate enriched blood cardioplegia, and permissive hyperkalemia.

RESULTS: Four of the patients were lost in the hospital (11.1%). One of these was due to cardiac failure. One patient was lost due to malignant ventricular arrhythmias and gastrointestinal system bleeding. One other patient died of pulmonary insufficiency and pneumonia. And the last one was lost due to multiorgan failure. All other patients were discharged in good condition.

CONCLUSION: There are reports claiming the risk of IMA graft injury in 15-40% of such reoperations. On the other hand in patients with injured IMA grafts, the mortality rate is reported to be as high as 50%. Thus considering this high risk we believe avoiding dissection of the patent IMA graft, and myocardial protection at low-moderate hypothermia with intermittent antegrade and retrograde, aspartate-glutamate enriched blood cardioplegia, and permissive hyperkalemia yields less risk and better mortality rates.

KEYWORDS: reoperation, internal thoracic artery, IMA, hypothermia

CORONARY ARTERY DISEASE: CHALLENGES IN MEDICAL AND SURGICAL TREATMENT

OP 083 - SHORT-TERM RESULTS OF COMPLETE ANATOMIC REVASCULARIZATION IN MULTIVESSEL CORONARY ARTERY DISEASE

Cağlı K.¹, Ulas M. M.¹, Lafci G.¹, Cağlı K. E.², Yalcinkaya A.¹, Pac M.¹

¹ *Türkiye Yüksek İhtisas Hospital, Department of Cardiovascular Surgery, Ankara, Turkey*

² *Türkiye Yüksek İhtisas Hospital, Department of Cardiology, Ankara, Turkey*

OBJECTIVE: Coronary artery bypass grafting (CABG) surgery is the most effective strategy for establishing the complete coronary revascularization. We present our short-term results of complete anatomic revascularization performed in 98 patients.

METHODS: On-pump complete anatomic revascularization was performed in 98 patients (70 male, 28 female) with multivessel coronary artery disease between January 2006 and July 2008. All coronary branches with a diameter of ≥ 1.5 mm and at least one stenosis of $\geq 50\%$ was grafted sequentially if possible. This definition included conal, right ventricular, acute marginal, posterior descending, and posterolateral branches of right coronary artery; 1st and 2nd diagonal branches of left anterior descending artery, and 1st, 2nd, 3rd obtuse marginal, and posterolateral branch of circumflex artery.

RESULTS: Five distal anastomosis was performed in 50 patients (51%), 6 in 27 patients (28%), 7 in 15 patients (15%), and 8 in 6 patients (6%). Mean age of patients was 60.2 ± 9.7 y, 62.8 ± 9.2 y, 62.1 ± 6.9 y and 64.2 ± 10.6 y, respectively. Left ventricular ejection fraction was less than 35% in 41 patients (42%). Cardiopulmonary bypass and X-clamp time were 109.1 ± 26.3 min and 81.7 ± 20.5 min in 5 anastomosis group, 120.5 ± 29.5 min and 91.4 ± 21.2 min in 6 anastomosis group, 129 ± 32.5 min and 101 ± 34.5 min in 7 anastomosis group, and 127 ± 10.4 min and 96.2 ± 8.9 min in 8 anastomosis group, respectively. Six of the patients have longer cardiopulmonary bypass and X-clamp time because of concomitant procedures including mitral, aortic, or tricuspid valve repair and aortoplasty. Intensive care unit and hospitalization duration were 1.2 ± 0.6 day and 6.5 ± 2.1 day in 5 anastomosis group, 1.1 ± 0.4 day and 6.4 ± 3.1 day in 6 anastomosis group, 1.3 ± 0.6 day and 5.9 ± 1.9 day in 7 anastomosis group, and 3.1 ± 3.2 day and 8 ± 3.2 day in 8 anastomosis group, respectively. Inotropic drugs were needed in 20% of patients during per-operative period. There was no per-operative mortality, myocardial infarction, or intra-aortic balloon requirement. Only one patient died due to pulmonary thromboembolism developed 3 months after surgery. At follow-up, grafts were controlled either by conventional coronary angiography or CT angiography in 20 patients. Results show that all anastomosis were patent.

CONCLUSION: In suitable patients, complete anatomic revascularization should be performed without any increased mortality or morbidity.

KEYWORDS: complete anatomic revascularization, multivessel coronary artery disease

OP 084 - CORONARY ARTERY BYPASS GRAFTING IN HAEMOPHILIA A

Goksedef D.¹, Ipek G.¹, Omeroglu S. N.¹, Ar C.², Sayilgan C.³, Yuceyar L.³, Kanbur E.¹, Karadag B.⁴

¹Department of Cardiovascular Surgery, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey

²Department of Internal Medicine, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey

³Department of Anesthesiology and Reanimation, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey

⁴Department of Cardiology, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey

Coronary artery disease is quite rare in patients with Haemophilia A. Coronary Artery Bypass Grafting (CABG) due to severe coronary artery disease was performed in 3 patients with Haemophilia A. All patients were operated on cardiopulmonary bypass. Two patients received 4 vessel bypass, one patient received 3 vessel bypass. Factor replacement was done to all patients. One patient received massive blood transfusion for excessive postoperative bleeding. Acute renal failure and myocardial dysfunction developed in this patient. Inotropic and intraaortic balloon pump support was needed in this patient and he could not be extubated until postoperative day 10. The patient was discharged on postoperative day 35. The postoperative course in the other patients was uneventful. Even if factor replacement was done, bleeding after CABG can be a major complication in patients with Haemophilia A. Both blood transfusion and factor replacement can lead to renal failure and other complications. Meticulous bleeding control and some other precautions are needed to prevent hemorrhage in patients with Haemophilia A.

KEYWORDS: Coagulation disorders, Complications of CABG, Factor replacement, Haemophilia A, Haematologic complications.

OP 085 - HYPOTHERMIC INTERMITTENT CROSS CLAMPING TECHNIQUE ANALYSIS IN 3729 ISOLATED AORTO-CORONARY BYPASS OPERATIONS

Cakalagaoglu C., Kantarci O., Kutlay F., Indelen C., Bulbul S., Yagci S., Toklu H., Yigiter B.

Switzerland Hospital, Department of Cardiovascular Surgery, Istanbul, Turkey

INTRODUCTION: Nowadays, cardioplegia technics are commonly used for myocardial protection on coronary artery bypass surgery. Nonetheless hypothermic intermittent cross clamping is widely used in European Centers especially in England.

MATERIAL-METHOD: In this study between January 2002 and December 2007, 3729 patients with only aortocoronary bypass graft operation made by same surgical team in Isviore Hospital were examined for mortality, morbidity (mostly cardiac and neurologic complications) and intensive care unit stay.

RESULTS: The mean age of the patient population is 59,97±9,38 and 872 of them are women at a ratio of %23.4. The ratio of patients who is suffering from diabetes is %19.7; COPD is %3.2; preoperative neurologic disorder is %3.5; high degree left ventricular dysfunction is %6.7. Emergent operation rate is %1.7; high risk patient (euroscore >=6) ratio is %4.7. The mean cross clamping time is 33,89±14,62 and mean by pass time is 81,57±36,78. The mean number of distal anastomosis is 2,31±0,89 and mean intensive care unit stay time is 2,31±0,89 days.

The mean mortality rate is %2.5. This ratio decreases to %1 in low risk patients and increases to %17 in high risk patients. The ratio of patient occurring cardiac complications (peroperative myocardial infarction, IABP usage, long time inotropic agent usage, rhythm disorders) is %6.8; neurologic complications (TIA, CVA, neurocognitive disorders) is %2.4; and the other complications (renal, respiratory, bleeding revision etc.) is %6.7.

The factors that effective on mortality age, high risk euroscore count, emergent operation, left ventricular functions, cross clamping and by pass time, preoperative neurologic disorders are found to be significant. In this study ROC curve analysis for mortality showed the cut off point of age is 60 (sensitivity %81,05, spesifity %45,95) and over and cut off point for cross clamping time (sensitivity %52,63, spesifity %64,23) is 38 minutes and over.

CONCLUSION: Hypothermic intermittent cross clamping technique can be used safely and easily on low and intermediate risk patients but for high risk patients with serious left ventricular dysfunction, age and cross clamping time must be considered carefully.

KEYWORDS: ACBG, Hypothermic Intermittent Cross Clamping Technique Analysis

OP 086 - READMISSION TO INTENSIVE CARE UNIT IN 3729 ISOLATED AORTO-CORONARY BYPASS OPERATIONS

Cakalagaoglu C., Kantarci O., Kutlay F., Bulbul S., Keser S., Yagci S., Toklu H., Yigiter B.

Switzerland Hospital, Department of Cardiovascular Surgery, Istanbul, Turkey

INTRODUCTION: In cardiac surgery re-admittance to intensive care unit is causing higher mortality and morbidity for patient and increasing hospital cost.

MATERIAL-METHOD: During January 2002 to December 2007, 3729 patients with isolated coronary bypass graft operation with hypothermic intermittent aortic cross clamping technique performed consecutively by the same surgical team and 145 of them have returned to intensive care unit. These patients were investigated for the reasons and analyzed statistically.

RESULTS: For the patients that transferred to hospital ward from intensive care unit and returned back mortality rates are determined significantly higher ($p<0,01$). Mortality risks for these patients increased 17.69 times higher. When the mean age of patients that re-admitted to ICU and non readmitted compared there is significant difference between the patient groups (65/59,77)($p<0,01$). Also cross clamping and bypass time for these two patient groups found statistically significant and re-admitted patients showed increased cross clamping and bypass time ($p<0,01$). The patients over 60 age, cut off value for ROC analyse made before for 3729 patients, re-admittance rates are significantly higher than the patients under 60. And also women showed higher rates of re-admittance (%5,6/3,4) ($p<0,01$). The circumstance of lower ejection fraction rates and diabetes mellitus are responsible for re-admittance too ($p<0,01$). Presence of COPD increased readmittance 17.88 times (%95 CI 4,487-71,254) and for neurologic disorders 6.141 times (%95 CI 4,193-8,995). Additionally emergent operations, number of anastomosis and intensive care unit staying time are found to be related with re admittance. ($p<0,01$)

CONCLUSION: the factors described above that related with re-admittance must be intensively examined preoperatively. High risk patients must be evaluated carefully before the transfer to hospital ward, especially for patient with COPD and peroperative complication occurred patients, intermediate intensive care unit follow ups are recommended.

KEYWORDS: Intensive Care Unit, Readmission

OP 088 - LOW CARDIAC OUTPUT SYNDROME AFTER ISOLATED CORONARY BYPASS SURGERY; AN ANALYZE OF RISK FACTORS AND OUTCOME

Alhan C., Senay S., Toraman F., Karabulut H.

Acibadem Kadikoy Hospital, Department of Cardiovascular Surgery, Istanbul, Turkey

INTRODUCTION: This study aims to analyze the risk factors and effect on outcome parameters of low cardiac output syndrome after isolated coronary bypass surgery.

METHODS: A total of 3736 patients who underwent isolated coronary bypass surgery between 1999 and 2008 were analyzed. Risk factors for the development of low cardiac output syndrome and outcome analysis is performed.

RESULTS: Low cardiac output syndrome is determined in 307 (8, 2%) patients. The number of patients which intraaortic balloon pump used was 53 (1, 5%). Risk factors for the development of low cardiac output syndrome was determined as; myocardial infarction in 24 hours preoperatively ($p=0, 0001$; OR: 5, 4; 95% CI: 3, 2-9, 2), preoperative congestive heart failure ($p=0, 001$; OR: 2, 8; 95% CI: 1, 5-5, 1) left ventricular ejection fraction $\leq 30\%$ ($p=0, 0001$; OR: 2, 3; 95% CI: 1, 4-3, 6), age >70 ($p=0, 0001$; OR: 2, 1; 95% CI: 1, 6-1, 7) diabetes mellitus ($p=0, 01$; OR: 1, 7; 95% CI: 1, 1-2, 5), hypertension ($p=0, 039$; OR: 1, 2; 95% CI: 1, 01-1, 6) in regression analysis. When compared between the patients with and without low cardiac output syndrome; mortality rate (%) (7, 5 vs. 0, 3; $p<0, 0001$), hospital stay time (d) (7, 2 $\pm$ 7, 2 vs. 5, 1 $\pm$ 2, 9; $p<0, 0001$), postoperative drainage (ml) (715, 8 $\pm$ 466, 1 vs. 590, 4 $\pm$ 323, 6; $p<0, 0001$), intubation time (h) (12,7 $\pm$ 42,7 vs. 4, 3 $\pm$ 4, $p<0, 0001$) were higher at the patients with low cardiac output syndrome.

CONCLUSION: There is an increased mortality and morbidity in patients with low cardiac output syndrome. Perioperative advanced care for the patients with myocardial infarction in 24 hours preoperatively, preoperative congestive heart failure, left ventricular ejection fraction $\leq 30\%$, age >70 , diabetes mellitus and hypertension may be beneficial for limiting the rate of low cardiac output and adverse outcome.

KEYWORDS: low cardiac output syndrome, coronary bypass surgery, risk factors, outcome

OP 089 - DOES VITAMIN C OR ITS COMBINATION WITH VITAMIN E IMPROVE RADIAL ARTERY ENDOTHELIAL FUNCTION IN PATIENTS AWAITING CORONARY ARTERY SURGERY OR NOT ?

Ulas M. M.¹, Turkvatan A.², Lafci G.¹, Tasoglu I.¹, Yalcinkaya A.¹, Yener A. U.¹, Yener O.², Diken A. I.¹, Cumhuri T.², Cagli K.¹

¹*Turkiye Yuksek Ihtisas Hospital, Cardiovascular Surgery Clinic, Ankara, Turkey*

²*Department of Radiology, Turkey Yuksek Ihtisas Hospital, Ankara, Turkey*

BACKGROUND: In the setting of atherosclerosis, vascular endothelial vasomotor function is abnormal. Increased oxidative stress has been implicated in the pathogenesis of atherosclerosis associated with traditional cardiovascular risk factors. Therefore we evaluated the vasodilating effects of two antioxidants, vitamin C and E, on radial artery and endothelium-dependent responses in patients awaiting coronary artery bypass surgery.

METHODS: Studies were performed before and 2 hours after oral administration of 2 g vitamin C in 31 patients or oral administration of 2 g vitamin C with 600 I.U vitamin E in 31 patients. Endothelial function of radial artery was assessed using high-resolution vascular ultrasound to measure the dilator response to flow during reactive hyperemia (flow mediated dilatation). For each patient radial artery images were obtained 2 and 5 cm above the radial styloid. After baseline measurements of the diameter and flow velocity in the non-dominant radial artery were taken, a blood pressure cuff placed around the arm was inflated with a pressure of 200 mmHg. Occlusion was maintained for 5 minutes. The cuff was then rapidly deflated, and measurements were taken after 15 and 60 seconds. Radial artery lumen diameter, lumen area, and flow volume were measured and recorded. In group 1, patients were then given 2 g oral ascorbic acid and a repeat radial ultrasound study was performed 2 hours after treatment. In group 2, patients were then given 2 g oral ascorbic acid and 600 I.U alpha-tocopherol and a repeat radial ultrasound study was performed 2 hours after treatment.

RESULTS: Vitamin C has been shown to reverse endothelial dysfunction in patients with ischemic heart disease like vitamin E.

CONCLUSION: We here conclude that vitamin C and E would improve abnormal endothelium-dependent vasomotor function in patients with atherosclerosis.

KEYWORDS: antioxidants, endothelial function, vitamin C, vitamin E, atherosclerosis

FROM RISK ASSESSMENT TO VARIETY OF SURGICAL TECHNIQUES IN CORONARY ARTERY DISEASE

OP 093 - COMPARISON OF TWO DIFFERENT COMMONLY USED VENOUS CANULAE IN PATIENTS UNDERGOING CORONARY ARTERY BYPASS GRAFTING FOR MULTIVESSEL DISEASE

Aytacoglu B. N., Karaca K., Sucu N., Ozeren M., Vezir O., Dikmengil M.

*Mersin University Faculty of Medicine, Department of Cardiovascular Surgery, Mersin, Turkey***OBJECTIVE:** The aim of the study was to investigate the flow differences between two venous canulae that are routinely used during CABG operations for multivessel disease patients.**MATERIALS-METHODS:** 60 consecutive patients were recruited for this investigation that had to have a bypass graft on at least either one of the circumflex or the right coronary arteries. Patients were divided into two groups. In the first group, which consisted of 30 patients, the atrio-caval cannulation was done with a two stage venous canula (Figure 1) and the group was named as the TS Group. The second group was also consisted of 30 patients and they were cannulated with a single stage venous canula (Figure 1), hence the group was named as the SS Group. Initial pump flows were noted separately for each patient at the commencement of cardiopulmonary bypass and all the flow rate changes during distal anastomoses to the circumflex and/or right coronary arteries were recorded. Synchronously mixed venous oxygen saturations were also estimated.**RESULTS:** In the TS Group patients, pump flows had to be reduced almost in all but 1 (96.7%) patient during the distal anastomosis period to the circumflex and/or right coronary arteries. In 9 patients (30%) pump flow had to be lowered to ½ of the standard and in 20 (66.7%) patients it had to be lowered to ¼ of the standard flows due to reduced venous blood return. Mixed venous oxygen saturations of the patients were also significantly lowered in whom the pump flows had to be reduced. No pump flow reduction was needed in the SS Group patients during the distal anastomosis periods to the circumflex and/or right coronary arteries and yet there were no noticeable change in their mixed venous oxygen saturations. When the changes in the flow rates and venous oxygen saturations of the two groups were compared the results were found to be statistically significant ($p < 0.001$ and $p < 0.05$ respectively).**CONCLUSION:** Patients undergoing CABG with mild hypothermia usually do not present with ischemic manifestations following their operations but patients with severe preoperative peripheral, carotid, renal, intestinal and/or pulmonary problems may have difficulties or even may present with manifest ischemic outcomes due to flow changes during CPB. Using a single stage venous canula during CPB for the patients especially with multivessel disease may help in maintaining the calculated flow rates without any compromise to the tissue perfusion.**KEYWORDS:** Venous canula, CABG, multivessel heart disease**Figure 1***Appearance of the compared venous canulae***OP 094 - COMBINED CORONARY ARTERY BYPASS GRAFTING AND CAROTID ENDARTERECTOMY**Ipek G.¹, Omeroglu S. N.¹, Goksedef D.¹, Ureyen C.¹, Kilic Z.¹, Sayilgan C.², Yuceyar L.², Erolcay H.²¹*Department of Cardiovascular Surgery, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey*²*Department of Anesthesiology and Reanimation, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey*Between May 2007 and May 2008, a total of 6 patients underwent combined on-pump Coronary Artery Bypass Grafting (CABG) and carotid endarterectomy without using shunt and saphenous patch plasty. The patients with carotid endarterectomy performed using shunt and saphenous patch plasty were excluded from the study. The mean age of the patients was 66 ± 7.8 years. Five patients were male (83.3%) and one patient was female (16.7%). All patients received one sided carotid endarterectomy. Carotid endarterectomy was performed without using shunt and the arteriotomies were primarily closed without using saphenous vein patch. CABG was performed on pump in all patients. Four patients (66.7%) received 3-vessel bypass, while 2 patients (33.4%) received 4-vessel bypass. The mean carotid artery clamping period was 6 minutes. LIMA was used in 4 patients (66.7%). Carotid endarterectomy was first performed before CABG in all patients. Mortality and morbidity did not develop in these patients. The mean intensive care unit stay was 2 days. The mean postoperative hospitalization period was 7.83 ± 2.04 days.

Combined CABG and carotid endarterectomy can be safely performed when both coronary artery and carotid artery lesions are severe.

KEYWORDS: Atherosclerosis, CABG, Carotid endarterectomy, Combined surgery.**OP 095 - RESULTS OF TREATMENT METHODS IN CARDIAC ARREST FOLLOWING CORONARY ARTERY BYPASS GRAFTING**

Guney M. R., Yapici F. M., Ketenci B., Cimen S., Demirtas M. M., Tuygun A. G., Olsun A., Ozler A.

*Department of Cardiovascular Surgery, Siyami Ersek Thoracic and Cardiovascular Surgery Center, Istanbul, Turkey***BACKGROUND AND AIM OF THE STUDY:** Emergency revascularization or invasive/non-invasive interventions in Intensive Care Unit (ICU) are two main treatment methods in cardiac arrest following coronary artery bypass grafting (CABG). We evaluated the short and long term consequences of these two methods and discussed the indications for re-revascularization.**METHODS:** Between 1998 and 2004, 148 CABG patients, who were complicated with cardiac arrest were treated with emergency revascularization ($n=36$, Group R) and ICU procedures ($n=112$). Revascularizations are mostly blind operations depending on clinical/hemodynamic criteria. These are; no respond to resuscitation, recurrent tachycardia/fibrillation and severe hemodynamic instability after resuscitation. Re-angiography could only be performed in 3.3% of the patients. Event-free survival of groups was calculated by Kaplan-Meier method. Events are; Death, recurrent angina, myocardial infarction, functional capacity and re-intervention.**RESULTS:** Seventy percent of patients, who were complicated with cardiac arrest, had perioperative myocardial infarction (PMI). This rate was significantly higher in Group R ($p=0.013$). The major finding in group R was graft occlusion (91.6%). During in-hospital period, no difference was observed in mortality rates between the two groups. However, hemodynamic stabilization time ($p=0.012$), duration of hospitalization ($p=0.00006$) and mechanical support use ($p=0.003$) significantly decreased by re-revascularization. During the mean 37.1 ± 25.1 month follow-up period, long term mortality ($p=0.03$) and event free survival ($p=0.029$) rates were significantly in favor of Group R.**CONCLUSION:** Better short and long-term results were observed in the re-revascularization group.**KEYWORDS:** Coronary Artery Bypass, Heart Arrest, Resuscitation

OP 096 - ACUTE EFFECTS IN PLASMA TOTAL ANTIOXIDANT CAPACITY AND TOTAL OXIDATIVE STATUS LEVELS FOLLOWING OFF-PUMP AND ON-PUMP CORONARY ARTERY BYPASS SURGERY

Rabus M. B.¹, Demirbag R.², Sezen Y.², Yildiz A.², Kalayci S.¹, Yilmaz R.², Erel O.², Taskin A.², Guzelmeric F.¹, Balkanay M.¹, Yakut C.¹

¹Kosuyolu Heart and Research Hospital, Istanbul, Turkey

²Medical Faculty of Harran University, Sanliurfa, Turkey

PURPOSE: We investigated the acute effects of off-pump and on-pump coronary artery bypass surgery on plasma TAC and TOS levels in patients with coronary artery and heart valve disease, and the results were compared with patients operated by off-pump technique

METHODS: Sixty-eight consecutive patients undergoing first elective off- and on-pump coronary bypass surgery and on-pump heart valve surgery were included in this prospective study. Plasma levels of TAC and TOS were measured to compare in 38 patients undergoing on-pump coronary artery bypass grafting (CABG) (group A), 15 patients undergoing off-pump coronary artery bypass grafting (OPCAB) (group B) and 15 patients undergoing on-pump heart valve replacement (group C).

RESULTS: The changes of the TAC levels in the first postoperative day in group A and the first and second day postoperative days in group C were not significant. Increases of the TOS levels in the first hour and second postoperative day was not also significant. The all others changes were significantly. In there groups of patients (especially in group B), markedly decreased level of TAC was observed. The increase of TOS level-especially on the period of intraoperative time was significant in all groups (especially in group C) (Figure 1).

CONCLUSIONS: Our results show that changes of TAC and TOS levels are similar found after reperfusion in OPCAB operation compared with CABG operation.

KEYWORDS: total antioxidant capacity, total oxidative status, off-pump, CABG

OP 097 - A NEW GRAFT HOLDER FOR CABG (2 YEARS EXPERIENCE)

Okutan H.

Suleyman Demirel University, Medical School Department of Cardiovascular Surgery, Isparta, Turkey

Herein are reported the experience of a new graft holder for coronary artery bypass grafting (CABG) over the past 2-year period. Many cardiac surgeons commonly use microvascular forceps to hold and open the orifice of the graft during CABG. However, this traditional technique has a number of pitfalls such as inadequate exposure, graft injury, and slips of the graft from the forceps during anastomosis.

The holder consists of a flexible arm and a handle. The handle can be used to easily hold the graft either by an assistant or attached to a flexible arm. The flexible arm can be used while attached to a sternal retractor. It facilitates opening the heel of the graft and stitching the most difficult angle of the anastomosis.

The innovative device has several advantages. It could be used during distal and proximal anastomosis of both arterial and venous grafts in off- or on-pump bypass. Successful proximal and distal anastomosis for CABG is dependent on good exposure and skillful assistance. The new graft holder provides excellent visualization of the anastomotic site, prevents back wall suturing and endothelial injury, and does not require skillful assistance. In addition, because these coronary probes were originally designed with different sizes for safe placement in grafts, the risk of endothelial injury is minimized. The new graft holder can be used by coronary surgeons with safety.

KEYWORDS: Anastomosis, coronary artery bypass grafting, device, graft holder

OP 098 - HOPELESSNESS DURING CARDIAC SURGERY; AN ANALYZE OF RISK FACTORS AND OUTCOME

Erkus B., Senay S., Toraman F., Karabulut H., Alhan C.

Acibadem Kadikoy Hospital, Department of Cardiovascular Surgery, Istanbul, Turkey

INTRODUCTION: Psychosocial factors have an important effect on morbidity and mortality in coronary heart disease. Depression is the main psychosocial disorder during cardiac surgery and is usually accompanied with hopelessness. This study aims to determine the effect of cardiac surgery on hopelessness and analyze the outcome parameters in relation with the risk factors.

METHODS: A total of 46 patients were interviewed before and after the operation. Frequency and severity of hopelessness is examined with Beck Hopelessness Scale and the Center for Epidemiologic Studies-Depression Scale. The risk factors and outcome parameters are evaluated.

RESULTS: A total of 25 (54, 3%) patients were at the age interval of 60-80, 20 (43, 5%) were at 40-60, 1 (2, 2%) was at >80 and 35 (76, 1%) of the patients were male, 30 (66, 2%) patients had more than 2 children, 23 (50,0%) of the patients had the educational degree of high school or more, 41 (89, 1%) were married, only 14 (30,4) had a care holder other than his/her wife/husband and 10 (21,7) had defined his/her wife/husband as a primary depressant factor or him/her; this factor was the most frequent reason. The mean hopelessness index was 4, 7±2, 9 preoperatively and 3, 0 ± 2, 1 postoperatively (p<0, 05). The mean Euroscore of the group was 3, 5 ±2, 5. The mean intensive care unit stay time (h) and hospital stay time (d) were 29,3± 26,4 and 7,6± 3,4 respectively among the patients. These parameters were similar when compared in patients with mild hopelessness or normal preoperatively (28, 5± 28, 3 vs30, 4± 24, 3; p>0, 05 and 7, 6± 2, 7vs.7, 5 ± 4, 3; p>0, 05; respectively). When compared according to the postoperative level of hopelessness the mean intensive care unit stay time was longer in the patients with postoperative mild hopelessness but hospital stay time was similar (40,0± 41,2 vs23,1± 6,5; p<0,05 and 7, 6± 3, 0vs.7, 6 ± 3, 7; p>0,05; respectively).

CONCLUSION: The husband/wife factor is the most frequent reason defined by the patients for hopelessness. There is a decrease of hopelessness index after the operation during cardiac surgery. Persistence of a high index of hopelessness postoperatively is related with increased intensive care unit stay time.

KEYWORDS: hopelessness, coronary bypass surgery, risk factors, outcome

OP 099 - "EFFECTS OF INTRAVENOUS N-ACETYLCYSTEINE ON PERIPROCEDURAL MYOCARDIAL INJURY AFTER ON-PUMP CORONARY ARTERY BY-PASS GRAFTING

Peker R. O.¹, Peker T. T.², Erdogan D.³, Ozaydin M.³, Kapan S.¹, Sutcu R.⁴, Ibrism E.¹

¹Department of Cardiovascular Surgery, Suleyman Demirel University, Isparta, Turkey

²Department of Anesthesiology, Suleyman Demirel University, Isparta, Turkey

³Department of Cardiology, Suleyman Demirel University, Isparta, Turkey

⁴Department of Biochemistry, Suleyman Demirel University, Isparta, Turkey

BACKGROUND: Myocardial ischemia/reperfusion injury in patients undergoing coronary artery by-pass grafting (CABG) involves the reperfusion-induced conversion of reversible injured myocardial and endothelial cells. N-acetylcysteine (NAC) has a potential being the minimization of the impact of reperfusion injury. Therefore, we aimed to evaluate the effects of intravenous NAC on periprocedural myocardial injury after CABG.

MATERIAL-METHODS: The population of this prospective-randomized, double blind, placebo controlled study consisted of 40 patients undergoing on-pump CABG. All the patients were treated with standard medical therapy and eligible patients were randomized to NAC group (n = 19; intravenous infusion for 1 hour before the procedure at a dose of 50 mg/kg, followed by intravenous infusion for 48 hours after the operation at a dose of 50 mg/kg/day) and placebo (saline) group (n = 21). The study drug and placebo infusions were set to infuse at the same rate.

RESULTS: Demographic and procedural variables were similar in the both groups (All p > 0.05). CK-MB mass levels did not significantly differ between the groups at both preoperative and postoperative periods. Similarly, cTnT levels were similar in the groups at all periods. Eight patients in the NAC group and 9 in the placebo group had increased CK-MB >3 times normal value.

CONCLUSIONS: Results of this study indicate that periprocedural use of NAC as intravenously did not attenuate myocardial damage after off-pump CABG surgery.

KEYWORDS: N-acetylcysteine, cardiac surgery, myocardial damage

UPDATE IN ACUTE CORONARY SYNDROME, FIBRINOLYTIC THERAPY AND CORONARY SURGERY BYPASS

OP 103 - PREOPERATIVE INTRAAORTIC BALLOON PUMP (IABP) SUPPORT IN HIGH RISK PATIENTS UNDERGOING CORONARY ARTERY BYPASS GRAFTING

Ak K.¹, Isbir S.¹, Tekeli A.², Adademir T.¹, Gursu O.¹, Guler A.¹, Arsan S.¹

¹Marmara University, School of Medicine Department of Cardiovascular Surgery, Istanbul Turkey

²Bahcelievler Medicana Hospital, Cardiovascular Surgery, Istanbul Turkey

OBJECTIVES: Due to recent advancements in medical management of atherosclerotic heart disease and interventional cardiology, the number of cardiac surgical patients with multiple co-morbidities and diffuse coronary artery disease is steadily increasing. In this study we aimed to present our experience in preoperative intraaortic balloon pump (IABP) support in high risk patients undergoing coronary artery bypass grafting (CABG).

PATIENTS AND METHODS: Between January 2007 and July 2008, 1535 patients underwent CABG. Of which, 42 (2,7%) patients had IABP support preoperatively (24 to 48 hours before operation). The mean age was 65,3±7,3 years and the 32 of the cases were male. The mean Euroscore was 7,3±1,1. The indications for IABP insertion were severe left ventricular dysfunction in the % 50 (n=21), unstable hemodynamics related acute myocardial ischemia in the % 33,3 (n=14), primary PTCA failure in % 7,2 (n=3) and malignant ventricular arrhythmias in the % 9,5 (n=4) of the patients. In patients with preoperative congestive heart failure findings, renal dose Dopamine was administered for forceful diuresis. Data related to the patients and clinical outcome were collected retrospectively.

RESULTS: Early mortality was observed in 11,9 % of the patients (n=5). The causes for early mortality were low cardiac output (n=3), respiratory dysfunction (n=1) and acute renal failure (n=1). Aortic cross clamping and cardiopulmonary bypass times were 34,3 ± 6,3 minutes and 54,4±12,2 minutes, respectively. In addition to IABP, weaning from CPB was achieved by high dose Dopamine (10-12 microgram/kg/min) in the % (n=14) and by both high dose dopamine and adrenalin support (0,06-0,1 microgram/kg/min) in the % (n=11). The mean number of distal anastomoses was 3,1±0,7. The most common early postoperative complications were low cardiac output (n=12) and reperfusion arrhythmias (n=9).

CONCLUSION: Our results demonstrate that preoperative IABP support may be helpful to improve clinical outcome and decrease early mortality in high risk CABG patients.

KEYWORDS: preoperative, intraaortic balloon pump, high risk, coronary artery bypass surgery

OP 104 - ASSESSMENT OF GRAFT FLOW MEASUREMENT WITH TRANSIT TIME FLOWMETRY BY INTRAOPERATIVE DILTIAZEM INFUSION IN CORONARY ARTERY BYPASS SURGERY PATIENTS

Erbasan O., Erdem O., Kemaloglu C., Golbasi I., Turkay C., Mete A., Bayezid O.

Department of Cardiac and Vascular Surgery, University Hospital of Akdeniz, Antalya, Turkey

Success of a coronary artery bypass surgery operation is defined with the patency of the grafts used. Surgical mortality and morbidity are mostly associated with graft dysfunction. Coronary angiography is an invasive evaluation technique which can be applied objectively. Transit time flowmeter evaluation is a simple and effective alternative technique. Low flow patterns are commonly caused by vasospasms of arterial grafts, kink and twists, thrombi and technique mistakes of the anastomosis. Early graft failure is associated with early postoperative catastrophic clinical status.

One hundred forty-six patients undergoing on-pump isolate coronary artery bypass grafting by the same surgical team were included in the study. Intraoperative diltiazem infusion was given 71 patients (group A), 75 patients had no diltiazem administration (group B). Total graft numbers were 69 IMA, 71 radial artery and 60 saphenous vein in group A and 73 IMA and 102 saphenous vein in group B. All grafts flow measurements were done with transit time flowmeter.

In group A, mean flow of IMA grafts were higher than group B (Qmean 55 ml/min in group A, 43 ml/min in group B). There was no difference for saphenous vein graft flows. Graft revision was required for 2 grafts in group A and for 3 grafts in group B. Incidences of overall mortality and perioperative myocardial infarction were zero.

KEYWORDS: Transit time flowmeter, Coronary artery bypass surgery, Graft dysfunction, Graft revision

OP 105 - REDO OFF-PUMP CORONARY ARTERY BYPASS GRAFTING VIA LEFT THORACOTOMY

Kurtoglu M., Ates S. M., Duvar I., Bakkaloglu B., Besbas S., Aybek T., Karagoz H.

Department of Cardiovascular Surgery, Guven Hospital, Ankara, Turkey

BACKGROUND: In this study, we reviewed our experience in a selected group of patients undergoing redo off-pump coronary artery bypass grafting (CABG) from descending aorta to circumflex artery and branches retrospectively.

In redo coronary revascularization (CABG), median sternotomy is the first choice depending on the target area of revascularization. However, re-sternotomy has risks, such as injury to patent grafts, graft embolism and adhesions. We used left thoracotomy for CABG, with grafting between the descending aorta and circumflex territory in off pump technique, to avoid such risks of repeat sternotomy.

METHODS: Between January 2001 and August 2008 eighteen patients underwent redo off-pump CABG from descending aorta to circumflex artery and branches via left thoracotomy at our institution. Of the eighteen patients 15 were male (83.3%) and 3 female (16.6%) with a mean age of 59.3 years. Major risk factors were hyperlipidemia (66.6%) and smoking (66.6%). The saphenous vein (2/18) or radial arteries (16/18) were used grafting. The main reasons for redo CABG in this group of patients was new lesion formation in 15 (83.3%) and graft occlusion in 6 (33.3%), both in 3 (16.6%).

RESULTS: Average operation time was 126.3 ± 20 minutes. 21 bypasses were performed, with one receiving two radial arteries in 18 patients. Average respiratory assist time was 4.35 ± 1.1 hours. ICU stay time was 20.1 ± 3.8 hours. 8 of 18 patients needed postoperative transfusion. Average hospital stay was 4.6 ± 3.28 days. One patient (5.5%) with poor left ventricle died in hospital. There were no neurological or bleeding complications. Average follow-up period was 26.4 months (ranging between 2-89 months). Two of 17 surviving patients (11.7%) died during follow up, one because of intracranial aneurysm rupture and bleeding, and the other sudden death of unknown cause.

CONCLUSIONS: Redo off-pump CABG via left thoracotomy provides a safe and effective surgical approach to patients who require revascularization of circumflex artery and branches. Avoiding risks of re-sternotomy and cardiopulmonary bypass may reduce the rate of complications and therefore hospital costs.

KEYWORDS: Minimally invasive coronary artery bypass grafting, Thoracotomy, Reoperation

OP 106 - LONG TERM FOLLOW UP LEFT VENTRICULAR FUNCTION AFTER REPAIR OF LEFT VENTRICULAR ANEURYSMS

Erbasan O.¹, Erdem O.¹, Turkey M.², Turkey C.¹, Yilmaz H.³, Golbasi I.¹, Mete A.¹, Bayezid O.¹

¹Department of Cardiac and Vascular Surgery, University Hospital of Akdeniz, Turkey

²Department of Public Health, University Hospital of Akdeniz, Turkey

³Department of Cardiology, University Hospital of Akdeniz, Turkey

OBJECTIVE: Myocardial infarction may be complicated by the formation of a left ventricular aneurysm that distorts the normal elliptical geometry of the ventricle to produce a dilated spherical ventricle with limited contractile and filling capacities. One of the consequences is congestive heart failure, which may be refractory to medical therapy and require surgical treatment. Surgical methods to restore the volume and shape of the left ventricle have evolved over the years. The aim of this study was to evaluate left ventricular function after repair of LV aneurysm, late term postoperatively.

METHODS: 97 patients underwent repair of postinfarctional LV aneurysms, between 1992 and 2003. There were 87 patients males and 10 females. 61 patients underwent classical aneurysmectomy and 36 patients had endoaneurysmorrhaphy. There was not significant difference between the groups with respect to age, gender, diseased coronary artery number, urgency of the procedure, preoperative LVEF, functional status, and comorbid risk factors. Their mean preoperative EFs were 39.9 % and 39.4 %, and the preoperative NYHA functional classes were 2.8±0.8 and 3.0±0.7. <30 days mortality after classical aneurysmectomy was 9.8% (n=6) and 2.7% (n=1) in the group with endoaneurysmorrhaphy.

RESULTS: Long term follow-up was available for 80 of these patients (48 patient in the linear closure group, 32 in the endoaneurysmorrhaphy group). Cardiac related mortality rates were 16.6 % (n=8) in the group with classical aneurysmectomy and 18.7 % (n=6) in the group with endoaneurysmorrhaphy. In the follow-up patient population, the preoperative ejection fractions were 40.2% and 39.3%. Postoperatively, ejection fractions increased 44.2% and 43.8% at the last follow-up. In the groups with classical aneurysmectomy and endoaneurysmorrhaphy, preoperative and postoperative NYHA functional class was changed from 2.8 to 1.6, and 2.9 to 1.3. In the first year, 5 years and 10 years, the survival rates of patients who underwent classical aneurysmectomy were 98%, 91%, 56% and those for patients who underwent endoaneurysmorrhaphy were 100%, 88%, 59% (p=0,2).

CONCLUSION: Left ventricular aneurysm can be repaired with acceptable surgical risk. Surgical treatment of left ventricular aneurysm is associated with a improvement in long term survival and symptomatology.

KEYWORDS: Left ventricular aneurysm/surgery; Aneurysmectomy; Linear repair; Endoaneurysmorrhaphy.

OP 107 - ANGIOGRAPHIC OUTCOMES OF THE PATIENTS WHO HAD ST ELEVATION AFTER OFF-PUMP CORONARY BYPASS SURGERY

Burma O., Kork I., Atik C., Arslanoglu Y., Ozcaliskan O., Kuran C., Guzel G., Ustunsoy H.

Gaziantep University, Medical School Cardiovascular Surgery Department, Gaziantep, Turkey

INTRODUCTION: We aimed to demonstrate angiographic outcomes of the patients who had ST elevation after off-pump coronary bypass surgery

MATERIALS-METHODS: 217 patients who underwent off-pump coronary bypass surgery between March 2002 – March 2008 were included in the study. Mean age was 59±8.2. 136 (62 %) were male, and 81 (38 %) were female. In preoperative evaluation, smoking, diabetes mellitus, hypertension, and Chronic Obstructive Lung Disease (COLD) were determined in 94 (%43), 48 (%22), 54 (%24), 16 (%7) patients, respectively. Patients were followed up by clinical findings and electrocardiography in a period of 2 – 72 months. Angiography was performed in patients who are of ST elevation and enzyme alteration.

FINDINGS: 307 distal anastomosis (mean graft number was 1.4) were performed. There were 217 (71 %) LAD, 41 (13%) diagonal, 29(9%) RCA, and 20 (6%) circumflex lesions. LIMA, saphenous vein, RIMA, radial artery were used in 211, 80, 4, and 12 patients, respectively. Mean extubation, ICU-stay, and hospital-stay times were 5,6±2,2 hours, 18,2±6,4 hours, 4,1±1,2 days, respectively. Totally 7 (3.2 %) patients died. ST elevation and enzyme alteration occurred in 18 (8.3 %) patients during ICU and clinic follow-up. ECG alterations were seen in anterolateral derivations. All of the ischemic changes improved in 8-54 hours. ECG and enzyme alterations were not seen in long-term observation. IABP was needed in 6 (2.7 %) patients. Atrial fibrillation occurred in 12 (5.5 %). Patency of LIMA, saphenous vein, radial artery, and RIMA grafts was %99.15, %92.79, %97.8, and 100 %, respectively.

CONCLUSION: It is considered that reversible ECG and enzyme alterations are related to micro-air embolism in off-pump coronary bypass surgery which has high patent graft rates.

KEYWORDS: Off-Pump Coronary Bypass Surgery, Angiographic Outcomes Of The Patients

MEDICAL AND SURGICAL CORONARY PATIENT: WHAT WE HAVE LEARNED FROM RECENT STUDIES?

OP 109 - CORONARY AIR EMBOLISM IN OFF-PUMP SURGERY CAUSED BY BLOWER-MISTER DEVICE

Korkmaz A. A.¹, Guden M.¹, Korkmaz F.³, Yuce M.²

¹Department of Cardiovascular Surgery, Sema Hospital, Istanbul, Turkey

²Department of Anesthesiology, Sema Hospital, Istanbul, Turkey

³Department of Cardiology, Sema Hospital, Istanbul, Turkey

OBJECTIVE: Gaseous emboli caused by the blower mister result in air locks within coronary vessels. We describe the case of a coronary air embolism caused by blower-mister device on off-pump surgery.

MATERIAL-METHODS: 65 year old male patient with diagnosis of 3 vessels coronary artery disease had comorbidities namely COPD and peripheral vascular disease. Left ventricular ejection fraction was 40% while cardiothoracic index was 55%. Consequently, CABG with beating heart technique was planned. After median sternotomy first RDP distal anastomosis was performed due to totally occluded RCA. While Medtronic Starfish was used for heart positioning, Medtronic Octopus 4 was applied for vessel stabilisation with side clamping of the aorta proximal anastomosis were performed. Afterwards LIMA-LAD anastomosis was completed. The saphenous vein graft, the proximal anastomosis of which was already performed, was utilized for OM1 distal anastomosis. Lastly the mentioned graft was used for sequential anastomosis on the OM2 coronary arteries. During this process the operation was continuing fluently. After positioning the heart, when making the toe of the anastomosis on the obtuse marginal, blower-mister was accidentally inserted in the coronary artery, which lead to gaseous emboli in the coronary artery. Rightafter this incident a couple of normal beats were observed, however severe arrhythmias occurred. Hemodynamic instability developed due to compromised LV contractility. Urgently CPB was initiated mandatoraly. Cardiac arrest was achieved with antegrade and retrograde blood cardioplegia. Retrograde cardioplegia was applied to discharge the gaseous emboli in the coronary arteries. The OM2 sequential anastomosis was completed. CPB weaned with medium dosage inotropic and IABP support.

RESULTS: The duration of ICU stay was 3 days. The patient was discharged on the 7th postop days.

CONCLUSION: Coronary artery air embolism can severely complicate the preoperative course for patients undergoing off-pump CABG, leading to myocardial ischaemia or infarction, life-threatening arrhythmias, persistent hypotension and even cardiac arrest. Early awareness and diagnosis of coronary air with the establishment of appropriate management strategies may prevent its potentially lethal consequences.

We advocate the following precautions to prevent the development of gaseous emboli during the use of blower mister.

- 1)CO2 must be used instead of O2 or room air
- 2)Air flow must be kept at the minimal level, and should be increased unless it is necessary for a clear view.
- 3)Blower mister must be kept as distant as possible from the coronary artery.

KEYWORDS: Coronary air embolism, Off-Pump surgery

OP 112 - FEASIBLE FACE OF CORONARY ARTERY SURGERY: CORONARY ENDARTERECTOMY

Yurtman V.¹, Akpınar M. B.¹, Uyar I. S.¹, Abacılar A. F.¹, Okur F. F.¹, Alayunt E. A.², Tellı A.¹

¹Department Cardiovascular Surgery, TUTAV Group of Sifa Hospitals, Izmir, Turkey

²Department Cardiovascular Surgery, Ege University, Izmir, Turkey

BACKGROUND: CABG associated coronary endarterectomy is a high-risk procedure. 1387 of 255 patients with multivessels coronary artery disease undergone coronary artery bypass grafting in whom coronary endarterectomy was performed between January 2007 – August 2008. We sought to evaluate the impact of recent advances in operative and perioperative period after endarterectomized CABG.

METHODS: There are two patients categories: In one of them unstable angina pectoris is refractory to the medical treatment with viable myocardium and large, total or subtotal coronary artery lesions are angiographically demonstrated, In the other category such coronary artery lesions are not angiographically demonstrated and the indication of coronary endarterectomy is detected at the time of coronary arteriotomy, anyway these lesions are inappropriate for receiving a coronary bypass graft unless previous endarterectomy is performed. The present report evaluates the factors influencing early morbidity and mortality in our initial experience with this procedure associated to coronary artery bypass grafting.

Technique for coronary endarterectomy: Once the heart has been arrested and entirely decompressed, the coronary arteriotomy is performed an distally widened to expose the lesion in its complete length, otherwise is to perform two coronary arteriotomy, the first at its proximal extremity and the other one at its distal extremity, with the aid of a dissector clamp the cleavage way between the adventitial and medial layers is achieved, then the lesion is dissected completely and extracted from the coronary artery. In the second technique the cleavage way is reached proximally and distally with the aid of the dissector clamp and the lesion is then disattached and tracted out gently through the proximal arteriotomy, after the atheromatous plaque has been extracted from the coronary artery the vessel is reconstructed with a venous patch or enlarging the distal extremity of a venous graft to be anastomosed to the wide arteriotomy, a conduit for CABG is anastomosed to an opening in the venous patch to perform revascularization.

RESULTS: From a total number of 255 patients, 331 endarterectomies were performed, RCAS was the most frequently approached. All patients were undergone double coronary artery bypass grafting or more (Table 2). The number of distal anastomosis/patient was 3.8 and endarterectomy/patient was 1.29 (Table 2 and 3). The Table 4 describes early postoperative complications. The main factors affecting hospital mortality were diagnosis of diabetes mellitus, EF under 30%, more than triple endarterectomy and especially circumstances of unsuccessful purified distal vessels.

Currently nearly 20% of patients undergone coronary artery bypass grafting require coronary endarterectomy in our clinic. The need of this procedure indicates high-complexity coronary artery lesions, a group of high-risk patients in whom CABG is not possible unless previous coronary endarterectomy is performed, and morbidity and hospital mortality rates do not increase in comparison with CABG without endarterectomy.

KEYWORDS: Coronary arteries endarterectomized, CABG/coronary endarterectomy, coronary endarterectomy/patient, early postoperative complications, hospital mortality and morbidity.

Table 2.

CABG EA	Associated	Number of Patients	Percentage (%)
CABG X 2		16	6
CABG X 3		116	45
CABG X 4		112	44
CABG X 5		11	4

Table 3.

CABG EA	Associated	Number of Distal EA	Number of Total Vessel EA	Percentage (%)
RCA		168	144	52,6
RCA(PDA)		16	3	5
LAD→LIMA		72	8	19
LAD→SAPHENOUS VEIN		23	5	7,2
D1		22	0	6,8
OM1		25	0	7,6
OM2		5	0	1,6

Table 4.

Postop Complications	Number of Patients	Percentage (%)
Low Cardiac Output	3	<1
Myocardial Infarction	2	<1
Supraventricular Dysrhythmias	19	7
Acute Renal Failure	3	<1
Mortality	2	<1

OP 115 - THE COMPARISON OF POSTOPERATIVE PULMONARY FUNCTION TESTS IN PATIENTS UNDERGOING ON-PUMP AND OFF-PUMP CORONARY BY-PASS OPERATION: A PROSPECTIVE STUDY

İyem H.¹, Alyan O.², Karahan Z.², Ayaz F.¹

¹Dicle University, Department of Cardiovascular Surgery, Diyarbakir, Turkey

²Dicle University, Department of Cardiology, Diyarbakir, Turkey

OBJECTIVE: we aimed to investigate the negative effect of cardio by-pass surgery on pulmonary function tests in early postoperative term by comparing pre- and postoperative pulmonary function tests and level of blood gases.

METHODS: One hundred and four consecutive patients underwent CABG surgery between January 2008 and July 2008 were enrolled to prospective study. Patients were divided into two groups: group 1 (n=52) included patients who underwent on-pump cardiac surgery, group 2 (n=52) included patients who underwent off-pump cardiac surgery.

RESULTS: In present study, 58 males and 46 females, overall 104 patients (mean age 62.2±6.4) were evaluated. Overall mortality was 4.80 % (2.88% in On pump, 1.92% in Off pump). Postoperative bleeding volume, duration of extubation, follow-up in coronary care unit and hospitalization were lesser in off-pump group compared on-pump group (p<0.05). Although there was no difference in FEV1 level in preoperative period, it was higher with statistical significance in off-pump group compared on-pump group (77.1±4.2 vs 63.2±4.2, p<0.005, respectively) at postoperative 6th day. FEV1/VC rate was also higher with statistical significance in off-pump group than on-pump group (88.1±12.1 vs 66.4±14.2, p<0.001, respectively) at postoperative 6th day while there was no difference in preoperative period.

CONCLUSION: We think that the off-pump technique is more useful not only in high risk patients but also in all patients will undergone CABG surgery when the negative effect of CPB just on pulmonary function tests is considered.

KEYWORDS: Coronary artery by-pass graft, on-pump, off-pump, pulmonary function tests

OP 116 - THE EFFECT OF BODY MASS INDEX ON CORONARY ARTERY BYPASS GRAFTING

Goksedef D.¹, Omeroglu S. N.¹, Balkanay O. O.¹, Talas Z.¹, Deser B.¹, Karadag B.², Sayilgan C.³, Yuceyar L.³, Ipek G.¹

¹Department of Cardiovascular Surgery, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey

²Department of Cardiology, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey

³Department of Anesthesiology and Reanimation, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey

AIM OF THE STUDY: Body mass index (BMI) is not one of the risk factors that are used to calculate Euro-Score, one of the most frequently used mortality predicting tests in coronary artery bypass grafting (CABG). As the prevalence of obesity is increasing in CABG patients, we evaluated the effect of body mass index on the mortality and morbidity of this operation.

PATIENTS AND METHOD: CABG was performed to 225 patients between 19th December 2006 and 11th April 2008 in our institution. The BMI, demographic data, hypertension, diabetes mellitus, history of cerebrovascular accident, chronic obstructive lung disease, smoking, family history of coronary artery disease, postoperative extubation time, arterial blood gases and O2 saturation rates after extubation, intensive care unit stay, postoperative hospitalization period, postoperative drainage, morbidity and mortality rates were collected and monitored. The patients were divided into 2 groups, the patients with BMI under 30 kg/m² and the patients with BMI equal or over 30 kg/m².

RESULTS: Twentyfour patients (10.7%) received 1 vessel bypass, 58 patients (25.8%) received 2 vessel bypass, 84 patients (37.3%) received 3 vessel bypass, 51 patients (22.7%) received 4 vessel bypass, 8 patients (3.6%) received 5 vessel bypass. Mean age was 61,57 ± 9.75 years. Mean cross-clamp time for the operations performed on pump was 68,59 ± 32,04 min and total perfusion time was 98,15 ± 45,36 min. Obese patients with the BMI equal or over 30 kg/m² constitute 30.2% (n=68) of all patients.

Hypertension rate in the obese patients was significantly higher than the rate in the nonobese patients (p=0.001). The intensive care unit stay period, the postoperative extubation time, the postoperative drainage, O2 saturation rates obtained from the second blood gases after extubation, hospitalization period after operation, rate of postoperative atrial fibrillation, occurrence of cerebrovascular accidents, history of smoking, chronic obstructive pulmonary disease, family history of coronary artery disease, diabetes mellitus and mortality rates did not differ between the 2 groups (p>0.005).

CONCLUSION: Although the morbidity rates are higher in obese patients, the difference between 2 groups was not statistically significant except the rate of hypertension that was more frequent detected in obese patients. The mortality and the morbidity rates are similar between obese and nonobese patients with the preoperative, operative and postoperative precautions in obese patients.

KEYWORDS: Body mass index, CABG, Obesity.

OP 117 - THE EFFECT OF RENAL FUNCTIONS ON CORONARY ARTERY BYPASS GRAFTING

Ipek G.¹, Omeroglu S. N.¹, Goksedef D.¹, Talas Z.¹, Balkanay O. O.¹, Engin E.¹, Deser B.¹, Karadag B.², Yuceyar L.³, Erolcay H.³

¹Department of Cardiovascular Surgery, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey

²Department of Cardiology, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey

³Department of Anesthesiology and Reanimation, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey

AIM OF THE STUDY: Renal insufficiency is one of the risk factors that are used to calculate Euro-Score, one of the most frequently used mortality predicting tests in coronary artery bypass grafting (CABG). The purpose of this study was to evaluate the effects of renal insufficiency on the mortality and morbidity of CABG.

PATIENTS AND METHOD: CABG was performed to 225 patients between 19th December 2006 and 11th April 2008 in our institution. The preoperative and postoperative urea, creatinine values, glomerular filtration rates (GFR), demographic data, hypertension, diabetes mellitus rates, history of cerebrovascular accident, rate of chronic obstructive lung disease, smoking, family history of coronary artery disease, postoperative extubation time, arterial blood gases and O₂ saturation rates after extubation, intensive care unit stay, postoperative hospitalization period, postoperative drainage, postoperative occurrence of atrial fibrillation, morbidity and mortality rates were collected and monitored.

The most popular formula used nowadays to calculate the GFR that was also used in our study is MDRD (Modification of Diet in Renal Disease). The patients were divided into 2 groups, the patients with GFR equal or under 60 mL/dk/1.73 m² and the patients with GFR over 60 mL/dk/1.73 m².

RESULTS: Twentyfour patients (10.7%) received 1 vessel bypass, 58 patients (25.8%) received 2 vessel bypass, 84 patients (37.3%) received 3 vessel bypass, 51 patients (22.7%) received 4 vessel bypass, 8 patients (3.6%) received 5 vessel bypass. Mean age of the patients was 61,57 ± 9.75 years. Mean cross-clamp time for the operations performed on pump was 68,59 ± 32,04 min and total perfusion time was 98,15 ± 45,36 min. The 23.6% of the patients (n=53) had a GFR equal or under 60 mL/dk/1.73 m².

The intensive care unit stay and the O₂ saturation rates after extubation were the only statistically significant factors between 2 groups. The intensive care unit stay was longer in patients with a GFR over 60 mL/dk/1.73 m² (p=0,001). The O₂ saturation rates after extubation were lower in patients with a GFR over 60 mL/dk/1.73 m² (p=0,004).

CONCLUSION: Although the morbidity rates are higher in renal insufficiency patients, the difference between 2 groups was not statistically significant except the period of intensive care unit stay which was longer in renal insufficiency patients and except the O₂ saturation rates after extubation which were lower in renal insufficiency patients. Preoperative, operative and postoperative precautions are essential in renal insufficiency patients.

KEYWORDS: CABG, Glomerular Filtration Rate, Renal Functions, Renal Insufficiency.

NEW THERAPEUTIC OPTIONS FOR ARRHYTHMIA PATIENT

OP 132 - RESULTS OF SALINE IRRIGATED BIPOLAR VERSUS MONOPOLAR RADIOFREQUENCY ABLATION

Bayramoglu Z., Sen O., Caynak B., Onan B., Huzmeli H., Sanisoglu I., Akpinar B.

Florence Nightingale Hospital, Cardiovascular Surgery Department, Istanbul, Turkey

PURPOSE: We evaluated the early and mid-term result of modified maze procedure with saline irrigated bipolar radiofrequency ablation compared to monopolar radiofrequency ablation.

MATERIAL-METHODS: Between April 2001 and May 2007, 96 patients with chronic AF underwent mitral valve and modified maze procedure. Patients divided into two groups according to ablative procedure. Patients in group A (n=45) underwent saline irrigated bipolar radiofrequency ablation and mitral valve procedure, while patients in group B (n=51) underwent saline irrigated monopolar radiofrequency ablation and mitral valve procedure.

RESULTS: At the discharge, free from AF was found 56% in group A compared to 67% in group B (p=0.264). End of the follow-up these were found 83% in group A compared to 78% in group B. Mean follow up duration were 17.03±8.87months in group A and 19.82±18.09 months in group B

CONCLUSION: End of the follow up, patients underwent modified maze procedure with irrigated bipolar and monopolar radiofrequency ablation had satisfied results in terms of free from AF.

KEYWORDS: Bipolar, Monopolar, Radiofrequency, ablation, AF

TREATMENT OF VALVULAR HEART DISEASES: EXPERIENCE, CHALLENGES, SUCCESS

OP 134 - SURGICAL AND ENDOVASCULAR APPROACH TO STENOTIC SUPRA-AORTIC BRANCHES WITH CONCOMITANT CORONARY ARTERY DISEASE

Arbatti H.¹, Numan F.², Yilmaz O.¹, Kocogullari C.³, Ardal H.¹, Sonmez B.¹

¹Department of Cardiovascular Surgery, Memorial Hospital, Istanbul, Turkey

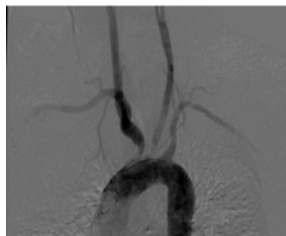
²Department of Radiology, Istanbul University Cerrahpasa Medical Faculty, Istanbul, Turkey

³Department of Cardiovascular Surgery, Afyon Kocatepe University, Afyon, Turkey

Carotid artery stenosis is a frequently observed co-morbidity in coronary bypass surgery candidates. Preoperative carotid artery stenting (CAS) and staged or synchronous surgical interventions are the standard approaches for these patients. However different strategies may be required for ostial stenosis of both the brachio-cephalic trunk and left major carotid artery especially when the aortic arch is unfavorable for CAS and acute coronary syndrome is present. A 65 year-old male patient referred to our hospital in non ST elevated myocardial infarction and unstable angina. Coronary angiogram revealed three vessel disease with antero-lateral hypokinesia of left ventricle. Diabetes and cerebrovascular accident was present in his medical history. Ostial stenosis of brachio-cephalic trunk and left carotid artery were detected during the preoperative examinations. Direct percutaneous CAS procedure was inappropriate due to Type III aortic arch and ulcerated lesions. Left main carotid ostium was stented through the main carotid artery via a cut down incision in retrograde fashion and ostium of the brachiocephalic artery was stented through the right axillary approach. Successful coronary bypass procedure was carried out in the following day. Case specific solutions can be created in coronary bypass candidates with multi-vascular disease by integrating the endovascular procedures.

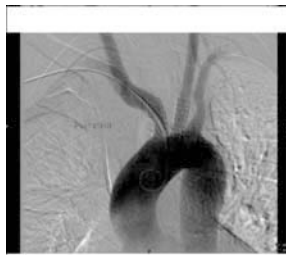
KEYWORDS: endovascular, CABG, carotid stenosis

Figure 1



Stenosis of the left carotid and the brachiocephalic ostia

Figure 2



Completed stent implantation procedure in the brachiocephalic trunk and the left carotid arteries

OP 135 - SURGICAL TREATMENT OF SUPRAVALVULAR AORTIC STENOSIS

Hatemi A. C.¹, Bicakhan B.¹, Gursay M.¹, Ceviker K.¹, Baltali S.², Guzelbas A.³, Cetin G.¹, Kansiz E.¹

¹Department of Cardiovascular Surgery, Istanbul University, Institute of Cardiology, Istanbul, Turkey

²Department of Anesthesiology and Reanimation, Kozan State Hospital, Adana, Turkey

³Department of Pediatric Cardiology, Yenimahalle State Hospital, Istanbul, Turkey

INTRODUCTION: Supravalvular aortic stenosis(SVAS) is a rare congenital cardiac anomaly with an incidence of 1/ 20 000 of live birth. SVAS may be a part of uncommon genetic disease: Williams Syndrome which occurs with an incidence of 1/7500. Supravalvular aortic stenosis is characterized with diffuse narrowing of the aorta usually at the level of sinotubular junction or its above and may be associated with generalized hypoplasia of the ascending aorta and more distal arterial tree as well as with stenosis in the pulmonary artery tree.

CASE: An eleven year old girl was admitted to our institution with complaints of fatigue, palpitation, and syncope. Physical examination revealed elfin-like facial appearance, mild mental retardation, pulsus parvus et tardus, sinus tachycardia about 120 beats/min. 3/6 systolic cardiac murmur. Echocardiography revealed supravalvular aortic stenosis and mixomatous aortic valve. Cardiac catheterization demonstrated a gradient of mean 60 mmHg, peak 140 mmHg across the left ventricular outflow tract. Patient underwent Doty operation and stenotic segment was enlarged with inverted Y patch. Patients peak transvalvular aortic gradient was 30 mmHg at the postoperative sixth month echocardiographic follow-up and patient was asymptomatic.

DISCUSSION: Although, extending aortoplasty technique with inverted Y patch is an effective and safe method for the treatment of SVAS with proven excellent mid and long term outcomes. Various techniques were advised for the treatment of SVAS.

KEYWORDS: inverted Y patch technique, supravalvular aortic stenosis

OP 137 - MITRAL VALVE REPAIR: MIDTERM RESULTS

Bayramoglu Z., Caynak B., Ozgen H., Kabakci B., Karabay C., Onan B., Akpınar B.

Florence Nightingale Hospital, Cardiovascular Surgery Department, Istanbul, Turkey

PURPOSE: For mitral valve regurgitation treatment, mitral valve repair is better choice than mitral valve replacement. Many surgeons made important contributions to the art and science of mitral valve repair. However, after mitral valve repair, reoperation chance is still a problem. We evaluated midterm results of mitral valve repair in our center

METHODS: Between 2004-2007, 152 patients who have diagnosis of mitral valve regurgitation had mitral valve repair operations. The reasons of mitral regurgitations were %62 ischemic (n:95), %21 rheumatic (n:32), %12 degenerative (n:19), the others were infective endocarditis and posttraumatic. Mean age of ischemic and nonischemic mitral valve patients were 65,01±8,76; 52,3±17,6 (p:0.0001). %60 of ischemic mitral valve, %80.7 of nonischemic mitral valve patients were in NYHA III (p:0.0001). Surgical techniques of mitral valve repair were band-ring annuloplasty (%78), posterior quadrangular resection (%23), anterior chordal replacement (%11), posterior chordal replacement (%4), reed annuloplasty (%21)

RESULTS: Postoperative mitral valve regurgitation were minimal in ischemic and nonischemic origin. Ejection fraction level was increased and Pulmonary artery pressure was decreased after the operation (p:0.001>=). Hospital mortality was %5.2 (p=0,024). Reoperation (mitral valve replacement) occurred %2 in ischemic origin; %3 in non ischemic origin (p=0,249). All reoperations occurred after 1 year

CONCLUSION: Mitral valve repair has become the procedure of choice to correct mitral insufficiency of all origins. Numerous studies have documented that mitral valve repair performed by standardized techniques is reproducible and associated with low operative morbidity.

KEYWORDS: mitral valve repair, ischemic, nonischemic

OP 138 - MITRAL VALVE REPAIR IN PATIENTS WITH MITRAL VALVE DISEASE OF DIFFERENT ETIOLOGIES: A SINGLE-CENTER EXPERIENCE

Çaglı K.¹, Ulas M. M.¹, Çaglı K. E.², Lafci G.¹, Yalcinkaya A.¹, Pac M.¹

¹Türkiye Yüksek İhtisas Hospital, Department of Cardiovascular Surgery, Ankara, Turkey

²Türkiye Yüksek İhtisas Hospital, Department of Cardiology, Ankara, Turkey

OBJECTIVE: Mitral valve repair (MVR), a technically challenging procedure, is now the surgical treatment of choice for mitral valve disease of different etiologies. In this report, we present our short-term results of mitral valve repair performed in 46 patients.

METHODS: Between December 2005 and July 2008, MVR was performed in 46 patients (31 male, mean age 46.9±19.4y, range 11-82y) with mitral valve disease of different etiologies at our tertiary-care center. The etiology was degenerative in 23 (50%) patients, ischemic in 11 (23,9%) patients, congenital in 7 (15,2%) patients, and rheumatic in 5 (10,9%) patients. The preoperative degree of mitral regurgitation was at least moderate in all patients. Repair techniques included chordal transfer, chordal shortening, and quadrangular or triangular resection. Reconstructive procedure was applied to the posterior leaflet in 24 patients, to the anterior leaflet in 6 patients, and to both leaflet in 12 patients. Open valvotomy was performed in 4 patients.

RESULTS: Mean cardiopulmonary bypass time was 145.4±31.8min (range 79-217min) and mean X-clamp time was 110.8±29.5min (range 57-181min). Intensive care unit and hospitalization duration were 1.5±1.9day (range 1-13day) and 6.7±2.7day (range 4-18day), respectively. Two patients (4,3%) with severe pulmonary hypertension and low left ventricular ejection fraction died 2 and 18 days after surgery. Mitral valve replacement was needed in one patient during initial surgery and in 2 other patients after 6 months follow-up. Freedom from reoperation was 95.6% at mean follow-up of 10.2±7months (range 1-34 months). Residual echocardiographic mitral regurgitation was trivial or minimal in all patients with successful initial procedure.

CONCLUSION: The short-term results of mitral valve repair demonstrates that MVR is an effective and safe treatment strategy for patients with mitral valve disease of different etiologies.

KEYWORDS: mitral valve repair

OP 139 - IS THE AORTIC VALVE PATHOLOGY TYPE DIFFERENT FOR EARLY AND LATE MORTALITY IN CONCOMITANT AORTIC VALVE REPLACEMENT AND CORONARY ARTERY BYPASS SURGERY?

Gunay R., Sensoz Y., Kayacioglu I., Tuygun A. K., Balci A. Y., Kisa U., Ates M., Demirtas M. M., Yekeler I.

Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Center, Istanbul, Turkey

BACKGROUND: The purpose of this study is to compare aortic valve pathology type on long term outcomes in cases of concomitant aortic valve replacement (AVR) and coronary artery bypass grafting (CABG) surgery.

METHODS: We retrospectively reviewed 150 patients who underwent AVR-CABG operation at our institution between January 1997 and December 2006. We divided three patient group according to aortic valve pathology type. Aortic stenosis, aortic regurgitation and mixt type groups consist of 98 (65.3%), 20 (13.3%) and 32 (21.3%) patients, respectively. The independent predictors of each outcome of interest were determined by Cox regression analysis and Kaplan-Meier method was used to calculate survival.

RESULTS: Aortic stenosis group had more female patients and higher angina class. The mean age of patients was significantly older and previous myocardial infarction was significantly more seen in aortic stenosis group than two other groups. There were no differences on other parameters. Operative mortality was 11.2%, 5.0%, and 9.4%, respectively ($p = 0.69$). Five and ten year survival for each group was 78.15% vs 42.90%, 87.93% vs 66.32%, and 75.38% vs 58.75%, respectively ($p = 0.83$). Cross clamp and cardiopulmonary bypass time, the amount of blood transfusion, chronic obstructive lung disease, intraaortic balon pump, inotropic drugs and pacemaker use were significant risk factors of early mortality. Intensive care unit stay, intraaortic ballon pump, stroke and renal failure were significant risk factors of late mortality.

CONCLUSIONS: Aortic valve pathology type in patients undergoing concomittant AVR-CABG operation does not adversely affect survival.

KEYWORDS: Coronary artery bypass grafting, aortic valve replacement, aortic valve pathology, early and late mortality

AORTIC DISEASES: A JOURNEY FROM PATHOPHYSIOLOGY TO COMPLEX SURGERY - ENDOVASCULAR SOLUTIONS

OP 146 - PHYSIOLOGICAL AND SIMPLE TECHNIQUE OF PROLONGED AND EFFECTIVE CEREBRAL PROTECTION IN COMPLEX ASCENDING AORTA AND AORTIC ARCH ANEURYSMS

Saritas A., Cetin E., Yavas S., Yener U., Unal E. U., Catav Z., Birincioglu C. L.

Clinic of Cardiovascular Surgery, Turkiye Yuksek Ihtisas Research and Training Hospital, Ankara, Turkey

Cerebral protection and cerebral complications in aortic arch surgery is still an important issue for the cardiac surgeons although the remarkable progress in recent years. Cerebral events plays a big role in mortality and morbidity causes.

Among the patients in which we carried out cerebral protection by right brachial canulation in our clinic, 22 patients with antegrade selective cerebral perfusion duration over 45 minutes in moderate hypothermia are selected.

The mean age of the patients was 55.5±11.6 (28-72 years). The operation was in elective condition in 17 patients (94.4%) and emergent in 1 patient (5.6%). Mean antegrade selective cerebral perfusion duration was 69.1±21.6 minutes (47-136 minutes). Overall mortality was 16.7% (in 3 patients). Mortality causes were low cardiac output in 2 patients (11.1%) and pulmonary complication in 1 patient (5.6%). For the surgical procedures of aorta with antegrade selective cerebral perfusion technique, mortality in our clinic is 6.6% regardless of cerebral perfusion duration.

There are considerable improvements for cerebral protection techniques in aortic arch surgery until today, but there are still controversies about this issue. Deep hypothermic circulatory arrest, retrograde cerebral perfusion and combination of these two have some disadvantages and adverse outcome, so there is no widespread use of these two techniques. Except antegrade selective cerebral perfusion techniques, other techniques have some drawbacks because of not providing sufficient duration and adverse effects of deep hypothermia.

Antegrade selective cerebral perfusion comes into prominence in moderate hypothermia with simplicity and providing safe and prolonged cerebral protection.

In conclusion; antegrade selective cerebral perfusion by right brachial arterial canulation is simple technique which is physiological and not necessitating deep hypothermia. Also it provides clean surgical area. This technique ensures prolonged and safe cerebral protection. The neurological results and mortality rates are better than the other techniques.

KEYWORDS: antegrade selective cerebral perfusion, aortic aneurysms

OP 147 - DISTAL ORGAN PERFUSION IN AORTIC SURGERY WITH ANTEGRADE SELECTIVE CEREBRAL PERFUSION

Kervan U., Iscan Z. H., Mavioglu L., Yavas S., Unal U., Boysan E., Cetin E., Tuncel C., Saritas A., Birincioglu C. L.

Turkiye Yuksek Ihtisas Research and Training Hospital, Ankara, Turkey

INTRODUCTION: The best approach for cerebral protection during aortic arch operations is still a matter of controversy. We perform antegrade selective cerebral perfusion (SCP) through right brachial artery cannulation with moderate hypothermia during aortic arch operations since 1996. In this study, we evaluated the distal organ perfusion with antegrade selective cerebral perfusion (SCP) through right brachial artery cannulation with moderate hypothermia.

MATERIALS AND METHODS: The cases of ascendant and/or aortic arch surgery which had been performed through the right upper brachial artery cannulation and with means of selective antegrade cerebral perfusion (SACP) between years 2002 and 2007 were collected. In "group A" 50 patients were selected to evaluate the SACP effects on distal organ perfusion and in "group B" 50 patients were selected in which coronary artery bypass grafting or valve surgery was performed via aortic cannulation and conventional cardiopulmonary bypass. The results are compared whether they are because of cardiopulmonary bypass or distal organ perfusion insufficiency. In group A, 66% of patients were female (n=33) and mean age was 56,1±10,7 (range between 26 and 76years). Presenting pathologies in group A were DeBakey Type I in 37 patients (74%) and aneurysm of ascending and aortic arch in 13 patients (26%). 28 patients (56%) in Group B were operated due to coronary artery disease and 22 patients (44%) due to aortic or mitral valve disease. In the study; preoperatively, postoperatively at the first and fifth days, plasma glucose levels, BUN, creatinine, Aspartate Aminotransferase (AST), Alanine aminotransferase (ALT), lactate dehydrogenase (LDH), Gamma-glutamyltransferase (GGT), Alkaline phosphatase (ALP), total and direct bilirubin, amilase and lipase levels were measured to assess distal organ perfusion adequacy.

RESULTS: Mean cardiopulmonary bypass time was 154±53,3 min, mean aortic cross-clamp time was 100,5 ± 41,1 min and mean period of selective antegrade cerebral perfusion (SACP) was 31,9 ± 14,2 min. Mean cooling temperature was 27,08 ± 1,15 C. Mean intensive care unit period was 34,2 ± 17,5 hours. One patient (2%) died because of multiorgan failure. There were no organ malperfusion postoperatively (liver failure, renal failure, pancreatitis, mesenteric ischemia and injury of medulla spinalis). When preoperative and postoperative first and fifth days' biochemical parameters were compared there was a statistical significance between preoperative values and postoperative first day values. On the other hand, there was no statistical significance between preoperative and postoperative fifth day values. When these values were compared to the values of Group B there were no statistical significance. Mean discharge time was 6,4± 1,4 days. One patient in Group B had died because of low cardiac output at postoperative first day.

DISCUSSION: In aortic surgery, several perfusion and cannulation techniques developed in recent years have focused attention on the organ most sensitive to ischemia: the brain. However, a high incidence of complications involving other organs and tissues, and the considerable morbidity and mortality rates that ensue, have been reported in the worldwide literature regardless of the surgical strategies adopted.

Cannulation of the right brachial artery ensures continuous antegrade cerebral perfusion, avoids manipulation of the supra-aortic vessels (which are often atherosclerotic or dissected), leaves a free operative field, and eliminates the need to change the cannulation site when the arch is replaced. Although antegrade selective cerebral perfusion has been demonstrated as being the best method of cerebral protection in thoracic aorta surgery, distal organ and spinal cord protection are not yet definitively established with unilateral SACP. Nappi et al compared preoperative and 4th postoperative day levels of BUN, AST, ALT and LDH of patients who underwent repair of aortic arch with using SACP through axillary artery cannulation with moderate hypothermia during aortic arch operations. They reported that differences were statistically

significant only for the BUN values. Postoperative AST, ALT, and LDH values all increased without reaching statistical significance.

In the present serie of patients, we compared preoperative, postoperative first and fifth days values of glucose, BUN, creatinine, AST, ALT, LDH, GGT, ALP, total and direct bilirubin, amylase, lipase. Also was compared between group A and group B. Postoperative first day levels increased statistically significant in both group but postoperative fifth day levels were normaly. There was no statistically significant difference between the two groups in the first or the fifth day. This results may be related to CPB and systemic circulatory arrest contribute to endothelial dysfunction in a number of organs but not SACP.

Keywords: Aort cerrahisi, Antegrad Selektif Serebral Perfuzyon, Distal Organ Perfuzyonu

OP 148 - ENDOVASCULAR ABDOMINAL AORTIC ANEURYSM REPAIR WITH CONCOMITANT OFF-PUMP MYOCARDIAL REVASCULARIZATION

Gurbuz A.¹, Yurekli I.¹, Yilik L.¹, Ozsoyler I.¹, Gunes T.¹, Aksun M.², Gokalp O.¹

¹Department of Cardiovascular Surgery, Izmir Ataturk Training and Research Hospital, Izmir, Turkey

²Department of Anesthesiology and Reanimation, Izmir Ataturk Training and Research Hospital, Izmir, Turkey

The simultaneous treatment of various coexistent cardiovascular diseases is increasingly common. In addition, the use of hybrid, open-endovascular techniques is also increasing in popularity. We present a case of coexistent coronary artery disease and giant abdominal aortic aneurysm, which were treated in a single operation by a hybrid approach.

A 76-year-old male with hypertension, hyperlipidemia and occlusive peripheral arterial disease presented with a large saccular infrarenal abdominal aortic aneurysm. Preoperative aortography and cardiac catheterization revealed left anterior descending (LAD) artery stenosis, as well. Concomitant off-pump coronary artery bypass grafting to the LAD artery and endovascular abdominal aortic aneurysm repair with bifurcated stent-graft deployment were performed. Several specific preoperative and operative considerations pertinent to the treatment of abdominal aortic aneurysmal disease with coexistent atherosclerotic occlusive coronary artery disease requiring revascularization must be carefully contemplated as illustrated by this case.

KEYWORDS: abdominal aortic aneurysm, endovascular repair, off-pump coronary artery bypass grafting

OP 149 - CONCOMITANT ENDOVASCULAR REPAIR OF A CASE WITH AORTIC ARCH AND ABDOMINAL AORTIC ANEURYSMS

Gurbuz A.¹, Ozsoyler I.¹, Yilik L.¹, Gunes T.¹, Kestelli M.¹, Aksun M.², Goktogan T.¹, Yurekli I.¹

¹Department of Cardiovascular Surgery, Izmir Ataturk Training and Research Hospital, Izmir, Turkey

²Department of Anesthesiology and Reanimation, Izmir Ataturk Training and Research Hospital, Izmir, Turkey

Aneurysmal disease may include a small part of aorta as well as a very long segment diffusely. Less frequently, several segments may be included separately whilst others remain intact. This rare situation requires a decision whether 2 different operations or a 2-staged single operation for these two aneurysms are more beneficial. Endovascular repair techniques may become alternatives to either undergoing two different operation sessions or concomitant repair of two different pathologies with two different incisions in one session.

In our clinic, a hybrid approach was performed to a case with isolated aortic arch and abdominal aortic aneurysms. First, debranching of aortic arch was carried out. Aneurysm of aortic arch was then isolated with an endovascular stent graft. Subsequently, endovascular repair with bifurcated graft was done to abdominal aortic aneurysm.

Combination of endovascular techniques with open surgical techniques could increase options for less invasive treatment modalities.

KEYWORDS: aortic arch aneurysm, abdominal aortic aneurysm, endovascular repair

OP 150 - ENDOVASCULAR REPAIR OF AORTIC ARCH PATHOLOGIES VIA SURGICAL DEBRANCHING

Ozsoyler I., Yilik L., Gunes T., Kestelli M., Yurekli I., Goktogan T., Aksun M., Gurbuz A.

Department of Cardiovascular Surgery, Izmir Ataturk Training and Research Hospital, Izmir, Turkey

Recently, the results are promising in operations performed for aneurysms and dissections of aortic arch. Nevertheless, in redo and severely ill cases, mortality and morbidity rates are still high. In these cases, endovascular and open surgical techniques are used as hybrid procedures with satisfactory results. Two cases with isolated aortic arch aneurysm and two cases with redeveloped dissection and aneurysm of aortic arch that were previously operated due to type I aortic dissection, underwent hybrid endovascular and open surgical repair. First, debranching of the aortic arch was done, and then via endovascular technique, aneurysm was isolated. All of these cases were discharged and they still survive. Results of hybrid endovascular and open surgical repair of complex aortic pathologies are satisfactory.

KEYWORDS: aortic arch aneurysm, endovascular repair

OP 151 - SIMPLE AND EFFECTIVE SURGICAL TREATMENT OF SEVERELY CALCIFIED (PORCELAIN) ASCENDING AND ARCUS AORTA

Saritas A.¹, Mavioglu L.², Unal U.¹, Irdem A. K.¹, Vural K.¹

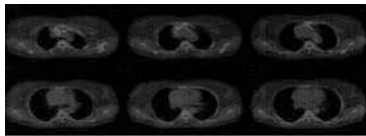
¹Department of Cardiovascular Surgery, Türkiye Yüksek İhtisas Hospital, Ankara, Turkey

²Department of Cardiovascular Surgery, Evliya Celebi Hospital, Kutahya, Turkey

Severe ascending and arcus aorta atherosclerosis is a difficult situation in cardiac surgery. In such conditions; manipulation, cannulation and clamping of the aorta may be the reason of cerebrovascular events in high incidence. Mills and Everson, reported rate of postoperative cerebrovascular accident (CVA) as 45% in a study of 20 patients (in which 4 of them had fatal stroke) with severe aortic atherosclerosis [1]. In patients with severe ascending and arcus aortic atherosclerosis, overmuch manipulations must be avoided and advanced procedures may be improved instead of standart surgical techniques to avoid atheroembolic events. In this case report, a surgical technique in a patient with aneurysm and severe atherosclerosis of totally affected ascending and arcus aorta (porcelain aorta) is presented.

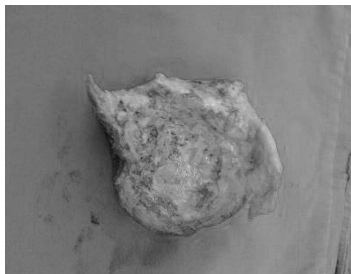
KEYWORDS: Ascending aorta, Aortic disease, Aortic Aneurysm

Figure 1



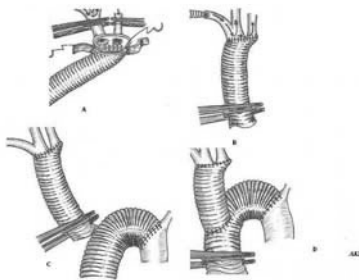
Preoperative Thoracic CT (without contrast media) (aneurysm of ascending and arcus aorta with severe and diffuse calcification)

Figure 2.



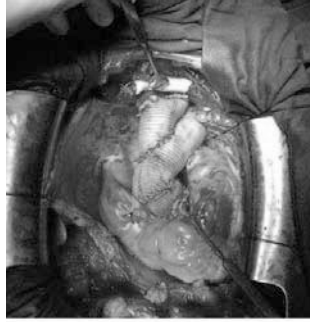
Intraoperatively shown porcelain aorta

Figure 3



Operative stages

Figure 4



After surgical procedure

Figure 5



Postoperative control thoracic CT angiography

OP 160 - EARLY MORTALITY AND REASONS FOR EARLY MORTALITY AFTER CARDIAC TRANSPLANTATION

Sezgin A., Akay T. H., Ozkan M., Gultekin B., Ozkan S., Ozcobanoglu S., Korun O., Donmez A., Aydinalp A., Aslamaci S.

Baskent University, Faculty of Medicine, Department of Cardiovascular Surgery, Ankara, Turkey

Survival is increasing after cardiac transplantation due to either the selection of recipient and donor or improvements in surgical technique and immunosuppressive treatment. In this presentation we discuss the reasons for mortality in our cardiac transplantation patients.

We performed 27 cardiac transplantations between 2003 and 2007. The mean donor and recipient ages were 24.8 ± 14 (4,72); 31.1 ± 16 (4-61) years respectively. The mean ischemic and aortic cross clamp times were 222.15 ± 78.2 (108,359) and 85.65 ± 16.12 (62,139) minutes respectively. The 30 day mortality was 11.1% (3 patients). The reasons for early mortality was arrhythmia in one patient, systemic inflammatory response syndrome in one patient and cerebrovascular event in one patient. The mean survival period of these patients was 8 (4-11) days. Survival rate in the first 30 days was 88.9%.

Life expectancy in patients with end stage cardiac failure and awaiting for cardiac transplantation is less than 40%. When considering literature and our experience, we believe that cardiac transplantation is a definitive treatment option in these patients.

KEYWORDS: Cardiac Transplantation, Mortality, Survival

AN ODYSSEY IN HEART FAILURE CONUNDRUM: FROM BIOMARKERS TO CRT AND HEART TRANSPLANT

OP 161 - COMPARISON OF STANDARD AND BICAVAL TECHNIQUES IN ORTHOTOPIC CARDIAC TRANSPLANTATION

Ozkan M.¹, Sezgin A.¹, Gultekin B.¹, Akay H. T.¹, Ozkan S.¹, Akkaya I.¹, Sade L. E.², Donmez A.³, Aslamaci S.¹

¹*Department of Cardiovascular Surgery, Baskent University, Ankara, Turkey*

²*Department of Cardiology, Baskent University, Ankara, Turkey*

³*Department of Anesthesiology, Baskent University, Ankara, Turkey*

Cardiac transplantation, as the technique was described by Lower and Shumway, has become the standart method for treating end-stage heart disease until the beginning of last decade. In this technique establishment of venous communication was simplified with atrial cuffs. However, the loss of atrial anatomy, high incidence of mitral and tricuspid valve regurgitation and atrial arrhythmias have let an alternative technique, the bicaval technique to gain popularity.

Twelve orthotopic cardiac transplantations with standart technique (group A) and 10 transplantations with bicaval technique (group B) which were done between February 2003 and July 2008 were enrolled in this study to evaluate the effect of surgical technique on alteration in the dimensions of atriums and the competence of the atrioventricular valves. All patients were assessed with transthoracic echocardiography on regular basis. The data obtained at first and sixth months after transplantation were evaluated in this study.

The mean right atrial dimension was larger in group A. The incidence of mitral and tricuspid valve regurgitation did not show any difference between the two groups. There was no difference regarding to the progression of atrial dilation or incidence of atrial arrhythmias.

KEYWORDS: cardiac transplantation, bicaval technique, atrium

OP 163 - DETERMINATION OF THE TIME AND TYPE OF DIRECT CARE GIVEN TO PATIENTS AFTER CORONARY ARTERY BYPASS GRAFT

Pour H. A., Demir Korkmaz F., Kececioglu T., Hacıoglu G.

Department of Nursing High School, Ege University, Izmir, Turkey

In this study it was aimed to determine the time and type of direct care given to patients after coronary artery bypass graft. The study was performed between 28 February and 28 June 2008 on 30 patients who were staying intensive care unit of a university hospital after coronary artery bypass graft surgery. The type of direct care was determined by observing the patients who undergone coronary artery bypass graft surgery from their coming to intensive care unit until transportation to ward and each time consumed for caring has been measured by chronometer. At the end of the study it was determined that the patients who undergone coronary artery bypass graft surgery have been stayed in the intensive care unit for 22 hours and 40 minute with a average and average direct caring was given to patients during this period was three hours and 14 minutes. In addition the nurse workload has been calculated as nine hours and 42 minutes.

KEYWORDS: Direct Care -Coronary Artery Bypass Graft

**FROM CARDIOVASCULAR
NURSING PRACTICE**

OP 165 - THE EFFECT OF COLD APPLICATION ON PAIN AND ANXIETY DURING CHEST TUBE REMOVAL

Demir Y., Khorshid L.

Fundamentals of Nursing Department, Ege University School of Nursing, Izmir, Turkey

This research is a randomized, double-controlled study to examine the effect of the application of cold to the area surrounding chest tubes on pain and anxiety levels in adult patients with chest tubes fitted when undergoing a cardiac operation or sternotomy. The sample of the study consisted of 90 patients, who had chest tubes, and who had undergone a cardiac operation or sternotomy in the Thoracic and Cardiovascular Surgery Clinic. Data were collected using a Patient Information and Approval Form, a Visual Analogue Scale, the McGill Melzack Pain Questionnaire, the Spielbergel Situational Anxiety Inventory Level and a Pain and Anxiety Following Form to record pain, anxiety level and haemodynamic variables and the application of cold and warm packages. Ninety subjects were randomly assigned to 1 of 3 groups: control without treatment, control with treatment, or cold application. Cold and warm packages, which were kept in a freezer at 14 °C and room temperature (18-22°C) covered with gauze dressing, were applied to the area surrounding the chest tubes and kept there for 20 minutes. Pain perception was determined 10 minutes before chest tube removal, immediately afterwards, and 15 minutes later. The situational anxiety of the patients was evaluated twice, before and after applications. Pain quality was measured in all groups 15 minutes after chest tube removal using the MPQ. Haemodynamic variables were monitored in all groups during application and were obtained 10 minutes after application, immediately after chest tube removal, and 15 minutes later. Variance analysis model (Repeated measure ANOVA, Multivariate ANOVA - MANOVA) and Latent Growth Model (LGM) were used in the analysis of the data. When the pain perception of patients was examined according to groups, it was found that the pain perception of the patients in the cold application group is posses to the meaningful least changing trajectory (0.18) than other groups ($P<0.05$). There was no statistically significant difference in change of anxiety level between the three groups ($P>0.05$). There was no statistically significant difference in the number of analgesics which were required after chest tube removal between the three groups. There was no statistically significant difference in passing duration for receiving analgesics after chest tube removal between the three groups. Results showed that the cold application reduced patients' intensity of pain due to chest tube removal, prolonged the passing duration for receiving analgesics after chest tube removal, but did not affect the anxiety level and the type of pain. It is recommended that the evidence obtained in this research should be supplemented by repeating the study on similar groups, and by investigating the effects of cold application combined with different pharmacological and no-pharmacological therapeutic techniques, because of the subjective quality of pain.

KEYWORDS: Pain, Chest Tube Removal, Anxiety

OP 166 - CORONARY ARTERY BYPASS SURGERY IN THE EYES OF SCHWESTER

Sokmen A., Ongun H.

Department of Cardiovascular Surgery, Dokuz Eylul University, Izmir, Turkey

Operation Rooms section of Dokuz Eylul University Hospital is centrally organized and includes nineteen operation rooms. Cardiovascular surgery department has two operation rooms in one module. The role of the schwester in preparation of the patient, the operation room and the operation; in the management of the means and progress of the operation is important. Our aim in this presentation is; as for cardiovascular surgery, to explain the preoperative preparation of the patient and the room, the responsibilities of the schwester and the circulating nurse, the preparation of the expending and surgical means needed for operations and with the use of photographs and videos, to share the progression of the operation.

KEYWORDS: Schwester

UNUSUAL OBSERVATIONS IN PERIPHERAL ARTERIAL DISEASES

OP 167 - IS CAROTID ENDARTERECTOMY DIFFERENT IN FEMALE GENDER?

Yavas S., Mavioglu L., Kocabeyoglu S., Iscan H. Z., Ulus A. T., Beyazit M., Birincioglu C. L.

Cardiovascular Surgery Clinic, Turkiye Yuksek Ihtisas Hospital, Ankara, Turkey

OBJECTIVES: In most vascular diseases, female gender is a risk factor and carotid stenosis is one of them. Female patients, who underwent carotid endarterectomy in our hospital, were included in this retrospective study to assess the impact of female gender on mortality and morbidity.

METHODS: One hundred and eighteen female patients, who underwent operation for carotid stenosis between 1994 and 2007, were included in this retrospective study. Mean age of the patients was 65.1 ± 7.1 and 43.2% of the patients were symptomatic. Coronary artery disease was detected in 45.1% of symptomatic and 74.6% of asymptomatic patients.

RESULTS: Hospital mortality was 9.8% in symptomatic and 6% in asymptomatic patients. Minor neurological stroke, major ipsilateral stroke, major contralateral stroke rates for symptomatic and asymptomatic patients were 2% and 1.5%, 3.9% and 3%, 3.9% and 1.5%, respectively. Twenty four months actual survival rate was $87.2 \pm 4.9\%$ in symptomatic group and $90.2 \pm 3.8\%$ in asymptomatic group ($p > 0.05$). Low cardiac output, postoperative neurological dysfunction and bilateral carotid stenosis are the risk factors for the morbidity and mortality.

CONCLUSIONS: Although female gender is an important risk factor for morbidity and mortality in carotid endarterectomy, patients who had an early postoperative period free from complications, have acceptable midterm results.

KEYWORDS: carotid disease, endarterectomy, female

OP 168 - THE RESULTS OF SURGICAL REPAIR IN VASCULAR INJURIES

Mataraci I.¹, Cevirme D.¹, Sasmazel A.¹, Erentug V.¹, Goksedef D.², Anasiz H.¹, Songur M.¹, Tuncer A.¹, Balkanay M.¹, Alp M.¹, Kirali K.¹, Yakut C.¹

¹*Kartal Kosuyolu High Graduate Education and Research Hospital, Istanbul, Turkey*

²*Department of Cardiovascular Surgery, Cerrahpasa Medical Faculty, Istanbul, Turkey*

OBJECTIVE: In this study, the cases operated for vascular injuries were evaluated retrospectively and surgical results are discussed.

MATERIAL-METHOD: Kosuyolu Heart and Research Hospital was moved from Kosuyolu which was in service since the hospital was established to Kartal to its new campus. New campus is near to major crossroads, therefore trauma cases have been increased since moving. We investigated the cases whom had vascular injury and operated in our hospital between June 2005 and July 2008 retrospectively. One hundred and sixty five cases were operated and 140 of them were male. Mean age was 30.08 ± 11.49 (12-73) and 8 cases had abdominal, 61 had upper extremity and 96 had lower extremity vascular injury.

RESULTS: The most common type for vascular injury was stab wound in 110 cases. Fifty five of them were made by gunshot. One hundred and forty six arterial injuries were seen in 165 cases. 108 cases had isolated arterial injury and 20 had isolated venous injury. During vascular repair, 10 bone, 9 nervous and 4 tendoneus injuries were repaired simultaneously. The most common injured artery was femoral artery and it was seen in 47 cases, followed by popliteal artery injury in 35 cases. The most common injured vein was femoral vein in 16 cases. Vascular injuries treated with primary repair technique in 87 cases. Two patients died, one intraoperatively. There was no need for extremity amputation in all cases. Fasciotomy was done in 7 cases. Eleven of the patients had wound infection following surgical repair. Mean discharge time was 5.15 ± 4.99 (0-30) days.

CONCLUSION: Vascular injuries may lead to disfunction, extremity loss or death. Early surgical intervention, injury type and localization and additional injuries are the most important risk factors influencing morbidity and mortality.

KEYWORDS: Vascular injury, arterial, venous, surgical intervention

OP 171 - EARLY AND LATE TERM RESULTS OF CAROTID ENDARTERECTOMY IN ISOLATED ASYMPTOMATIC CAROTID ARTERY STENOSIS

Isçan Z. H., Mavioglu L., Kocabeyoglu S., Yavas S., Ulus A., Bayazit M., Birincioglu C. L.

Turkey Yuksek Ihtisas Hospital, Ankara, Turkey

Stroke prevention is the main goal for surgical approach in carotid stenosis. In asymptomatic carotid stenosis, even though protective carotid endarterectomy seems to be effective, there is still no consensus. In our study, isolated asymptomatic patients who experienced carotid endarterectomy in our clinic were retrospectively revealed. Mean age was 62.9 ± 8.4 years and 105 were male. The most common associated diseases were coronary artery disease (74,8%), hypertension (35,3%) and hyperlipidemia (31,7%). Hospital mortality was 1,4%, late term mortality was 9,4%. Statistically significant risk factors for perioperative mortality was coronary ischemia and postoperative peripheral artery intervention. Mean follow-up period was 43.3 ± 29.9 months. Actuarial survival rate for 10 years was 88,97%. In early postoperative period 7 patient experienced neurologic complications (6 minor). 10 patient (7,2%) had coronary ischemia and 3 (2,2%) low cardiac output. Five postoperative revisions were necessitated. At follow-up period, 97,8% of patient population was reached and only 7,2% was symptomatic. In conclusion, carotid endarterectomy with a <3% mortality rate for asymptomatic patients who have stenosis over 70% is effective in stroke prevention. Patients must be evaluated for coronary artery disease preoperatively and surgery or coronary intervention should be performed if significant lesions detected.

KEYWORDS: Early and late term results, carotid endarterectomy, isolated asymptomatic carotid artery stenosis

OP 172 - EFFECT OF PREOPERATIVE NEUROLOGIC STATUS FOR CAROTID ENDARTERECTOMY IN SYMPTOMATIC CAROTID ARTERY DISEASE

Isçan Z. H., Mavioglu L., Ulus A. T., Yavas S., Boysan E., Yener U., Bayazit M., Birincioglu C. L.

Turkey Yuksek Ihtisas Hospital, Ankara, Turkey

Stroke is one of the most important complication of carotid artery surgery and related with increased mortality. In this study we retrospectively analyse 225 symptomatic patient who had carotid endarterectomy. Analysis were made according to their preoperative symptoms and postoperative early and midterm results.

35 patients (group 1) consult hospital with stroke, 53 patients (group 2) consult with reversible ischemic neurologic deficit (RIND) and 167 patients (group 3) consult with transient ischemic attack (TIA). 183 patients had isolated carotid endarterectomy, 59 patients had combined simultaneous and 13 patients had staged carotid endarterectomy and coronary artery bypass graft operation. 51 patients (20%) were women and mean age was 65.6 ± 8.5 years. Hypertension occurred 41,3% in group 1, 60,4% in group 2 and 22,9% in group 3 ($p < 0.05$). COPD occurred 1,8%, 9,4%, 2,9% respectively ($p < 0.05$). hypercholesterolemia occurred 25,1%, 39,6%, 17,1% respectively ($p < 0.05$). contralateral stenosis occurred 51,5%, 52,8%, 65,7% respectively and total occlusion of contralateral carotid artery occurred 11,4%, 5,7%, 34,3% respectively ($p < 0.05$).

3% of group 1, 1,9% of group 2 and none of group 3 had minor neurologic events during postoperative period. 3% of group 1, 5,7% of group 2 and none of group 3 patients had major neurologic events during postoperative period. Major contralateral neurologic events occurred 0,6% of group 1, none of group 2 and 2,9% of group 3 ($p > 0.05$). Actuarial survival was found 66.9 ± 7.1 in group 1, 83.0 ± 8.8 in group 2 and 78.9 ± 8.9 in group 3 during the 78 month follow up in Kaplan-Meier actuarial life analysis. In addition to these, peripheral artery disease, postoperative neurologic state and low cardiac output syndrome are the other important factors according to the Cox regression analysis.

Patients preoperative symptoms and risk factors are important for early and middle period follow up of postoperative carotid artery surgery. Surgeons should considerate not only the atherosclerotic carotid lesions but neurologic state and the other risk factors as well, while planning carotid artery surgery.

KEYWORDS: neurologic status, carotid endarterectomy, symptomatic carotid artery disease

OP 174 - PSEUDOANEURYSMS: A RETROSPECTIVE STUDY OF 52 PATIENTS

Tiryakioğlu O.¹, Demirtas S.¹, Goncu T.¹, Ari H.², Yumun G.¹, Demir A.¹, Vural H.¹, Ozyazicioglu A.¹

¹Department of Cardiovascular Surgery, Bursa Yuksek Ihtisas Education and Research Hospital, Bursa, Turkey

²Department of Cardiology, Bursa Yuksek Ihtisas Education and Research Hospital, Bursa, Turkey

OBJECTIVE: The aim of this study is to retrospectively evaluate 52 patients with pseudoaneurysm who underwent surgical reconstruction in our clinic.

MATERIAL-METHOD: A total of 52 patients (24 women and 28 men) who underwent surgical operation were included in the study. The mean age was 45.1±20.6. There were pseudoaneurysms of the femoral artery 34 (65.3%), popliteal artery 9 (17.3%), brachial artery 4 (7.7%), axillary artery 2 (3.9%), radial artery 2 (3.9%) and iliac artery 1 (1.9%) patients. Diagnosis was made in 51 (98%) of the patients through clinical evaluation together with Doppler ultrasonography, and in 16 (30.7%) of these DSA and in 12 of them (23%) MRA was performed.

RESULTS: Primary reconstruction was performed in 40 (77%) of all pseudoaneurysms, while interposition with saphenous venous graft was performed in 9 (17%) patients and Polytetrafluoroethylene (PTFE) graft was performed in 3 (6%) patients.

These patients applied our clinic in a mean of 8 (6-15) days following invasive procedure and within 28 (16-44) days after trauma ($p<0.05$). Popliteal artery pseudoaneurysms there were mostly penetrating injuries by sharp objects 7 (77%) subjects ($p<0.05$). Infection developed in 6 subjects; no mortality or amputation was reported.

CONCLUSION: Surgical reconstruction remains the most effective treatment method in pseudoaneurysms, especially in cases with large aneurysms.

KEYWORDS: pseudoaneurysm, primary reconstruction, penetrating injury, angiography

Table 1

Region of pseudoaneurysm	Primary repair	Saphenous graft interposition	PTFE graft interposition
Femoral artery	32 (94.1%)*	2 (5.9%)	-
Popliteal artery	3 (33.4%)	5 (55.5%)	1 (11.1%)
Brachial artery	3 (75%)	-	1 (25%)
Iliac artery	-	-	1 (100%)
Radial artery	1 (50%)	1 (50%)	-
Axillary artery	1 (50%)	1 (50%)	-

Surgical treatment according to the artery with pseudoaneurysm.
* $p<0.05$, PTFE = Polytetrafluoroethylene.

Table 2

	Traumatic pseudoaneurysm	Iatrogenic pseudoaneurysm	p
Number of subjects (n)	26	26	NS
Mean age (years)	32.3±12.9	59.5±15.1	0.000
Femoral artery (n)	18 (52.9%)	16 (47.1%)	NS
Popliteal artery	9	-	0.000
Brachial artery	2	2	NS
Radial artery	2	-	NS
Iliac artery	-	1	NS
Axillary artery	2	-	NS
Diameter of pseudoaneurysm (mean-cm)	8.8±3.7	4.3±0.5	0.027

Comparison of iatrogenic and traumatic pseudoaneurysms.

CARDIOVASCULAR MEDICINE: UNEXPECTED CHALLENGES

OP 179 - OUR VAC (VACUUM-ASSISTED CLOSURE) EXPERIENCES IN DEEP STERNAL INFECTIONS OCCURED AFTER CARDIAC SURGERY

Filizcan U., Cetemen S., Aydogan H., Bayserke O., Arslan C., Yilmaz M., Soylu O., Simsek S., Eren T., Eren E.

Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Training and Research Hospital, Istanbul, Turkey

OBJECTIVE: Deep sternal infection (mediastinitis) is a complication encountered after cardiac surgery. VAC(vacuum-assisted closure system) treatment, which was recognized in clinical practice in 1996, is performed by a system that applies a controlled negative pressure on the wound. Main objective in applying this system is to ensure wound healing by increasing microcirculation and tissue proliferation. In this study we aimed to present our hospital's clinical experiences.

METHODS: Between the years 2006-2008, in Siyami Ersek Hospital, 13 cases were retrospectively and prospectively investigated, who had been VAC - treated after deep sternal infection diagnosis (sternal leakage and according to the bone, mediastinum culture results and extent of infection detected during operation after dehiscense) followed by cardiac surgery (11 aorta coronary by-pass, 1 ascending aorta replacement due to ruptured ascending aorta dissection, 1 aorta valve implantation). During VAC treatment sessions the dressings were replaced as per secretions produced every 2-3 days. Upon achieving adequate tissue healing and having the culture 1 patient was treated with pectoral flap reconstruction and 12 cases were by primery

FINDINGS: Patients' mean age was 65 (50-84), hospitalization time was 35 days (20-90), number of VAC treatments applied was 7.5 sessions (4-30). All of the cases recovered except one 84-year-old case who deceased of Multiple Organ Dysfunction Syndrome (ya da diger adıyla Multi Organ Failure) after having been applied ascending aorta replacement following a ruptured dissection. During follow-up of 12 discharged cases chronic leakage was detected in 2 of them.

RESULT: In the treatment of deep sternal infection (mediastinitis) occured after cardiac surgery VAC treatment is a satisfactory operation which decreases mortality and hastens the healing process.

KEYWORDS: deep sternal infections, mediastinitis, vacuum assisted closure system

OP 180 - IS CRYSTALLOID CARDIOPLEGIA A STRONG PREDICTOR OF INTRAOPERATIVE HEMODILUTION ?

Gulmen S., Kiris I., Peker O., Yavuz T., Okutan H., Ibrism E., Kuralay E.

Department of Cardiovascular Surgery, Suleyman Demirel University Medical Faculty, Isparta, Turkey

INTRODUCTION: Intraoperative hemodilution causes greater intensive care requirements, hospital stays, operative costs, and death with increasing levels of hemodilution, particularly for lowest hematocrit value less than 22%. We tried to identify crystalloid cardioplegia as a predictor of intraoperative hemodilution and transfusion requirement.

MATERIALS-METHODS: One hundred patients were included into this randomized prospective study. We decided to give crystalloid cardioplegia to the odd-numbered patients and not to give the to the even-numbered patients. Patients were divided into the two groups. Group-1 included 50 patients that crystalloid cardioplegia have been used. Blood cardioplegia solution which was developed in our university was used in Group-2 patients.

RESULTS: Average intraoperative hematocrit value was 18.4 ± 2.3 in crystalloid group 24.2 ± 3.4 in blood cardioplegia group ($p < 0.001$). Nadir Htc value was 16% and 21% in both groups ($p < 0.001$). Average transfused intra-operative packed RBC was 2.3 ± 0.41 units in crystalloid group and 0.7 ± 0.6 units in blood cardioplegia group ($p = 0.001$). Average postoperative packed RBC was transfused 2.7 ± 0.8 units in crystalloid group, 0.9 ± 0.4 units blood cardioplegia group ($p < 0.001$). Multivariate analyses confirmed BSA $< 1.6 \text{ m}^2$ ($p = 0.001$, OR = 6.01) and crystalloid cardioplegia ($p < 0.001$, OR= 1.19) as predictors of intraoperative hemodilution.

CONCLUSION: Crystalloid cardioplegia, compared to blood cardioplegia not only causes much more intra-operative hemodilution but also increases the blood transfusion requirement. Hemodilution and increased transfusion increases the ICU and hospital stay, mortality in the early postoperative period.

KEYWORDS: Crystalloid cardioplegia, hemodilution, cardiopulmonary bypass, transfusion

OP 181 - EFFECTS OF SAPHENOUS VEIN HARVESTING WITH INTERMITTENT INCISIONS ON WOUND HEALING AND INFECTION

Atik C., Ozcaliskan O., Kork I., Arslanoglu Y., Kuran C., Guzel G., Burma O., Ustunsoy H.

Gaziantep University, Medical School Cardiovascular Surgery Department, Gaziantep, Turkey

INTRODUCTION: We proposed to demonstrate in this study whether saphenous vein harvesting with intermittent incisions is of better results on wound healing and infection than classic incision.

MATERIAL-METHODS: Coronary artery bypass grafting (CABG) was performed to 304 cases by using saphenous vein between January 2006 – December 2007. In intermittent incision technique, saphenous vein was harvested from approximately 4-5cm length incisions which have 8-10cm distances between each incision. We grouped patients as classic incision group (Group 1, n: 175) and intermittent incision group (Group 2, n: 129). First wound dressing was made on postoperative 48th hour if there were no dressing necessity.

RESULTS: Demographic data of the both group was similar. Wound infection was observed in 16 (9 %) group 1 patients and in 5 (3.8 %) group 2 patients. 13 of Group 1 and 3 of Group 2 cases those developed wound infection were obese and diabetic. 11 patients in Group 1 and 4 patients in Group 2 who had superficial wound infection improved with daily wound dressing, whereas 5 of Group 1 and 1 of Group 2 patients who had deep wound infection improved with debridement and daily wound dressing. Mean hospital-stay time of infected cases of Group 1 and Group 2 was 11.4 ± 2.4 days and 8.4 ± 1.9 days, respectively.

DISCUSSION: Saphenous vein harvesting with intermittent incisions provides either better wound healing via conservation of tissue integrity or cosmetic pleasant of patient. In our cases, we determined lower wound infection rates when saphenous harvesting was performed with intermittent incisions. So we suggest that wound healing will be better with intermittent incisions, particularly in diabetic and obese patients.

KEYWORDS: Intermittent Incisions On Wound Healing And Infection, Saphenous Vein Harvesting

OP 183 - RISK FACTOR ANALYSIS FOR DEEP STERNAL WOUND INFECTION FOLLOWING CARDIAC SURGERY

Peker R. O.¹, Kaya O.², Dogan E.¹, Kiris I.¹, Gulmen S.¹, Erk Z.¹, Turkoglu H.³, Kuralay E.¹

¹Department of Cardiovascular Surgery, Suleyman Demirel University, Isparta, Turkey

²Department of Clinical Bacteria And Infectious Diseases, Suleyman Demirel University, Isparta, Turkey

³Department of Public Health, Suleyman Demirel University, Isparta, Turkey

BACKGROUND: The sternal wound infections still represent a challenging cause of morbidity and mortality following cardiac surgery. The identification of modifiable risk factors for deep sternal wound infection(dswi) may aid in the prevention and avoidance of such complications. The aim of this study is to determine factors associated with dswi.

METHODS: Between 1 January 2006 and 28 February 2008, 498 on pump cardiac surgical procedures were conducted in our department. Fourteen patients were reoperated for dswi and/or severe sternal dehiscence(study group). Forty one patients who were discharged complication free during the same period were selected randomly(control group). Twenty five variables were retrospectively assessed(age, gender, body mass index, chronic obstructive lung disease, diabetes, cigarette smoking, peripheral arterial disease, hypertension, ejection fraction, creatinine, blood urea nitrogen, leukocyte and platelet counts, hematocrit, intraaortic balloon pump use, cardiopulmonary bypass duration, fresh frozen plasma, whole blood or erythrocyte solution consumption during cardiopulmonary bypass, extubation time, low cardiac output, inotropic agent use, postoperative blood component consumption, amount of bleeding) between the groups.

RESULTS: The incidence of dswi and/or severe sternal dehiscence was 2.81%(14 patients)in our group of patients. Perioperative mortality was observed in one patient. Body mass index(bmi) is found to be independent risk factor for dswi(p<0.01).

CONCLUSION: The present study suggests that only bmi is a significant predictor for dswi.

KEYWORDS: Cardiac surgery, deep sternal wound infection, risk factors

OP 184 - PENETRATING CARDIAC INJURIES

Mataraci I.¹, Anasiz H.¹, Tuncer E.¹, Erentug V.¹, Cevirme D.¹, Goksedef D.², Aydin C.¹, Konukoglu O.¹, Alsalehi S.¹, Zeybek R.¹, Kirali K.¹, Yakut C.¹

¹Kartal Kosuyolu High Graduate Education and Research Hospital, Istanbul, Turkey

²Department of Cardiovascular Surgery, Cerrahpasa Medical Faculty, Istanbul, Turkey

OBJECTIVE: The aim of this study is to emphasize the significance of the diagnostic approach and urgent surgical interference in the patients who were treated with surgery for penetrating cardiac injuries.

RESULTS: Kosuyolu Heart and Research Hospital was moved from Kosuyolu in June 2005 which was in service since the hospital was established to Kartal to its new campus. New campus is near to major crossroads, therefore trauma cases have been increased since moving. In this retrospective study; we evaluated 22 patients who were diagnosed penetrating cardiac injuries between June 2005 and July 2008. Eighteen of them were operated urgently for cardiac injuries. The mean age was 24.94 ± 10.1 (12-49), 14 of them were male. One of them had gunshot and the others had stab wound injuries. The differential diagnosis was made with clinical findings, telecardiography and echocardiography. The choice of the incision was median sternotomy for 12 patients and left anterolateral thoracotomy for the others. Twelve patients had right ventricle injury and 5 patients had left ventricle injury. Five patients had pulmonary injury, 1 patient had brachiocephalic vein injury and 1 patient had coronary artery injury concomitantly. One patient were reoperated because of bleeding and two patients died postoperatively.

CONCLUSION: For the patients whom had penetrating cardiac injury; rapid patient transport, accurate quick diagnosis and aggressive surgical approach would increase the survival rate.

KEYWORDS: Penetrating, Cardiac injuries, Surgical approach

OP 185 - CONVENTIONAL STRIPPING OF GREAT SAPHENOUS VEIN ABOVE THE KNEE LEVEL VERSUS 2-LIGATION FOLLOWED BY SCLEROTHERAPY

Uguz E., Oz B. S.

Department of Cardiovascular Surgery, Maresal Cakmak Military Hospital, Erzurum, Turkey

INTRODUCTION: Several techniques have been designed to reduce postoperative complications and the high rate of recurrence after stripping over the years. The aim of this study was to compare early results and postoperative complications after treatment with two different surgical techniques for varicose vein surgery above the knee level: conventional stripping and 2-ligation followed by sclerotherapy of the great saphenous vein (GSV).

MATERIALS-METHODS: Forty patients with lower extremity varicose veins above knee level were randomly assigned to two groups. Both groups were well balanced for age, gender, BMI and stage of the venous disease. In all of the patients, due to the absence of varicosities in the tibia, the extent of the operations were restricted to the knee level and clinical examination complied with preoperative colour duplex imaging (CDI) revealing reflux along the GSV length above the knee. Group A, patients who underwent classical surgery (ligature and section at the sapheno-femoral junction and collateral veins, with saphenectomy above the knee) and group B patients who underwent the 2-ligation technique followed by sclerotherapy, which includes the resection of GSV, and dissection of all tributaries at the groin and thigh. Operative times, postoperative analgesic drug consumption were recorded. Visual analogue pain scores were used to measure postoperative pain. Patients were examined during the 1st and 12th weeks for recurrence, saphenous nerve injury (SNI), haematoma formation and bruises; by clinical examination and CDI.

RESULTS: No residual saphenous reflux was found at the assessments 1-12 weeks following surgery. 15% of the patients developed haematoma and bruises in group A, while none of the patients developed haematoma and bruises in group B. CDI revealed recurrence in none of the patients.

Neurological examination at 1 week postoperatively, revealed SNI in 3 limbs (15%) in group A. However, at the 3-month neurological reassessment, we found that two out of these three limbs were alleviated from SNI adverse symptoms presenting only deficits in sensation. SNI was not observed in any of patients in group B following the operation.

There were no statistically significant differences between the two groups in operative time, postoperative pain and postoperative analgesic consumption.

CONCLUSION: Minimally invasive varicose vein surgery reduces haematoma formation and postoperative bruising without any obvious drawbacks. SNI does not influence limb disability since any related symptoms seem to regress in almost all of the limbs 12 weeks postoperatively. Therefore, the technique should not be guided by the intent of avoiding SNI above the knee level.

The 2-ligation technique followed by sclerotherapy is one of the important choices of minimally invasive treatments for varicose veins especially above the knee level with encouraging preliminary results but the technique has still to prove its efficiency, especially in view of long-term results.

KEYWORDS: stripping, 2-ligation, varicose vein

OP 186 - A NEW INTERNAL CARDIAC MASSAGE TECHNIQUE

Kuralay E., Gulmen S., Peker O., Kiris I., Okutan H., Yavuz T., Ibrsim E.

Department of Cardiovascular Surgery, Suleyman Demirel University, Isparta, Turkey

Internal cardiac massage routinely used technique in patient with cardiac arrest and severely pump failure conditions. systolic blood pressure can be raised by internal cardiac massage but diastolic pressure can not be adequately raised by classical internal massage technique. actually diastolic pressure practically remains below 10 mmHg. we have described a new cardiac massage technique to raise diastolic blood pressure. in our new technique we squeeze heart with right hand in systolic time period to raise systolic blood pressure. in the diastolic time period we relaxed our right hand and squeeze ascending aorta by first and second finger of left hand, to raise diastolic blood pressure. diastolic blood pressure can be raised above 60 mmHg in diastolic time period. increased diastolic pressure increase cardiac pressure and better allows myocardial recovery. We have demonstrated that finger compression of ascending aorta gains a lots of time to cardiac surgeon and avoids repeated cardiopulmonary bypass.

KEYWORDS: internal cardiac massage, diastolic blood pressure, heart surgery, myocardial recovery

OP 200 - MYCOTIC PSEUDOANEURYSM OF THE ASCENDING AORTA FOLLOWING PURULENT PERICARDIAL EFFUSION DIAGNOSED BY MULTI-SLICE COMPUTED TOMOGRAPHY

Becit N.¹, Erkut B.¹, Kantarci M.², Ceviz N.³

¹Ataturk University, Medical Faculty, Department of Cardiovascular Surgery, Erzurum, Turkey

²Ataturk University, Medical Faculty, Department of Radiodiagnostic, Erzurum, Turkey

³Ataturk University, Medical Faculty, Department of Pediatric Cardiology, Erzurum, Turkey

NEW IMAGING TECHNIQUES: DO WE USE ENOUGH?

An 8-year-old girl admitted to our hospital with complaints of fever, weakness, sore throat, shortness of breath, and lack of appetite ongoing ten days. She had no any history of mediastinal surgery or recent trauma. She had a temperature of 39 °C, an arterial blood pressure of 70/30 mmHg, a pulse rate of 140 beats/min and a respiratory rate of 50 breaths/min. Echocardiography revealed cardiac tamponade, required surgical pericardial drainage. The chest tube was inserted to the pericardial cavity via subxiphoid incision in emergency state. The 350 ml viscous fluid with exudative view was evacuated. Parenteral amikacin and teicoplanin was initiated for antibacterial treatment. Gram stain of the pericardial fluid revealed gram-positive cocci then was identified as a staphylococcus species. The pericardial drain was removed on the 3th day. Control echocardiography was made for the presence of pericardial effusion. There was minimally fluid in pericardial cavity, but a mass was detected lateral site of the ascending aorta. The multi-slice computed tomography (MSCT) was made, and showed a 4x5 cm mass between superior caval vein and ascending aorta (Fig. 1A). Contrast enhanced axial MSCT (Fig. 1B), and coronal reconstruction image (Fig. 1C) revealed a mass measuring 41x55x42 mm, which was diagnosed a pseudoaneurysm. After inserting pericardial tube, a chest x-ray had made and it had realized that the tube orientation through pulmonary artery, not ascending aorta. So traumatic pseudoaneurysm associated to insertion of the tube was excluded (Fig.2). It was thought that pseudoaneurysm was associated to contamination of purulent bacterial effusion. Because of the risk of spontaneous rupture, emergency surgical was performed via sternotomy by using cardiopulmonary bypass. The mycotic pseudoaneurysm of the ascending aorta arose from the postero-lateral wall of the aorta above the sinotubular junction. The aortic wall defect left by the neck of the pseudoaneurysm was about 3 x 4 cm after pseudoaneurysm excision. The defect margins were reached up to between noncoronary and left coronary cuspis commissures. The aortic wall defect was closed with pericardial patch, and with the use of 4-0 polypropylene sutures together with non-coronary commissural resuspension stitch. She had an uneventful postoperative recovery. In postoperative term, MSCT was repeated. There was no any pathology relation to ascending aorta and pseudoaneurysm (Fig. 1D). Mycotic pseudoaneurysm of the aorta is an uncommon disease especially in childhood but has a high mortality due to spontaneous rupture. It is caused by endarteritis following bacteremia or fungemia. Due to spontaneous rupture, early diagnosis is very important. We reported a child with a normal cardiac history who had developed mycotic pseudoaneurysm of the ascending aorta occurring due to purulent bacterial effusion in the absence of aortic surgery or blunt trauma

KEYWORDS: Mycotic aortic aneurysm, purulent pericarditis, multi-slice computed tomography, surgery

Fig.2

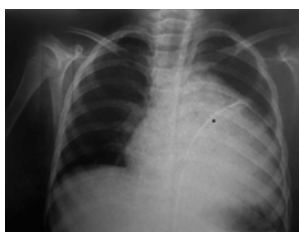
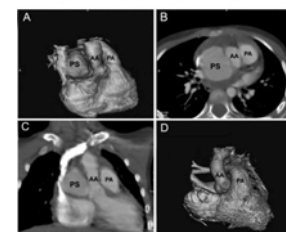


Figure 1A-D



HOT ISSUES IN CARDIOVASCULAR PHARMACOTHERAPY

OP 215 - THE ROLE OF GENETIC VARIABILITY IN EFFECTIVE AND FAVORABLE DOSE MANAGEMENT OF ORAL ANTICOAGULATION IN PATIENTS UNDER THE RISK/TREATMENT OF THROMBOEMBOLISM

Sertbas B. C.¹, Yapici F. M.¹, Tuygun A. G.¹, Senocak M.¹, Aydin S.¹, Tuygun A. K.¹, Gurer O.¹, Sevinc D.², Ulucan K.², Guney I.³, Ozler A.¹

¹Department of Cardiovascular Surgery, Siyami Ersek Hospital, Istanbul, Turkey

²Department of Biology and Genetics, Medicine Faculty of Maltepe University, Istanbul, Turkey

³Department of Genetics, Medicine Faculty of Marmara University, Istanbul, Turkey

PROSPECTIVE: Problems are encountered in the regulation of therapeutic oral anticoagulant doses with minimum side effects. Vitamin K Epoxid Reduction complex subunit (VKORC1G1639A) is the gene which determines the activity of Vitamin K Epoxid reduction (VKOR) in the warfarin metabolism and cytochrome P450 2C9 (CYP2C9) is the gene of cytochrome P450 enzyme. The aim of this clinical study was to examine the warfarin resistance and sensibility of VKORC1G1639A and CYP2C9 polymorphisms.

MATERIALS-METHODS: 99 patients treated with oral anticoagulant in our center between 2003-2006 years were included in the study. The patients were divided into three groups as warfarin-sensitive, taken low dose warfarin (n=24), warfarin-resistant, taken high dose warfarin (n=25) and control, easily controlled warfarin dose requirements (n=50). The patients have any other systemic disease which could affect the regulation of warfarin doses were excluded from the study. The patients whose INR levels did not reach the appropriate level were accepted as warfarin-resistant and the effect of the other drugs that have to be taken that supposed to be affect warfarin dose requirements were examined. Also the relationships between smoking, age, weight and height and warfarin doses were investigated.

RESULTS: 24.2% of the patients were receiving low, 25.3% of them high and 50.5% medium doses of warfarin. %71.7 G/G, %25.3 G/A, %3.0 AA alleles were found in VKORC1G/C polymorphism and *1/*1 allele ratio was %78.8, *1/*2 allele ratio was found %21.2 in CYP2C9 gene polymorphism. There was not any statistically significant relation between the low, medium and high warfarin dose groups and age, gender and height, but however there was a significant relation between the low and medium dose group and weight. The relation between warfarin dose and smoking was also statistically significant. There was not any relation between the warfarin dose and systemic drug usage. There was not any statistically significance between VKORC1G/A and CYP2C9 gene polymorphism and warfarin doses. However the warfarin usage level of the patients with VKORC1 G/G polymorphism was significantly lower than the patients with G/A polymorphism.

DISCUSSION: In this clinical study we examined the relation between warfarin-resistance and VKORC1 and CYP2C9 genes polymorphism and found only statistically significant relation between VKORC1 G/A polymorphism and warfarin dose. The small sample number and the high costs of the investigations are within the limitations of this study. A further study enrolled larger number of patients should be constructed in order to execute precisely the gene map of warfarin resistance in Turkey. This will play an important role in the follow-up of the patients. In addition to these, the effect of non-genetic factors, such as smoking and weight should always be kept in mind in warfarin dose regulation.

KEYWORDS: Anticoagulation, Genetic Variability, Dose Management

OP 224 - RIGHT VENTRICULAR PERFORATION FOLLOWING PERICARDIOCENTESIS FOR CARDIAC TAMPONADE

Iyem H.¹, Alyan O.², Taskesen T.², Ayaz F.¹, Karahan Z.²

¹Dicle University, Department of Cardiovascular Surgery, Diyarbakir, Turkey

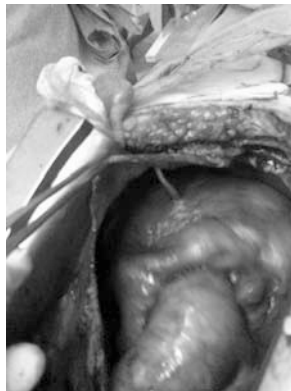
²Dicle University, Department of Cardiology, Diyarbakir, Turkiye

CASE: A 36 year old woman was admitted to an outside hospital's emergency department for dizziness, fatigue and nearsyncope. Echocardiography (ECHO) performed in a subcostal four-chamber plane showed cardiac tamponade with collapse of the right ventricle. In outside hospital, acutely performed pericardiocentesis using a subxiphoid approach and the catheter was left in place. After drainage of 1000 mL of bloody effusion, her blood pressure was 85/55 mmHg and her heart rate was 110 beats per minute. Because the patient still unstabilized hemodynamically, she was subsequently transferred to our institution. In our hospital, echocardiography showed catheter tip into right ventricle and progressive pericardial effusion. Ten minute later, her blood pressure was declined (60/35 mmHg) and cardiogenic shock was developed. Immediately, the patient was taken to the operating room. After median sternotomy, a notable distention of the pericardial cavity was seen and about 800 mL of hemorrhagic effusion were evacuated. It was seen that the anterior wall of the right ventricle was perforated by catheter (Figure). Perforating lesion was oversewn with 4-0 prolene suture and catheter was removed into right ventricle. The surgical procedure was successfully performed. Her blood pressure was increased (125/70) and heart rate was declined (90beat/min. After full recovery, she was discharge on sixth hospital days. Cardiac tamponade can be effectively treated by percutaneous pericardiocentesis. However, pericardiocentesis may be associated with a variety of complications, including cardiac perforation. As in our case, cardiac perforation should be recognized when acute hypotension or cardiovascular collapse developed during, or immediately after, a catheter-based procedure. Therefore, it is essential that pericardiocentesis could be performed at centers with cardiac surgery backup and echo-guided

KEYWORDS: Right ventricular perforation, pericardiocentesis, cardiac tamponade

CHALLENGING APPROACHES IN DIFFICULT CASES

Peroperative image



Catheter perforating anterior wall of the right ventricle

OP 225 - BENTHALL PROCEDURE FOR THE TREATMENT OF AORTIC DISSECTION AFTER CARDIAC TRANSPLANTATION: A CASE REPORT

Sezgin A., Ozkan S., Korun O., Ozkan M., Gultekin B., Akay H. T., Aslamaci S.

Department of Cardiovascular Surgery, Baskent University, Ankara, Turkey

There is scarce data in the literature about aortic dissection in heart transplant recipients and successful repair is even less common. We hereby report a case of a 47-year-old male patient who suffered from type A aortic dissection 5 months after the cardiac transplantation. The situation was incidentally diagnosed in the routine follow-up of the patient. He was treated with a Benthall procedure. On the follow-up he was in asymptomatic with non – pathologic echocardiography and myocardial biopsy 1 year after the transplantation and 7 months after the Benthall operation.

KEYWORDS: Cardiac transplantation, Benthall Operation, Type A Aortic Dissection

OP 226 - SURGERY FOR ACUTE TYPE A AORTIC DISSECTION WITH CORONARY INVOLVEMENT

Omeroglu S. N.¹, Sayilgan C.², Talas Z.¹, Ureyen C.¹, Balkanay O. O.¹, Denli S.¹, Kilic Z.¹, Ipek G.¹

¹*Department of Cardiovascular Surgery, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey*

²*Department of Anesthesiology and Reanimation, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey*

Although surgical outcomes of type A aortic dissection have been improving, aortic dissection with coronary malperfusion remains a surgical challenge because preoperative diagnosis is not easily made, even during surgery, and the mortality rate is high. A 41-year-old woman with 8 children was transferred intubated to our institution with the diagnosis of acute type A aortic dissection. Cardiopulmonary bypass was instituted using femoral arterial and double venous cannulation. All ascending aorta was dissected with the intimal tear on the anterior superior surface extending to the arcus aorta. The ostium of the right coronary artery was totally detached and it was impossible to prepare it as a button for anastomosis. The intimal tear was surrounding the brachiocephalic artery, therefore the brachiocephalic artery was detached and separately anastomosed using a no 8 PTFE graft. The operation was started using deep circulatory arrest and retrograde brain perfusion, but after the graft implantation to the brachiocephalic artery, antegrade brain perfusion was also used. 28 no Dacron graft was anastomosed to the arcus aorta proximal to the left carotid ostium. Then after the brachiocephalic artery graft was anastomosed to the graft implanted to arcus aorta in an end to side fashion. Aortic valve and ascending aorta was resected. A composite graft was prepared using a 23 no St. Jude mechanic prosthesis and a 28 no Dacron vascular graft. This composite graft was anastomosed to the aortic annulus with separately U shaped pledgetted 2-0 sutures. The dissection was extending into the left main coronary artery and it involved all LAD while the RCA was totally disrupted. Both coronary ostia were sutured and closed, therefore SVG's were anastomosed to LAD and RCA. The anastomotic site of LAD was also dissected and the fresh thrombi were present. The weaning from cardiopulmonary bypass was easily performed. The patient was discharged without any complication. Coronary artery dissection, coronary artery disruption and the need of coronary artery bypass with the separately anastomosis of the brachiocephalic artery and the Bentall operation for acute type A aortic dissection is rarely performed but successful with the abovementioned techniques.

KEYWORDS: Acute type A aortic dissection, antegrade brain perfusion, Bentall operation, CABG, composite graft, coronary dissection, coronary malperfusion, deep circulatory arrest.

OP 227 - ENDOVASCULAR COMPLETION OF THE ELEPHANT TRUNK IN TYPE A AORTIC DISSECTION

Arbatli H.¹, Numan F.², Yilmaz O.¹, Ardal H.¹, Kocogullari C.³, Sonmez B.¹

¹*Department of Cardiovascular Surgery, Memorial Hospital, Istanbul, Turkey*

²*Department of Radiology, Istanbul University Cerrahpasa Medical Faculty, Istanbul, Turkey*

³*Department of Cardiovascular Surgery, Afyon Kocatepe University, Afyon, Turkey*

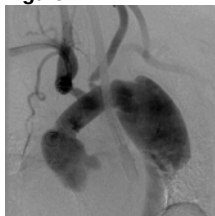
AIM: The elephant trunk procedure is a useful method for the aortic arch replacement especially in acute type A dissections. It simplifies the secondary descending thoracic interventions either for open or endovascular repair. Endovascular repair of the dissected segment of the descending aorta with elephant trunk extension poses some difficulties concerning the patent false lumen, dilated aorta and the wrinkled prosthetic graft in the true lumen. We present an acute type A dissection case who had been operated and aortic arch replacement with elephant trunk extension was carried out.

CASE: 55 years old male patient was operated for acute type A dissection in another medical center with aortic arch replacement with an elephant trunk extension. Descending thoracic aortic intervention was scheduled as a secondary procedure. In our institution an endovascular stent-graft was implanted starting from within the elephant trunk and ending in the supra-celiac thoracic aorta. He was discharged from the hospital 3 days later.

CONCLUSION: The secondary repair of the descending thoracic aorta in patients with previous arch replacement and elephant trunk extension can be done via endovascular route. Some other vascular access sites such as the right axillary artery can be used for cannulation of the lumen of the elephant trunk extension.

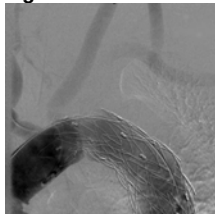
KEYWORDS: elephant trunk, aortic dissection, type A, endovascular, descending aorta

Figure 1



The patient's angiography showing the vascular graft of the aortic arch with the elephant trunk extension and the descending thoracic aortic aneurysm. Note that the left subclavian artery had been ligated and a left carotico-subclavian bypass had been constructed.

Figure 2



The same patient's angiography after the procedure, showing the endovascular stent-graft anchored just distal to the ostium of the left carotid artery descending within the elephant-trunk.

OP 228 - SUCCESFUL TOTAL CORRECTION OF TRUNCUS ARTERIOSUS WITH CONTEGRA VALVED CONDUIT IN A 12 YEAR OLD CHILD

Hatemi A., Ozgol I., Canikoglu M., Cetin G., Kansiz E.

Istanbul University, Institute of Cardiology Department of Cardiovascular Surgery, Istanbul, Turkey

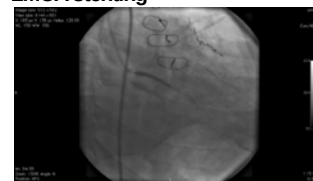
Truncus arteriosus (TA) is a rare congenital anomaly. The diagnosis of truncus arteriosus is an indication in itself for surgical treatment. Ideally daignosis should be made within hours of birth. And ideally surgery should be udetaken within the first week of life before the development of pulmonary vascular disease. In 1967 McGoon first used a valved allograft conduit to repair TA. We report a succesful surgical correction of a 12-year-old patient with TA and severe pulmonary hypertension. There were conotruncal valve regurgitation, minimal pulmonary steonsis. Ventricular septal defect closure with dacron patch, right ventricular outflow tract reconstruction using Contegra valved conduit were done. He had four times pulmonary hypertension attack at recovery period that were treated ilioprst (inhaler and tought to pulmonary arterial line) and peros sildenafilyl. He was discharged with sildenafilyl (Viagra R p.o.) and ilioprost (Ventavis R inh.) treatment.

KEYWORDS: truncus arteriosus, contegra valved conduit, adult patient**OP 229 - LEFT MAIN CORONARY ARTERY STENTING ON CARDIOPULMONARY BYPASS – CASE REPORT**Karpuzoglu E. O.¹, Oz D.², Aksu T.¹, Gercekoglu H.¹, Ersek B.²¹*Department Of Cardiovascular Surgery, Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Center, Istanbul, Turkey*²*Department Of Cardiology, Dr. Siyami Ersek Thoracic and Cardiovascular Surgery Center, Istanbul, Turkey*

INTRODUCTION: Left main coronary artery stenosis (LMCA) is a serious condition which requires urgent intervention. Coronary artery bypass grafting (CABG) is the procedure of choice in LMCA stenosis but percutaneous coronary intervention (PCI) with drug eluting stents (DES) is a good alternative when patient is not eligible for surgery.

CASE: Our case was a 65 years old male with a history of two CABG operations, 17 years (CABGx3) and 11 years (CABGx1) ago. He had stable angina pectoris for one year, but his clinical situation worsened and presented with unstable angina pectoris. After hospitalization angiography was performed urgently; LMCA 98%, LAD (left anterior descending) proximal portion was totally occluded, TIMI (thrombolysis in myocardial infarction) grade II flow in midportion, Cx (circumflex) 70%, RCA (right coronary artery) multiple stenosis 90-95% proximally and 80% before PDA (posterior descending artery) bifurcation, LIMA (left internal mammarian artery) graft was poorly visible. Echocardiography revealed ejection fraction of 35-40%, LV (left ventricle) segmentary wall motion dysfunction, LV diastolic dysfunction, LV concentric hypertrophy, mild aortic regurgitation. Nuclear imaging showed anteroapical and inferior ischemia. The patient suffered a new onset acute myocardial infarction (AMI) at inpatient clinic, severe chest pain began, CK-MB (Creatinin kinase myocardial band) and Troponin I levels increased and finally patient was taken to coronary ICU with pulmonary edema refractory to medication. Patient general condition worsened and mechanical ventilation became necessary. Coronary artery bypass surgery was considered as first option but patient's critical condition, history of several CABG operations and comorbidities put him into very high-risk group. EuroScore was 16 (logistic score was 58,03%). Patient was taken to angio theater, put on cardiopulmonary bypass via left femoral artery and common femoral vein. Three drug eluting stents (DES) with sirolimus were deployed to LMCA, proximal and distal portion of RCA, respectively. Patient was extubated on the same day, discharged from ICU to inpatient clinic on the second day. Patient was discharged from hospital on the fourth day with NYHA Functional Class II. Patient was free of symptoms and rest perfusion with thallium 201 was normal at 6 month follow up.

CONCLUSION: PCI with DES for LMCA stenosis in patients who are not good candidates for surgery gaining popularity among cardiologists. Performing intervention with cardiopulmonary support increases the invasiveness of the procedure but also increases the safety especially in patients with critical conditions like AMI with unstable hemodynamics.^A

KEYWORDS: Cardiopulmonary bypass, left main coronary artery, stent**LMCA stenosis****LMCA stenting****LMCA with stent**

OP 230 - A CLINICAL EXPERIENCE WITH A TWELVE DAYS OLD NEONATE IN BANDING OF THE PULMONARY ARTERIES AFTER STENTING OF THE ARTERIAL DUCT

Hatemi A. C.¹, Ozgol I.¹, Canikoglu M.¹, Gursoy M.¹, Tongut A.¹, Guzeltaş A.², Saltik L.³, Cetin G.¹, Kansiz E.¹

¹Department of cardiovascular surgery, Istanbul University, Institute of cardiology, Istanbul, Turkey

²Department of Pediatric Cardiology, Yenimahalle State Hospital, Istanbul, Turkey

³Department of Pediatric Cardiology, Cerrahpasa Medical Faculty, Istanbul, Turkey

INTRODUCTION: Hypoplastic Left Heart Syndrome (HLHS) describes developmental anomaly of left heart-aorta complex in various degrees which cause failure of systemic circulation due to hypoplasia of the left ventricle and the aorta. Pathologic anatomy may include hypoplasia even absence of left ventricle, hypoplasia of aortic root and ascendance and arcus aorta, stenotic or atretic aortic valve with or without mitral valve stenosis or atresia. In this anomaly systemic circulation depends on to the openness of the ductus arteriosus. Norwood I procedure is the most widely accepted technique for palliation of this syndrome which is composed of anastomosis of the aorta and the pulmonary artery and systemic-pulmonary shunt. In high risk patients this procedure still carries high morbidity and mortality. In this report, we presented our experience of palliation with bilateral pulmonary banding following ductal stenting in high risk patient.

CASE: A twelve day old infant was presented with diagnosis of Hypoplastic Left Heart Syndrome and advanced heart failure clinic, patient was in edematous appearance, anuric, bradycardic, and hypotensive despite high dose inotropic support. Echocardiography revealed mitral valve atresia, hypoplastic left ventricle, hypoplastic arcus aorta, large patent ductus arteriosus, dilated coronary sinus, pulmonary hypertension and persistent left superior caval vein. Patients condition was considered as high risk for open heart surgery. Patient underwent ductal stenting and bilateral pulmonary banding with usual fashion. Patients clinic dramatically improved postoperative, hemodynamic parameters were normal with inotropic support and congestive appearance was regressed with peritoneal dialysis, and urine output began, inotropic support was decreased and ceased, but unfortunately patient died due to septic shock

DISCUSSION: We report palliation of high risk neonate with hypoplastic left heart syndrome via a hybrid procedure in critic preoperative state and declare hybrid procedure is an safe alternative in selected patients.

KEYWORDS: Bilateral pulmonary banding, ductal stenting, hypoplastic left heart syndrome, norwood procedure

OP 231 - SUBCLAVIAN STEAL SYNDROME AFTER REPAIRING AORTIC COARCTATION IN AN ADULT PATIENT: GRAFT LENGTH SHOULD BE MINDED

Guler A., Sahin M. A., Cingoz F., Demirkilic U., Arslan M., Tatar H.

GATA, Cardiovascular Surgery, Ankara, Turkey

Aortic coarctation can be repaired by different surgical techniques in adult patients. Aorta-subclavian bypass is one these choices. An adult patient was operated using this technique to treat the coarctation localized on the isthmic aorta. There was 1-1.5 cm distance between coarcted segment and proximal site of the left subclavian artery in aortographically scenes. And also the aortic wall was observed as very thin formation. Operation was terminated without complication. The patient was taken to the postoperative room from intensive care unit without any problem. But he complained with dizziness after movement his left arm on the postoperative 2nd day. Left axillary, brachial, and radial pulses were not palpated. Aortography showed a bend that occluded the ostium of the left subclavian artery. The patient was reoperated using Dacron tube graft interposition after taking coarcted aortic segment. We would like to share our observations according to the surgical technique for treatment of the aortic coarctation in current literature view.

KEYWORDS: subclavian steal syndrome, aortic coarctation

OP 232 - VETEBRAL ARTER TRANSPOSITION TO THYROCERVICAL ARTERY AND CAROTID - SUBCLAVIAN BYPASS IN A CASE OF SUBCLAVIAN STEAL SYNDROME: CASE REPORT

Gulmen S., Kiris I., Kuralay E.

Department of Cardiovascular Surgery, Suleyman Demirel University, Isparta, Turkey

OBJECTIVES: Subclavian steal syndrome (SSS) occurs when there is stenosis or occlusion of the subclavian artery (SCA) proximal to vertebral artery (VA). The most common lesion of the VA is an atheromatous plaque located at its origin from the SCA. Surgical reconstruction of the SCA and VA to relieve symptoms of ischemia are done infrequently. We present a patient who underwent vertebral artery transposition to thyrocervical artery concomitant with carotico-subclavian safen bypass due to subclavian and vertebral arteries stenosis.

CASE: A 59-year-old male patient with subclavian steal syndrome was admitted to our clinic. The patient's medical history included uncontrolled hypertension and cerebrovascular occurrence. Results of the physical examination were no left radial and ulnar pulses. A blood pressure difference was measured more than 20 mmHg between right and left upper extremity. Angiography revealed about 80% stenosis at proximal the left SCA and at origin of the VA.

MATERIALS-METHODS: The SCA was approached by supraclavicular incision and dividing the scleus anticus muscle and gently retracting the phrenic nevre. The neurovascular bundle of the neck was retracted medially and the VA was exposed and, the common carotid artery (CA) were identified. The CA was arteriotomized by using an 4 mm aortic punc and, the safen-carotid proksimal end to side anastomosis was performed by using 6-0 monofilament nylon sutures. After, safen- SCA end to side anastomosis was performed by using 6-0 monofilament nylon sutures under side clamp. VA was clipped temporarily with microvascular clamp and proximal of the VA was cut and occluded with vascular clips and then ligated. Arterial lumen was irrigated with heparinized saline. The diameter and lenght of the artery was favorable to brunch of the thyrocervical artery (TA) and there was no king configuration. Proximal VA – TA end to end anastomosis was performed by using 7-0 monofilament nylon suture. There was no postoperative complications.

DISCUSSION: Supraclavicular approach is preferred for most operations of the proximal vertebral arteries. The surgical strategies for atherosclerotic disease of the proximal of the vertebral artery include endarterectomy or transpositions. Vertebral – carotid transposition is ideal for the surgical management of stenosis of vertebral artery origin and for the treatment of SSS. But, we prefered VA-TA transposition for VA stenosis.

CONCLUSION: We think that carotid clamp time may decreased with this technique and thus, neurological complications may prevented due to short clamp time.

KEYWORDS: Vertebral artery, Subclavian steal syndrome, transposition

OP 233 - OPEN HEART SURGERY IN A PATIENT WITH CHILD – PUGH CLASS C CIRRHOSIS

Korun O.¹, Gultekin B.¹, Yilmaz U.², Sezgin A.¹

¹Department of Cardiovascular Surgery, Baskent University, Ankara, Turkey

²Department of Gastroenterology, Baskent University, Ankara, Turkey

It is not common to perform cardiac surgery in cirrhotic patients. The data on the literature is derived from very small series which almost totally consist of Child Pugh Class A or Class B patients. Here we report a Child – Pugh Class C patient that we operated.

The patient was a 46 year- old male patient who had alcoholic cirrhosis. He was classified as Child–Pugh Class C and was a liver transplant candidate. He was hospitalised for the preoperative preparation for the transplantation and was referred to our department because he was diagnosed with endocarditis. We performed AVR, MVR and septal myectomy on the patient. He was discharged from the hospital on the postoperative day 32. The patient is known to be alive and in good condition 5 months after the operation.

This was a Class C cirrhosis patient that went through open heart surgery.

KEYWORDS: Child - Pugh Class C Cirrhosis, Cirrhosis, Child C, Open Heart Surgery, Infective Endocarditis, AVR, MVR, Septal Myectomy

OP 234 - CLINICAL SIMILARITIES AND DIFFICULTY OF DIFFERENTIAL DIAGNOSIS OF POST-MI VSD AND RUPTURE OF A SINUS OF VALSALVA ANEURYSM – CASE REPORT

Arbatti H., Ardal H., Yilmaz O., Yagan N., Sonmez B.

Department of Cardiovascular Surgery, Memorial Hospital, Istanbul, Turkey

AIM: Ventricular septal defects occurring after transmural myocardial infarctions and rupture of the aneurysm of the sinus of Valsalva usually present with the similar clinical symptoms of acute left heart failure. This clinical similarity may pose a difficulty in differential diagnosis.

CASE: A 64 years old female patient applied to the emergency unit with complaints of dyspnea and palpitations. She had a history of recent anterior myocardial infarction two weeks before. She had had pulmonary edema and had to be intubated for ventilatory support. The physical examination revealed bilateral coarse rales in both lungs, and a 3/6 systolic murmur on the mesocardiac spot in auscultation. Her cardiac catheterization revealed separate ostia of the left anterior descending (LAD) and the circumflex (Cx) coronary arteries, 80% stenosis of the LAD ostium, 70% stenosis of the first Obtuse Marginal branch (OM1), and a non-dominant right coronary artery. There was also a radioopaque material flow from the left to the right ventricle. She had an echocardiography report with her showing moderate left ventricular systolic dysfunction, mild-moderate mitral and moderate tricuspid insufficiency. She had also other reports describing a post-MI VSD. Echocardiography done in our hospital revealed a shunt flow from aortic root to the right atrium diagnosed as a ruptured aneurysm of the sinus of valsalva.

In the operation, the finding was actually a ruptured aneurysm of the sinus of valsalva opening into the right atrium. The aorta was fixed with a patch, two bypass grafts were done, a small patent foramen ovale was closed, and the tricuspid valve was fixed with a DeVega annuloplasty. She was discharged in good condition after 6 days.

RESULT: Post-MI VSD and rupture of the aneurysm of the sinus of Valsalva may clinically look very similar. There are also reports in literature of patients having a myocardial infarction after rupture of the aneurysm of the sinus of Valsalva without any coronary artery disease. Concomitant coronary artery disease in such patients may lead to a false diagnosis of post-MI VSD.

KEYWORDS: valsalva aneurysm, post-MI VSD, myocardial infarction, complication

POSTER PRESENTATIONS

PERIPHERAL VASCULAR DISEASES: UNUSUAL OBSERVATIONS

PP 001 - OUR APPROACH IN CAROTID BODY TUMOR DIAGNOSIS AND THERAPY **OBJECTIVE:** CAROTID BODY TUMORS ARE RARE NEOPLASM ARISING FROM THE PARAGANGLION CELLS OF THE CAROTID BODY. BECAUSE OF PERIPHERAL VASCULAR AND NEURAL INVASION OR KOMPRESION OF TUMORS, EARLY DIAGNO

Basel H.¹, Ekim H.², Hazar A.³, Odabasi D.¹, Kapan S.¹, Demir I.¹, Comakli H.¹

¹Department of Cardiovascular Surgery, Van Yuksek Ihtisas Hospital, Van, Turkey

²Department of Cardiovascular Surgery, Yuzuncu Yil University, Van, Turkey

³Department of Cardiovascular Surgery, Harran University, Sanliurfa, Turkey

OBJECTIVE: Carotid body tumors are rare neoplasm arising from the paraganglion cells of the carotid body. Because of peripheral vascular and neural invasion or kompresion of tumors, early diagnosis and treatments are very important, whereas this kind of tumors have got slow progression and low malignity potential. In this study we presented carotid body tumors with reviewing of literature.

PATIENT AND METHODS: A retrospective review was performed of patients at Van Yuksek Ihtisas Hastanesi in whom carotid body tumor was diagnosed between 1999 and 2008. Preoperative complaints, clinical radyological findings, surgical approachs, complications of surgery and outcome of treatment were presented.

RESULT: Beetween 1999 and 2008 10 women and 4 men were treated with carotid body tumors. The age range of the extended from 35-53 years old. with a mean age of 44.3 years. Of these patients, one of them presented with bilateral tumors. We divided the groups according to the shamplin classification. There were 8 patients (7 women 1 men) in the first group, 4 patients (3 women, 1 man) in the second group, and 2 patient(1 women 1 men) in the third group. All of the 14 patients underwent surgical resection. No mortality and was seen, however one patient eksperienced hoarness postoperatively. In the follow up period no recurrences were observed.

CONCLUSION: Carotid body tumors should be in the amamentorium of a cardiovascular surgeon when a patient with servical mass admits to outpatients clinic, and further examination should be done including doppler ultrasonagraphy and angiograph for differtential diagnosis for eventual surgical resection.

KEYWORDS: carotid body tumor

PP 002 - EMBOLLECTOMY AND CLOSED FASCIOTOMY IN THE SAME SESSION FOR THE DELAYED ACUTE ARTERIAL THROMBOTIC OCCLUSIONS

Guler A., Sahin M. A., Karabacak K., Kurkluoglu M., Tavlasoglu M., Kadan M., Kucukarslan N., Tatar H.

GATA Cardiovascular Surgery, Ankara, Turkey

OBJECT: in this study we aimed to investigate the effects over morbidity of fasciotomy performed at the same session after embolectomy in patients with late stage acute thrombotic arterial occlusions of lower extremity who presented to our clinic.

MATERIAL AND METHOD: We investigated retrospectively 36 patient (13 female, 23 male), average age 57 (37-71) who presented at our clinic with late stage acute thrombotic arterial occlusions of lower extremity between Mars 2004-April 2008. Only the patients who presented later than 12 hours after the onset of symptoms were included in the study. In group I were included the patients who presented between years 2004-2008 that underwent fasciotomy because of development of compartment syndrome after embolectomy, in group II were included those presented between years 2006-2008 that underwent fasciotomy at the same session after embolectomy. Morbidity rates were investigated.

RESULTS: In group I was included 21 patients that underwent fasciotomy because of development of compartment syndrome after embolectomy, in group II were included 15 patients that underwent fasciotomy at the same session after embolectomy. Cardiac origin embolus was the most frequent etiologic factor while femoropopliteal area was the most frequent target location.

Morbidity in group I was 66,6 % while in group II was 13,2 % ($P < 0.0014$). Amputation below the knee was performed to two patients in group I.

CONCLUSION: In patients that present with late stage acute arterial occlusion of lower extremity fasciotomy performed at the same session after embolectomy to diminish negative effects of reperfusion injury plays an important role in mortality and morbidity decrease.

KEYWORDS: acute arterial occlusion, reperfusion injury, embolectomy, fasciotomy

PP 003 - ASSESMENT OF SILENT KAROTID ARTERY STENOSIS IN PATIENTS UNDERGOING CORONARY ARTERY SURGERY

Ucar H. I.¹, Turan A.², Karatas G.², Emir M.¹

¹Department of Cardiovascular Surgery, Private Sincan Lokman Hekim Hospital, Ankara, Turkey

²Department of Radiology, Private Sincan Lokman Hekim Hospital, Ankara, Turkey

BACKGROUND: Stroke is one of the most serious complications of coronary artery bypass surgery. It increases the mortality and morbidity of open heart surgery, and prolongs the length of hospital stay. Functional disability from the stroke may dramatically reduce the quality of life postoperatively, and some patients will require permanent institutional care. We conducted a study to assess the value of carotid ultrasound examination as a non-invasive method in the evaluation of atherosclerotic carotid lesions in patients undergoing coronary artery surgery.

METHODS: Thirtyseven patients who underwent elective coronary artery surgery were enrolled in this study (age between 41 and 79, mean age = 61.8 ± 9.3 years). Preoperative carotid artery doppler ultrasonography evaluation was performed for all patients who had no signs of atherosclerotic carotid artery disease.

RESULTS: Eight of the 37 patients (23 male (62.2%) and 14 female (37.8%), mean age, 61.8 ± 9.3) had stenotic carotid artery disease. One death (2.5 %) was occurred fifth day of the surgery. Twenty two patients (59.5%) had intima-media thickness on the right and 21 patients (56.8%) had on the left. Eighteen patients (48.6%) had calcified plaque on the right side and 24 (64.8 %) had on the left side. There were mild, moderate and severe carotid stenosis 2 (5.4%), five (13.5%) and one (2.7%) patients, respectively. Hemiparesis was occurred in one patient (2.5 %) and convulsion was occurred in one patient (2.5 %).

CONCLUSIONS: About 2% of patients who undergo coronary artery bypass surgery develop neurologic complications in the period directly after the surgery. Patients with previous history of cerebral, coronary, or carotid disease are more predisposed for such complications. Extra-cerebral carotid stenosis is the most important predictor of stroke for patients undergoing coronary artery bypass grafting. Recognising these complications before coronary artery surgery may help in their prevention or early treatment.

Keywords: Koronary artery disease, atherosclerotic carotid artery disease, coronary artery bypass surgery

PP 004 - TRAUMATIC PSEUDOANEURYSM OF COMMON CAROTID ARTERYAtes A.¹, Alper F.², Erkut B.¹, Karaca Y.¹, Colak A.¹, Calik E.¹¹Ataturk University, Medical Faculty, Department of Cardiovascular Surgery, Erzurum, Turkey²Ataturk University, Medical Faculty, Department of Radiodiagnostic, Erzurum, Turkey

A 34-year-old male patient was admitted to our institution because of a painful pulsatile mass localized in his right carotid triangle. He had a cutter trauma from left neck region under left clavicle bone a week before. Clinical examination revealed a diffuse pulsatile swelling (approximately 4x15 cm) in the anterior and lateral aspect of his neck on the right side. The swelling was continued throughout right clavicle bone. Magnetic resonance imaging (MRI) angiography was performed for diagnostic evaluation. It showed the saccular traumatic large false aneurysm of the right common carotid artery after truncal bifurcation (Fig. 1). On admission, the patient was without any neurological deficit. Because the swelling reached along clavicle bone and sternal jugulum region, sternotomy and standard approach to the right carotid arteries combinations were made under general anesthesia. Intraoperative findings confirmed the presence of the saccular carotid artery pseudoaneurysm, located in the origin segment of the common carotid artery (Fig.2). After the proximal and distal control of the right common carotid artery, the aneurysmal sac was opened, to find one half of it filled with thrombus. The aneurysm communicated with the arterial lumen through a round opening in the antero-lateral wall of the carotid artery, 2 cm in diameter, and the environment carotid artery lumen tissue was irregular due to trauma. The 3 cm arterial tissue was excised from right common carotid artery after resection. Between right common carotid artery and right brachiocephalic artery was performed graft interposition with 6 mm PTFE graft (Fig.3). The patient made an eventful recovery and was discharged from hospital on the 7th postoperative day. The control MRI angiogram showed patency lumen relation to right common carotid artery (Fig.4).

False aneurysms of the extra-cranial carotid arteries are uncommon and might be associated with blunt or penetrating trauma.

KEYWORDS: common carotid artery, pseudoaneurysm, penetrating trauma

Figure 1**Figure 2****Figure 3****Figure 4****PP 005 - PARTIAL J STERNOTOMY IN CAROTID ARTERY INJURIES**

Yasa H., Bademci M., Kestelli M., Bayrak S., Ozelci A., Lafci B., Ozbek C., Gurbuz A.

Izmir Ataturk Training Research Hospital, Izmir, Turkey

INTRODUCTION: Carotid arteries receive 10% of cardiac output. Injury of carotid arteries may result in severe neurological damage or death. In this study we present our patients who underwent partial j sternotomy because of zone I and/or zone II carotid artery injury according to Manson classification.

MATERIAL AND METHODS: Between March 2001 and January 2008 5 patients (4 male, 1 female) with carotid artery injury underwent urgent surgery at our department. Diagnosis was established by physical examination in 3 patients, by arterial Doppler ultrasonography in one patient and by arteriography in one patient. The injured artery or arteries were detected and appropriate surgical procedure was performed.

RESULTS: Four patients had firearm injury and one patient had stab injury. The patients were between 28 to 46 years old. Three patients underwent urgent surgery due to active carotid artery bleeding. Right common carotid artery was injured in 4 patients and left common carotid artery was injured in one patient. Early or late mortality did not occur. Cross-clamp time was 8-17 minutes. Stay time in intensive care unit was 17.6±5.4 (12-24) hours. Time to extubation was 3.8±1.7 (2-7) hours. There was no major bleeding, incisional infection or sternal dehiscence. Left hemiplegia developed in a patient 2 days postoperatively. Hemiplegia resolved nearly totally on 6 month. Remaining patients were discharged without any problem.

DISCUSSION: Partial j sternotomy has significant advantages for the treatment of zone I and/or zone II firearm or stab injuries of carotid artery.

KEYWORDS: partially, carotid artery, injury, sternotomy

PP 006 - TOTAL OCCLUSION OF LEFT INTERNAL CAROTID ARTERY DIAGNOSED IN LATE PERIOD FOLLOWING BLUNT CERVICAL TRAUMAOzelci A.¹, Yetkin U.¹, Sarsilmaz A.², Apaydin M.², Yurekli I.¹, Gurbuz A.¹¹Izmir Ataturk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey²Izmir Ataturk Training and Research Hospital, Department of Radiology, Izmir, Turkey

A 21 - year- old male was admitted to our outpatient clinic with vertigo. In his anamnesis there was a non-penetrating blunt left sided neck trauma. Vehicular trauma was the mechanism of this injury. Injury was caused by lateral hyperflexion of the neck. Carotid ultrasonography revealed occlusion of the left internal carotid artery. Magnetic resonance angiography at this time revealed no areas of cerebral infarction. Digital subtraction angiography (DSA) showed total occlusion of the left internal carotid artery initiating from very proximal segments. Branches of common and external carotid arteries could be visualized whereas all the segments of left internal carotid artery were invisible. Axial reformatting magnetic resonance angiography images showed the discontinuation in cranial and cervical segments of left internal carotid artery. Left middle cerebral artery and its branches showed retrograde filling –as it was seen in DSA- from right carotid system. We treated our patient only by clopidogrel without surgical therapy.

Blunt injury to the carotid arteries in the neck, either by direct or indirect forces, is rare but may produce a devastating outcome with long term morbidity(1). Asymptomatic carotid artery injury can easily go undetected during clinical assessment of head and neck trauma(2). Neuroimaging may be helpful in assessing the presence and extent of the vascular lesion(3). Digital subtraction angiography(DSA) provided a more precise assessment. Aortic arch angiography is crucial for the diagnosis, and should be frequently performed in patients who have sustained blunt cervical trauma. Normal computed tomography of the brain does not exclude ischaemic cerebral infarction, visualization of which requires several days(4).

In conclusion; a search for carotid artery injury should be performed in patients with a history of neck or head trauma(5). Duplex ultrasound detects many of these injuries, but this does not demonstrate its utility as a screening tool. Anticoagulant therapy appears to be associated with a better outcome.

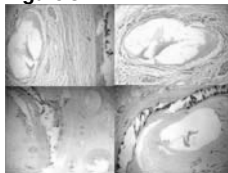
KEYWORDS: Occlusion, Left Internal Carotid Artery, Blunt Cervical Trauma

PP 008 - CALCIFIC UREMIC ARTERIOLOPATHY CALCIPHYLAXISKervan U.¹, Karaboyun T.², Ersoy O.³, Ozturk E.⁴, Iscan Z.⁵, Birincioglu C. L.⁵¹Department of Cardiovascular Surgery, Hospital of Mardin, Mardin, Turkey²Department of Ortopedia, Hospital of Mardin, Mardin, Turkey³Department of Cardiovascular Surgery, Hospital of Diskapi Yildirim Beyazit, Ankara, Turkey⁴Department of Patology, Hospital of Diskapi Yildirim Beyazit, Ankara, Turkey⁵Department of Cardiovascular Surgery, Hospital of Yuksek Ihtisas, Ankara, Turkey

Calcific uremic arteriopathy (CUA) is a rare necrotizing skin condition characterized by calcification in arterioles, leading to ischemia and skin ulcerations. Risk factors for CUA include elevated calcium, phosphorus levels, increased body mass index, hypoalbuminemia, and reduced serum levels of a calcification inhibitory protein alpha₂-Heremans-Schmid glycoprotein (Fetuin-A) and abnormalities in smooth muscle cell biology in uremia. Hyperparathyroidism and elevated concentrations of serum phosphate remain consistent clinical features of most cases reported. Controversy still exists regarding the role of parathyroidectomy in this condition with some studies suggesting improved outcome with surgical intervention. A 48-year-old man patient receiving hemodialysis with chronic renal failure accompanied with calciphylaxis had bilateral leg ulcers with a gangrenous left foot (figure 1). Despite antibiotic therapy and aggressive wound care for 3 months, the skin ulcers enlarged and the patient's general condition worsened. Plain soft-tissue x-ray showed diffuse calcified arterioles (figure 2). Skin biopsy specimens from the left foot surgery showed calcium deposition in numerous small blood vessels in the dermis and fat, leading to a diagnosis of CUA (figure 3). Therapy consists of lowering serum phosphorus, calcium, parathyroid hormone levels, local wound management including debridement and antibiotics.

We can protect extremity by simple, safe, and inexpensive x-ray imaging using

KEYWORDS: cutaneous ulceration, chronic kidney disease, calcium phosphorus product, hyperparathyroidism

Figure 1**Figure 2****Figure 3**

**PP 009 - REPAIR OF COMPLETE BRACHIAL ARTERY
TRANSECTION FOLLOWING CLOSED ELBOW DISLOCATION**

Uguz E., Oz B. S.

*Department of Cardiovascular Surgery, Maresal Cakmak Military
Hospital, Erzurum, Turkey*

INTRODUCTION: Brachial artery (BA) rupture is a recognised complication of open traumatic elbow dislocation (ED) but it is relatively rare (0.47%) with closed injuries. Here, we present a complete BA rupture resulting from a hyperextension injury to an elbow, with dislocation.

CASE: A 20 years old patient presented to the Emergency Department following a fall from 2 m. height. His elbow was grossly swollen, bruised and tender with reduced range of movement secondary to pain. Further assessment revealed absent radial and ulnar pulses. However, his hand was warm and appeared well perfused. There was no associated motor or sensory deficit. Plain radiographs demonstrated a posterior ED with no associated fracture. The elbow was manipulated and the reduction was confirmed with plain radiographs. The peripheral pulses remained absent. Axillary pulse was palpable and a Doppler probe gave no signal at both the radial and ulnar pulse. An acute brachial artery injury was diagnosed and he was taken immediately to theatre. Under a general anaesthetic a lazy 'S' incision was made across the ante-cubital fossa. The median nerve was bruised but intact. Biceps brachialis was partially ruptured and there was a complete transection of the BA just above the level of the elbow with an 8cm deficit. The flexor muscles were reattached. A reversed long saphenous vein graft was interposed for the vascular repair, and medial and lateral fasciotomies were performed. Post operatively, the patient made good progress. The arterial flow to the hand remained good and postoperative CT angiography revealed good functioning graft. The mobility in the elbow continued to improve with physiotherapy and there was no major functional deficit.

DISCUSSION: The elbow has extensive collateral circulation that may mask the signs of acute BA injury following closed ED, but whether this circulation is adequate is debatable. It is not uncommon to attribute vascular compromise to either vessel spasm or surrounding oedema or haematoma. Angiography remains the gold standard for investigation of arterial injuries. Methods of investigation also include duplex sonography, which is non-invasive, but limited. It is generally accepted that the standard of care is repair or reconstruction of BA injury. Therefore, prompt surgical exploration must be undertaken for BA injuries. Primary repair of the artery is undertaken if the gap or defect is small. Large gaps, as in this case, are best reconstructed with autologous vein grafts, such as a reversed saphenous graft or vein grafts of the upper extremity.

CONCLUSION: This case highlights the need for careful and ongoing vascular assessment following closed ED. Prompt reduction and stabilization should be performed. If any suspicion of vascular injury remains, even in an apparently well perfused limb, doppler ultrasonography followed by vascular repair is recommended.

KEYWORDS: closed elbow dislocation, brachial artery injury, repair

**PP 011 - SIDE EFFECTS OF ILOPROST INFUSION IN PATIENTS
WITH PERIPHERAL ARTERIAL DISEASES**

Tokgoz N., Yuksel A., Karamustafa H., Keceligil H. T.

*Department of Cardiovascular Surgery, Ondokuz Mayıs University,
Samsun, Turkey*

PURPOSE: Prostacyclin has very important effects on microvascular blood flow, inhibition of platelet aggregation and increase on capillary density. For these properties, it is used frequently in the treatment of obstructive peripheral arterial diseases. Iloprost is an analogue of prostacyclin with similar pharmacokinetic and clinical properties. In this study we aimed to determine the frequency of side effects in patients who were not suitable for surgical treatment of peripheral arterial diseases and received iloprost treatment.

METHODS: This study was conducted prospectively on 36 patients (21 males, 15 females) who received iloprost infusion. Twenty micrograms of iloprost in 100ml isotonic solution was infused in a 6 hours period via intravenous route. This treatment was applied for 10-14 days. Headaches, blood pressure alterations, thrombophlebitis formation and gastrointestinal side effects were recorded for the first 5 days of the treatment.

RESULTS: Thrombophlebitis was observed in 26 patients (72.22) and headaches requiring analgesic intake was recorded in 28 patients (77.77%). Peripheral venous routes were changed in thrombophlebitis developing patients. Nausea was recorded in two patients (5.55%) and flushing was observed in 1 patient (2.77%).

CONCLUSION: Even though the iloprost treatment is effective in peripheral arterial disease patients who are not suitable for surgery, it has considerable amount of side effects requiring secondary treatment.

KEYWORDS: headache, iloprost, peripheral arterial diseases, thrombophlebitis,

side effects during iloprost infusion

	1.day	2.day	3.day	4.day	5.day
Trombophlebit	%19.4	%30.6	%33.3	%27.8	%38.9
headache	%41.7	%47.2	%50.0	%27.8	%36.1

PP 012 - THE COMPARISON OF THE DIFFERENT TREATMENT MANagements IN PATIENTS WITH ACUTE DEEP VENOUS THROMBOSIS BY THE EFFECTS ON ENHANCING VENOUS OUTFLOW IN THE LOWER LIMB

Rahman A.¹, Colak M.¹, Ustunel L.¹, Koc M.², Kocakoc E.²

¹Department of Thoracic and Cardiovascular Surgery, Faculty of Medicine, Firat University, 23119, Elazig, Turkey.

²Department of Radiology, Faculty of Medicine, Firat University, 23119, Elazig, Turkey

BACKGROUND: This study aimed at evaluating the benefits of the traditional management of acute deep venous thrombosis (DVT), subcutaneous (SC) administration of low molecular weight heparin (LMWH) one dose a day and bed rest, LMWH with compression stocking and early ambulation are compared LMWH with pneumatic compression (PC) of patients with DVT.

METHODS: Forty-eight consecutive patients with DVT were separated evenly into four groups. Group A received intravenous of unfractionated heparin; group B received sc injection of enoxaparin sodium and bed rest; group C received sc injection of enoxaparin and thigh-length compression stockings; and group D received SC injection of enoxaparin sodium and PC for periods up to 7 days. Primary end points were the reduction of pain assessed daily with the Visual Analogue Scale (VAS) and the Lowenberg test, the differences in circumference between the two legs, improvement of clinical scores, Wells score for DVT diagnosis and color Doppler sonography.

RESULTS: when compared day 0 with day 7, significant differences were determined in each group for the differences in circumference between the two legs at thigh and calf level and VAS, and in the groups B, C and D for Lowenberg test for diseased and healthy legs ($p < 0.001$). Between 0 and 7 days, significant differences were found in SFA, FV, SFV and PV for group A and D ($p < 0.05$).

CONCLUSION: Traditional management, SC administration of LMWH and PC of patients with DVT lead to a faster reduction of leg swelling and pain and increase of volume flow through the deep veins of the legs.

KEYWORDS: Deep venous thrombosis, pneumatic compression, Venous Outflow, color Doppler sonography.

A POTPOUPRI OF CORONARY ARTERY ANOMALIES

PP 055 - SUCCESSFUL SURGICAL TREATMENT OF GIANT MAIN CORONARY ARTERY FISTULA CONNECTING TO RIGHT ATRIUM

Akcay A.¹, Yasim A.², Acar G.¹, Sokmen A.¹, Koroglu S.¹, Suner A.¹, Tuncer C.¹

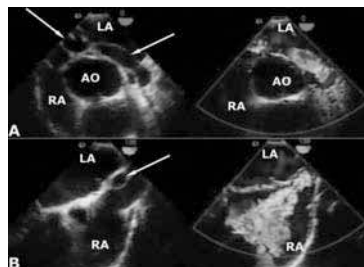
¹Department of Cardiology, Kahramanmaraş Sutcu Imam University, Kahramanmaraş, Turkey

²Department of Cardiovascular Surgery, Kahramanmaraş Sutcu Imam University, Kahramanmaraş, Turkey

A previously healthy 29-years-old man was presented with shortness of breath and palpitations. On physical examination 2-3/6 continuous murmur was heard on right sternal border. Transthoracic echocardiography (TTE) demonstrated that an abnormal flow into the right atrium (RA) and dilatation at right heart chambers. Therefore, transesophageal echocardiography (TEE) was decided and demonstrated a vascular structure with varying sizes about 1.0-1.5 cm connecting left main coronary artery (LMCA) to RA (Fig 1). Following coronary angiography (CAG) demonstrated an unusually dilated left main coronary artery and draining into right atrium with an giant aneurysmal coronary artery fistula (CAF) (Fig 2). Because of the hemodynamic effects surgical repair for ligation of the giant main coronary artery fistula at both the origin and drainage site was scheduled. The operation was performed through a standart median sternotomy. After pericardium was opened and aorta was pulled up laterally an abnormally vascular structure connecting to RA was appeared. For this reason, the ascending aorta, inferior and superior vena cava were cannulated for establishing extracorporeal circulation. It was realized that the anomalous vascular structure arised from the orifice of LMCA and dilated this orifice seriously (Picture 1). Anomalous vascular structure was dissected up to separating point from LMCA carefully, and ligated proximally by trying to leave no residue. Also, distal portion of the vascular structure connecting to right atrium was ligated (Picture 2). During the follow-up period for one year he remained asymptomatic. During physical examination no murmurs were noted; no signs of cardiac insufficiency were found. Echocardiography revealed normal function and diameter of the cardiac chambers.

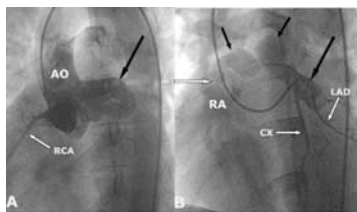
KEYWORDS: Coronary artery fistula, congenital malformations, cardiac surgery

Figure 1



Midesophageal short-axis view of the heart with transesophageal echocardiography showing left main coronary artery to RA fistula. (A) Left: Giant coronary artery fistula posterior to aorta is visible (white arrow). Right: Two turbulent flow signals are noted. (B) Left: the site of the ostium of the fistula is clearly visualized (white arrow). Right: turbulent flow signals are noted in the ostium. RA: right atrium; LA: left atrium, Ao: Aorta

Figure 2



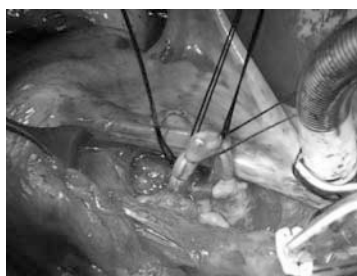
(A): Coronary arteriography revealed an aneurysmally dilated LMCA (black arrow) and normal right coronary artery. (B) Antero-posterior view showing the origination of LAD and CX arteries from markedly dilated LMCA, also the course of the fistula from the LMCA to the right atrium (black arrows). The drainage of contrast medium from distal part of the fistula to right atrium was identified (white arrow). LAD: Left anterior descending artery, CX: Circumflex coronary artery, LMCA: Left main coronary artery, RA: right atrium, Ao: Aorta.

Picture 1



: The common origin of the fistula, the LAD and CX after transverse aortotomy. LAD: Left anterior descending artery, CX: Circumflex coronary artery.

Picture 2



Giant fistula was dissected up to separating point from LMCA and distal portion was ligated. LMCA: Left main coronary artery.

PP 057 - A CASE OF FISTULA BETWEEN LEFT ANTERIOR DESCENDING ARTERY AND LEFT VENTRICLE THAT CAUSED MYOCARDIAL INFARCTION

Kurt I. H.

Adana Numune Education and Research Hospital, Department of Cardiology, Adana, Turkey

In this report we presented a case of fistula located between the left anterior descending artery and the left ventricle that caused myocardial infarction in a male patient who was 50 years old. Electrocardiography of the patient revealed loss of R progression in V1-4 derivations and transthoracic echocardiography showed apical aneurysm. Selective coronary angiography was performed. The calipers and dimensions of left coronary artery were normal and, following injection from the distal part of the left anterior descending artery, the left ventricle was colored like smoke by an opaque accumulation. The caliber of the left anterior descending artery was found to be normal. (Figure 1,2,3) Ventriculography at the left anterior oblique position revealed a small aneurysm in the apex. (Figure 4) Myocardial perfusion scan evidenced a fixed perfusion defect in the apex of the left ventricle. Cases of coronary fistulae that resulted in myocardial infarction are fairly rare. Coronary artery fistula is among the rare causes of coronary artery disease and it generally does not lead to significant complaints. Most prevalent complaints are: angina pectoris; congestive heart failure; and, more rarely, thrombosis; embolism; atrial fibrillation; and infective endocarditis. Coronary fistula that expanded to left ventricle are known to cause coronary ischemia due to coronary steal syndrome, but they rarely lead to hemodynamic impairment due to high pressure in the left ventricle. While right sided fistulae increase the volume load of the right heart chambers and pulmonary bed, left sided fistulae do not affect pulmonary bed, although they do cause volume load in the left chambers. In our case, it was considered that the volume increase in the left ventricle due to steal syndrome formed a suitable background for thrombosis. It was reported that, in some cases, coronary fistulae were spontaneously obstructed as a result of atherosclerosis, leading to asymptomatic patients.

In conclusion, coronary fistulae are among the rare causes of myocardial infarction that develop on non-atherosclerotic background. It was reported in the literature that fistulae between the left ventricle and the left anterior descending artery rarely lead to myocardial infarction. As our patient did not have any complaint following myocardial infarction, medical treatment was recommended.

KEYWORDS: Fistula of Coronary Artery, Myocardial Infarction, Coronary Artery Disease

1



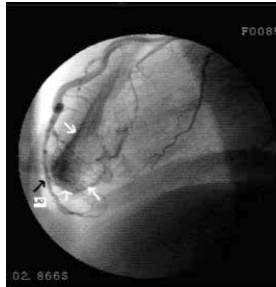
In AP cranial position, Intense accumulation of opaque is seen on the left ventricle due to fistulization between the distal part of left anterior descending artery and the apex of the left ventricle. (white arrows).

2



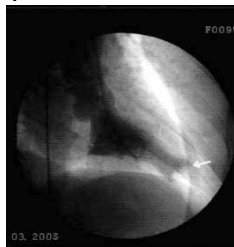
In left oblique position, Intense accumulation of opaque is seen on the left ventricle due to fistulization between the distal part of left anterior descending artery and the apex of the left ventricle. (white arrows).

3



In lateral position, Intense accumulation of opaque is seen on the left ventricle due to fistulization between the distal part of left anterior descending artery and the apex of the left ventricle. (white arrows).

4



A small aneurysm is seen in the apical region through ventriculography in the left anterior oblique position (White arrow).

PP 058 - REPAIR OF AOTIC VALVE CONGENITAL CORONARY ARTERIOVENOUS FISTULA IN NEONATAL INFANT

Kutsal A.¹, Koc M.¹, Uluhan V.³, Bolat A.¹, Surer S.¹, Isik O.¹, Bas T.¹, Ocal B.², Orun U. A.², Senocak F.²

¹Department of Cardiovascular Surgery, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

²Department of Pediatric Cardiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

³Department of Anesthesiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

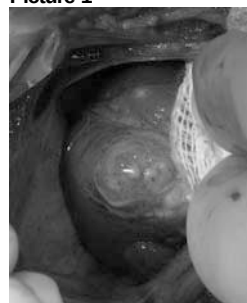
Congenital coronary arteriovenous fistula was (CAVF) first described by Krause in 1865. It is a rare congenital anomaly seen in 0.2-0.4% of all congenital heart disease cases. These patients may be asymptomatic or may present with angina, endocarditis and/or signs and symptoms of congestive heart failure.

CASE: 16 day old neonate presented with gross congestive cardiac failure. He had heart murmur and murmur was heard best at mid-sternal region over the second to fourth right and left intercostal space. He had normal systemic arterial and pulse pressure and he had valvular pulmonary stenosis. During surgery, coronary AV fistula was seen, surgical ligation of fistula was performed and the pulmonary valve was dilated with Hegar dilator via a transventricular way. The patient was discharged day 6th postoperative day. At control follow-up examination, the child was asymptomatic with no abnormal clinical findings and normal ECG.

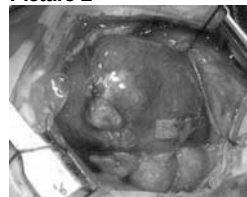
DISCUSSION: Congenital coronary artery fistula are found in approximately one of every 50,000 patients with congenital heart disease and in one of every 500 patients undergoing coronary arteriography. Aneurysmal dilatation of the coronary artery fistula has been reported to occur in 19% of patients with coronary fistula. Patients are often asymptomatic; however, they may develop cardiac failure, infectious endocarditis, myocardial infarction, and death. Fistula rarely close spontaneously. Surgical obliteration is generally recommended because patients with CAVF have potential late complications. The operative results are good and the surgical morbidity and mortality low.

KEYWORDS: coronary arteriovenous fistula

Picture-1



Picture-2

**PP 061 - ANOMALOUS ORIGIN OF THE LEFT MAIN CORONARY ARTERY WITH SEVERE NARROWING AT RCA AND LAD;**

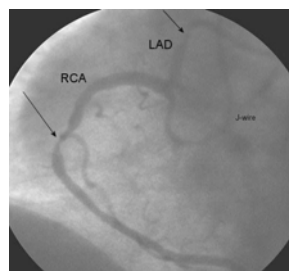
Pekbay A., Grbolar A.

Private Ulus Hospital, Cardiovascular Surgery, Ankara, Turkey

A 72-year-old woman with angina pectoris and exertional dyspnea underwent coronary artery bypass graft operation, reason of severe narrowing at right coronary artery (RCA) and left anterior descending (LAD) artery. In addition, she had anomalous origin of the left main coronary artery. A left internal mammary artery (LIMA) to LAD and saphenous vein graft to RCA anastomosis was performed. This case report illustrates the patient undergoing coronary angiography for evaluation of possible ischemic heart disease with an unexpected presence of anomalous origin of the left coronary artery from the right coronary artery.

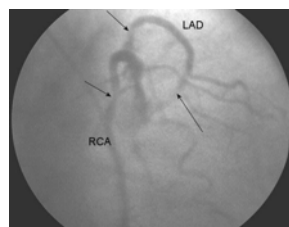
KEYWORDS: Anomalous coronary, Angiography, Left coronary from right coronary sinus, CABG at anomalous coronary

Figure 1



The anomalous origin of LAD

Figure 2



Anomalous origin and lesions (RCA 80%, LAD 65%-80%)

CONGENITAL HEART DISEASES: FROM THE WINDOW OF THE CARDIOVASCULAR SPECIALIST

PP 062 - A COMPLEX ANOMALY OF SYSTEMIC AND PULMONARY VENOUS RETURN ASSOCIATED WITH SECUNDUM ATRIAL SEPTAL DEFECT

Eyileten Z.¹, Ucar T.², Gokalp F.¹, Cakici M.¹, Aral A.¹, Tutar E.², Atalay S.², Uysalel A.¹, Ozyurda U.¹

¹Department of Cardiovascular Surgery, Ankara University, Ankara, Turkey

²Department of Pediatric Cardiology, Ankara University, Ankara, Turkey

Partial anomalous pulmonary venous connection (PAPVC) is relatively an uncommon congenital anomaly which is found 0.4%-0.7% of the general population. It is characterized with the failure of the drainage of one or more, but not all, of the pulmonary vein(PV)s into the left atrium. Previously published autopsy reports indicated that the most common form of PAPVC is right-sided PV to the superior vena cava or to the right atrium, followed by a left-sided PV to the vertical-innominate vein. Anomalous connection of the left-sided PVs are much less common than anomalous right-sided veins. PAPVC is frequently associated with other congenital heart disease, most commonly ASD, in > 75% of patients. It is estimated that up to 85% of patients with sinus venosus ASD have PAPVC.

We report a 4.5-month-old girl who had rare form of PAPVC, associated with abnormal systemic venous return and secundum atrial septal defect.

Physical examination for jaundice at 12-day-old age, revealed grade 3/6 systolic heart murmur at the left parasternal region and the patient was referred to the Pediatric Cardiology Clinic of Ankara University for further diagnostic evaluation. Echocardiogram showed secundum atrial septal defect (ASD), vena azygos continuation with interruption of inferior vena cava, persistent left superior vena cava and drainage of right PVs to the right atrium. The left superior PV was not well visualized. The patient subsequently underwent, catheterization and computed tomography which also supported the previous diagnosis. There was still nonvisualization of left superior PV.

During operation, while all right PVs were seen through secundum ASD, to be drained into left atrium, superior PV was found to drain into the right atrium. There was inferior caval interruption and 3 hepatic veins were detected to be connected to the right atrium separately. The patient underwent total correction. Secundum ASD was closed by rerouting of the partial anomalous superior PV to the left atrium with dacron graft, following the enlargement of the right atrial ostium of the anomalous vein. The atriocavotomy is then closed with the gluteraldehyde treated pericardium to ensure unobstructed drainage.

Diagnosis of PAPVC may be sometimes challenging. Although routine echocardiographic examination is usually enough for determining anatomic, functional and hemodynamic diagnosis in most patients, the inability to visualize all four PVs draining into the left atrium, must be a strong suggestion that the nonvisualized vein may be anomalously connected. Then further examination is required. However, anatomic variation of the normal venoatrial connection may occur. Therefore one must always remember that, even demonstration of four pulmonary veins entering the left atrium does not always exclude the presence of PAPVC. One must also remember that it may rarely be accompanied by secundum ASD which may complicate preoperative diagnosis.

KEYWORDS: pulmonary venous return anomaly, secundum ASD

PP 064 - IMPROVEMENT IN FUNCTIONAL CAPACITY AFTER THE SURGERY OF SECUNDUM TYPE ATRIAL SEPTAL DEFECT IN ADULT PATIENTS

Ergunes K., Yasa H., Yetkin U., Ilhan G., Gokalp O., Sahin A., Ozbek C., Gurbuz A.

Izmir Atatürk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

OBJECTIVE: Since surgical intervention yields more effective results than medical treatment in preventing atrial arrhythmia and associated morbidity and mortality and it provides symptomatic improvement in patients.

METHODS: 52 adult patients with secundum type ASD were operated in our clinic between January 2001 and December 2007. Mean age was 35.63 ± 12.4 (range 18-60 years) where 37 were female (71.2%) and 15 were male (33.3%). Before the operation 3 of (8.1%) Group I patients had functional status of NYHA class I, 30 (81.1%) had functional status of class II and 4 (10.8%) had functional status of class III whereas 6 (40%) of Group II patients had functional status of class II and 9 (60%) had functional status of class III. Preoperative NYHA functional capacity was statistically meaningful between Group I and Group II ($p < 0.001$).

RESULTS: Postoperative NYHA functional class was I in 42 (80.8%) of the patients, II in 10 (19.2%). Of the 37 patients in Group I, 34 (91.9%) were postoperatively in NYHA class I and 3 (8.1%) were in NYHA class II, whereas of the 15 patients in Group II, 8 (53.5%) were postoperatively in NYHA class I and 7 (46.5%) were in class II. Postoperative functional capacity of Group I improved remarkably which was statistically significant ($p = 0.000$). Of the Group II patients, 6 (40%) were preoperatively in NYHA class II, and 9 were (60%) class III. Postoperative improvement in the functional capacity of Group II patients was statistically significant ($p < 0.05$).

CONCLUSION: Our patients in all Groups were significant improvement in their postoperative NYHA functional capacity and significant improvement was observed in their clinical findings following the ASD closure.

KEYWORDS: Functional Capacity, Surgery, Secundum Type Atrial Septal Defect

PP 065 - PARTIAL ANOMALOUS PULMONARY VENOUS RETURN WITH SINUS VENOSUS TYPE OF ATRIAL SEPTAL DEFECT - ORIGINAL IMAGE-

Gurbuz A., Yetkin U., Ozpak B., Yurekli I.

Izmir Atatürk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

Partial anomalous pulmonary venous return (PAPVR) is a congenital anomaly in which one or more, but not all, of the pulmonary veins are connected to a systemic vein or to the right atrium. If an ASD is present, about 10% of patients will have a pulmonary venous abnormality.

A 19-year-old woman presented to our hospital with exertional dyspnea and sinus tachycardia. Her chest X-ray demonstrated cardiomegaly with prominent right atrium, right ventricle and dilated pulmonary vessels. Transthoracic and transoesophageal echocardiography showed dilatation of the right atrium and the right ventricle. The patient was diagnosed as sinus venosus type of atrial septal defect with partial anomalous pulmonary venous return. The same pathology was diagnosed also with the catheter based angiography. Qp/Qs ratio was 2. Blood oxygen saturations were 82.4% in superior vena cava, 93.1% in right ventricle, 98.9% in left ventricle. She was operated under endotracheal general anesthesia and in supine position. During surgical exploration we determined three abnormally draining pulmonary veins into the superior vena cava. We explored also a sinus venosus type of atrial septal defect. We created a patch that closes the defect and also redirects blood from the anomalous pulmonary vein to the left atrium.

Postoperative recovery was uncomplicated. Postoperative echocardiographic data confirmed complete correction of the lesion. In this combined pathology, elective surgery is favoured with patch closure of the ASD and redirection of the abnormally draining PV into the left atrium.

KEYWORDS: Partial anomalous pulmonary venous return, sinus venosus type, atrial septal defect

PP 068 - WOLF PARKINSON WHITE SYNDROME IN A PATIENT WITH EBSTEIN ANOMALYYurdakul S.¹, Usul Afsar C.², Saglam M.², Cebeci E.², Erguney M.²¹Coronary Intensive Care Unit, Ministry of Health Istanbul Training and Research Hospital, Istanbul, Turkey²Department of Internal Medicine, Ministry of Health Istanbul Training and Research Hospital, Istanbul, Turkey

INTRODUCTION: Ebstein anomaly is the displacement of septal leaflet of tricuspid valve towards the apical. This leads to atrialisation of right ventricular input way and the contraction of functional right ventricle. Associated anomalies are patent foramen ovale or atrial septal defect in 50% of the patients and the obstruction of accessory conduct pathways. Right atrial enlargement accompanies tricuspid deficiency of various grades or, more rarely, tricuspid obstruction. Most patients are asymptomatic until early adult age. Generally, patients may show exercise intolerance, flutter, cyanosis, and more rarely, paradoxal embolism; sudden death associated with arrhythmias may be seen. In physical examination, jugular venous pressure increases, tricuspid component of S1 become more prominent and S3 and pansystolic murmur due to right heart deficiency may be heard. Definite diagnosis of the Ebstein anomaly is based on at least 8 mm/m2 apical layout of tricuspid septal leaflet in ecocardiographic examination. Operational indications are the occurrence of cyanosis and right heart deficiency, Class III or greater functional capacity according to New York Heart Association classification and the presence of paradoxal embolism. As a surgical intervention, tricuspid valve repair is preferred to replacement of valve. Wolf Parkinson White (WPW) syndrome is a clinical manifestation characterized by a premature stimulation of the ventricle by an atrial stimulus or of the atrium by a ventricular stimulus. Tachyarrhythmias originating from accessory pathways are commonly seen. The accessory pathway is most frequently localized in the left free wall. In some patients with WPW, concomitant heart diseases are present. These include Ebstein anomaly, mitral valve prolapsus and cardiomyopathies. In general, in patients with Ebstein anomaly, many accessory pathways resulting from the right heart are present. In these patients, tachyarrhythmias with a long ventriculoatrial interval and right bundle block morphology are present.

CASE: A 46-years-old man, presented to our emergency department with flutter and dizziness. In cardiovascular system examination, S1 and S2 were floating, no S3 and S4 were observed. In all focuses, 3/6 pansystolic murmur was heard. Arterial blood pressure was 100/60 mmHg and pulse was 110/min and so arrhythmic. In his ECG, atrial fibrillation with high ventricular response was seen. In his ECG obtained after the infusion of propafenone, sinus rhythm and delta waves in V2-V6 leads were observed. As a result of transthoracic and transoesophageal ecocardiographic examinations of the patient, Ebstein anomaly (in which tricuspid valve orifice displaced towards apical direction), enlargement of the right atrium and patent foramen ovale were found.

DISCUSSION: In some patients with WPW syndrome, Ebstein anomaly is present. In these patients, there is generally more than one accessory pathway that leads to tachyarrhythmias. In cases resistant to medical therapy, radiofrequency catheter ablation or, in selected cases, surgical tricuspid valve repair is the appropriate treatment.

KEYWORDS: Wolf-Parkinson-White (WPW) syndrome, Ebstein anomaly, tachyarrhythmia

PP 069 - SURGICAL REPAIR OF PULMONARY ARTERIAL SLING ASSOCIATED WITH TETRALOGY OF FALLOT

Goktas B., Goksel O., Torlak Z., Alpogut U., Tireli E., Dayioglu E.

Department of Cardiovascular surgery, Istanbul University, Istanbul Medical faculty, Istanbul, Turkey

OBJECT: A rare case of pulmonary artery sling occurring simultaneously with tetralogy of Fallot in literature.

METHOD: A girl baby had shown cyanosis immediately after birth, diagnosed as having tetralogy of Fallot. At the age of 6months, a left modified blalock tausing (mBT) shunt was constructed via a left thoracotomy. she presented 2 months later with cyanosis, associated with absence of continuous murmur from the shunt mBT were occluded on echocardiography and a right modified blalock tausing shunt was constructed via a right thoracotomy. at 3 years-old, she was referred with the complaints of severe respiratory distress, expiratory wheeze and, recurrent pneumonia.

Angiography demonstrated that Pulmonary artery sling associated with tetralogy of Fallot, the left PA was severely hypoplastic, right and left mBT were occluded. The left PA was extensively dissected behind the trachea, divided at its origin, translocated anteriorly, and anastomosed to the pulmonary trunk in front of the left main bronchus. The tetralogy of Fallot was repaired using a transannular patch. peroperative LV/RV pressure ratio was lower 0.6. Postoperative computerized tomography at 3 months after repair found no obvious pulmonary stenosis and reconstruction was anatomic.

CONCLUSION: This report describes the successful concomitant repair of pulmonary arterial sling associated with tetralogy of Fallot.

KEYWORDS: Pulmonary sling, Fallot tetralogy

PP 072 - ISOLATED PARTIAL ANOMALOUS PULMONARY VENOUS CONNECTION OF THE LEFT LUNGKanber E. M.¹, Goksel O.¹, Torlak Z.¹, Goktas B.², Alkara U.², Alpogut U.¹, Tireli E.¹, Dayioglu E.¹¹Department of Cardiovascular Surgery, Istanbul University, Istanbul Medical Faculty, Istanbul, Turkey²Department of radiology, Istanbul University, Istanbul Medical Faculty, Istanbul, Turkey

Isolated PAPVC of the whole left lung is a rare congenital anomaly with incidental diagnosis and vague symptoms if any until late adulthood. If left untreated, PAPVC may result in severe right ventricular failure and pulmonary vascular disease. We present a 34-year-old lady with isolated PAPVC of the whole left lung operated with a side-to-side left atrio-ventral vein anastomosis with cardiopulmonary bypass and cardioplegic arrest. She was discharged without complications and a 2 mmHg gradient across the anastomosis.

Left-sided PAPVC can be repaired with minimal morbidity and mortality. Surgical correction is warranted when patients are symptomatic or show evidence of right-sided overload due to unpredictability of the natural course. Recent data demonstrate that both on-pump and off-pump surgical procedures result in excellent long-term outcome when performed without persisting gradients

KEYWORDS: Isolated PAPVC

PP 074 - AN ASSOCIATION OF PERSISTENT LEFT SUPERIOR VENA CAVA WITH CRIBRIFORM SECUNDUM ATRIAL SEPTAL DEFECT AND A LONG MUSCULAR BAND IN RIGHT ATRIUM

Yetkin U., Ozpak B., Akyuz M., Yurekli I., Gurbuz A.

Izmir Atatürk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

Association of persistent left superior vena cava with other congenital cardiac diseases is common and frequently encountered during diagnostic studies.

A 28 - year- old male was admitted to our hospital with nonspecific angina pectoris and exertional dyspnea. Transthoracic echocardiogram demonstrated two middle-sized defects in secundum septum with a left-to-right shunt. Cardiac catheterization showed persistent left superior vena cava (PLSVC) and atrial septal defect. He was operated under endotracheal general anesthesia and in supine position. Cribiform multiple secundum atrial septal defects(ASD) were evaluated regarding their localization, size, other related cardiac structures and possible associated abnormalities. There was a long muscular band in the right atrium. This muscular band was resected. After this step cribiform ASD was made an uniform defect with excision of the septal defect portions. We performed an e-PTFE patch closure of atrial septal defect as to drain blood from left SVC to right atrium. Postoperative echocardiographic data confirmed complete correction of the lesions.

The left superior vena cava has surgical significance when congenital heart disease is present. If PLSVC exists, other venous system anomalies should be investigated and cardiopulmonary by-pass procedure should be performed in different ways if necessary.

KEYWORDS: Persistent Left Superior Vena Cava, Cribiform Secundum Atrial Septal Defect, Muscular Band in Right Atrium

PP 075 - DOUBLE-CHAMBERED RIGHT VENTRICLE WITH INTACT VENTRICULAR SEPTUM

Gurbuz A., Yetkin U., Lafci B., Bademci M., Yurekli I.

Izmir Atatürk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

Double-chambered right ventricle is a rare congenital heart disease.

A 21 - year- old male was admitted to our hospital with dyspnea. Transthoracic echocardiography and cardiac catheterization revealed a infundibular pulmonary stenosis with a pressure gradient of 80 mm Hg. He was operated under endotracheal general anesthesia and in supine position. Perioperatively, it was revealed that infundibular region and pulmonary valve were completely normal; whereas inflow region of the right ventricle showed stenosis. Hypertrophied muscle bundles at the stenotic region of the pulmonary inflow were resected. 21 mm Hegar dilator could be passed easily through resected area which indicated that adequate dilation was obtained. Postoperative echocardiographic data confirmed complete correction of the lesion.

Accurate determination of the severity of the stenosis and the anatomy of the obstructing lesion are important in devising a treatment strategy. Generally, resection of the hypertrophic muscle bundles practically eliminated the obstruction.

KEYWORDS: Double-chambered right ventricle, intact ventricular septum, surgery.

PP 076 - SINGLE-STAGE REPAIR OF ADULT AORTIC COARCTATION AND CONCOMITANT CORONARY ARTERY DISEASE: AN UNUSUAL SURGICAL APPROACH THROUGH MEDIAN STENOTOMYUlas M. M.¹, Tasoglu I.¹, Ergun K.², Lafci G.¹, Sen N.², Yalcinkaya A.¹, Caglı K.¹¹*Türkiye Yüksek İhtisas Hospital Cardiovascular Surgery Clinic, Ankara, Turkey*²*Türkiye Yüksek İhtisas Hospital Cardiology Clinic, Ankara, Turkey*

Surgical management of postductal aortic coarctation associated with severe coronary artery disease is difficult to decide in most cases. As staged procedures are associated with a higher rate of morbidity and mortality, simultaneous operative management of both pathologies is desirable. We describe here a 51-year-old man who was referred to our department for surgical treatment of postductal aortic coarctation and concomitant coronary artery disease and his single-stage surgical management through median sternotomy. Surgery was performed via standard median sternotomy. Firstly, we used sequential graftings with saphenous vein. The distal anastomosis to right posterior descending artery was completed first, and the proximal sequential anastomosis to right acute marginal artery was completed and the final proximal anastomosis to ascending aorta was completed. Secondly, the distal anastomosis to obtuse marginal branch and the proximal sequential anastomosis to diagonal artery was completed and the final proximal anastomosis to ascending aorta was completed. Finally, LITA-LAD anastomosis was completed and the Bulldog clamp was left on the LITA graft. After all anastomoses were completed, the aorta was mobilized extensively, left pleura was opened, a tape was passed around left pulmonary artery to retract inferiorly. Patient was turned to rightward and mini retractors were used for maximum exposure. Arcus aorta was pulled above and right, and pulmonary artery was retracted inferiorly. We saw the coarctation segment, left vagus and recurrent laryngeal nerves, and ligamentum arteriosum. The ligamentum arteriosum was divided and oversewn. Large intercostal branches were identified and encircled in preparation for snaring. The aorta was clamped just distal to the left subclavian artery and distal to the coarctation. The aorta was then incised longitudinally across the lesion and a wide, Dacron patch of appropriate size was sewn with fine continuous prolene sutures to aortic edges. Cross-clamp time was 95 minutes. After declamping, CPB was discontinued uneventful. Two months later, the patient was asymptomatic and control echocardiography revealed mean 12 mmHg gradient (preoperative gradient was 114 mmHg).

One of the main indications for single-stage repair is coarctation with serious triple coronary artery disease. We conclude here that coarctation of the aorta with concomitant coronary artery disease can be safely and efficaciously repaired simultaneously through median sternotomy when patients present in adulthood.

KEYWORDS: Single-stage surgical management, aortic coarctation, coronary bypass surgery

PP 077 - DOUBLE-OUTLET TECHNIQUE FOR TETRALOGY OF FALLOT-TYPE DISEASE WITH AN ANOMALOUS CORONARY ARTERYOmay O.¹, Vuran C.¹, Yoruken U.¹, Ayabakan C.², Tokel K.², Turköz R.¹¹Department of Cardiovascular Surgery, Baskent University, Istanbul, Turkey²Department of Pediatric Cardiology, Baskent University, Istanbul, Turkey.

A anomalous coronary artery transversing the right ventricular outflow tract (RVOT) is a major surgical challenge in tetralogy of Fallot-type disease with a small pulmonary annulus. In these cases conduits are frequently used and reoperations are required over time.

A 1-year-old boy, cyanotic since birth due to a double-outlet right ventricle with subaortic ventricular septal defect and valvular pulmonary stenosis. Intraoperative findings showed that the right coronary artery originated from the left coronary artery, transversing the RVOT very near the main pulmonary trunk. After cardioplegic arrest, a vertical infundibulotomy incision is made beginning a few millimeters below the level of the coronary artery that crosses the right ventricular outflow tract. Two parallel longitudinal incisions in the main pulmonary artery were connected by a transverse incision so that a wide flap was created. After pulmonary valvotomy, the flap is turned down onto the anterior surface of the infundibulum of the right ventricle such that it lies over the course of the anomalous coronary artery. Right ventricular outflow tract patch was used on the pulmonary artery flap. Double orifice was obtained from right ventricle to pulmonary artery. The peak-to-peak gradient between the right ventricle inflow and the branch pulmonary arteries was 19 mm Hg after cardiopulmonary bypass. The patient discharged 7 days after the operation and 9 months after the operation his functional capacity was NYHA Class I.

Abnormal coronary artery anatomy, with a major coronary vessel crossing the outflow tract of the right ventricle, poses special problems during repair of tetralogy of Fallot. This method described in 1995 by van Son, appears to provide adequate decompression of the right ventricle. Theoretically it has the advantage of potential growth of the surgically created outflow pathway that has been constructed in part from a flap of viable autologous vascular tissue.

KEYWORDS: Tetralogy of Fallot, Coronary Vessel Anomalies, Pulmonary Valve stenosis

PP 078 - ISOLATED CONGENITAL ABSENCE OF A SINGLE PULMONARY VALVE CUSPOmay O.¹, Vuran C.¹, Yoruken U.¹, Ayabakan C.², Tokel K.², Turköz R.¹¹Department of Cardiovascular Surgery, Baskent University, Istanbul, Turkey²Department of Pediatric Cardiology, Baskent University, Istanbul, Turkey

Tetralogy of Fallot with absent pulmonary valve is present about 5% of the patients with tetralogy of Fallot. However, isolated absent pulmonary valve without Tetralogy of Fallot is extremely unusual. This report describes a case of an aneurysmal dilatation of the pulmonary artery and pulmonary incompetence due to absent non-facing leaflet.

A 7-year-old male was referred for cardiac evaluation because of decreasing exercise tolerance and fatigue. He was acyanotic, with a blood pressure of 90/55 and pulse 98/minute. On auscultation, systolic ejection murmur of 3/6 degree and diastolic murmur of 3/6 degree is heard on the left sternal border, at 2-3th intercostal space. Chest roentgenography showed cardiomegaly and very prominent pulmonary trunk. Two-dimensional echocardiography showed that pulmonary arteries are larger than normal, and there is a turbulent flow in the pulmonary artery and with CW Doppler 15 mmHg systolic gradient is measured. On angiography pulmonary valve is dysplastic and main pulmonary artery and its branches are dilated. There is moderate to high degree of regurgitation from main pulmonary artery. Cardiopulmonary bypass was established with bicaval cannulation, and the heart was arrested with cold antegrade blood cardioplegia. The pulmonary artery was then opened with a longitudinal incision above the sinuses. Inspection of the pulmonary valve revealed normal right-facing leaflet and anterior left lateral facing leaflet with slightly thickened edges, and the absence of a non-facing leaflet. There were no pathologic signs of active or previous infectious endocarditis. Deformative leaflets are excised. A Contegra graft was interposed proximally to the annulus and distally to the bifurcation of the pulmonary artery branches. Contegra graft were covered with native pulmonary artery. Patient stayed two days in the intensive care unit and discharged from hospital seven days after the operation.

This study appears to justify the need for surgical intervention at least after the development of symptoms. Surgical technique of the pulmonary incompetence has included heterograft replacement, homograft valve replacement, valved conduits, and creation of an autologous monocusp. Contegra grafts have been used frequently for pulmonary position. In this case we used Contegra graft successfully.

KEYWORDS: Pulmonary Insufficiency

PP 080 - ANEURYSM OF THE MEMBRANOUS VENTRICULAR SEPTUM WITH SUBAORTIC DISCRETE MEMBRANE -ORIGINAL IMAGE-

Gurbuz A., Yetkin U., Lafci B., Ozpak B., Gurbuz A.

Izmir Atatürk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

The ventricular septal defect (VSD) may close spontaneously in the first few years of life. It was recently shown that the appearance of aneurysmal transformation may be associated with subaortic ridges.

A 16 - year- old female was admitted to our hospital with tachycardia. Transthoracic echocardiography revealed a malignment type perimembraneous ventricular septal defect with left-to-right shunt, a discrete membrane forming a dynamic subaortic stenosis with a pressure gradient of 50 mm Hg in the left ventricular outflow tract and an asymmetrally hypertrophied interventricular septum. Cardiac catheterization pointed out no additional pathology. During surgical period discrete membrane was resected following aortotomy. After right ventriculotomy an aneurysm was revealed on the interventricular perimembraneous septum. Mitral leaflets showed neither organic lesions nor prolapse. Cribriform ventricular septal defect pores were present on the aneurysm. This aneurysm was repaired by wrapping the tissue over itself. Then, the defect of patent foramen ovale was repaired primarily. Postoperative echocardiographic data confirmed complete correction of the lesions.

The morphology of the aneurysmal transformation in perimembraneous ventricular septal defect can be characterized by echocardiograms. Two-dimensional echocardiography is the best method to determine the mechanisms that take part in the aneurysm formation.

KEYWORDS: Aneurysm, membranous ventricular septum, subaortic discrete membrane

PP 081 - THE SURGICAL TREATMENT OF AORTOPULMONARY WINDOW IN A 5-YEAR-OLD PATIENT

Omeroglu S. N.¹, Denli S.¹, Gode S.¹, Balkanay O. O.¹, Sayilgan C.², Yuceyar L.², Guzeltas A.³, Ipek G.¹

¹*Department of Cardiovascular Surgery, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey*

²*Department of Anesthesiology and Reanimation, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey*

³*Department of Pediatrics, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey*

A 5-year-old male patient was referred to our clinic with a diagnosis of Type 1 aortopulmonary window. The pulmonary artery pressure was 79/42 mmHg (mean 54 mm Hg) while the aortic pressure was 78/38 mmHg (mean 51 mmHg) at cardiac catheterization. Qp/Qs was 6.59. Pulmonary vascular resistance was 1.64. The pressure of the pulmonary artery slightly decreased after oxygen inhalation.

The operation was conducted on cardiopulmonary bypass. Longitudinal aortotomy was performed after cross-clamping the aorta. A well-defined defect of 3x2 cm in dimensions between aorta and pulmonary artery was detected. The aortopulmonary window was closed using a Dacron patch.

The pulmonary artery pressure decreased to 42/14 mmHg while the aortic pressure increased to 90/50 mmHg after the repair. The patient was discharged without complications on postoperative day 7.

The surgical treatment of aortopulmonary window can be successfully performed even if the age of the patient increases depending on the pulmonary vascular resistance.

KEYWORDS: Aortopulmonary window, Pulmonary hypertension, Pulmonary vascular resistance

PP 082 - OUTCOME OF VENTRICULAR SEPTAL DEFECT REPAIR IN DR SAMI ULUS CHILDREN HOSPITAL CARDIOVASCULAR SURGERY CLINIC

Kutsal A.¹, Koc M.¹, Nebigil R. M.¹, Disli O. M.¹, Ulsan V.², Surer S.¹, Bolat A.¹, Bas T.¹, Isik O.¹, Ocal B.³, Orun U. A.³, Senocak F.³

¹*Department of Cardiovascular Surgery, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey*

²*Department of Anesthesiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey*

³*Department of Pediatric Cardiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey*

Ventricular septal defect (VSD) is one of the most common congenital heart defects, accounting for 25% to 30% of all children born with structural heart disease.

Large VSDs cause significant morbidity and mortality in infants because of congestive heart failure and recurrent lung infections.

In the VSDs that need closure, surgical treatment is aimed at prevention of pulmonary hypertension, endocarditis or in some instances of progressive aortic valve regurgitation. Delay in closure of large VSDs during infancy is also associated with a risk for development of pulmonary vascular obstructive disease.

METHOD: Between May 2005 and May 2008 a consecutive series of 108 patients (53 females) were operated for closure of a VSD or ASD and VSD combination. The age of the patients ranged from 3 month to 14 year mean age was 4 year.

All patients were repaired by means of cardiopulmonary bypass (CPB) with aortic and bicaval cannulation and mild-to-moderate hypothermia (28°C). The VSD was approached through the right atrium and tricuspid valve in all patients. The septal or the anterior leaflet of the tricuspid valve was detached in one patient to visualize the VSD and protect the chordae crossing the VSD. All the defects were closed with a double velour Dacron patch, with continuous polypropylene sutures. All associated lesions were also corrected during the operation.

RESULT: Hospital mortality rate for these 108 patients was 3,7%.

DISCUSSION: Found either as an isolated lesion or in combination with other cardiac anomalies, ventricular septal defects (VSDs) are the most common congenital intracardiac defects of clinical importance. Staged repair with pulmonary artery banding was recommended because of the high risk of open heart surgery in infancy. Today, pulmonary artery banding still has a role in the management of VSD in the setting of associated complex cardiac lesions. Indications for surgical repair in infancy are uncontrolled congestive heart failure, including growth failure or recurrent respiratory infection.

The risk of VSD closure is low and the development of pulmonary vascular disease is unpredictable. Therefore, patients who for some reason still show a large L-Rshunt (> 2:1) by the age of 2 years must be operated without delay. Patients with pulmonary arteriolar resistance of 10 units/m2 or more are considered to be inoperable; those with the resistance of 6–8 U/m2 have to be evaluated very carefully.

KEYWORDS: VSD, surgical repair

PP 083 - OUTCOME OF ATRIAL SEPTAL DEFECT REPAIR IN DR SAMI ULUS CHILDREN HOSPITAL CARDIOVASCULAR SURGERY CLINIC

Kutsal A.¹, Koc M.¹, Nebigil R. M.¹, Disli O. M.¹, Ulsan V.³, Bolat A.¹, Bas T.¹, Isik O.¹, Ocal B.², Orun U. A.², Senocak F.²

¹Department of Cardiovascular Surgery, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

²Department of Pediatric Cardiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

³Department of Anesthesiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

Atrial septal defect (ASD) is one of the most common congenital heart defects ASD was among the first anomalies to be corrected by operative treatment. Before the advent of cardiopulmonary bypass, several ingenious techniques were developed and used.

Secundum-type atrial septal defects account for approximately 80% to 85% of all ASDs. Sinus venosus defects (both the superior and the inferior type) and incomplete atrioventricular canal defects each constitute between 5% and 10% of all ASDs. Coronary sinus defects are a relatively uncommon form of ASD.

METHOD: Between May 2005 and May 2008 a consecutive series of 117 patients (55 females) were operated for closure of a ASD and associated lesions. The age of the patients ranged from 3 month to 15 year mean age was 6.3 year.

All patients were repaired by means of cardiopulmonary bypass (CPB) with aortic and bicaval cannulation and mild-to-moderate hypothermia (28°C). The ASD was approached through the right atrium in all patients. 83 secundum ASD defects were closed primary sutures and 3 secundum ASD defects were closed with pericardial patch, with continuous polypropylene sutures, 14 incomplete atrioventricular canal defects, 17 sinus venosus defects (both the superior and the inferior type), and 4 cor triatriatum with ASD were closed with pericardial patch, with continuous polypropylene sutures. All associated lesions were also corrected during the operation.

RESULT: Hospital mortality rate for these 117 patients was 0,8%.

DISCUSSION: The natural history suggests a slow development of symptoms and rising pulmonary artery pressure. When the pulmonary resistance rises and a right-to-left shunt appears, the patient starts to deteriorate more rapidly. It is accepted that significant secundum ASD should be closed in children. We prefer closure before patients reach school age.

Survival after repair of ASD was influenced by early age and increased pulmonary arterial resistance. In the series of Steele et al. (1987), patients with pulmonary arterial resistance of 15 U/m² did very poorly, whereas those with resistance under 10 U/m² did reasonably well.

KEYWORDS: ASD

PP 086 - REMOVAL OF EMBOLIZED PDA COIL FROM PULMONARY ARTERY WITHOUT CARDIOPULMONARY BYPASS

Aydin H., Surer S., Isik O., Bas T., Ozisik K.

Department of Cardiovascular Surgery, Dr.Sami Ulus Children's Hospital, Ankara, Turkey

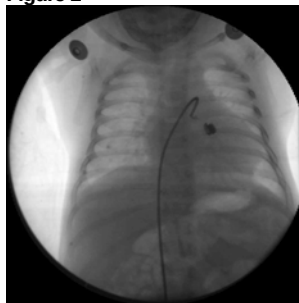
Four-months old girl underwent elective transcatheter coil (Ductocclud, PFM Coil, PFM AG, Cologne, Germany) embolization with diagnosis of moderate-size PDA. During procedure, following its release from the connector, the coil migrated and embolized to left pulmonary artery (Figure 1). The coil was seen to be embedded at lower segment branch of left pulmonary artery. Concerted effort of interventional cardiologists for removing the coil was failed after two hours. Coil cannot be retrieved despite the use of snare, basket and loop techniques. The coil was lodged and entrapped so tightly that even a millimeter of movement was impossible. After failure of all these attempts, baby was referred to our surgical unit urgently. Although the patient remained hemodynamically stable during the procedure, closure of PDA and removal of the coil was deemed necessary due to its long-term effects.

The procedure was planned to be held without cardiopulmonary bypass and carried out through left thoracotomy. The PDA was divided with double ligation. Then hilus of the lung was dissected and pulmonary veins were suspended with silastic loop in order to reach pulmonary artery and its major branches. After reaching main pulmonary artery, dissection was further carried towards lower segment artery and its palpated that the coil was lodged at very distal part of the artery where its impossible to remove with simple arteriotomy. As we planned before, we decided to use Fogarty catheter in order to remove this foreign object. Small arteriotomy was made at branching point of pulmonary artery and 4F Fogarty catheter was introduced. At first attempt we failed to remove it but second attempt was successful (Figure 2). Then we flushed the artery with heparinized solution and repaired the arteriotomy with dearing proximally and distally. Pulmonary circulation was restored. Thoracotomy was closed in a standard fashion with a small chest tube for drainage. Patient was heparinized with low molecular weight heparin for five days postoperatively. Chest tube was removed the day after surgery and the patient was discharged at fifth postoperative day without any problem.

This report emphasizes the need for cardiopulmonary by-pass is not mandatory for these patients and in no way these cases preclude catheter embolization as the preferred method of PDA occlusion.

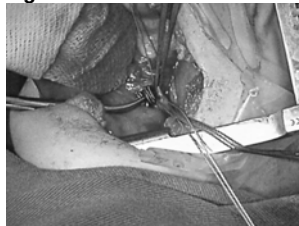
KEYWORDS: PDA, coil embolization, Fogarty catheter

Figure 1



Angiographic view of embolized coil

Figure 2



Removal of the coil with Fogarty Catheter through right thoracotomy

PP 087 - THE CONTEGRA XENOGRAFT IS A POTENTIAL ALTERNATIVE CONDUIT FOR THE EXTRACARDIAC FONTAN CONNECTIONS

Sersar S. I.

*KFSH and RC, Jeddah, Saudi Arabia***OBJECTIVES:** To compare between Contegra and Dacron tube as a conduit for Fontan completion.**METHODS:** The demographic, operative and follow-up data were analyzed in 32 children undergoing Fontan completion in King Faisal specialist hospital & Research centre; Jeddah.**RESULTS:** Contegra was used in 18 patients and Dacron tube was used in 14 patients. Of the contegra group, one patient died because of arrhythmia & sepsis, and the other one due to thrombosed Fontan, while in the Dacron tube, one patient died due to protein losing enteropathy.**CONCLUSIONS:** The Contegra xenograft is a potential alternative conduit for the extracardiac Fontan connections.**KEYWORDS:** Contegra, fontan**PP 088 - IS INTERRUPTED INFERIOR VENA CAVA A RISK FACTOR IN CASES OF BILATERAL BIDIRECTIONAL GLENN?**

Sersar S. I., Jamjoom A. A.

*King Faisal Specialist Hospital & Research Centre, Jeddah, Saudi Arabia***OBJECTIVES: BACKGROUND:** Bilateral Cavopulmonary anastomoses are technically challenging. Our impression has been that bilateral superior vena cavae are a risk factor for poor outcome in children needing single ventricle palliation especially if associated with Interrupted Inferior Vena Cava (IIVC).**METHODS:** Detailed demographic, operative, some angiographic, and follow-up data were analyzed in 40 children undergoing bilateral cavopulmonary anastomoses (b-CPA). The outcome was analysed and they were divided into 2 groups according to the presence and absence of IIVC.**RESULTS:** Forty Patients had bilateral bidirectional glenn shunts in King Faisal Specialist Hospital and Research Centre (KFSH&RC); Jeddah. All the IIVC cases (8) were hypo-RV. There was a significantly higher rate of arrhythmias, reoperation and need of Mean Mechanical Ventilation, Nitric Oxide Need and Oscillator Ventilation in the group of IIVC. The mean ICU stay was 2.8 days.**CONCLUSIONS:** In single ventricle anatomy, bilateral superior vena cava especially with hypo RV are more associated with interrupted inferior vena cava than single SVC. Bilateral cavopulmonary anastomoses with IIVC has a tough early postoperative course. We should look at and exclude or prove IIVC in cases of Bilateral SVCs.**KEYWORDS:** Interrupted IVC, Bilateral Bidirectional Glenn**PP 089 - TELEMETRICALLY ADJUSTABLE PULMONARY ARTERY BANDING: INITIAL EXPERIENCE WITH 4 CASES**Kalavrouziotis G.¹, Karanasios E.², Konstandopoulou G.⁴, Loukopoulou S.², Manoli E.³, Paphitis C.¹¹Department of Cardio-Thoracic Surgery, "AGHIA SOPHIA" Children's Hospital, Athens, Greece²Department of Cardiology, "AGHIA SOPHIA" Children's Hospital, Athens, Greece³Departments of Anaesthesiology, "AGHIA SOPHIA" Children's Hospital, Athens, Greece⁴Department of Fetal & Paediatric Cardiology, "IASO" Maternity Hospital, Maroussi, Greece**AIM:** Pulmonary blood flow control in congenital heart diseases has been the "dream" of many decades. Today, this dream seems to have come true. We present the first 4 cases in Greece with congenital heart disease (CHD) and pulmonary hypertension, who had pulmonary artery banding (PAB) with the "FloWatch®-PAB" telemetrically adjustable device.**PATIENTS - METHODS:** There were 4 infants (3 female). Their ages at the time of surgery were 28, 69, 231, and 290 days, and their body weight 3.6, 3.6, 4.2, and 6.2 kg, respectively. CHD diagnosis were: complete atrioventricular septal defect (n=2), ventricular septal defect (n=2), patent ductus arteriosus (n=2), secundum atrial septal defect (n=1). All patients were in heart failure and were submitted to PAB (plus PDA ligation) with the "FloWatch®-PAB" device. One patient had preoperatively fever of unknown origin, and a second one had fever during operation.**RESULTS:** The implantation of the device was easy. Mortality was nil. The patient with the preoperative fever was found intraoperatively to have septic pericardial effusion. Drainage of the effusion combined with appropriate antibiotic treatment resulted to smooth postoperative course. The other patient with the intraoperative fever, demonstrated septic shock on the first postoperative day. She was resuscitated successfully, and her course was uneventful thereafter. In no case the device was explanted. The other two patients had a smooth postoperative course. Median ICU stay was 2 days, and median hospital stay was 13 days. The device was regulated gradually under echocardiographic control in the next days after surgery till the desired pressure gradient across PAB was achieved. On follow-up at 2, 12, 5 and 6 months after surgery, all the patients were fine and had gained weight.**CONCLUSIONS:** 1. The "FloWatch®-PAB" device can precisely control pulmonary blood flow in both directions (decrease - increase). 2. It is, in fact, accompanied with no surgical mortality, and no surgical morbidity for PAB adjustment. 3. The device demonstrated resistance to an infected / septic environment without the need for explantation.**KEYWORDS:** pulmonary artery banding, adjustable, telemetrically adjustable, congenital heart disease

PP 090 - HEMITRUNCUS: EXPERIENCE IN DIAGNOSIS AND SURGICAL TREATMENT

Kalavrouziotis G.¹, Ciotti G.², Paphitis C.³, Papadopoulos G.⁴, Azariades P.⁵, Pozzi M.¹

¹Department of Cardiac Surgery, Royal Liverpool Children's Hospital "Alder Hey", Liverpool, United Kingdom

²Department of Cardiology, Royal Liverpool Children's Hospital "Alder Hey", Liverpool, United Kingdom

³Department of Cardiac Surgery, "Aghia Sophia" Children's Hospital, Athens, Greece

⁴Department of Cardiology, "Aghia Sophia" Children's Hospital, Athens, Greece

⁵Department of Cardiac Surgery, "Onassis" Cardiac Surgical Centre, Athens, Greece

OBJECTIVE: Anomalous origin of one branch pulmonary artery (PA) from the aorta with 2 normal semilunar valves (hemitruncus- HT) is a rare and fatal congenital heart disease. We present a 3-institution-experience in diagnosis and surgical management of this entity.

PATIENTS – METHODS: During the 8-year period from 7/1998 to 8/2006, 7 patients with HT were surgically treated in the 3 centers. All were infants (6 male) with a median age at surgery 83 (range, 58-243) days, and a median body weight 4.2 (range, 3.9-7.8) kg. All presented with signs of congestive cardiac failure and pulmonary hypertension. Diagnosis was made by echocardiogram (5/7 cases), and / or cardiac catheterization (4/7 cases). Six patients had anomalous origin of the right PA from aorta, and one had the left PA from aorta. Surgical technique employed reattachment of PA to MPA either directly or with augmentation with autologous pericardium (n=3). The aortic wall was reconstructed directly (n=4), or bovine pericardial patch (n=3).

RESULTS: There was no early or late mortality. One patient had seizures in the early postoperative period, with no abnormality on brain scan. At a mean follow-up with echocardiogram at 5 (range, 2-9) years has revealed one patient with mild-to-moderate stenosis at RPA origin. No patient is on medication, and none has required any reintervention. No patient has had any tracheal / bronchial problem.

CONCLUSIONS: Repair of AORPA as soon as diagnosis is made results in excellent haemodynamic and anatomic outcome. Mortality, both early and late, can be nil, and morbidity (reoperations and reinterventions) very low.

KEYWORDS: hemitruncus, anomalous origin of pulmonary artery, pulmonary artery, congenital heart disease

PP 092 - NEONATAL AORTIC COARCTATION REPAIR: EARLY AND MIDTERM RESULTS

Kalavrouziotis G.¹, Kourtesis A.¹, Eleftherakis N.², Kourerinis I.¹, Stavropoulou-empeira P.³, Konstandopoulou G.², Azariades P.¹, Papadopoulos G.², Thanopoulos V.², Paphitis C.¹

¹Department of Cardio-Thoracic Surgery, "AGHIA SOPHIA" Children's Hospital, Athens, Greece

²Department of Cardiology, "AGHIA SOPHIA" Children's Hospital, Athens, Greece

³Department of Anaesthesiology, "AGHIA SOPHIA" Children's Hospital, Athens, Greece

OBJECTIVE: Repair of aortic coarctation (CoA) in neonates (<30 days) is associated with higher mortality and increased incidence of restenosis compared to older children. We present our early and mid-term results in neonatal CoA repair.

METHODS: From June 2001 to May 2008, 58 neonates with a mean age of 17.5 (range, 7-30) days and a mean body weight of 2.7 (range, 1.4-4) kg, underwent CoA repair in our institution. Additional cardiac defects (besides PDA) were: VSD- 18, ASD / PFO- 9, hypoplastic aortic arch (HAA)- 4, aortic stenosis- 4, mitral stenosis- 1. Surgical techniques for CoA repair included: resection and end-to-end anastomosis (ETE)- 36, extended ETE anastomosis (EETE)- 9, radically extended ETE (REETE)- 4, subclavian flap (SF) alone- 4, synthetic patch (SP)- 2, SF + ETE- 1, SF + SP- 1. Pulmonary artery banding was performed in 11 cases with unrestrictive VSD.

RESULTS: There was one death (in theatre, after thoracotomy and before CoA repair), perioperative mortality- 1.7%. Follow-up of 53 patients (93% of the survivors) for 3 to 78 (mean: 42) months, revealed no late death; 8 patients (15%) had successful balloon dilatation 2 to 5 months postoperatively; two of these patients (both with HAA) had reoperation for aortic arch reconstruction (n=1), or post-balloon aneurysm formation (n=1); 11 patients (20%) are at present under antihypertensive treatment; 4 patients had successful repair of their intracardiac defect (VSD closure and pulmonary artery debanding). Age, weight, and surgical technique were not identified as risk factors.

CONCLUSION: CoA repair in neonates can be performed with very low early and mid-term mortality; recoarctation is relatively high, especially in smallish / hypoplastic aortic arches, but is irrelevant to age, body weight and surgical technique.

KEYWORDS: aorta, neonate, aortic coarctation, congenital heart disease

DISEASES OF THE AORTA: MEDICAL AND SURGICAL VIEW

PP 102 - ACUTE TYPE A AORTIC DISSECTION IN A PATIENT WITH VENTRICULAR SEPTAL DEFECT

Kaya M. G.¹, Mavili E.², Dogdu O.¹, Dogan A.¹, Inanc T.¹, Baykan A.³

¹Erciyes University, Department of Cardiology, Kayseri, Turkey

²Erciyes University, Department of Radiology, Kayseri, Turkey

³Erciyes University, Department of Pediatric Cardiology, Kayseri, Turkey

Acute aortic dissection (AAD) is an extremely fatal disorder, with a mortality rate of 1% per hour during the first 24 hours after the onset of chest pain. The extension of aortic dissection into the coronary arteries may cause acute myocardial infarction. Ventricular septal defects (VSD's) are common congenital heart defects, but there have been no reports of these defects in association with acute myocardial infarction and an acute aortic dissection in the literature.

We report a 38-year-old man with a long-standing history of a small ventricular septal defect presented with chest pain. Electrocardiography revealed sinus rhythm, ST segment elevation in leads V1-6. The chest x-ray showed mild cardiomegaly. He underwent cardiac catheterisation laboratory to primary coronary angioplasty. Coronary angiography showed normal coronary arteries. Aortic root angiography revealed type A aortic dissection (Figure 1). Transthoracic and transesophageal echocardiography showed aortic dissection in ascending aorta and a perimembranous ventricular septal defect (Figure 2). Thoracoabdominal CT angiography confirmed the aortic dissection before the surgery (Figure 3). The patient underwent to cardiac surgery immediately. The ventricular septal defect and aortic dissection were repaired successfully. The postoperative recovery was uneventful and he has thus far remained asymptomatic at 6 months follow-up.

In conclusion; the extension of aortic dissection into the coronary arteries may lead to acute myocardial infarction, like present case. This is the first case report in which there is an acute myocardial infarction and acute aortic dissection in a patient with ventricular septal defect. Patients with acute Stanford type A aortic dissection and VSD benefit from rapid surgical intervention because prognosis without surgery is very poor.

KEYWORDS: Acute aortic dissection, acute myocardial infarction, ventricular septal defect

Figure 1

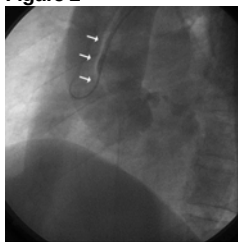


Figure 2

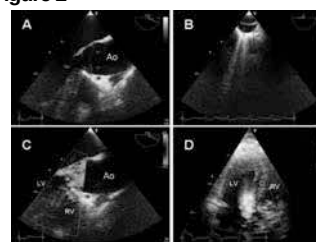
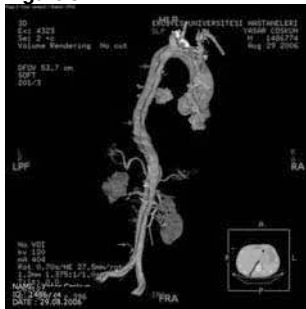


Figure 3



**PP 104 - EXTRAANATOMIC THORACIC AORTIC BYPASS
TECHNIQUE: ASCENDANT TO DESCENDANT AORTIC BYPASS
GRAFTING**

Goktas B.¹, Goksel O. S.¹, Badem S.¹, Toker A.², Alpagut U.¹, Tireli E.¹, Dayioglu E.¹

¹Department of Cardiovascular Surgery, Istanbul University, Istanbul Faculty of Medicine, Istanbul, Turkey

²Department of Thoracic Surgery, Istanbul University, Istanbul Faculty of Medicine, Istanbul, Turkey

AIM: Aortic coarctation and aneurysms are usually repaired by resection and end to end anastomosis. At adult coarctations and recoarctation syndromes, false aneurysms and steal syndromes, anatomic repair may be complicated by the need for extensive mobilization of the aorta, control of collateral blood vessels, damage to the recurrent laryngeal or phrenic nerves, chylothorax, and spinal cord ischemia. We demonstrate the results of 3 operations of an extra anatomically bypass technique via right thoracotomy approach

METHODS: Case 1: 24-year-old male patient presented to our clinic with complaints including hypertension in upper extremities, fatigue and headache. He was previously operated when he was 18-year-old due to aortic coarctation via left thoracotomy and with patch aortoplasty. Physical examination revealed absent femoral pulses and weak left upper extremity pulses. Right arm-lower extremities systolic pressure gradient was 100 millimeters-mercury. Echocardiography and cardiac catheterization demonstrated hypoplasia of the aortic arch between left carotid and left subclavian artery.

Case 2: 17 years old male child, with a history of crash injury (blunt trauma on the chest) was admitted to emergency room with dyspnea and chest pain. Computed tomography (CT) scan, magnetic resonance imaging (MRI) of the chest revealed an aneurysm involving the arch of the aorta.

Case 3: 32 year old male patient presented to our clinic with complaints including hypertension. Physical examination revealed absent femoral pulses. Right arm-lower extremities systolic pressure gradient was 80 millimeters-mercury. Echocardiography and cardiac catheterization demonstrated hypoplasia of the aortic arch and isthmus. Extension of aortic disease no allowed to performed resection and end to end anastomosis.

On the operation first right thoracotomy was performed. The patients were operated on without cardiopulmonary bypass under normothermia. Descending thoracic aorta was palpated along the left side and posterior of esophagus. Mediastinal pleura at the right side of esophagus was dissected. We performed supracoronary ascendan to descendan aortic bypass with Dacron tube graft. Two patients were discharged to home on early postoperative period and one patient died on long term period from sepsis.

CONCLUSIONS: Extraanatomic ascending-to-descending aortic bypass via right thoracotomy which is a safer, less invasive and effective method for correction of the complicated forms of thoracic aortic pathologies.

KEYWORDS: Ascending-descending aortic bypass, Extraanatomic bypass, Right thoracotomy

PP 105 - ENDOVASCULAR TREATMENT OF THORACIC AORTIC PATHOLOGIES

Torlak Z., Goksel O., Badem S., Cinar T., Alpagut U., Tireli E., Dayioglu E.

Department of Cardiovascular Surgery, Istanbul University, Istanbul Medical Faculty, Istanbul, Turkey

OBJECTIVE: Thoracic aortic surgery has still significant mortality and morbidity rates despite advances in anesthesia, intensive care unit follow up and surgical techniques. Endovascular stent grafting was first applied to the abdominal aorta in 1991. Since then, increasing experience and technological improvements endovascular grafting has been applied even in critical segments of the aorta, such as the thoracic and arch levels. We summarize our experience of endovascular stent grafting in the treatment of thoracic aorta pathologies.

PATIENTS AND METHODS: Between January 2005 and June 2007, 22 endovascular treatment for thoracic aorta were performed in 26 patients at our institution. Aortic pathologies were; PDA (1 patient), saccular aortic arch aneurysm (2 patients), descending aortic aneurysm (10 patients), chronic type B aortic dissection (4 patients) and acute type B aortic dissection (5 patients). Accompanying pathologies were abdominal aortic aneurysm (5 patients), aortic aneurysm with aortoiliac occlusive disease (2 patients) and iatrogenic iliofemoral stenosis (1 patient). Cerebrospinal fluid drainage catheter was routinely inserted before the procedure and pressure was monitored.

RESULTS: Due to very small calibration of the whole aortic and iliofemoral segments endovascular treatment could not be performed in the PDA case. In one of the patients treated for saccular arch aneurysm, descending aortic rupture ensued during the long term follow up and it was treated with stent graft implantation. In one patient treated for chronic type B dissection, antegrade and retrograde aneurysm also compressing the stent graft developed and it was treated with endovascular stent grafting. In one patient, unidentified quadriplegia occurred in the early postoperative period and resolved spontaneously. Type I and type II endoleak occurred in two consequent patients. Two patients died in the early postoperative period. Hybrid therapy and/or multiple endovascular procedures were applied to the accompanying pathologies. The patients were discharged from the hospital in mean 7 days.

CONCLUSION: Nowadays endovascular stent grafting is commonly used in the treatment of thoracic aortic aneurysms with successful early and mid term results. Despite still the gold standard surgical treatment, we believe endovascular stent grafting is an attractive alternative to open surgery especially in patients with multiple comorbidity factors.

KEYWORDS: Aortic arch; aneurysm, type B dissection; endovascular stent graft

PP 106 - A FIBROMATOSIS CASE MIMICKING ABDOMINAL AORTA ANEURYSM

Tasdemir K.¹, Gunebakmaz O.², Kaya M. G.², Mavili E.³, Tasdemir A.⁴, Ceyran H.³

¹Department of Cardiovascular Surgery, Erciyes University, Kayseri, Turkey

²Department of Cardiology, Erciyes University, Kayseri, Turkey

³Department of Radiology, Erciyes University, Kayseri, Turkey

⁴Department of Pathology, Erciyes University, Kayseri, Turkey

Abdominal aorta aneurysm is very rare in young adult women and mostly develops secondary to Behcet's disease, trauma, and infection or connective tissue diseases. Incidence of aneurysms occurring as a result of atherosclerotic changes increases in post-menopausal period. Diagnosis can be established with arteriography, tomography or magnetic resonance imaging associated with clinical findings. Tumors and cysts should be considered in differential diagnosis. Abdominal ultrasound and contrast enhanced computerized tomography revealed an infrarenal abdominal aorta aneurysm in a 41 year old woman (Figure 1,2), but on surgery, retroperitoneal fibrosis surrounding the aorta was detected and confirmed with pathological examination (Figure 3). We present this interesting case because retroperitoneal fibrosis encircling the abdominal aorta can mimic abdominal aorta aneurysm radiologically.

KEYWORDS: Abdominal aorta aneurysms, fibromatosis

Figure 1



Preoperative contrast enhanced axial CT images demonstrates the aorta is surrounded by a soft tissue mass.

Figure 2



Preoperative contrast enhanced oblique sagittal images shows that the lesion is extending to the iliac arteries.

Figure 3



Pathological examination shows fibromatosis (hematoxylin-eosin, 40x).

PP 109 - AORTA-CAVAL FISTULA IN A BEHCET'S DISEASE PATIENT DUE TO ABDOMINAL AORTIC PSEUDOANEURYSM

Turk T., Ata Y., Eris C., Demir M., Yavuz S.

Bursa Yuksek Ihtisas Training and Research Hospital, Department of Cardiovascular Surgery, Bursa, Turkiye

Behcet's disease is a chronic, recurrent, systemic disease that is characterized by oral and genital ulcers and oculocutaneous inflammatory lesions. Cardiovascular involvement is a common feature; especially large artery involvement is a serious complication of Behcet's Disease. We present a case of abdominal aortic pseudoaneurysm associating Behcet's disease complicated with an aortacaval fistula.

A 24 years old man referred to our hospital with a diagnosis of an AAA. He also had a diagnosis of BD which was established in another hospital because of a history of uveitis and recurrent oral or genital ulcerations. MRI revealed a 6X8 cm pseudoaneurysm at the distal abdominal aorta just proximal to the bifurcation of the aorta associated with an ACF. After medical treatment the patient was explored with midline laparotomy. There was a huge pseudoaneurysm nearly to rupture with a 1-1.5 cm neck. The real size of the pseudoaneurysm was bigger than MRI image and was surrounding the aorta including the retroaortic region. After opening the pseudoaneurysm pouch and evacuating the thrombus we found the venous bleeding into the aneurysm pouch at the right and distal part of the pseudoaneurysm that was coming from a 0.5 cm connection from the inferior vena cavae. The fistula was sutured primarily by manual compression of distal and proximal cavae. After reaching to the disease free and normal segments of the aorta we performed a Dacron graft interposition to the abdominal aorta using teflon felt at the anastomoses. The patient had an uneventful postoperative course and was discharged at the seventh postoperative day.

According to our knowledge, our case is the first abdominal aortic pseudoaneurysm associated with ACF in a BD patient in English literature.

As a conclusion, diagnosis of BD should always be considered in patients who present with aortic aneurysm or pseudoaneurysm especially in young adults from Mediterranean region or Asia. Additionally, ACF associating with AAA or pseudoaneurysm should be kept in mind as a complication. Patients with BD should also be under regular evaluation for diagnosis of arterial complications. Surgery or endovascular treatment modalities must be considered for any aneurysm or pseudoaneurysm complicating BD with a risk of rupture or ACF formation.

KEYWORDS: Aorta, Vena Cavae, Fistula, Aneurysm, False, Behcet syndrome

PP 110 - A SINGLE STAGE OPERATION WITH TWO DIFFERENT INCISIONS IN A CASE WITH ASCENDING AORTIC ANEURYSM AND AORTIC COARCTATION

Erkut B.¹, Ates A.¹, Aslan S.², Alper F.³, Karaca Y.¹, Keskin O.¹

¹Ataturk University, Medical Faculty, Department of Cardiovascular Surgery, Erzurum, Turkey

²Ataturk University, Medical Faculty, Department of Cardiology, Erzurum, Turkey

³Ataturk University, Medical Faculty, Department of Radiodiagnostic, Erzurum, Turkey

A 31-year-old man was referred to our unit for sudden onset of retrosternal, constrictive pain. A 3/6 systolic murmur was heard in the aortic area. Blood pressure was 160/100 mmHg in above extremity and 90/40 mmHg in the under extremity. A chest radiography showed rib notching and very large mediastinal site (Fig.1). A computerised tomogram of the chest revealed a giant aneurysm of the ascending aorta, normal aortic arch, and a coarctation of the aortic isthmus (Fig.2). Transthoracic echocardiogram confirmed the presence of an aneurysm of the ascending aorta and advanced aortic valve incompetence. The diameter of the ascending aorta was 11 cm. The patient underwent emergency surgery. In order to improve of the coarctation, a left thoracotomy was carried out at the fourth intercostal (Fig.3). The patchplasty was made with PTFE patch for coarctation repair. Then, the patient was rotated to the flat position, and was made median sternotomy. The pericardium was opened. The aneurysm was very large, but the aneurysm was limited to the ascending aorta, and the proximal segment of the arcus aorta didn't affected (Fig.4). There was cross-clamping site. Cardiopulmonary bypass (CPB) was initiated with femoral arterial and right atrium venous cannulation. The ascending aorta was cross-clamped and incised transversely. There was no dissection in ascending aorta. The sinuses of valsalva were abnormal, they were suspended, and the coronary ostia were displaced. The aortic valve was bicuspid, with partially fused, thickened, and calcified leaflets. The aortic valve was excised, and the segment of the ascending aorta comprising the aneurysmal part was resected. The patient was performed modified Bentall procedure with 30 mm ascending aortic graft as described by Yakut et al. The anastomoses were reinforced with gelatin resorcinol glue and teflon strips. The thoracotomy and then sternotomy were closed after bleeding control. Intensive care unit stay was 4 days. No cerebral, respiratory or renal complications occurred.

In patients with ascending aortic aneurysm together with aortic coarctation, initially aortic coarctation must be repaired in one or two-stage procedure, in order to lessen proximal hypertension, decrease the chances of progressive dissection or rupture, and enable safe perfusion during correction of the aortic aneurysm. Besides, surgical repair may be performed through two different incisions by thoracotomy and sternotomy in cases treated with surgery in one stage or coarctation treatment may be carried out with extra-anatomical bypass following ascending aortic aneurysm repair by sternotomy only in one stage. Despite of increased anesthesia period and infections risk, one-stage technique two different incisions by thoracotomy and sternotomy allowed good exposure and radical corrective repair in both ascending aortic aneurysm and coarctation pathology. With this procedure, the extra-protective methods didn't necessities for spinal site during operation.

KEYWORDS: Ascending aortic aneurysm, aortic coarctation, surgical treatment, Bentall procedure

Figure 1



Figure 2

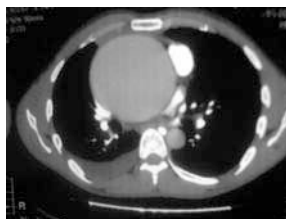
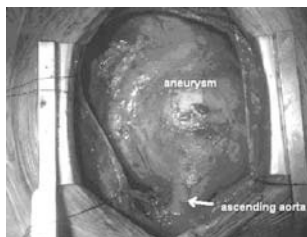


Figure 3



Figure 4



PP 111 - A GIANT ASCENDING AORTIC ANEURYSM WITH SILENT POSTERIOR DISSECTION AND DOUBLE RIGHT CORONARY ORIFICE

Ucar H. I.¹, Hidiroglu M.², Emir M.¹

¹Department of Cardiovascular Surgery, Private Sincan Lokman Hekim Hospital, Ankara, Turkey

²Department of Cardiovascular Surgery, Ataturk Hospital, Ankara, Turkey

BACKGROUND: Aortic aneurysms are caused by degeneration of the tunica media, causing dilation of all three layers of the artery. The wall of the aorta becomes progressively weaker as the aneurysm enlarges. Aortic dissection is the most common catastrophe of the aortic aneurysm. There is a strong link between aortic aneurysms and atherosclerosis. The pathologic changes in the ascending aorta can cause aneurysmal dilation of the aortic root which leads to valve incompetence and aortic regurgitation.

CASE: A 52 year-old man was admitted to the hospital with the complaint of chest pain, dispnea and fatigue. Chest radiography revealed a widened mediastinum. CT showed giant ascending aortic aneurysm and no dissection was detected. Echocardiography showed left ventricular systolic dysfunction (ejection fraction 40%), severe aortic regurgitation and aortic dilatation. The procedure is performed through a median sternotomy. Cardiopulmonary bypass is established with the right femoral arterial and right atrial cannulation and the aorta is cross-clamped just below the innominate artery. After aortotomy dissection just above the left coronary sinus was seen. The tear was 8 mm long and 5 mm wide in dimension. The aorta is transected at the sinotubular junction. The valve examination showed incompetence. During the procedure, a 30 mm Dacron tube graft is used to replace the proximal ascending aorta and No: 25 St. Jude aortic valvular prosthesis. The tube graft is measured to length distally and sutured to the distal aorta using running 4-0 prolene suture with a strip of felt. The right coronary artery origin had double orifice. The left and right coronary orifices are reimplanted to the graft.

CONCLUSION: Aortic dissection is more common in patients with hypertension, connective-tissue disorders, congenital aortic stenosis or bicuspid aortic valve, and in those with first-degree relatives with history of thoracic dissections. In our patient there was no history of atherosclerosis and connective-tissue disorders. Aneurysmatic dilatations must be carefully evaluated due to the risk of dissection which can lead catastrophic results.

KEYWORDS: Ascending aortic aneurysm, aortic dissection, Bentall procedure, open heart surgery

PP 114 - THE SURGICAL TREATMENT AND EARLY TERM RESULTS IN ACUTE TYPE A AORTIC DISSECTION

Becit N., Ceviz M., Unlu Y., Karaca Y., Diler M. S., Erkut B., Kocak H.

Department of Cardiovascular Surgery, Medical Faculty, Ataturk University, Erzurum, Turkey

OBJECTIVE: The purpose of this study is to present the surgical techniques and early term results of proximal aortic dissections.

MATERIAL-METHODS: Between 1996 and 2006, 59 patients operated due to proximal aortic dissection by same surgical team were reported. Thirty-nine (66.1%) of the patients were male, whereas 20 (33.9%) were female, with the mean age of 56.8. The diagnosis was based on clinical examination, telecardiography, transthoracic echocardiography and computerized tomography. The dissection type in 35 (59.3%) patient was Type I, in 24 (40.7%) was Type II. Distal anastomosis was performed under deep Hypothermic total circulatory arrest, retrograde or antegrade cerebral perfusion. In 48 patients (81.4%) were used femoral cannulation, and axillary cannulation in 11 patients (18.6%). Antegrade cerebral perfusion through the right subclavian artery or selective carotid arteries in 17 patients and retrograde cerebral perfusion in 42 patients was used for brain protection. Supracoronary ascending aortic replacement was made in 48 patients (81.3%). Of these patients, 15 patients concomitantly received aortic valve resuspension, and two patients underwent AVR. Aortic root and ascending aortic replacement with flanged composite grafting technique was performed in 11 patients (18.7%). Two patients concomitantly received a coronary artery bypass graft.

RESULTS: Fifteen (25.4%) patients died in postoperative early term. Five (8.5%) patients died in the first following year. Stroke occurred in 2 patients in postoperative early time. One of these patients was lost in 54th day. Aortic root replacement was made due to severe aortic regurgitation in one patient who had undergone ascending aortic replacement before 8 months. For the same patient an operation was needed because of pseudoaneurysm originating from coronary button anastomosis after 4.5 years of the operation.

CONCLUSIONS: We considered that aortic dissections may be operated with acceptable risk by using deep hypothermic circulatory arrest and cerebral perfusion techniques. Furthermore, if aortic root replacement is needed, flanged composite graft should be preferred, because it has more appropriate effects related to homeostasis and hemodynamic.

KEYWORDS: Aorta; dissection; surgical treatment.

PP 115 - INCIDENCE OF CORONARY ARTERY DISEASE FOR INFRARENAL ABDOMINAL AORTIC ANEURYSM CASES WHO UNDERWENT ELECTIVE OPERATION

Ergunes K.¹, Yasa H.¹, Yetkin U.¹, Akyuz M.¹, Gunes T.¹, Ozbek C.¹, Karahan N.², Gurbuz A.¹

¹Izmir Atatürk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

²Izmir Atatürk Training and Research Hospital, Department of II. Anesthesiology and Reanimation, Izmir, Turkey

OBJECTIVE: CAD is a major risk factor in patients scheduled for surgical treatment of AAA and causes elevated rates of morbidity and mortality. Stenosis over 50% in the coronary arteries were considered as a significant disease and these patients were performed coronary artery bypass grafting (CABG) or percutaneous transluminal coronary angioplasty (PTCA) before repair of AAA.

METHODS: A total number of 66 patients were operated for the infrarenal AAA in our clinic between March 2001 and November 2007. 45 patient underwent elective operation. In our series, we performed coronary angiography before the AAA repair in all patients who electively underwent operation, and 28 (62.2%) of these patients were detected CAD.

RESULTS: We performed CABG to one patient intraoperatively. CABG was performed 17 patients prior to AAA surgery and PTCA were performed 3 patients prior to AAA surgery. Thus, we performed coronary revascularization on a total of 82.1% (21) of cases which had CAD before elective AAA surgery had not been performed. The other 7 (17.9%) patients who had CAD did not show any indication for coronary revascularization and they received medical treatment before elective AAA surgery had not been performed.

CONCLUSION: Decline in rates of morbidity and mortality for elective surgical treatment of AAA is associated with early diagnosis, treatment of coexisting diseases prior to AAA surgical procedures and advancements in surgical techniques.

KEYWORDS: Coronary Artery Disease, Infrarenal Abdominal Aortic Aneurysm, Elective Operation

PP 117 - OFF-PUMP EXTERNAL WRAP-AROUND AORTOPLASTY: A CASE REPORT

Çağlı K.¹, Ulas M. M.¹, Lafci G.¹, Gedik H. S.², Korkmaz K.², Yalcinkaya A.¹

¹Türkiye Yüksek İhtisas Hospital, Department of Cardiovascular Surgery, Ankara, Turkey

²Kırıkkale Yüksek İhtisas Hospital, Department of Cardiovascular Surgery, Kırıkkale, Turkey

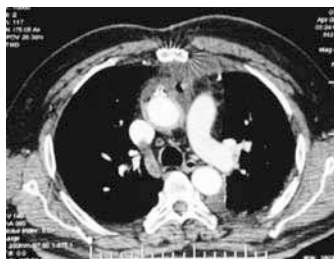
BACKGROUND: Off-pump reduction aortoplasty is a technically difficult procedure to perform. In this report we describe a case of a patient with coronary artery disease and aneurysm of ascending aorta, in whom coronary artery bypass grafting and reduction aortoplasty was performed in an off-pump manner.

CASE: A 71-year-old male patient with the history of diabetes mellitus, hypertension, cerebrovascular accident and myocardial infarction was admitted to our hospital for coronary angiography. Since severe stenosis was detected on proximal left anterior descending coronary artery (LAD), coronary artery bypass grafting surgery (CABG) was planned. Preoperative transthoracic echocardiography revealed that ascending aorta was 44mm in diameter with a left ventricular ejection fraction of 45%. Off-pump CABG including an anastomosis of left internal thoracic artery (LITA) to LAD was decided. After median sternotomy and preparation of LITA, pericardium was opened longitudinally. Ascending aorta was measured as 50mm in diameter intraoperatively. First of all, off-pump LITA-LAD anastomosis was performed. On beating heart, a 30x50mm Dacron tube graft with a longitudinal cut was wrapped around the dilated segment of aorta under systolic arterial pressure of 90mmHg. After wrapping, single U sutures were used to plicate the dilated segment of aorta between the free edges of the graft. During plication systolic arterial pressure was decreased to 40mmHg for a short period of time. After hemodynamic stabilization, operation was ended. On post-operative 4th day computed tomography angiography showed that ascending aorta was 32mm in diameter with a plicated appearance (Figure 1). After 1-year follow-up, ascending aorta was measured 33mm in diameter with echocardiography.

CONCLUSION: In the case of ascending aortic aneurysms, the general consensus tends toward performing an aortic replacement rather than aortoplasty. This case demonstrates that off-pump external wrap around aortoplasty can be performed successfully in selected cases.

KEYWORDS: aortoplasty, off-pump surgery

Figure 1



PP 118 - AN UNUSUAL COMPLICATION OF AXILLARY ARTERY CANNULATION FOR ACUTE TYPE A AORTIC DISSECTION REPAIR

Battaloglu B.¹, Erdil N.¹, Eroglu T.¹, Fansa I.², Cihan H. B.¹, Nisanoglu V.¹, Erbas F.¹

¹Department of Cardiovascular Surgery, Inonu University, Malatya, Turkey

²Department of Cardiovascular Surgery, Mustafa Kemal University, Hatay, Turkey

BACKGROUND: Axillary artery cannulation is a safe, feasible and reliable method for acute type A dissection repair. The complications of axillary artery cannulation include embolization, brachial plexus injury, wound hematomas and infection. We report right shoulder dislocation as an unusual complication of axillary cannulation.

METHODS: We reported the case of a 44-year-old man who referred to our institution because of acute type A dissection. The patient transferred to the operating room. Benthal procedure and hemiarth replacement with valved conduit was performed under selective antegrade cerebral perfusion by right axillary artery cannulation.

RESULTS: The postoperative course was satisfactory. The patient did not need inotropic agents. After 12 hours postoperatively the patient had parasthesia and muscular weakness involving the right arm. We expected this symptom as a result of brachial plexus injury. The patient was discharged on postoperative day 8. The patient's symptoms, right arm parasthesia and muscular weakness, had been continued till the routine control on the postoperative second month. There were no pathologic findings when the nerve and vessels evaluated. Right shoulder dislocation was found on the orthopaedic consultation and his therapy was arranged.

CONCLUSION: Axillary artery cannulation is a safe, feasible and reliable method for acute type A dissection repair. Postoperative complications occurs rarely. As a unusual and rare complication of axillary cannulation the right shoulder dislocation must not be forgotten.

KEYWORDS: Aortic Dissection, Surgery, Complication, Axillary cannulation

PP 119 - PREOPERATIVE RISK FACTORS IN INFRARENAL ABDOMINAL AORTIC ANEURYSM CASES

Ergunes K.¹, Yetkin U.¹, Yasa H.¹, Goktogan T.¹, Ozelci A.¹, Gokalp O.¹, Aksun M.², Gurbuz A.¹

¹Izmir Ataturk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

²Izmir Ataturk Training and Research Hospital, Department of II.Anesthesiology and Reanimation, Izmir, Turkey

OBJECTIVE: Treatment of coexisting diseases prior to AAA surgical procedures decline in rates of morbidity and mortality. Preoperative presence of advanced age, serum creatinin level $\geq$ 2 mg/dL, chronic obstructive pulmonary disease (COPD) and peripheric arterial disease have been showed to increase this rate.

METHODS: Sixty-six patients who had infrarenal AAA were operated in our clinic between the dates March, 2001 and November, 2007. Sixty-four patients were male and two patients were female. Their ages ranged from 36 to 84 years (mean was 64.65 $\pm$ 9.03). AAA was nonrupture in 45 patients and they were operated electively. 21 patients who had ruptured AAA was operated emergently.

RESULTS: In Table 1(Patient characteristics) presents data illustrating higher rates of preoperative risk factors such as advanced age, coronary artery disease (CAD), chronic obstructive pulmonary disease (COPD), periferic arterial disease, creatinin level $\geq$ 2 mg/dL and hyperlipidemia pertaining to patients, who underwent surgical treatment of AAA[CAD (63.6%), hypertension (53%), hyperlipidemia (12.1%), COPD (9.1%), renal dysfunction (serum creatinine level $\geq$ 2mg/dL) (3%), peripheric arterial disease (18.5%) and carotid artery disease (1.5%)].However, the difference between the risk factors of ruptured and non-ruptured AAA cases did not show statistical significance.

CONCLUSION: Preoperative detection of risk factors and appropriate treatment can reduce postoperative morbidity and mortality rates.

KEYWORDS: Risk Factors,Infrarenal Abdominal Aortic Aneurysm

PP 121 - REPAIR OF THORACIC AND THORACOABDOMINAL AORTIC ANEURYSMS USING HYBRID PROCEDURES

Ozsoyler I., Yilik L., Gunes T., Kestelli M., Aksun M., Uluc E., Gurbuz A.

Izmir Ataturk Training and Research Hospital, Izmir, Turkey

Surgical treatment of thoracic aortic pathologies still have high mortality and morbidity rates today. Furthermore, mortality and morbidity rates are more higher in surgical treatment of thoracoabdominal aortic aneurism. Endovascular techniques using combination of the open techniques may be established more pleasant results. We reports our seven cases have operated on hybrid procedures.

Two patients have been operated on due to Type I aortic dissection. They have redo aortic dissection beyond of the old greft and false lumen expansion (Case 1 and 2). Two patients have Crawford Type III thoracoabdominal aortic aneurysm (Case 3 and Case 4). One patient has two aneurysm, one of them at descending aorta and other at abdominal aorta (Case 5). Debranching of the arcus aorta has been performed to first and second patients. Then, endovascular stent grafts have been inserted arcus and descending aorta. Total abdominal debranching have been performed to case 3 and case 4. Tube graft interpositioning to abdominal aortic aneurysm and endovascular stent graft repair to descending thoracic aorta have been performed in the same period. All of patients have been discharged. No mortality and morbidity occurred in early postoperative period. Mortality and morbidity rates of major surgical techniques required thoracic descending aortic aneurysms and thoracoabdominal aortic aneurysms may be reduced using hybrid techniques.

KEYWORDS: Aortic Aneurysms, Hibrid, Surgery

PP 123 - MANAGEMENT OF PORCELAIN AORTA AND USING LEFT COMMON CAROTID ARTERY AS INFLOW SITE IN CABG WITH OFF PUMP AND NO TOUCH TECHNOLOGY

Ulas M. M., Tasoglu I., Gedik S., Korkmaz K., Lafci G., Yalcinkaya A., Cagli K.

Turkiye Yuksek Ihtisas Hospital, Cardiovascular Surgery Clinic, Ankara, Turkey

A 76-year-old woman was applied for coronary revascularization after she had an acute myocardial infarction with subsequent postinfarct angina. Cardiac catheterization showed decreased cardiac function, 98% proximal lesion of the left anterior descending artery, 80% proximal circumflex artery narrowing, total occlusion of the right coronary artery. Successful off-pump coronary revascularization established in this patient. Inspection and palpation of the anterior mediastinum revealed a serious diffuse calcified ascending aorta and brachiocephalic artery. The LITA flow was not enough. A soft area was found on the anterior aspect at the base of the left common carotid artery. This location was selected as the arterial inflow site to which the greater saphenous vein was grafted end-to-side. The saphenous vein had a Y-branch suitable for bypasses. A first branch of saphenous vein was anastomosed to left anterior descending artery. Its second branch was anastomosed to right coronary artery. The patient was extubated 4 hours after the operation. She had an uneventful recovery. Various techniques have been described to reduce the risk of atheroembolism causing neurologic defects in patients with calcified ascending and arcus aortas. However, none of these techniques eradicated the risk of neurologic events, because none eliminated manipulation of the diseased aorta. In this report we are describing off-pump coronary revascularization in a patient with porcelain aorta and calcified brachiocephalic artery where saphenous Y-graft was used in a no touch technique of the ascending aorta.

KEYWORDS: porcelain aorta, y graft, coronary surgery

PP 124 - THE SURGICAL TREATMENT OF THE ASCENDING AORTIC ANEURYSMS: THE EARLY TERM RESULTS OF 43 CASES

Ceviz M., Unlu Y., Becit N., Karaca Y., Colak A., Erkut B., Kocak H.

Department of Cardiovascular Surgery, Medical Faculty, Ataturk University, Erzurum, Turkey

BACKGROUND: Ascending aortic aneurysms are lesions that should be surgically handled because of their life threatening complications like rupture and dissection. The surgical treatments and the early term results in patients with ascending aortic aneurysm were presented in this study.

METHOD: We retrospectively examined the records of 43 patients who underwent surgical treatment due to ascending aortic aneurysm at Ataturk University Medical Faculty, Cardiovascular Surgery Department between Jan 1992 and July 2008. The patients ranged in age from 18 to 71 years old (mean; 45,5±13,8). There were 32 (74.4%) men and 11 (25,6%) women. 27 (62,7%) patients had Marfan Syndrome. There were coronary arterial disease, mitral stenosis, aortic stenosis, and aortic coarctation in 6, 1, 4, and 2 patients, respectively. The emergency surgical treatment was required in 12 (27,9%) patients.

RESULTS: Bentall procedures or add cardiac interventions together Bentall procedures were performed in the 37 (86,0%) patients. Of these patients, aortic root and ascending aortic replacement with flanged composite grafting technique was performed in 30 patients (69.8%). The ascending aortic graft replacement was made in only 1 patient. Aortic valve replacement + ascending aortic graft replacement as separate were made in 5 patients. In 28 patients total circulatory arrest was used. The operative mortality was occurred in 1 (2.3%) patient with Bentall procedure and the early postoperative mortality occurred in 1 (2,3%) patient with aortic coarctation.

DISCUSSION: The enlargement process of the aortic diameter should be close monitored and operated unruptured in ascending aortic aneurysms. Besides, button modified Bentall procedure with flanged composite graft provides excellent results in term of reduced complications and good cardiac functions in the patients with Marfan Syndrome with the aortic root dilatation.

KEYWORDS: Ascending aorta, aneurysm, Marfan Syndrome, Bentall procedure, flanged technique, surgical treatment

PP 125 - ENDOVASCULAR TREATMENT OF ABDOMINAL AORTIC ANEURYSMS: FOUR CASES REPORT

Kecelgil H. T.¹, Bahcivan M.¹, Celik S.¹, Demirag M. K.¹, Belet U.², Akan H.²

¹*Department of Cardiovascular Surgery, Ondokuz Mayıs University, Samsun, Turkey*

²*Department of Radiology, Ondokuz Mayıs University, Samsun, Turkey*

The standard management of abdominal aortic aneurysms (AAA) is surgical, with graft replacement in the aneurysmatic segment. The treatment of AAA with endoluminal stent-graft prostheses is receiving increasing attention as an alternative method to abdominal surgery. We treated four patients with abdominal aortic aneurysms received bifurcated stent-graft. In conclusion, endovascular repair of abdominal aortic aneurysms with the use of stent-grafts looks like a safe and effective alternative method to conventional surgical technique.

KEYWORDS: Abdominal aorta, endoprosthesis, endoleac, radiodiagnosis, technique.

PP 126 - SPONTANEOUS RUPTURE OF THE ASCENDING THORACIC AORTA IN YOUNG MANRahman A.¹, Colak M.¹, Bozdemir N.², Kocakoc E.³¹Department of Thoracic and Cardiovascular Surgery, Faculty of Medicine, Firat University, 23119, Elazig, Turkey²Department of Emergency, Firat Medical Center, Firat University, 23119, Elazig, Turkey³Department of Radiology, Faculty of Medicine, Firat University, 23119, Elazig, Turkey

INTRODUCTION: Spontaneous rupture of the ascending thoracic aorta without history of trauma, hypertension or apparent aortic pathology is a rare but catastrophic disorder. In this case, repair of a spontaneous Ascending Thoracic Aorta rupture is described in young man. Case report: 20-year-old male who had complained of sudden onset of severe chest pain and dispnea was admitted to our hospital. On admission, he was unconscious and in a state of shock with a systolic blood pressure of 70 mmHg. His blood pressure improved after treatment by intravenous drip combined with dopamine. Electrocardiogram (ECG) no showed myocardial infarct. Chest radiography revealed an enlarged mediastinal and cardiac silhouette. Transesophageal echocardiogram (TEE) showed a low attenuation echogenic space around the aortic arch corresponding to the mediastinal hematoma. The aortic root and aortic valve were normal. Initially, acute type A aortic dissection was suspected but CT scanning did not show a false channel, aortic dissection or intramural hematoma. CT scan of the chest revealed a mediastinal hematoma. His blood pressure fell to 70 mmHg and so an emergency operation was performed. A median sternotomy was performed. Surgery revealed a hematoma over the main pulmonary artery the ascending aorta and pericard. The patient was placed on cardiopulmonary bypass, after a rectal temperature of 24°C was achieved. The arcus aorta was normal. Thus arcus aorta was clamped before the innominate artery. We were find 15x20 mm a rupture in the anteromedial aspect of the ascending aorta approximately 40-50 mm from the aortic valve. The rupture site showed no evidence of dissection, cystic medial necrosis and atherosclerosis in the intima but pseudoaneurysm had produced a hematoma around the aortic wall without medial dissection. Furthermore, the adventitia of the pseudoaneurysm at the site of the rupture was walled off by organizing granulation tissue with hemorrhaging. The rupture was replaced with a dacron patch. Patient died on the 2nd postoperative day due to bradycardia and hypotension. Histopathology revealed normal aortic wall.

CONCLUSION: Although our case was young man, this was not associated with aortic aneurysm, dissection or trauma, inflammation of the aortic wall or erosion from a neoplastic mass and normal histopathology. He died on the 2nd postoperative day. Suspicion of spontaneous aortic rupture and aggressive exploration of the pericardium, mediastinum, or left thorax with appropriate aortic repair seems to provide the only chance for the patient's survival.

KEYWORDS: Spontaneous Aorta Rupture, Young Man

PP 127 - ENDOVASCULAR TREATMENT OF AORTIC ANEURISMS WITH ENDOVASCULAR STENT-GRAFT

Rahman A., Colak M., Ozdemir H., Oztugler M., E. Cil B.

Department of Thoracic and Cardiovascular Surgery, Department of Radiology, Faculty of Medicine, Firat University, 23119, Elazig, Turkey

OBJECTIVE: The aim of this study is to investigate the efficacy of thoracic and abdominal aortic lesions with endovascular stent-graft

METHODS: In 2007, 1 thoracic and 5 abdominal lesions underwent treatment with endovascular stent-graft. Indications for endovascular repair were nonspecific degenerative aneurysm. All of the patients were endovascular aortic repair performed with Medtronic®Talent stent-graft.

RESULTS: Repair was performed with thoracic stent-graft (1), aortabilliic stent-graft (1) and left iliac stent-graft (1), only aortabilliic stent-grafts (5). Technical success rate was 100%. No major complication or need of immediate conversion to open repair was seen. During the early follow-up period, death was seen due to acute coronary syndrome in 1 patient. No graft infection or death due to aneurysm rupture was detected.

CONCLUSION: Endovascular treatment of aortic lesions in selected patients with comorbid conditions using stent-graft exhibits a high degree of technical success with a low perioperative morbidity and mortality rate.

KEYWORDS: Endovascular aortic repair, aorta aneurysm, computed tomography

PP 128 - TREATMENT OF DELAYED RETROGRADE AORTIC DISSECTION AFTER ENDOVASCULAR STENTING OF DESCENDING AORTA; GRAFT TO ENDOGRAFT ANASTOMOSISKarabulut H.¹, Senay S.¹, Cagil H.², Toraman F.¹, Alhan C.¹¹Acibadem Kadikoy Hospital, Department of Cardiovascular Surgery, Istanbul, Turkey²Acibadem Kadikoy Hospital, Department of Radiology, Istanbul, Turkey

Endovascular aneurysm exclusion represents a valuable treatment option for descending thoracic aortic aneurysms. This method may be associated with procedure related early and late complications. We report 70- years-old male who developed acute retrograde dissection of the aortic arch and ascending aorta 30 days after endovascular stent-grafting of a thoracoabdominal aortic aneurysm (thoracic 20cm 44mm Medtronic stent graft and 20cm 46mm Medtronic stent graft) and extraanatomic reconstruction of supraortic branches (left carotico-subclavian artery bypass with Vascutek 8 mm graft). The ascending aorta and aortic arch were successfully replaced with a Dacron graft under deep hypothermia and circulatory arrest; the distal part of the graft was partially anastomosed to the previously placed endograft. Postoperative period was uneventful. No late complication was determined after 1 year.

KEYWORDS: endovascular treatment, aortic dissection

PP 129 - CHRONIC CONTAINED RUPTURE OF AN ABDOMINAL AORTIC ANEURYSM WITH VERTEBRAL EROSION

Colak M., Rahman A., Yucedag E., Azak S., Ustunel L., Aydin S., Kilinc A., Senol S., Kahraman A.

Department of Thoracic and Cardiovascular Surgery, Faculty of Medicine, Firat University, 23119, Elazig, Turkey

BACKGROUND: The chronic contained rupture of an abdominal aortic aneurysm is relatively rare (2.7% of operated infrarenal abdominal aortic aneurysms) and occurs when an aortic leak is contained by surrounding tissues (1). We report a case who presented with history of back pain.

CASE: A 82-year-old man presented with a 6-month history of back pain despite having medical treatment. He had no fever, and his blood pressure was 145/74 mm Hg on admission. His abdomen was soft without any palpable mass. There were no neurologic deficits, and peripheral pulses were normal. Results of initial bloodwork, including a complete blood count and measurement of urea and creatinine levels, were also normal. A computed tomography scan of his abdomen showed erosion of his third lumbar vertebra. An angiogram revealed an infrarenal abdominal aortic aneurysm 6 cm in diameter. Repair was performed with aortabilliic stent-graft. No major complication or need of immediate conversion to open repair was seen. No graft infection or death due to aneurysm rupture was detected.

CONCLUSION: Endovascular treatment of aortic lesions in selected patients with comorbid conditions using stent-graft exhibits a high degree of technical success with a low perioperative morbidity and mortality rate.

KEYWORDS: Aortic Rupture, Aneurysm, Vertebral Erosion

HEART FAILURE: CLINICAL OBSERVATIONS

PP 134 - USING LEVOSIMENDAN IN HEART FAILURE DEVELOPED AFTER INTRAORTIC BALLOON PUMP AND PERCUTANEOUS CORONARY INTERVENTION IN ACUTE MYOCARDIAL INFARCTION COMPLICATING CARDIOGENIC SHOCK. REPORT OF A CASE

Kurt I. H.

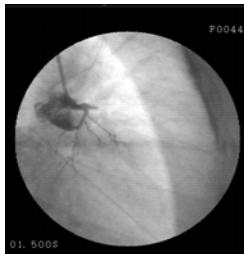
Adana Numune Education and Research Hospital, Department of Cardiology, Adana, Turkey

We present a case of a 62-year-old woman treated successfully with levosimendan in heart failure developed after intra-aortic balloon pump (IABP) and percutaneous coronary intervention (PCI) for cardiogenic shock following acute myocardial infarction. In physical examination, her skin was cold, pale and she was unconscious. Her blood pressure was 60/40 mmHg, pulse rate 104 /min, although it was supported with dopamin. In electrocardiography, we observed widespread ST elevation in V1-6, AVL, DI derivation. In the coronary angiographic study left anterior descending artery (LAD) was completely occluded at the proximal part, circumflex artery was rudimentary with diffuse plaques, and right coronary artery had several stenosis. (Figure 1) A coronary stent was inserted into LAD after balloon dilatation. (Figure 2) Since the luminal flow was decreased after coronary intervention, tirofiban infusion was started, and following IABP blood pressure increased to 90/60 mmHg and urine output 1800 cc/24h was increased. IABP was ended in 72 h. Because of manifest heart failure after IABP, levosimendan with a loading dose of 24 microg/kg over 10 min was initiated, followed by a continuous infusion of 0.2 microg/(kg min) for 24h. After levosimendan infusion, urine output increased about 2800 cc in 24 hours. Left ventricular ejection fraction was improved from 21% to 35 after levosimendan infusion. Treatment of cardiogenic shock due to acute myocardial infarction with IABP and revascularization by PCI was lower in-hospital mortality rates than standard medical therapy. Uses of intravenous levosimendan in acute heart failure with cardiogenic shock due to myocardial stunning are scarce.

CONCLUSION: Levosimendan therapy can be used in cardiogenic shock due to acute myocardial infarction after primer PCI in cases of IABP failure without any serious side effect, and with improvement of clinical and left ventricular function.

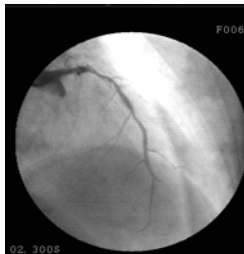
KEYWORDS: Cardiogenic Shock, Heart Failure, intra-Aortic Balon Pump, Levosimendan, Percutaneous Coronary Intervention

1



In coronary angiogram, right anterior oblique projection showing the total occluded left anterior descending artery at the proximal part.

2



In anterior-posterior coronary angiogram, showing total dilated LAD post PCI.

PP 138 - ANTEROLATERAL RIGHT THORACOTOMY FOR MITRAL VALVE PROCEDURE AFTER PREVIOUS CORONARY ARTERY BYPASS GRAFTING WITH FUNCTIONING INTERNAL MAMMARY ARTERY GRAFTS

Goktas B., Goksel O. S., Cinar T., Umaroglu S., Tireli E., Dayioglu E.

Department of Cardiovascular Surgery, Istanbul University, Istanbul Faculty of Medicine, Istanbul, Turkey

AIM: Mitral valve procedure after previous coronary artery bypass grafting (CABG) with functioning internal mammary artery (IMA) grafts has high risk. An injury to patent coronary artery bypass grafts, especially internal mammary artery grafts, during reoperation via a redo sternotomy, may be fatal. The anterolateral right thoracotomy affords easy access to the right atrium with minimal dissection, and minimizes the risk of injury to the IMA grafts. We reviewed our operative technique and outcome after mitral valve procedure after previous CABG with functioning IMA grafts.

METHODS: A 57 years old male was admitted to outpatient clinic with dyspnea on effort and orthopnea. In history, patient had undervent CABG operation (left internal mammary- diagonal 1, left anterior descending artery- saphenous vein (SV), posterior descending artery- SV) 7 years ago. Patient had New York Heart Association functional class IV. Transthoracic echocardiography showed 3rd degree mitral insufficiency. Coronary angiography showed that all coronary grafts were patent and severe mitral insufficiency was present. On the operation first right femoral artery cannulation was performed. After that right thoracotomy bi-caval cannulation was performed. Operation was performed with the use of moderate hypothermic cardiopulmonary bypass without cross-clamping the aorta in the beating heart.

RESULTS: Anterolateral right thoracotomy approach, beating heart with moderate hypothermia without cardioplegia were a safe and good method for mitral valve operation after previous CABG with functioning IMA graft.

KEYWORDS: Anterolateral right thoracotomy, mitral valve operation after previous CABG

VALVULAR HEART DISEASES: OLD PROBLEMS, NEW SOLUTIONS

PP 140 - PANNUS FORMATION AFTER AORTIC VALVE REPLACEMENT IN SJOGREN SYNDROME

Sacar M., Onem G., Emrehan B., Degirmenci M., Coskun O., Verdi D., Ozturk S., Ocak E., Isikli O. Y., Baltalarli A.

Department of Cardiovascular Surgery, Pamukkale University, Denizli, Turkey

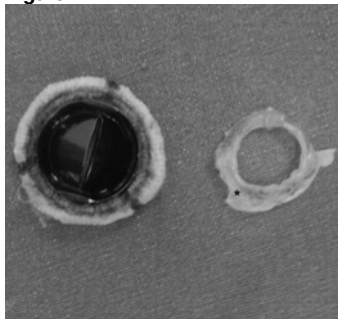
Although pannus formation after aortic valve replacement is not common, obstruction due to chronic pannus is one of the most serious complications of valve replacement. The causes of pannus formation are still unknown and effective preventive methods have not been fully elucidated. 41 years old woman with sjogren syndrome underwent aortic valve replacement reoperation because of valve obstruction due to pannus formation. Previously patient had undergone aortic valve replacement, mitral valve replacement and tricuspid annuloplasty procedure in 2004. Echocardiographic examination revealed a ring-shaped pannus formation narrowing subaortic region and resulting in severe aortic gradient. By this reason patient was reoperated. Surgical procedure was performed by using cardiopulmonary bypass. Because the subvalvular area could not be seen and reached to the resection of subaortic pannus formation, previously implanted prosthetic aortic valve was removed following aortotomy (Figure 1). Circular pannus formation was excised (Figure 2). A new prosthetic valve was replaced. Pannus was defined as fibrous plaque on microscopic examination of the resected tissue. There have been several reports concerning the cause of prosthetic valve dysfunction related to pannus formation revealed on surgical procedures. But the definitive causes of pannus growth had not yet been determined. In addition to chronic inflammatory reactions, the design and surface of the prosthetic materials, applied surgical techniques, low cardiac output state, turbulent blood flow, endocarditis, the valve size in patient with a small annulus and inadequate anticoagulation may all play a role in pannus formation. Sjogren syndrome is associated with connective tissue disorders, like SLE, Romatoid arthritis. We thought that pannus formation in this case is associated with sjogren disorder. In cases who had undergone prosthetic valve replacement with Sjogren disease a careful follow up with echocardiographic evaluation for the presence of pannus formation has to be made in order to detect it earlier.

KEYWORDS: Sjogren syndrome, pannus Formation, aortic valve replacement,

Figure 1



Figure 2

**PP 142 - INFREQUENT COMPLICATION OF MITRAL VALVE SURGERY: CORONARY ARTERY EMBOLISM**

Tuygun A. K., Kisa U., Alkan P., Ozdemir F., Aksoy R., Vural U., Balci A. Y., Tuygun A., Yekeler I.

Siyami Ersek Thoracic and Cardiovascular Surgery Center, Istanbul, Turkey

The most important reason of transmural myocardial infarction is atherosclerotic disease. Myocardial infarction after embolism is not very common. This complication can be seen subsequent to valve surgery, especially in cases which are related to dysfunctional valves.

CASE: Patient, who underwent mitral valve replacement seven months ago and had no health issues after the surgery, applied to an emergency room at a local hospital with severe chest pain and dyspnea. By the examination of her ECG, ST elevations at lateral derivations and normal sinus rhythm determined. She also had high Troponin levels on her blood test results. Coronary angiography was performed to diagnose if she had coronary artery disease. Although no atherosclerotic plaque observed at her coronary arteries; just for CxOm2 branch, total occlusion determined. This occluded branch of coronary arteries opened with primary PTCA. At that time, her INR result came as 3, 8. Her symptoms regressed immediately and she discharged from hospital. After one month, she applied to our hospital for the follow-up. This time her INR result came as 1, 4 and we planned to perform TEE (Transoesophageal Ecocardiography) We discovered thrombosis in her left atrium. We adjusted medication to increase INR adequate level for her treatment. After that she discharged from our hospital. One month later, we again performed her TEE to control thrombosis. We determined that size of the thrombosis is reduced and also it became organized.

DISCUSSION: Coronary artery embolism after intracardiac operations can be seen related to the air embolism, intracardiac prosthesis, infective endocarditis, mural thrombosis, cardiac tumors and masses. The most common artery for embolism is LAD because of its anatomically straight route. CxOm2 embolism is very rare. Treatment of this complication is not standard but it is up to etiology. Catheter aspiration instruments, PTCA, thrombolytic drugs are same of the treatment options.

KEYWORDS: mitral valve surgery, coronary embolism

PP 144 - MITRAL VALVE REPLACEMENT IN "COMPLEX" MITRAL INSUFFICIENCY: AN UNUSUAL CASE OF AN ISOLATED HAMMOCK MITRAL VALVE WITHOUT ANY CARDIAC MALFORMATION IN A FIVE YEARS OLD PATIENT

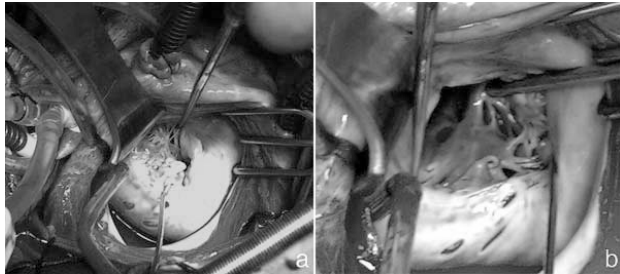
Ulas M. M., Kocabeyoglu S., Yener A. U., Cagli K., Lafci G., Hanedan O., Pac M.

Türkiye Yüksek İhtisas Hospital Cardiovascular Surgery Clinic, Ankara, Turkey

A 5-years-old patient was referred to our department for surgical treatment of severe mitral valve regurgitation due to fibrosis of the posterior mitral leaflet. Cardiac catheterization revealed severe mitral regurgitation, intact interatrial septum and poor left ventricular contractility. No other congenital malformation was found either on echocardiography or catheterization. At operation, direct inspection through left atriotomy confirmed the presence of hammock mitral valve. The anterior chordae were attached to the posterior papillary muscles and there were multiple orifices between the fibrous bands and chordae (Figure). There were multiple papillary muscles originating from high posterior wall of the left ventricle which had the shape of large muscular bands as little fingers. And also posterior leaflet was completely adhered to the annulus. Mitral insufficiency was related to the restricted motion of both leaflets and annular dilatation. It was not feasible for repair. After careful analysis of mitral valve and subvalvular apparatus, mitral valve replacement with 27 no. St. Jude Medical mechanical heart valve (St. Paul, Minnesota 55117 USA) was performed. The postoperative course was uneventful. In the first month follow up, echocardiography revealed an improvement of left ventricular wall motion with an ejection fraction of 52%.

KEYWORDS: Hammock mitral valve, congenital mitral valve abnormalities

a) Multiple orifices seen between the fibrous bands and chordae
b) Multiple papillary muscles originating from high posterior wall of the left ventricle which had the shape of large muscular bands as little fingers



PP 146 - MECHANICAL VALVE REPLACEMENT IN PATIENTS AGED $\geq$ 65 YEARS: EARLY POSTOPERATIVE OUTCOMES

Erdil N.¹, Nisanoglu V.¹, Fansa I.², Eroglu T.¹, Erbas F.¹, Secici S.¹, Cihan H. B.¹, Battaloglu B.¹

¹*Department of Cardiovascular Surgery, Inonu University, Malatya, Turkey*

²*Department of Cardiovascular Surgery, Mustafa Kemal University, Hatay, Turkey*

OBJECTIVE: The mean age of the population is increasing rapidly. Technical advances in cardiac surgery provide the opportunity to offer valve replacement to elderly patients. This study was undertaken to evaluate the early results of mechanical valve replacement in patients aged $\geq$ 65 years.

METHODS: Between September 2001 and March 2008, 47 consecutive elderly patients underwent heart valve replacement using mechanical valve with an average age of 68.7 ± 4.2 years (range 65 to 81 years), consisting of 25 male and 22 female at our clinic. Aortic valve replacement was performed in 31 patients, mitral valve replacement in 17 patients and double valve replacement in 1 patient. Concomitant coronary artery bypass grafting was performed in 14 patients.

RESULTS: Operative mortality rate was 4.3% (2 patients). Eleven patients required pharmacological inotropic support and an intraaortic balloon pump was placed in one patient. A total of 2 patients (4.3%) required re-exploration for bleeding or tamponade. Postoperative neurologic complications occurred in one patient. Three patients suffered from severe pleural effusion and required tube drainage. Mean intensive care unit and mean hospital stay time were 2.8 ± 1.4 and 6.9 ± 1.9 days, respectively.

CONCLUSION: With increased life expectancy and improved technology, valve replacement is being offered to increasing numbers of elderly patients with an acceptable operative risk and satisfactory clinical results.

KEYWORDS: Valve surgery, mechanical prosthesis, elderly patients, results

PP 147 - SURGICAL APPROACH TO A CONGENITAL MITRAL STENOSIS CASE WITH LEFT PERSISTENT SUPERIOR VENA CAVA

Ozbek C., Yetkin U., Lafci B., Gunes T., Yurekli I., Gurbuz A.

Izmir Atatürk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

Congenital mitral valve stenosis is a rare pathology.

Our case was a 5-year-old girl who was admitted to the Department of Pediatric Cardiology with complaints of fatigue. Echocardiographic investigations revealed severe mitral stenosis and she was hospitalized for surgical correction.

She was operated. After standard cannulation, right atriotomy was performed revealing an excessive amount of blood draining from coronary sinus ostium. Persistent left superior vena cava was found and suspended and snared. Subsequently, left atriotomy was done. The diameter of mitral annulus was compatible with her age. A severe mitral stenosis was seen due to commissural fusions. Suspensory sutures were put on the midpoints of the edges of anterior and posterior leaflets. These leaflets were suspended superolaterally demonstrating that the leaflet structure was severely deformed. Mitral commissurotomy was performed to the commissural areas not attached by the chordae. We tested the valve competence after this step on observing valve closure while the left ventricular cavity was filled with saline solution. There wasn't any saline regurgitation. Anterior and posterior leaflet structures were found to be competent. Opening of the valve was tested via Hegar dilators pointing that it was optimal. No additional problem was seen postoperatively and she was discharged on 7th postoperative day with surgical cure and outpatient clinic follow-up was recommended. Postoperatively on the day of discharge and after 3 months an echocardiographic investigation revealed no regurgitation for the repaired mitral valve.

Conservative surgery of the congenital mitral valve stenosis can be performed with acceptable early and midterm outcome in terms of mortality and reoperation rate. For this reason it is the procedure of choice for congenital mitral valve stenosis.

KEYWORDS: Congenital Mitral Stenosis, Left Persistent Superior Vena Cava, Surgery.

PP 148 - BLOOD CYST OF THE TRICUSPID VALVE

Kutsal A.¹, Nebigil R. M.¹, Surer S.¹, Bas T.¹, Isik O.¹, Unlu S.², Orun U. A.³, Ocal B.³, Senocak F.³

¹*Dr. Sami Ulus Children Hospital, Department of Cardiovascular Surgery, Ankara, Turkey*

²*Dr. Sami Ulus Children Hospital, Department of Anesthesia, Ankara, Turkey*

³*Dr. Sami Ulus Children Hospital, Department of Cardiology, Ankara, Turkey*

INTRODUCTION: Blood cyst of the cardiac valves are usually found in infants, but are rare findings in children and adults. Blood cyst of the cardiac valves are commonly found at necropsy in infants, but are quite rare after the sixth month of life.

CASE: A 18 months girl with ventricular septal defect (VSD) and patent foramen ovale was hospitalized. At physical examination; heart rate was 120/min, and the systemic blood pressure was 100/60 mmHg. Cyanosis and clubbing are absent. Systolic ejection murmur with a grade 4/6 was heard on the left parasternal area. The chest x-ray showed a cardiothoracic ratio of 60%. The ECG demonstrated left axis deviation. At echocardiographic examination a 9 mm pulmonary outlet VSD was seen. Cardiac catheterization was performed with PFO and VSD. A gradient of 60 mmHg between both ventricles were shown.

The operation was performed under cardiopulmonary by-pass with systemic hypothermia 28 C. Myocardial preservation was obtained by antegrad cold crystalloid cardioplegia. The right atrium was opened. There was an oval, multilocular cystic mass with 1x 0.5 cm in diameter which was attached on the septal leaflet of the tricuspid valve. The cyst was excised and the VSD was closed with a dacron patch with continuous polypropylene suture.

DISCUSSION: Blood cysts are congenital cysts found on the endocardium mostly which are lined by flattened endothelium and filled with nonorganized blood.

In 1844 Elsasser has described a blood cysts localized on the heart valves for the first time.

Since then many authors have defined blood cysts of the cardiac valves which were varied from pinpoint to pinhead in size in infants and these are believed to be benign and typically regress by 6 months of age. Review of the literature revealed 27 cases and most of them are localized at the papillary muscle of the mitral valve producing severe left ventricular outflow tract obstruction.

Optimal treatment of a blood cyst is controversial. Some of authors insist on that asymptomatic cysts can be monitored with echocardiography, and resection because of their benign character, should be reserved for cysts massed that interfere with normal cardiac function, while others proposed that the cysts should be removed surgically as soon as they are diagnosed and we also believed that surgical removal of the cysts is the only treatment of choice whenever diagnosed.

KEYWORDS: Blood cyst, Tricuspid valve, Cardiac surgery

PP 150 - MITRAL VALVE REPLACEMENT AFTER 14 YEARS OF CLOSED MITRAL COMMISSUROTOMY

Ozbek C., Yetkin U., Bademci M., Sahin A., Ozpak B., Goktogan T., Gurbuz A.

Izmir Atatürk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

Mitral stenosis is the most frequently encountered valvular pathology and may require surgical intervention when the lesion is severe in rheumatic etiology. Closed mitral commissurotomy (CMC) was the first effective intervention in valvular heart disease. CMC provides excellent long-term hemodynamic and clinical improvement in appropriately selected patients.

In this study we're presenting a successful mitral valve replacement in reoperation of a case who had CMC operation 14 years ago.

We think also, when symptomatic deterioration occurs late after CMC, MVR restores clinical and hemodynamic improvement in many patients

KEYWORDS: mitral valve replacement, closed mitral commissurotomy

PP 151 - AORTIC ANNULAR ENLARGEMENT FOR MECHANICAL AORTIC VALVE REPLACEMENT IN YOUNG PATIENT

Kutsal A.¹, Koc M.¹, Ulsan V.³, Bolat A.¹, Surer S.¹, Isik O.¹, Bas T.¹, Orun U. A.², Ocal B.², Senocak F.²

¹*Department of Cardiovascular Surgery, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey*

²*Department of Pediatric Cardiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey*

³*Department of Anesthesiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey*

Aortic annular enlargement is frequently necessary for the young patient with a small aortic annulus undergoing mechanical valve replacement. The Konno procedure was introduced to allow aortic valve replacement with an adequate sized mechanical valve for patients with a small aortic annulus.

CASE: A 12-years-old girl was referred to our department with a history of congestive heart failure and on examination she was found to be dyspneic with a diastolic murmur on right border of the sternum. She was operated for ASD and PDA at 5 years old. Echocardiography was demonstrated bicuspid aortic valve and 92 mmHg gradient at aortic valve. During surgery, standard cardiopulmonary bypass with bicaval cannulation, moderate hypothermia and multidose antegrade cardioplegia was used. A horizontal aortotomy was made and after explanting the old valve substitute, excessive fibrotic tissue was debrided. To relieve subvalvar obstruction and to implant a larger new prosthesis, an incision was made in the right ventricular outflow tract, followed by an incision across the aortic annulus into the ventricular septum to the left of the right coronary artery ostium, as described by Konno et al. A Dacron patch was then used to enlarge the subvalvular area and the aortic annulus. The appropriate valve sizes were used to measure the enlarged annulus. After valve insertion the Dacron patch was used to close the aortotomy for additional enlargement of the ascending aorta. The incision in the right ventricular outflow tract was enlarged with a dacron patch.

The patient was discharged at 6th postoperative day. At control follow-up the child was asymptomatic with no abnormal clinical findings and normal ECG.

DISCUSSION: Complex multilevel aortic stenosis, usually with a small aortic valve annulus, is the leading indication for aortic valve replacement in children. When AVR is indicated in young children, the bulky nature of the mechanical prosthetic valves, the limited available sizes, and the reduced hemodynamic performance of smaller sized valves in conjunction with complex multilevel LVOTO often lead to an extensive procedure, including enlargement of the aortic root in addition to AVR. Various methods to achieve this enlargement have been described;

The Konno aortoventriculoplasty has been reported to be a good surgical option for complex left ventricular outflow tract obstruction.

The major morbidity after the Konno aortic root enlargement is complete heart block. The incidence of pacemaker insertion following the prosthetic valve/Konno procedure has been from 6 to 12.5%.

KEYWORDS: Konno procedure

Picture-1



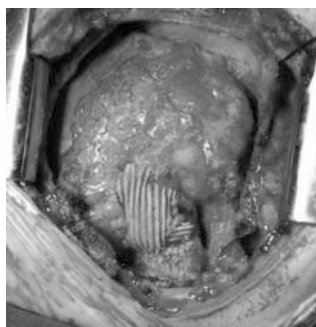
Picture-2



Picture-3



Picture-4



PP 152 - REPAIR OF AOTIC VALVE LEAFLET INJURY

Kutsal A.¹, Koc M.¹, Ulusan V.³, Bolat A.¹, Surer S.¹, Bas T.¹, Ocal B.², Orun U. A.², Senocak F.²

¹Department of Cardiovascular Surgery, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

²Department of Pediatric Cardiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

³Department of Anesthesiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey

Iatrogenic aortic valve injury and leaflet perforation have been reported after cardiac operations performed with the transaortic approach, such as repair of a bicuspid aortic valve, aortic valve decalcification procedure, and septal myotomy-myectomy.

At the time of operation, the aortic valve leaflets were inspected and the cause of regurgitation was assessed. Operation for iatrogenic aortic valve regurgitation required standard cardiopulmonary bypass through a median sternotomy. Aortic valve repair or replacement was done through a standard aortotomy incision. Aortic valve repair was considered or attempted in case. The aortic valve was repaired using suture approximation of the edges of the perforated leaflet tissue.

CASE REPORT: This 7 years old patient with VSD was initially referred at age 6 years old when the diagnosis of a perimembranous ventricular septal defect (VSD) and defect was closed with a double velour Dacron patch, in another clinic. Ten month after closure of the VSD an early diastolic murmur was heard for the first time and Doppler echocardiography revealed evidence of mild aortic regurgitation. Subsequently this aortic regurgitation progressed to a moderate level, and at cardiac catheterization 10 months after operation the pulse pressure was 78 mmHg with aortic systolic and diastolic pressures of 105 and 50 mmHg, respectively. It was suspected that the operation had contributed to the aortic regurgitation by damaging one of the valve cusps. Surgical treatment was recommended because of significant aortic incompetence and the high right-to-left ventricular pressure ratio. During the operation vertical aortotomy was made and right coronary leaflet defect was demonstrated, this perforation was repaired with teflon patch.

DISCUSSION: Aortic regurgitation caused by a leaflet perforation is seen most frequently in association with infective endocarditis involving the aortic valve. Iatrogenic aortic valve injury and leaflet perforation have been reported after cardiac operations performed with the transaortic approach, such as repair of a bicuspid aortic valve, aortic valve decalcification procedure, and septal myotomy-myectomy. Rarely, suture-related, inadvertent injury to an aortic valve leaflet can produce leaflet perforation with regurgitation after cardiac operations performed in the vicinity of the aortic valve (eg, mitral valve replacement, repair of a membranous ventricular septal defect, and repair of an ostium primum atrial septal defect).

KEYWORDS: Aortic Injury,

Picture-1



Right coronary leaflet defect

Picture-2



Right coronary leaflet defect

PP 155 - MITRAL VALVE REPLACEMENT ON BEATING HEART THROUGH RIGHT THORACOTOMY: A SAFE OPTION FOR REOPERATIONGoksin I.¹, Ozcan A. V.¹, Dereli M.¹, Emrehan B.¹, Tanriverdi H.²¹Department of Cardiac and Vascular Surgery, Pamukkale University, Denizli, Turkey²Department of Cardiology, Pamukkale University, Denizli, Turkey

Re-sternotomy after CABG is a challenging situation especially in the presence of patent grafts. Cardiac injury, bleeding, injury of a patent graft especially the internal thoracic artery (ITA), and difficulty of sternotomy are major problems that may increase morbidity and mortality in these patients. In this case report we present a patient who had mitral valve replacement on beating heart with the aid of cardiopulmonary bypass who had previous CABG operation.

CASE: 61-year-old male patient with the symptoms of fatigue and tachycardia had undergone CABG[LITA-LAD]+AVR operation 8 years before. The patient had NYHA functional Class IV symptoms. Transthoracic echocardiography showed severe mitral insufficiency. Coronary angiography revealed a patent LITA-LAD graft, RCA and Cx artery occlusion. The Cx artery had been intervened and opened with PTCA 2 months before. On the operation first right femoral arterial, femoral venous and percutaneous right jugular venous cannulations were performed. After right anterolateral thoracotomy the chest was entered through the fourth intercostal space. Ascending aorta and right upper pulmonary vein were continuously vented for air removal and to maintain clear surgical field during the procedure. Operation was performed with the use of normothermic (36°C) cardiopulmonary bypass (CPB) the beating heart without cross-clamping the aorta. Left atrial entrance was accomplished through the interatrial groove by left atriotomy. Mitral valve was fibrotic. Severe mitral regurgitation with leaflet degeneration was present. Posterior leaflet was preserved. 25 no bileaflet mechanical valve was implanted with interrupted pledgeted suture. The CPB time was 80 minutes. Post operative bleeding was 350 ml and early extubation was done in the fourth postoperative hour. The patient was discharged uneventfully on the seventh postoperative day without any complication.

DISCUSSION: Beating heart procedure on CPB provides perfect myocardial protection. Normothermic CPB protects against hypothermia related coagulopathy. Besides avoiding the cross-clamping, it protects myocardium against cardioplegia induced ischemia reperfusion injury. Trendelenburg position, continuous aortic venting, filling the cardiac chambers before the termination of CPB; and trans mitral or apical venting are useful to avoid air embolism. The occluded right coronary artery was small in size. Therefore we did not want to injure the patent LITA graft so we preferred thoracotomy. Nevertheless the right coronary artery was found ungraftable on evaluation of this artery during the procedure. There may be aortic regurgitation of blood while retracting the left atrial wall during the procedure. This may be due to the disturbance of aortic valve coaptation on left atrial retraction. This regurgitant volume may disturb the surgical field. However as in our case if there has previously been replaced aortic valve, this regurgitation will probably not be a problem due to the fact that the coaptation of this mechanical valve will not occur. As a conclusion, on-pump beating heart normothermic mitral valve replacement without cross-clamping the aorta through right anterolateral thoracotomy is a simple and safe procedure. It may be a good option for reoperation in the patients especially with patent bypass grafts.

KEYWORDS: Thoracotomy, Mitral valve, Beating heart, Resternotomy.

PP 156 - PHENOTYPE MODULATION AND APOPTOSIS OF FIBROBLASTS IN RHEUMATIC AND DEGENERATIVE AORTIC VALVE STENOSISSerag A. R.¹, Saied E. M.², Serag A. R.³, El-nahas A. M.⁴¹Department of Cardiothoracic Surgery, Tanta University, Tanta, Egypt²Department of Pathology, Tanta University, Tanta, Egypt³Department of Cardiology, Menoufiya University, Shebin El-Kom, Egypt⁴Sheffield Kidney Institute, Sheffield University, Sheffield, United Kingdom

BACKGROUND: Recent data suggest that activation and apoptosis of fibroblasts have been implicated in the pathogenesis of degenerative aortic valve stenosis. Little is known about their contribution to rheumatic aortic stenosis. Many studies to date have concentrated on elucidating the similarities between rheumatic and degenerative aortic valve stenosis, while explanatory studies explaining the observed discrepancies are lacking.

MATERIAL-METHODS: The study population included 28 patients undergoing aortic valve replacement for aortic valve stenosis. Fifteen cases were rheumatic (age 28 ± 8.6 years) and 13 cases were degenerative (age 65.3 ± 7.4 years). We performed histological, histochemical and immunohistochemical studies on formalin-fixed, paraffin-embedded stenotic aortic valve leaflets removed during aortic valve replacement. Immunohistochemical studies were performed according to avidin-biotin-peroxidase complex (ABC) technique using monoclonal antibodies directed against human Vimentin, alpha Smooth Muscle Actin (α -SMA) {cytoskeletal proteins} and polyclonal rabbit antihuman Bax antibody (pro-apoptotic marker). An immunoreactive score (IRS) was calculated by multiplying the grade of percentage of positive cells by the grade of intensity of different immunostaining.

RESULTS: Immunostaining for cytoskeletal proteins in stenotic aortic valves showed that there was a clear increase in cells expressing α -SMA and vimentin in relation to calcification and areas of fibrosis. Also, the presence of fibroblasts/myofibroblasts in areas of neovascularization was demonstrated. Cells lining these neovessels reacted positively with anti- α -SMA and anti-Vimentin.

On the other hand, all the studied valves showed positive Bax (pro-apoptotic) immunostaining that was predominantly detected in the cytoplasm of interstitial fibroblasts "especially in areas adjacent to calcification" as well as the endothelial cells of the new-capillary sprouts present in the valvular interstitium. The differentiating features are the positive Bax immunostaining, detected only in the cytoplasm of the valvular surface endothelial cells of rheumatic cases. Also, areas of neovascularization were more abundant in degenerative aortic valves and in the vicinity of calcification of these valves. The IRS was higher in degenerative aortic valve stenosis compared to rheumatic valves.

CONCLUSIONS: Our data suggest that activation and apoptosis of fibroblast play an important role in the fibrotic and calcific changes observed in aortic valve stenosis. They also appear to be associated with new vessel formation in scarred aortic valves.

Understanding the differences between fibroblast activation and apoptosis in the pathogenesis of rheumatic and degenerative aortic valve stenosis offers the potential to develop targeted therapeutic regimens.

KEYWORDS: Fibroblasts - Apoptosis - Calcification - Aortic stenosis

PP 157 - ETIOLOGICAL MITRAL VALVE REPAIR FOR MYXOMATOUS DISEASE. PRELIMINARY SURGICAL RESULTS

Fiore G., Guerra F.

Department of Cardiac surgery, Policlinico di Monza, Milan, Italy

OBJECTIVE: New concepts and recent advances in mitral valve repair surgical techniques allow the etiological correction of the myxomatous mitral valve regurgitation. This study presents the preliminary results with the use of the Edwards Myxo ring for correction of myxomatous derived MVR.

METHODS: Between January and June 2008, 10 patients affected by myxomatous disease underwent primary mitral valve repair with a new Myxo Etiologic annuloplasty ring (Edwards Lifesciences; Irvine USA) in our center.

This ring is geometrically shaped to accommodate the underlying pathology: increasing 29% the antero-posterior diameter and pulsing the posterior leaflet away from outflow tract and reduces systolic anterior motion (S.A.M.).

Moderate quadrangular resection and minimal sliding annuloplasty was performed in eight patients (80%) while in all patients a Myxo ring was implanted. The most frequently implanted size was 32 mm (range 30-34 mm).

RESULTS: The mean patients' at surgery age was 71 ± 7 years and 70% were female.

Preoperative echocardiography detected in 8 patients a ruptured chordae in P2 leaflet while the mitral valve regurgitation was classified severe (4+) in seven patients and moderate-severe (3+) in three. The mean distance from the coaptation point to the septum was 16.8 ± 3.2 mm (range 13-23 mm).

The A-P leaflet ratio was 1.4 or lower.

At follow-up after an average of 4.2 ± 2.5 months all patients presented a minimal mitral regurgitation (1+). A minimum reduction of x scores was observed in xy patients. Systolic anterior motion (SAM) was not observed in any patients and no deaths or reoperations did occur at time of follow-up.

CONCLUSIONS: Correction of mitral regurgitation with Myxo ring in our preliminary experience is good because, thanks to its particular geometry, it restores the normal anatomy and physiological structure of the mitral valve apparatus, significantly reduces the mitral regurgitation avoiding the risk of SAM. For complete validation of this evolving concepts and technologies in mitral valve repair a larger patient cohort and longer follow-up are required.

KEYWORDS: myxomatous mitral valve, Edwards Myxo ring

EXPERIENCES WITH NEW ECHOCARDIOGRAPHIC TECHNIQUES

PP 159 - LEFT AND RIGHT VENTRICULAR DYSFUNCTION RELATION WITH THE SEVERITY OF MITRAL REGURGITATION AND CHANGES IN VENTRICULAR GEOMETRY IN PATIENTS WITH MITRAL REGURGITATION: STRAIN AND STRAIN RATE IMAGING STUDY

Arslan S., Elbey M., Senocak H., Karakelleoglu S.

Department of Cardiology, Ataturk University, Erzurum, Turkey

BACKGROUND: We sought left and right ventricular function impairments by strain and strain rate (S/SR) imaging relation with the severity of mitral regurgitation (MR) and changes in ventricular geometry in patients with moderate to severe isolated MR.

METHODS: Thirty-one patients with isolated MR, 16 of whom were with moderate MR and 15 of whom were with severe MR, and 25 healthy controls were included in the study. Severity of MR was graded quantitatively by calculation of proximal isovelocity surface area and regurgitant volume. Real-time 2-dimensional color Doppler myocardial imaging data were recorded from the left ventricle and right ventricle at a high frame rate. Analysis was performed for S/SR from segments of all walls of left ventricle and strain and strain rate from free lateral wall of RV.

RESULTS: Age, female ratio, heart rate, and systolic and diastolic blood pressure were similar in all groups ($p>0.05$). The left ventricle and left atrial diameters increased in patients with MR, but left ventricle ejection fraction was similar in groups ($p>0.05$). S/SR values from segments of all walls of left ventricle decreased in MR patient ($p<0.001$). S/SR values of free wall of right ventricle were found to decrease in MR patients ($p<0.05$). A negative correlation was detected between effective regurgitant orifice area (ERO), regurgitant volume and left ventricle dimensions with S/SR values from all wall segments of left ventricle ($p<0.001$). On the other hand no significant correlation was found between ERO values and regurgitant volume with SR and strain values of free wall of right ventricle ($p>0.05$).

CONCLUSION: A decrease occurs in MR patients depending on the severity of MR and dysfunction in left ventricular geometry. This condition shows that in MR patients the deterioration in ventricular functions starts as subclinic at an early stage and becomes apparent in the later periods of MR.

KEYWORDS: Mitral regurgitation, strain/strain rate, left ventricular function, right ventricular function

CLINICAL OBSERVATIONS IN MYOCARDIAL AND ENDOCARDIAL DISEASES

PP 166 - REEXPANSION LUNG ODEMA IN POSTOPERATIVE EARLY PERIOD IN A CHILD CASE WITH MASSIVE PERICARDIAL EFFUSION

Iyem H.¹, Mansuroglu N.³, Alyan O.², Karahan Z.², Yilmaz A.¹

¹Dicle University, Department of Cardiovascular Surgery, Diyarbakir, Turkey

²Dicle University, Department of Cardiology, Diyarbakir, Turkey

³Dicle University, Department of Anesthesiology, Diyarbakir, Turkey

INTRODUCTION: Reexpansion lung edema is a complication arising during the treatment of the lung collapse for a long time. It is usually seen after discharging the air and the fluid very swiftly or removing the endobronchial lesion causing atelectasis. The beginning of the reexpansion edema is usually dramatic. Especially the mortality rate in bilateral and reexpansion of lung edema occurring suddenly is reported to be approximately 20%.

CASE: A 7 year old and 20 kg. child patient was admitted to the hospital for pericardial window because although the patient took medical and invasive treatment due to breathing distress, night sweating and weight loss for three months and did not respond to the treatment. In physical examination on the right, lung sounds were ordinary but on the left no lung sounds were heard. The heart sounds were heard deeply. Cardiac beats were 145/dk and blood pressure was 80/40mmHg. In his lung X-ray his heart shadow was wide and it had covered the left side of the lung. In the Transthoracic echocardiography an image of 6-7 cm. diameter resembling fibrinoid coherent with pericardial massive effusion was seen. The monitoring of invasive arterial pressure, cardiac output, central venous pressure and sPO₂ was applied to the patient with serious breathing distress under the emergency conditions. Dopamine infusion of 5mcg/kg/min was started and following the anesthetic induction, through the left anterolateral mini thorocotomy it was reached to the pericardial and approximately 3cm. pericardial window was opened. 600 mL serous liquid was pumped out. CVP decreased to 8 mmHg from 35. The preoperative sPO₂ was 92-95 %. Intraoperative sPO₂ was 98-99 %. Just after the extubation, postoperative sPO₂ decreased to 70-80 %. Although the patient's lungs were especially on the left, on both sides there were wet rales. We started antiedema treatment for the patient we thought to have developed reexpansion lung edema. Diuresis increased to 1000 ml. After extubation and 70-80 minutes of observation, the patient was stable. We started antiedema treatment for the patient we thought to have developed reexpansion lung edema. Diuresis increased to 1000 ml. After extubation and 70-80 minutes of observation, the patient was stable. There was improvement in sPO₂ (95-97 %).

DISCUSSION: In primary conditions related to lungs (pneumothorax, hydrothorax) if reexpansion with drainage of low, negative pressure is supplied slowly, the risk of developing lung edema decreases. As in our case heart tamponade had developed, we did not have the chance to supply slow reexpansion with low, negative pressured drainage.

CONCLUSION: In such cases we believe that especially the anesthesiologist's being ready and careful against the hemodynamic disorders will decrease the risk of developing postoperative lung edema. Since we had predicted that that would happen, we fixed the lung edema by following non-invasive ventilation without endotracheal intubation.

KEYWORDS: pericardial massive effusion, lung collapse, reexpansion lung edema, non-invasive ventilation

PP 167 - VENTRICULAR SEPTAL RUPTURE AFTER PENETRATING CARDIAC TRAUMA

Türk T., Ata Y., Vural H., Eris C., Bozkurt O., Sezen M., Demir A., Ozyazicioglu A.

Department of Cardiovascular Surgery, Bursa Yuksek Ihtisas Training and Research Hospital, Bursa, Türkiye

Penetrating cardiac trauma is not always limited to the free wall of the heart or the great arteries and may result in a wide range of injuries to intracardiac structures such as the interventricular and interatrial septa, cardiac valves, coronary arteries, and conduction system. We report two patients in whom surgical repair of perimembranous ventricular septal rupture was carried out after the initial surgery for penetrating cardiac trauma.

Case 1: A 19-year-old man with no evidence of heart disease was stabbed with a knife in the left 5th intercostal space during a street fight. He admitted to the emergency service of another hospital with dyspnea and severe hemodynamic instability. The patient underwent emergency exploratory surgery via a left anterior thoracotomy. A perforation was noted in the right ventricle which was repaired primarily with pledgeted sutures. No other cardiac injuries were noted during the operation. After stabilization the patient was transferred to our institution for further evaluation. The next day there was a precordial systolic thrill and a 5/6 harsh systolic murmur which was radiating to the left axilla. Transthoracic and transesophageal echocardiography revealed rupture in the interventricular septum with a 1,5 cm diameter. The ventricular septal rupture at the myocardial septum was repaired surgically with right atrial approach one week after the initial operation. Postoperative course was uneventful and the patient is discharged at the 7th postoperative day.

Case 2: A 17 year old man with no evidence of heart disease was admitted to our institution with a penetrating cardiac injury and hemodynamic instability. When cardiac arrest occurred the patient was emergently taken into the operating room. After a median sternotomy cardiac tamponade and right ventricular perforation was noted that was repaired primarily with pledgeted sutures. Transthoracic and transesophageal echocardiography revealed a ventricular septal rupture in the interventricular septum with Qp/Qs of 1,4/1,0 the day after the surgery and the patient was discharged. With worsening of the symptoms one month later control angiography revealed a shunt ratio of 2,5/1,0. The ventricular septal rupture at the myocardial septum was repaired surgically with right atrial approach. Postoperative course was uneventful and the patient is discharged at the 6th postoperative day. Most patients with penetrating cardiac injuries die before reaching to an emergency department and receiving medical care. Patients with penetrating cardiac trauma should undergo hemodynamic stabilization and investigation for multiple intracardiac injuries. Transthoracic and transesophageal echocardiography are preferred techniques of choice for prompt diagnosis and both can identify most possible injuries, including ventricular septal rupture. Cardiac injuries have high mortality. The mortality can be reduced by quick evaluation and prompt surgical intervention. Surgical repair should be performed for hemodynamically significant lesions such as ventricular septal rupture.

KEYWORDS: cardiac, penetrating injury, ventricular septal rupture

PP 168 - A CASE OF RIGHT ATRIAL HYDATID CYST INTERRELATED WITH TRICUSPID SEPTAL LEAFLET AND SEPTUM: CASE REPORT

Gulmen S., Kiris I., Kuralay E.

Department of Cardiovascular Surgery, Suleyman Demirel University, Isparta, Turkey

OBJECTIVES: Hydatid Cyst, a parasitic infection caused by *Echinococcus granulosus* still remains an important health problem in Turkey. Cardiac hydatid cyst is uncommon and accounting for %0.4-2% of all hydatid infections. Right atrium and right ventricle are a very rare sites for cardiac involvement. We present a case of cyst hydatid located in adjacent to tricuspid annulus.

CASE: A 21-year old male with the symptoms of palpitation and atypical chest pain admitted to our clinic. Transthoracic echocardiography (TTE) revealed a heterogenous cystic mass with calcified margins of 3 x 1 cm in diameter located in the right atrium and right ventricle. Cystic mass was adjacent to septal leaflet of tricuspid cusp and appeared protruding from posterior septum of the right atrial.

MATERIALS-METHODS: The patient was operated by using cardiopulmonary bypass through a median sternotomy and right atrial incision approach. A cystic mass adjacent to septal leaflet of tricuspid annulus and protruding into posterior wall of the right atrium was noted (Figure 1). The cyst was opened and excised. Germinative membrane was removed and black. Cavity layered by fibrous membrane was not closed (Figure 2). There was no postoperative complication.

DISCUSSION: When possible, total enucleating of the cyst is the best technique. However, fibrous capsule may not be removed easily and the size of the cyst may preclude cyst removal due to disruption of ventricular or valve function, depending on the location. Particularly, cysts localized to septum may cause conduction disturbances and complete atrioventricular block. In this circumstance, decompression by drainage may be the most appropriate and the most judicious.

CONCLUSION: We think that the large cyst cavity interrelated with forbidding cardiac structure may leave open in cardiac hydatid cysts patients that required open heart surgery.

KEYWORDS: Cardiac hydatid cyst, cardiopulmonary bypass

PP 176 - RECURRENT LARGE PERICARDIAL EFFUSION AFTER CARDIAC SURGERY-ASSOCIATED REVERSIBLE HYPONATREMIA

Koroglu S.¹, Akcay A.¹, Sayarlioglu H.², Gisi K.²

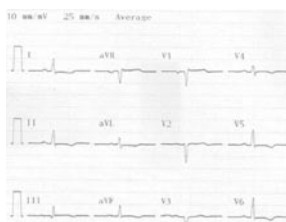
¹Kahramanmaraş Sutcu Imam University, Faculty of Medicine, Cardiology Department, Kahramanmaraş, Turkey

²Kahramanmaraş Sutcu Imam University, Faculty of Medicine, Internal Medicine Department, Kahramanmaraş, Turkey

Pericardial effusion (PE) is not a rare complication of cardiac surgery and more common in patients undergoing coronary artery bypass grafting (CABG). Chest pain, dyspnea, and orthopnea are the most common symptoms. But presentation with hyponatremia is extremely rare, which has been reported only three times in the literature. Here, we describe firstly a case with recurrent PE after CABG presented with reversible hyponatremia. A 55 year old woman admitted to emergency department with dyspnea and fatigue. She has undergone CABG operation, two months ago. On physical examination, blood pressure was 100/60 mm Hg; heart rate was 84 beats/min. Heart sounds were distant and deep on cardiac auscultation. Laboratory studies were as follows: Serum sodium, 124 mmol/L; potassium, 4.3 mmol/L; chloride, 90 mmol/L; creatinine 1.6 mg/dl and blood urea nitrogen, 54 mg/dl. An electrocardiogram showed low voltage on chest leads (Figure 1). Chest radiograph showed cardiomegaly. Transthoracic echocardiogram demonstrated large, diffuse PE with evidence of right atrial collapse (Figure 2). Valvular and left ventricular systolic functions were normal. Because of the progressive symptoms and size of the PE, pericardiocentesis was performed via subxiphoid route and approximately 1500 ml serous pericardial fluid was removed. A pigtail catheter was leaved in pericardial cavity and during the following 24 hours 1700 ml blood-tinged fluid removed, subsequently. Control laboratory studies were; serum sodium, 134 mmol/L; creatinine, 1.1 mg/dl; blood urea nitrogen, 36 mg/dl. Surprisingly, serum sodium was normalized after pericardiocentesis without any specific therapy. In control echocardiography only minimal residual pericardial fluid was detected and patient was discharged with colchicine 0.5 mg 2x1 and ibuprofen 800 mg 2x1 therapy. 10 days later, patient presented with dyspnea at rest and orthopnea. Echocardiography showed recurrence of large, diffuse PE with evidence of right atrial collapse. Serum sodium levels were normal. Pericardiocentesis was performed again, approximately 2500 ml serous pericardial fluid removed and a pigtail catheter was leaved in pericardial cavity. Pericardial fluid studies were negative for evidence of infectious, neoplastic, or rheumatologic causes. Pericardial fluid adenosine deaminase level was in normal ranges. During the following 72 hours 2000 ml pericardial fluid removed, subsequently. Two days later, control echocardiography demonstrated recurrence of large, diffuse PE again. Owing to the frequent recurrences of large PE and risk of tamponade, patient was referred for pericardiopleural fenestration. After a successful operation, she is following up uneventfully for 2 months. In conclusion, patients with PE developed after CABG may present with hyponatremia. Currently, the most reasonable cause of hyponatremia seems to be the imbalance between the antinatriuretic and antidiuretic responses to PE leading to low cardiac output. Hyponatremia resolves, only when the effusion removed without any specific therapy. Further investigations are needed to understand all factors contributing hyponatremia in patients with PE.

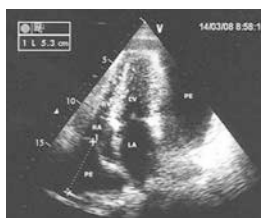
KEYWORDS: coronary artery bypass grafting, hyponatremia, pericardial effusion

Figure 1



The 12-lead electrocardiogram showing low voltage on chest leads.

Figure 2



Transthoracic echocardiography from apical 4-chamber view demonstrating large pericardial effusion and right atrial collapse (LA: left atrium, LV: left ventricle, RA: right atrium, RV: right ventricle, PE: pericardial effusion).

PP 177 - THE MOSTLY ATTACKED NATIVE VALVE IN BRUCELLA ENDOCARDITIS IS: AORTIC VALVE

Yetkin U., Yilik L., Ozceli A., Ergunes K., Yasa H., Dumus A., Ozsoyler I., Gurbuz A.

Izmir Atatürk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

INTRODUCTION: Brucella endocarditis injures the valve and causes insufficient flow. Brucella endocarditis appears with a long-lasting subfebrile body temperature and a delayed severe dysfunction occurring in aortic valve

METHODS: Ten patients were admitted to our institution with a diagnosis of Brucella endocarditis. The patients were routinely observed by the departments of Cardiology and Cardiovascular Surgery during their hospitalization in the Infectious Diseases Clinic for their medical treatment. All patients were operated in our clinic.

RESULTS: The affected tissues beside the valves and the native valves were carefully excised before bileaflet mechanical valves replacement. All the surgical data are in Table 1. All patients had AVR.

CONCLUSION: Brucella endocarditis is important, because it can be fatal. Generally aortic valve invasion is seen. The most effective option is antibiotics and surgery combination.

KEYWORDS: attacked native valve, Brucella Endocarditis, Aortic Valve

PP 178 - GIANT PERICARDIAL CYST

Kakiikkaya I., Altun G.

Department of Cardiovascular Surgery, School of Medicine, Karadeniz Technical University, Trabzon, Turkey

INTRODUCTION: Pericardial cysts are uncommon benign congenital anomaly in the mediastinum occurring at the rate of 1 person per 100,000 (1, 2). Most pericardial cysts are asymptomatic and they are detected incidentally on the chest x-ray. But some of them can present symptoms and complications such as right ventricular outflow obstruction, pulmonary stenosis, pericardial tamponade, and partial erosion into the superior vena cava can occur (3). Differential diagnosis of pericardial cysts should include bronchogenic cysts, foregut cysts, lymphangiomas, cystic hydatidic disease, ventricular aneurysm, Morgagni diaphragmatic hernia, large right pericardial fat pad, extralobar pulmonary sequestration, mediastinal or diaphragmatic tumors, and tumors of the heart or pericardium (2,3,4).

CASE PRESENTATION: S.K. 39-year-old man reported several episodes of left pleuritic chest pain. He denied palpitations, syncope, or exertionally provoked symptoms. He maintained an active lifestyle, and his medical history was only for mild hypertension and headache. His electrocardiograms is no evidence of myocardial ischemia and routine laboratory tests were within normal limits. A posteroanterior chest roentgenogram showed a large opacity in the left hemithorax (fig. 1). Computed tomography scan revealed a 22-cm × 17-cm cystic lesion in the left mediastinum, surrounding left cardiac border (fig. 2). The pericardial cyst was removed by left postero-anterior thoracotomy. Histopathologic examination confirmed the diagnosis of pericardial cyst.

CONCLUSION: Pericardial cysts are rare benign mediastinal lesions. Pericardial cysts occur most frequently in the third or fourth decade of life and equally among men and women (3). Treatment options for pericardial cysts include excision by thoracotomy, thoracoscopic surgical removal and percutaneous aspiration with injection of a sclerosing agent such as ethanol. The indications for resection of pericardial cysts include large size, symptoms, uncertainty of malignant potential, and prevention of the complications (5,6).

KEYWORDS: Benign mediastinal lesion, pericardial cyst,

Figure 1. Chest radiograph showing posteroanterior view: a large, homogeneous radiodense mass at the basal left hemithorax is seen.



Figure 2. Chest computed tomography shows a unilocular cystic mass at the left cardiophrenic angle.



PP 179 - AN UNUSUAL COMPLICATION OF INFECTIVE ENDOCARDITIS: LEFT VENTRICULAR OUTFLOW TRACT PERFORATION

Deniz A.¹, Ucar H. I.², Oc M.², Hazirolan T.³, Ozyuksel A.², Demircin M.², Nazli N.¹

¹Department of Cardiology, Hacettepe University, Ankara, Turkey

²Department of Cardiovascular Surgery, Hacettepe University, Ankara, Turkey

³Department of Radiology, Hacettepe University, Ankara, Turkey

INTRODUCTION: Infective endocarditis is an infectious disease of cardiac endothelium mainly affecting valvular structures. It may also develop on mural endocardium or manifest as endarteritis.

CASE: A 24 year-old female patient was admitted to our hospital with the complaints of fever, chest pain, cough and dyspnea. She had a history of rheumatic valvular heart disease mainly affecting aortic valve. Transthoracic echocardiography revealed moderate aortic insufficiency and perforation in the left ventricular outflow tract. Left ventricular free wall was seen to be compressed partially by the hematoma surrounding the heart. Chest computed tomography was performed which showed the perforation at left ventricular outflow tract, partial compression of left ventricular lateral wall, main pulmonary artery, superior vena cava and nearly complete obstruction of left pulmonary veins. The patient underwent emergent cardiac surgery. It was seen that inflamed pericardium was attached to heart. A pseudoaneurysm sac was detected starting from the lateral side of the aorta extending to transverse sinus and includes LAD coronary artery region. Aortotomy was performed. The aortic valve was detected to be bicuspid. A 10x15 mm perforation was seen just below the aortic valve. The perforation was repaired with a dacron graft, and aortic valve replacement was performed. The pathological examination revealed inflammation and vegetation at the sample taken from the perforation region which demonstrated that the etiology of perforation was mural infective endocarditis.

CONCLUSION: Mural endocarditis may develop on left ventricular outflow tract secondary to chronic aortic regurgitation due to chronic endocardial trauma. It is well known that inflammation and vegetation may cause destructive lesions and perforation usually affecting valves and result in acute valvular regurgitation, or may result in fistula formation. But myocardial perforation and pseudoaneurysm formation is rarely reported. It is almost always fatal without treatment and may cause some catastrophic complications such as congestive heart failure, cardiac abscess formation, conduction abnormalities, acute valvular regurgitation, coronary and systemic embolism and renal impairment.

KEYWORDS: Infective endocarditis, left ventricular outflow tract perforation, open heart surgery

PP 180 - OPEN PERICARDIECTOMY VIA THE MEDIAN STERNOTOMY FOR CHRONIC CONSTRICTIVE PERICARDITIS IS AN EFFECTIVE APPROACH

Yetkin U., Yilik L., Ozelci A., Gunes T., Ozpak B., Ozcem B., Ozbek C., Gurbuz A.

Izmir Ataturk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

OBJECTIVE: Advantages of the median sternotomy are the ease and comfort of this approach for the surgeon, the ability to initiate CPB if necessary, and the postoperative comfort of the patient.

MATERIAL-METHODS: In this study of 39 consecutive cases with constrictive tuberculous pericarditis at our hospital, we investigated the surgical techniques. In all patients, we approached via median sternotomy.

RESULTS: We freed the pericardium in this order: first from the aorta and pulmonary artery, including the left ventricular outflow tract; then from the left and right ventricles and the left pulmonary vein orifices; and finally from the superior and inferior venae cavae. One patient required cardiopulmonary bypass due to severe calcification and we did perform cardiopulmonary bypass in 6 patients who required additional cardiac surgery. There was no major bleeding from the pericardial edges, nor was there evidence of phrenic nerve injury either perioperatively or postoperatively.

CONCLUSION: The sternotomy incision enables exploration of the left ventricle and right part of the heart and direct vision of the great vessels. It is possible to perform an extensive pericardiectomy with minimal cardiac manipulation. The left ventricle can be decorticated easily via sternotomy, and better cardiac hemodynamics can be achieved through a sternotomy than through a thoracotomy.

KEYWORDS: Open Pericardiectomy, Median Sternotomy, Chronic Constrictive Pericarditis

PP 184 - THE MOSTLY SEEN COMPLICATION IN BRUCELLA ENDOCARDITIS: AORTIC CUSP PERFORATION

Gurbuz A., Yetkin U., Yilik L., Goktogan T., Yasa H., Ergunes K., Gunes T., Akyuz M.

Izmir Ataturk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

INTRODUCTION: Brucella also injure the tissues. Situations like leaflet perforation (ranging from small perforations to flail leaflets) are responsible for acute valve insufficiency.

METHODS: Ten patients were admitted to our institution with a diagnosis of Brucella endocarditis and they were operated. In all patients, we approached via median sternotomy. All surgeries were performed by means of cardiopulmonary bypass with the use ascending aortic and bicaval cannulation with caval snuggers with minimal manipulation. After cross-clamping the aorta, tissue loss was detected in most of the affected leaflets.

RESULTS: Perforation of the aortic cusps were seen in 4 of the patients (40%). Although definitive diagnoses of four of our patients as aortic valve pathology due to Brucella endocarditis were made by our Cardiology Clinic via TTE and/or TEE, perforation of cusps could only be identified during operative exploration.

CONCLUSION: Brucellosis shows various clinical signs and can effect different organs. Although rare, endocarditis is important, because it can be fatal. The most effective option is antibiotics and surgery combination.

KEYWORDS: complication, Brucella Endocarditis, Aortic Cusp Perforation

PP 185 - THE INCIDENCE OF VEGETATION IN BRUCELLA ENDOCARDITIS

Yetkin U., Yilik L., Yakut N., Ozsoyler I., Yasa H., Yurekli I., Aslan O., Gurbuz A.

Izmir Atatürk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

INTRODUCTION: Echocardiography is very important in all infective endocarditis cases. Most frequently, vegetation is searched in echocardiography and usually it causes insufficiency due to valve damage.

METHODS: Ten patients were hospitalized at different times between september 2001 and 2007 due to Brucella endocarditis. In echocardiographic evaluation, vegetations were seen in all of the patients. Their echocardiographies were repeated weekly and they were taken for operation after the antibiotherapy.

RESULTS: During their operations, we explored vegetations in all (Table 1). The affected tissues beside the valves and the native valves were carefully excised before bileaflet mechanical valves replacement. Postoperative control echocardiography revealed no abnormality.

CONCLUSION: Echocardiography is very important to determine the treatment protocol, and the morbidity and mortality rates in Brucella endocarditis. Clinical symptom rate is 10-50% for vegetations. Brucella endocarditis' diagnostic rate and surgical therapy practices increased due to availability of echocardiography.

KEYWORDS: vegetation, Brucella Endocarditis

PP 187 - PRIMARY CARDIAC ANGIOSARCOMA ASSOCIATED WITH MITRAL VALVE INVOLVEMENT

Eyleten Z., Eryilmaz S., Sirlak M., Baran C., Hasde A. I., Kaya B., Ozyurda U.

Department of Cardiovascular Surgery, Ankara University, Ankara, Turkey

Primary cardiac tumors, a rare entity with an incidence of 0.2% in routine autopsies, are benign in 90% of cases. Among the malignant tumors, sarcomas are the most frequent and angiosarcoma accounts for about 31% of all primary cardiac malignant tumors. It often arises as a mass in the right atrium and it may cause pericardial effusion. Recently we experienced an angiosarcoma of the heart that presented pericardial effusion initially, but progressed rapidly during short period.

CASE: A 43-year-old woman visited emergency room, due to severe chest pain and dyspnea. She had history of drainage for hemorrhagic pericardial effusion 2 months ago. Analysis of pericardial fluid were performed with suspecting underlying malignancy, but failed to determine the etiology of bloody pericardial effusion. Severe mitral valve insufficiency and stenosis was detected on echocardiography. There was no echogenic mass neither in the pericardium nor heart. Coronary angiography revealed serious occlusion in left anterior descending artery.

Emergent surgical exploration revealed extensive multiple masses involvement of pericardium with multifocal central hemorrhage on epicardium, such that visualization of coronary arteries was extremely difficult. Left atriotomy revealed lobulated variegated mass extended from posterior left atrial wall to the all pulmonary veins and invaded the posterior mitral valve, such that excision was not possible. LAD-LIMA anastomosis were performed.

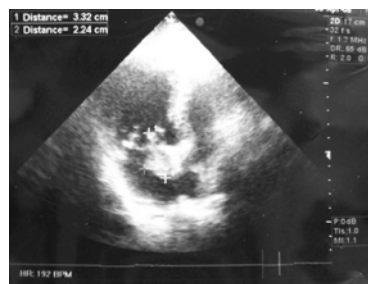
RESULT: The histological diagnosis was high grade angiosarcoma with infiltration at the borders. The extension study using computed tomography, brain magnetic resonance imaging, bone scintigraphy study showed no metastasis. He was consulted with medical oncology for chemotherapy.

DISCUSSION: Angiosarcoma of the heart often go undetected until late in the course of the disease as symptoms are insidious and available non-invasive, imaging modalities lack specificity. Although echocardiography is the initial non-invasive procedure used for imaging of the heart, suboptimal visualization of extracardiac extension limit the value of echocardiographic evaluation of cardiac masses. Despite the poor prognosis of this disease, surgery is considered the best treatment for angiosarcoma patients without distant metastasis. So clinician should be assiduous in searching for a malign etiology in early stage using all possible diagnostic modalities, of particular, when unexplained bloody pericardial effusion is observed as in our case, for earlier detection and chance of targeted therapy for improving survival in this fatal cancer.

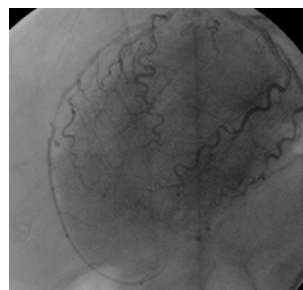
KEYWORDS: Angiosarcoma, mitral valve

PP 188 - A RARE CASE; COEXISTENCE OF LEFT ATRIAL MYXOMA AND CORONARY ARTERY DISEASEPekbay A.¹, Sungun M. B.², Aluzum H.³, Halit V.¹¹Private Sevgi Hospital, Cardiovascular Surgery, Kayseri, Turkey²Private Sevgi Hospital, Anesthesia, Kayseri, Turkey³Private Sevgi Hospital, Cardiology, Kayseri, Turkey

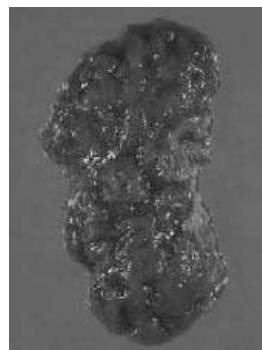
Cardiac myxomas are rare however most frequently seen primary benign heart tumors. Most of them localized in left atrium. Coronary bypass and left atrial myxoma resection concomitance is rare in literature. 75 year-old woman was evaluated reason of chest discomfort. Left atrial myxoma which is prolapsing the left ventricle via the mitral valve and serious narrowing on LAD was diagnosed. Uneventfully CABG and myxoma removal performed to her on a single-stage operation.

KEYWORDS: Coronary Bypass, Left atrial myxoma**Picture 1**

Echocardiographic seen of left atrial myxoma which is prolapsing to left ventricle

Picture 2

Severe LAD lesion

Picture 3

Myxoma

PP 191 - PACEMAKER LEAD-ASSOCIATED ENDOCARDITIS CAUSED BY STAPHYLOCOCCUS COAGULASE NEGATIVEPeker R. O.¹, Ozaydin M.², Okutan H.¹, Altinbas A.²¹Department of Cardiovascular Surgery, Suleyman Demirel University, Isparta, Turkey²Department of Cardiology, Suleyman Demirel University, Isparta, Turkey

INTRODUCTION: Vegetative electrode infection following permanent pacemaker implantation is a rare but serious condition.

CASE: A 78-year-old male patient was admitted to our institution with loss of appetite, chills and nightsweats for last three months. Past medical history revealed implantation of a pacemaker because of complete AV block 8 years ago. In transthoracic echocardiography, a mobile vegetation, 5 by 11 mm, related with tricuspid septal leaflet in the right atrium and severe tricuspid regurgitation with systolic pulmonary arterial pressure of 70mmHg were detected. The diagnosis was confirmed by identification of Staphylococcus coagulase negative on blood cultures during the febrile period. At the end of four week antibiotic therapy C-reactive protein 10,3mg/L, the erythrocyte sedimentation rate was 65mm/h. Surgical lead removal was decided and coronary angiography before the surgery reveal normal coronary anatomy. Conventional midline sternotomy and bicaval venous cannulation was performed. Pacemaker electrodes on right atrium and right ventricle were removed. There was 3-4mm tear on the leaflet, 5mm vegetation on tricuspid septal leaflet was excised. Tricuspid valve was degenerated severely and repair could not be justified. Size 31 No biological prosthesis was replaced with leaflet and chordal preservation. Concomitant epicardial pace maker was implanted. Postoperative course was uneventful and patient was discharged on the sixth day.

DISCUSSION: Coagulase negative staphylococci are responsible for the majority of lead associated endocarditis. Complete removal of the pacemaker system with intensive antibiotic treatment is necessary for complete eradication of the infection. Combined with positive blood culture results, echocardiographic images strongly suggest pacemaker lead infection.

KEYWORDS: Cardiac surgery, endocarditis, pacemaker lead

ADVANCES IN CARDIOVASCULAR PHARMACOTHERAPY

PP 208 - INITIAL EXPERIENCE WITH AMELOGENIN PROTEIN "XELMA™" IN THE TREATMENT OF A PATIENT WITH HARD-TO- HEAL VENOUS LEG ULCER

Akbulut B.

*Department of Cardiovascular Surgery, Kutahya State Hospital,
Kutahya, Turkey*

Venous leg ulcers are among the most common chronic wounds and approximately 1-2% of the whole population, and 3-5% of the population over the age of 65, will suffer from a leg ulcer during their lifetime. Over 20% of leg ulcers remain unhealed after one year, despite standard care. Although several treatment methods are available, the use of extracellular matrix proteins -amelogenins- (Xelma™) is a novel strategy to assist in the healing of hard-to-heal venous leg ulcers.

Xelma™ consists of a viscous solution of extracellular matrix proteins (amelogenins) in propylene-glycol alginate. It provides a temporary extracellular matrix for cell attachment which creates favourable conditions for wound healing by restoring vital cell functions including proliferation, migration and the production of growth factors and natural essential extracellular matrix proteins.

In this case, a 21-year-old male patients suffered from chronic venous leg ulcer. Despite different treatments in several clinical centers the ulcer couldn't be treated definitively and recurrence occurred. After detailed clinical and Doppler ultrasonographic examination venous insufficiency was detected at the level of Cockett II. First, the patient was decided to underwent perforator vein ligation using the endoscopic method (SEPS). At the second step amelogenin proteins were applied once weekly for 9 weeks. Compression therapy was maintained throughout the investigation.

The ulcer diameter reduced from 11x8 cm to 5x4 cm after 3 weeks. After 6 weeks of treatment the ulcer diameter was 2,5x2 cm. 9 weeks after treatment wound healing was completed. The patient was advised to continue using compression stockings. Wound healing was completed without any signs of infection or inflammation. Patient satisfaction was very good.

In this case perforator veins were ligated to decrease venous pressure on the ulcer site. High venous pressure could be the reason of recurrence in previous treatments. Especially in wounds caused by venous hypertension the venous pressure should be reduced prior to wound treatment. Finally, the patient will be followed-up to determine the long-term benefit of this new treatment modality.

KEYWORDS: Venous ulcer, matrix protein, amelogenin, SEPS, perforator vein ligation

PP 213 - THE ROLE OF NEBIVOLOL IN MYOCARDIAL PROTECTION FOR CORONARY BYPASS SURGERY

Savas K., Kaklikkaya I., Ozcan F.

Department of Cardiovascular Surgery, School of Medicine, Karadeniz Technical University, Trabzon, Turkey

Myocardial damage occurred during operation in cardiac surgery is one of the most important causes of mortality and morbidity and can overwhelm the technical achievements of the surgery itself. Insufficient surgical correction and insufficient myocardial protection are the two most important reasons of post-surgical mortality. The myocardial protection starts with the pre-operational care given to the patient, continues with anesthesia induction and the surgery itself and extends until the early postoperative period. Myocardial cellular necrosis is the last steps of a complicated process which starts with a global myocardial ischemia, exacerbates with continuing ischemia and results in reperfusion. The endothelia plays a key role in the ischemia-reperfusion damage. The endothelial cells, in addition to its general barrier function, also secrete compounds that control vascular tone and reveals local effects [Nitric Oxide(NO), prostacyclin and adenosine]. The NO is a strong muscle relaxant. It also inhibits adhesion of thrombocytes and neutrophils to the endothelium, and obviates the proliferation of smooth muscle cells. The beta-adreno receptor antagonist agents still constitute the main part of the basic therapy for all stages of ischemic cardiac diseases, excluding Prinzmetal angina caused by coronary spasms. Nebivolol is a highly selective beta₁ adrenergic receptor antagonist. It does not have intrinsic sympathomimetic activity. The vasodilatory effects of the Nebivolol seems to be linked to the endothelia and is attributed to the NO that is produced in the endothelia. Contrary to the other beta-blockers, nebivolol doesn't cause negative inotropic effect. It increases cardiac output and stroke volume. In our study, we have examined a case and control group; we have compared the two groups with regard to the myocardial protection, the occurrence of post-surgical arrhythmia, the number of postsurgical hospitalization days spent in the hospital. The most important result of this study was the difference established in favor of the case study group regarding the number of postsurgical hospitalization days spent in the intensive care unit which is statistically significant ($p=0.035$). We consider this prophylaxis provided by nebivolol would be efficient in myocardial protection and prevention of postoperative complications, but the result of this study must be supported by further studies which includes more subjects.

KEYWORDS: Cardiopulmonary bypass, Myocardial damage, Cardiac troponin T, Nebivolol.

Table 1: Cardiac Troponin T Mean Serum Concentration*

Study Period	Control Group (n=10) TnT (ng/mL)	Nebivolol Group (n=10) TnT (ng/mL)
Preoperative	0.109±0.31	0.013±0.01
5 Minutes after completion of CPB	0.118±0.31	0.029±0.05
6 Hours postoperatively	0.742±0.30	0.919±0.50
12 Hours postoperatively	0.847±0.38	1.343±0.83
24 Hours postoperatively	0.706±0.39	1.890±1.84
48 Hours postoperatively	0.477±0.21	1.109±0.93
72 Hours postoperatively	0.408±0.20	0.965±0.78
96 Hours postoperatively	0.388±0.25	0.982±0.86
120 Hours postoperatively	0.344±0.28	0.821±1.01

TnT = Cardiac Troponin T.; CPB = Cardiopulmonary Bypass *There was no statistically significant difference between mean serum concentrations of the nebivolol and control groups ($p>0.05$).

PP 214 - CORONARY ARTERIAL BYPASS SURGERY WITH BEATING HEART IN A PATIENT WITH HEPARIN-INDUCED THROMBOCYTOPENIA: USAGE OF THROMBIN INHIBITOR (LEPIRUDIN; R-HIRUDIN)

Becit N., Erkut B., Ceviz M., Karaca Y.

Ataturk University Medical Faculty, Department of Cardiovascular Surgery, Erzurum, Turkey

A 78-year-old male with a history of chest pain admitted to the cardiology clinical. The patient had anterior myocardial infarction. His electrocardiography had ST elevations in anterior derivations. In laboratory examination; hemoglobin: 17 mg/dL, thrombosit: 244,000/mL. After low molecular weight heparin (LMWH) was started (100 U/kg 2x1, Clexane, Aventis, Turkey), the same day, the patient was brought to the catheterization laboratory for coronary angiography. The two vessels disease was determined in coronary angiography, and operation decision was given. After catheterization, the patient was hospitalized until operation time without discharge due to proximal coronary lesion. The patient was treated with LMWH, a beta-blocker, and an angiotensin-converting enzyme inhibitor during hospitalization. After 3 days, laboratory examinations were repeated. The platelet count was decreased from 244,000/mL to 58,000/mL. Because of this decrease in platelet count, the LMWH was discontinued and heparin-induced antibody tests were sent to the laboratory. The platelet count continued to decrease to 48,000/mL prior to surgery even after the heparin was discontinued. The heparin-induced antibody test was positive, and a diagnosis of HIT was made. After heparin ceased, in 5th day, platelet count was determined as 92,000/mL. The patient was brought to the operating room after standard preoperative medications was given. Standard monitors were placed, including radial and jugular venous catheter. After induction of general anesthesia, for anticoagulation was achieved with a bolus dose of 0.5 mg/kg lepirudin 10 minutes. Then, lepirudin was continued by an infusion (0.15 mg/kg/hr). The ACT was used to monitor anticoagulation, and it was between 350 and 500 seconds during surgery. The aPTT was maintained between 1.5 to 2.5 times the normal values. Two coronary arterial bypass grafting was performed with beating heart by using two saphenous veins. The lepirudin infusion was discontinued after proximal anastomosis. The ACT returned to baseline after 40 minutes. No significant adverse effects were noted. The total blood product utilization during the surgery included red blood cell 300 mL, platelets 200 mL, and fresh-frozen plasma 400 mL. The total postoperative blood loss was 475 mL. The patient was administrated lepirudin after surgery 3 days for anticoagulation. Then, acetylsalicylic acid therapy was started as orally. The patient's platelet value was 140,000/mL on postoperative first day and 175,000/mL on postoperative in 5th day. Postoperative course was uneventfully. The patient was discharged on 10th day with acetylsalicylic acid therapy.

In conclusion, immune-mediated HIT is a rare but severe adverse effect of heparin therapy. Thrombin inhibitors as lepirudin are an effective alternative anticoagulant for treatment of HIT patients with/without thrombosis during cardiac surgery. Despite of major hemorrhage risk, if activated clotting time and partial thromboplastin time close monitored, bleeding risk might be reduced.

KEYWORDS: r-hirudin, heparin induced thrombocytopenia, coronary bypass grafting

PP 216 - FIBRINOLYTIC THERAPY OF ILIOFEMORAL DEEP VENOUS THROMBOSIS

Colak M., Rahman A., Ozdemir H., Yucedag E., Azak S., Ustunel L.

Department of Thoracic and Cardiovascular Surgery, Department of Radiology, Faculty of Medicine, Firat University, 23119, Elazig, Turkey

BACKGROUND: The conventional treatment of acute deep vein thrombosis (DVT) is anticoagulation and compression therapy. Anticoagulation prevents recurrent venous thrombosis, pulmonary embolism. Compression therapy reduces the risk of postthrombotic syndrome (PTS). Our purpose is to evaluate the efficacy of catheter-directed low-dose recombinant tissue-type plasminogen activator infusion in the treatment of iliofemoral deep venous thrombosis and prevention of post-thrombotic syndrome.

METHOD: Two patients with acute iliofemoral deep venous thrombosis were prospectively selected for thrombolytic therapy. Catheter-directed low-dose recombinant tissue-type plasminogen activator (1 mg/h) was infused into the thrombotic segments.

RESULTS: Effective fibrinolysis was achieved in two cases. There were no episodes of major complications or early rethrombosis (1 to 8 weeks). Individuals were followed for a period up to 24 weeks. The incidence of clinical signs and symptoms of venous insufficiency, duplex-scan findings of valvular reflux and venous angiography finding were significantly lower in the patients in which lytic therapy succeeded and patency was kept.

CONCLUSIONS: Low-dose recombinant tissue-type plasminogen activator fibrinolytic therapy is safe and effective in the treatment of acute iliofemoral venous thrombosis.

KEYWORDS: Fibrinolytic therapy, deep venous thrombosis

PP 217 - DANGEROUS DRUG INTERACTIONS FOLLOWING CARDIOTHORACIC TRANSPLANTATION

Parissis H.¹, Gould K.², Dark J.²

¹Department of Cardiothoracic Surgery, Galway University Hospital, Ireland

²Department of Cardiothoracic Surgery, Freeman Hospital, Newcastle, United Kingdom

OBJECTIVES: To report our experience of a rather uncommon drug interaction resulting in hemolytic uremic syndrome (HUS) following lung transplantation.

There are 91 Cases of HUS in the literature after solid organ Transplant recipients. The majority following renal transplant with only 2% Heart-Lung transplantation.

MATERIALS: Two consecutive cases of HUS were diagnosed in our service. In both patients the use of macrolides in patients taking Tacrolimus (T), resulted in high levels of T.

RESULTS: The first patient was a 48 y old, female with Bilateral emphysema. She underwent SSLTx. She developed reperfusion injury requiring prolonged ITU stay. Tacrolimus introduced (Day 51). Discharged 74 days following SSLTx. Patient remained well up till 5 months later. Visited GP with chest infection. Erythromycin commenced. Clinical diagnosis of HUS. Treated with plasmapheresis.

The second case was a 57 y old, female with Emphysema & A1 Antithrypsin deficiency. She underwent Rt Single Lung Transplantation. A2 rejection with Mild OB 1 year later, switched to Tacrolimus. Admitted to Local Hospital 2 ½ years later with Rt Middle lobe consolidation. Patient commenced on amoxicillin and clarithromycin. Worsening renal indices. High Tacrolimus levels. Anaemia & Low Platelets. HUS diagnosed & treated with plasmapheresis.

CONCLUSIONS: There are 21 cases in the Literature of HUS that may be induced by high tacrolimus levels.

Mechanism of action could be glomeruloconstrictor effect with reduced GFR increased production of Endothelin-1 and increased Platelet aggregation.

Use with caution Macrolides in patients taking Cyclosporin or Tacrolimus.

KEYWORDS: Side effects of macrolides, erythromycin and tacrolimus interactions

OBSERVATIONS FROM INTERVENTIONAL CARDIOLOGY PRACTICE

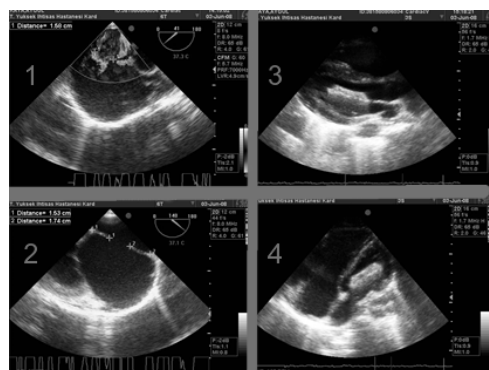
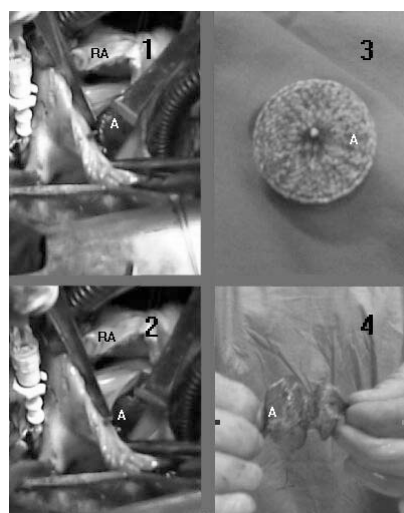
PP 226 - ASD OCCLUDER FALLED INTO THE LEFT VENTRICLE AND ATTACHED TO ANTERIOR MITRAL LEAFLET DURING AN ASD CLOSURE: OPERATIVE APPROACH

Ulas M. M., Tasoglu I., Lafci G., Kocabeyoglu S., Kadirogullari E., Ozatik M. A.

Turkiye Yuksek Ihtisas Hospital, Cardiovascular Surgery Clinic, Ankara, Turkey

We report the case of a 24 year-old-woman who presented an unusual position of an ASD occluder in the left ventricle during a percutaneous closure of her secundum atrial septal defect (Figure-1). Emergency cardiac surgery was performed. The edges of ASD were retracted and device was just found under the anterior leaflet of the mitral valve that was attached to the cordae at the segment of A3. The device was gently saved from the cordae and removed (Figure-2). The mitral valve, leaflets and cordae were examined carefully for traumatic injury and no pathology was found. Then sutures were placed at the superior and inferior ends of atrial septal defect and continued towards each other, incorporating the margins of the defect. Postoperative period was uneventful and the patient was discharged on the fifth postoperative day.

KEYWORDS: ASD occluder, Atrial septal defect

Imaging of the occluder in the left ventricle**Intraoperative view of occluder****PP 227 - SPONTANEOUS CORONARY ARTERY DISSECTION: A CASE REPORT**

Akgul Ercan E., Ekici B., Erkan A. F., Cehreli S., Tore H. F., Candan I.

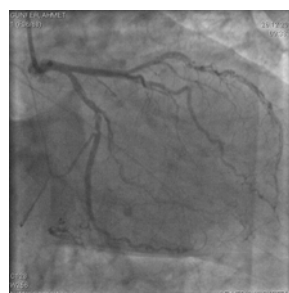
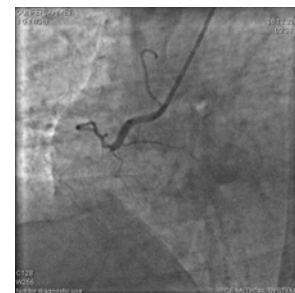
Department of Cardiology, Ufuk University, Ankara, Turkey

Primary or spontaneous coronary artery dissection is a rare form of ischaemic heart disease. Occurrence in the absence of atherosclerosis risk factors is an important characteristic of spontaneous dissection. In this case report, we presented a patient diagnosed as acute coronary syndrome in our hospital, whom had documented spontaneous dissection on coronary angiography.

CASE: A 44 year old male patient applied to our hospital emergency department complaining of dizziness, perspiration, epigastric pain and vomiting. He had no atherosclerosis risk factors and no known cardiac disease as well. His physical examination was normal except a 1/6 apical pansystolic murmur. However, ECG taken at the emergency department showed 0.5 mm ST segment elevation in inferior derivations. The first cardiac enzyme analysis was as follows; CK-MB was 5.68 ng/dl and troponin-T was 0.01 ng/dl. In the presence of these signs and symptoms, being diagnosed as an acute coronary syndrome patient, the patient was decided to be hospitalized in the coronary care unit. The medical therapy consisted of acetylsalicylic acid 1 x 300 mgr, enoxaparine 2 x 6000 IU (sc), metoprolol succinate 1 x 50 mgr, atorvastatin 1 x 40 mgr, intravenous nitroglycerin. On serial follow-ups, his complaints subsided, but progressive increase in CK-MB and troponin-T was observed. At a stable clinical stage, he was taken to the catheterization laboratory for coronary angiography at the sixth hour of hospitalization. RCA was totally occluded with collaterals from the left coronary system and proximal RCA. LAD showed diffuse spontaneous dissection after the first diagonal branch approaching to the distal end and CFX showed % 80 stenosis at the mid level. The second OM had diffuse dissection all through the length of the vessel. Coronary artery bypass graft operation was planned after all.

DISCUSSION: Spontaneous coronary artery dissection is a rare clinical situation which is seen mostly in pregnancy and postpartum period. It is rarely seen secondary to atherosclerotic coronary artery disease and coronary vasospasm. Ehlers Danlos type IV, immunosuppressive therapy and cocaine abuse are also reported to be rare causes of spontaneous dissection. It is often seen in the fourth decade. Spontaneous coronary dissection should be included in the differential diagnosis of acute coronary syndrome in the young adult especially women. Therapy must be individualized according to the characteristics of the patient. Coronary stenting is one of the therapeutic modalities but in the case of left main stem involvement, progressive dissection and hemodynamic instability coronary bypass surgery must be preferred. This case is found to be interesting with the occurrence of diffuse spontaneous coronary dissection accompanied by atherosclerotic coronary artery disease in a male adult with no known atherosclerosis risk factors.

KEYWORDS: emergency department, postpartum period, spontaneous coronary dissection, troponin-T

Diffuse spontaneous dissection of LAD and OM**Totally occluded RCA**

CORONARY ARTERY DISEASE: THERAPEUTIC OPTIONS

PP 234 - PLASMA ADIPONECTIN LEVEL AND ASOCIATION WITH POSTOPERATIVE COURSE AFTER CORONARY ARTERY SURGERY

Ucar H. I.¹, Oc M.¹, Tok M.¹, Karabay C.¹, Akbulut B.¹, Serter F. T.¹, Oc B.², Capci S.¹, Pinar A.³, Farsak B.¹, Guvener M.¹, Yorgancioglu C.¹

¹Department of Cardiovascular Surgery, Hacettepe University, Ankara, Turkey

²Department of Anesthesiology, Hacettepe University, Ankara, Turkey

³Department of Biochemistry, Hacettepe University, Ankara, Turkey

BACKGROUND: Adiponectin is an adipocyte-derived circulating plasma protein with insulin-sensitizing metabolic effects and vascular protective properties. Low adiponectin levels have been shown to be associated with endothelial dysfunction. adiponectin specifically binds to subendothelial collagens and abundantly accumulates into subendothelial space of acute injured wall of human artery and suppresses TNF- α induced adhesion molecule expression on human aortic endothelial cells. This suggests that the adipocyte-derived protein may act as an endogenous modulator for vascular remodelling, repair process and modulate the excessive inflammatory response. There are limited clinical data concerning plasma adiponectin concentration in patients with cardiovascular disease.

METHOD: Seventy six consecutive patients were enrolled in this study who underwent elective coronary artery bypass surgery. Blood samples were obtained in the morning on the day of operation after overnight fasting. Plasma total adiponectin levels were measured by using ELISA kit for human adiponectin (BioVendor Laboratory medicine, Inc, Czech Republic). We compared plasma adiponectin level between coronary artery bypass grafting patients with and without postoperative complication.

RESULTS: There were 57 men (%75) and 19 women (%25), ages from 40 to 80 year old (mean age 61.2 ± 9.6). Mean adiponectin level was 6.3 ± 4.3 and body mass indexes (BMI) changed between 19.2 and 38.6 (mean 26.9 ± 3.4). Twenty four patients were normal weight (BMI between 18.5 and 24.9), 39 patients were over weight (BMI between 25 and 29.9) and 13 patients were obes (BMI of 30 or greater). Eighteen patients had inotropic support.

CONCLUSION: Adiponectin is an adipose-derived hormone that exhibits protective properties on the heart and blood vessels. Adiponectin is reported to be negatively associated with disease states, such as obesity, diabetes and cardiovascular disease. In heart, adiponectin serves as a regulator of cardiac injury through modulation of anti-inflammatory and prosurvival reactions. Hypoadiponectinemia could be considered as a risk factor for the postoperative course after coronary artery surgery.

KEYWORDS: Plasma adiponectin, coronary artery bypass grafting, open heart surgery

PP 235 - PLASMA LEPTIN LEVELS AND EFFECTS ON THE PATIENTS UNDERGOING CORONARY ARTERY BYPASS SURGERY

Guvener M.¹, Demirturk O. S.¹, Oc B.², Gurbuz A.³, Pinar A.⁴, Oc M.⁵, Ucar H. I.⁶

¹Department of Cardiovascular Surgery, Baskent University Research Hospital, Adana, Turkey

²Department of Anesthesiology, 29 Mayıs Hospital, Ankara, Turkey

³Department of Cardiovascular Surgery, Hacettepe University, Ankara, Turkey

⁴Department of Biochemistry, Hacettepe University, Ankara, Turkey

⁵Department of Cardiovascular Surgery, 29 Mayıs Hospital, Ankara, Turkey

⁶Department of Cardiovascular Surgery, Private Sincan Lokman Hekim Hospital, Ankara, Turkey

BACKGROUND: Leptin is an adipocyte-derived protein, regulating food intake and metabolism has been implicated in the development of coronary heart disease. A number of studies have provided evidence that leptin is involved in the pathogenesis of atherosclerotic vascular disease. Elevated leptin levels are associated with decreased arterial distensibility. Human plasma leptin levels are independently associated with the intima-media thickness of the common carotid artery, which is an early arteriosclerosis marker, in normal weight and obese adults as well as in children and adolescents with type 1 diabetes.

METHODS: Twenty consecutive patients were enrolled in this study. All patients were clinically stable at the time of evaluation and had no evidence of active infection, gastric ulcer, or other primary cachectic states, such as cancer, thyroid disease, and severe liver disease. Blood samples were taken from the antecubital vein in the morning between after an overnight fasting, because plasma leptin level has been shown to be altered by food intake. We measured plasma leptin levels at four intervals during preoperatively, and postoperative first hour, first day and fifth day with Biosource Easia kit. Patients were divided into two groups: Group A including 10 diabetic patients and Group B including 10 non-diabetic patients.

RESULTS: Group A including 10 diabetic patients (mean age 56.4 ± 9.7) and Group B including 10 non-diabetic (mean age 63.7 ± 11.8) patients. Body mass index in non-diabetic group (Group B) was (28.7 ± 0.3) and in diabetic group (Group A) (30.2 ± 4.3).

CONCLUSIONS: The role of leptin as an important therapeutic agent is clearly emerging. Leptin affects central circuits in the hypothalamus, thereby suppressing food intake and stimulating energy expenditure. Thus, leptin plays a major role in the control of body fat stores through coordinated regulation of feeding behaviour, metabolism, the autonomic nervous system, and body energy balance. In our study, plasma leptin levels increased on postoperative fifth day. This increase can explain postoperative lack of appetite after open heart surgery. Further development will aid in our understanding of the mechanism of leptin action and its effects on metabolic regulation and endocrine function.

KEYWORDS: Plasma leptin level, feeding, coronary artery bypass grafting

PP 245 - VENTRICULAR SEPTAL RUPTURE COMPLICATING ACUTE MYOCARDIAL INFARCTION-SURGICAL REPAIR BY RIGHT ATRIAL ROUTE

Demirturk O.¹, Tunel H.¹, Coskun I.¹, Tekin A.², Gulcan O.¹, Guvener M.¹

¹Department of Cardiovascular Surgery, Baskent University Adana Medical Center, Adana, Turkey

²Department of Cardiology, Baskent University Adana Medical Center, Adana, Turkey

Postinfarction ventricular septal rupture (VSR) in acute myocardial infarction (AMI) settings is a well known but rare (0.2%) complication which causes high mortality rates.

Predictors of poor late survival in this patient cohort are cardiogenic shock, inferior MI, poor right ventricular function. Overall mortality with medical treatment is given as 74% in the well known GUSTO trial and 87% in the SHOCK trial.

The best time to operate these patients would be after fibrotic healing of the necrotic cardiac muscle. But according to reports it takes at least 3 weeks before the connective tissue proliferation is demonstrated in histological studies.

In a large proportion of patients it is not possible to postpone surgery because they develop severe heart failure and multiorgan dysfunction as in our case. So, to avoid future hemodynamic deterioration patients should be operated on expeditiously after establishment of the diagnosis by angiography.

Our patient was a 63 year old male person who applied to our cardiology department with AMI. One day elapsed before inferoseptal basal rupture was detected on echocardiography. Upon angiography inferoseptal VSR was diagnosed. Because of subsequent severe heart failure intraaortic balloon pump (IABP) counterpulsation was begun and inotropic support had to be administered. He was given thrombolytic therapy (streptokinase).

His angiography demonstrated 50% narrowing of the LAD and total occlusion of the circumflex artery with 70% narrowing of the major obtuse marginal artery with normal right coronary artery. 4 days after diagnosis he reached a relatively stable condition which did not further improve. He was still on IABP and inotropic support. Decision to operate was taken.

He was operated on using cardioplegic arrest and normothermic blood cardioplegia. CABG was done to the obtuse major with a saphenous vein graft and internal thoracic artery for the LAD. VSR was repaired through the right atrium using teflon pledgeted sutures. Mitral ring annuloplasty was performed. Cardiopulmonary bypass (CPB) time was 168 and cross-clamp time was 125 minutes which are in accordance with results in the literature.

The patient had an easy weaning from CPB with only 5µg/kg/min of dopamine support and IABP counterpulsation. The intensive care unit and the rest of the hospital stay was uneventful. His echocardiography 2 months postoperatively showed no left to right shunt with 47% ejection fraction and only 1/4 mitral regurgitation.

Most patients with VSR and cardiogenic shock do not survive. To deter operation is to deny the patient any chance of survival before irretrievable end organ damage occurs. Right atrial approach also helps in reducing possible hemorrhagic complications because it avoids suture placement in the newly infarcted delicate ventricular myocardium. Therefore expeditious surgical treatment through the right atrial approach is advisable in patients with postinfarction VSR as in our case.

KEYWORDS: Ventricular septal rupture, myocardial infarction, right atrial surgical approach

PP 246 - EFFECT OF RENAL DYSFUNCTION ON MORTALITY AND MORBIDITY FOLLOWING CORONARY ARTERY BYPASS SURGERY

Battaloglu B.¹, Erdil N.¹, Nisanoglu V.¹, Fansa I.², Eroglu T.¹, Erbas F.¹, Cihan H. B.¹, Kaynak M.¹

¹Department of Cardiovascular Surgery, Inonu University, Malatya, Turkey

²Department of Cardiovascular Surgery, Mustafa Kemal University, Hatay, Turkey

OBJECTIVE: The aim of the present study was to evaluate impact of preoperative renal disfunction on perioperative mortality and morbidity in patients undergoing coronary artery bypass grafting.

METHODS: The study population included 1536 consecutive patients. The sample was divided into two groups; those who is creatinin level < 1,50 (group 1; n = 1466) and those who is cretinin level >= 1,50 (group 2; n = 70). The exclusion criteria were emergency operation and re-operation. Group 2 had a significantly higher incidence of prior myocardial infarction (MI) and diabetes mellitus (p<0.05). Mean age was 60.7±9.8 in group 1 and 64.1±9.7 years in group 2 (p<0.05)

RESULTS: The in-hospital mortality rate was similar in two groups (1.1% in group 1 and 2.9% in group 2; p>0.05). There was no significant difference in the number of grafts between the groups (2.79±0.97 vs. 2.83±0.96; p>0.05). The patients in renal dysfunction group showed significantly higher rates of inotropic agent using (p<0.05), Ventilation time was significantly longer in the renal dysfunction group (p=0.021). There was no difference significantly with regard to major and minor complication in both groups.

CONCLUSION: Preoperative renal dysfunction is not a predictor of outcome in terms of in-hospital mortality and morbidity in patients undergoing coronary artery bypass grafting.

KEYWORDS: Coronary artery bypass grafting, renal dysfunction, results, mortality, morbidity

PP 250 - THE COMPARISON OF THE POSTOPERATIVE COMPLICATIONS OF THE BEATING HEART PROCEDURE OF CORONARY ARTERIES LOCATED AT THE POSTERIOR CARDIAC WALL WITH THE CONVENTIONAL CORONARY ARTERY BYPASS PROCEDURE

Ozelci A., Yetkin U., Ozsoyler I., Yurekli I., Bayrak S., Gokalp O., Yilik L., Gurbuz A.

Izmir Ataturk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

OBJECTIVE: Coronary artery bypass grafting (CABG) is one of most common cardiac surgical procedures among adult population. Beside conventional cardiopulmonary bypass, beating heart coronary bypass procedures developing in recent years bring some advantages and therefore become more popular.

MATERIAL-METHODS: In this study, off-pump CABG was compared with conventional CABG in terms of availability of coronary arteries of posterior wall for revascularization and early postoperative results. Twenty six patients were included in this study that underwent revascularization of coronary arteries of the posterior wall out of 272 patients undergoing off-pump CABG operation between June 2001 and October 2005 at our institution (Group 1). Postoperative data of these patients were investigated and compared with those of randomized 26 patients (Group 2) that underwent conventional coronary arterial revascularization including arteries of posterior wall.

RESULTS: Acute renal failure, respiratory failure, and perioperative MI were not seen in off-pump group; whereas in on-pump group 2 patients developed acute renal failure, one patient developed perioperative MI, and 2 patients developed respiratory failure. In cases of low cardiac output syndrome developing postoperatively characterized by hypotension refractory to inotropic support, IABP use was necessary. One patient in off-pump group and 2 patients in on-pump group required IABP. Although preoperative EF was lower in off-pump group, postoperative need for inotropes was higher in on-pump group (4/9). Postoperative incidence of AF was 3 in off-pump group and 6 in on-pump group which was statistically insignificant. Duration of intensive care unit stay was 1.96±0.44 days in off-pump group and 2.46±0.58 days in on-pump group which was significantly higher (p<0.001). Likewise, in-hospital stay length was shorter in off-pump group (5.34±0.62 days vs. 6.73±0.96 days; p<0.001)

CONCLUSION: For the appropriate and chosen cases the target coronary arteries located at the posterior cardiac wall can be revascularized with the beating heart coronary artery bypass procedure that is applied without CPB.

KEYWORDS: Postoperative Complications, Beating Heart Procedure, Posterior Cardiac Wall, Conventional Coronary Artery Bypass Procedure

PP 251 - CORONARY ARTERY STENT MIGRATION ASSOCIATED LOWER LIMB ISCHEMIAPeker R. O.¹, Gulmen S.¹, Kocyigit A.¹, Erdogan D.²¹Department of Cardiovascular Surgery, Suleyman Demirel University, Isparta, Turkey²Department of Cardiology, Suleyman Demirel University, Isparta, Turkey

INTRODUCTION: Stent loss in the peripheral or visceral arterial system is a complication with an incidence ranging from 0,9 to 8,4%. Limb or organ ischemia after stent embolisation is reported extremely rare.

CASE: A 53-year-old female patient had isolated 99% stenosis in intermediate coronary artery on coronary angiography and stenting was planned. During the procedure due to the presence of a very calcified lesion of the coronary artery, the stent was accidentally lost and traveled to the right common femoral artery. Several attempts by the cardiologists to rescue the stent were unsuccessful. After six hours patient had pain in the right leg and the extremity was cold. Doppler examination revealed the absence of distal pulses. We decided to perform a surgical procedure for stent removal. Under local anesthesia we carried out a vertical skin incision. By a transverse arteriotomy to common femoral artery fresh thrombus was removed by the use of a N.3 Fogarty catheter. With the aid of scopy we visualise the stent in profunda femoral artery 1-2 cm from the common femoral artery bifurcation. With a longitudinal arteriotomy on profunda artery we removed the stent. Both arteriotomies were primarily sutured. Postoperative course was uneventful and the peripheral pulses were intact.

CONCLUSION: Early surgical management is preferred to prevent intimal injuries in patients with limb ischemia due to the stent embolisation. The endovascular approach is used in the case of central vessels like the common carotid, visceral or renal arteries

KEYWORDS: Coronary artery stent, limb ischemia, migration

PP 252 - POSTOPERATIVE FOLLOW UP RESULTS OF NEGLECTED MODERATE ISCHEMIC MITRAL REGURGITATION DURING CORONARY ARTERY BYPASS GRAFTING

Isçan Z. H., Tuncel C., Boysan E., Yavas S., Cetin E., Demirtas E., Unal U., Yasar E., Bardakci H., Kiziltepe U., Saritas A., Birincioglu C. L.

Turkey Yuksek Ihtisas Hospital, Ankara, Turkey

Ischemic mitral regurgitation (IMR) occurs in 4–5% of patients who have coronary artery bypass grafting (CABG). IMR is a complication of coronary artery disease which increases the mortality and morbidity rate. There is a consensus that patients with severe IMR should undergo mitral valve surgery with CABG. Today surgeons prefer only CABG for patients with mild IMR. However, there is a debate about the management of moderate IMR. Some surgeons advocate that moderate IMR should be surgically repaired in the light of developing repair techniques and myocardial protection methods. On the other hand, some surgeons suggest that only CABG is sufficient and the benefits of repair do not compensate the increased mortality related with mitral valve surgery. 30 patients with moderate IMR had CABG with neglected IMR between 2004–2007 in Türkiye Yuksek Ihtisas Research Hospital were included in our study. Patients preoperative data analyzed retrospectively. Outpatient records, phone numbers and hospital data base were used and patients postoperative physical examinations and echocardiographies were done (mean follow up 17 months). We found that improvement in functional capacity ($p=0,001$), regression in mitral regurgitation ($p=0,01$), improvement in ejection fraction and left ventricle systolic diameters ($p=0,012$, $p=0,001$) were statistically significant. Operative mortality was %3,3. After a 17-month follow up actuarial survival was %86 (2 patients died because of non cardiac causes). According to these evidences, results of neglected mild or moderate IMR during CABG is satisfactory. Nevertheless prospective, multi-centered, randomise controlled researches with wide patient populations are needed to compose a evidence based medical consensus.

KEYWORDS: moderate ischemic mitral regurgitation, coronary artery bypass grafting

PP 256 - ICU AND HOSPITAL STAY IN REVASCULARIZATION OF CORONARY ARTERIES LOCATED AT THE POSTERIOR CARDIAC WALL WITH THE BEATING HEART PROCEDURE AND WITH THE CONVENTIONAL CORONARY ARTERY BYPASS PROCEDURE

Ozelci A., Ozsoyler I., Yetkin U., Yurekli I., Ergunes K., Ozcem B., Yilik L., Gurbuz A.

Izmir Ataturk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

OBJECTIVE: In our study, we investigated the ICU and hospital stay of the patients who underwent beating heart and conventional coronary artery bypass procedures in which the posterior coronary arteries were revascularized. If the duration of in-hospital stay of the patients shortens postoperative rehabilitation would be more effective and the patients would return their routine daily life faster.

MATERIAL-METHODS: Twenty six patients were included in this study that underwent revascularization of coronary arteries of the posterior wall out of 272 patients undergoing off-pump CABG operation (Group 1). Postoperative data of these patients were investigated and compared with those of randomized 26 patients (Group 2) that underwent conventional coronary arterial revascularization.

RESULTS: Duration of intensive care unit stay was 1.96 ± 0.44 days in off-pump group and 2.46 ± 0.58 days in on-pump group which was significantly higher ($p<0.001$). Likewise, in-hospital stay length was shorter in off-pump group (5.34 ± 0.62 days vs. 6.73 ± 0.96 days; $p<0.001$).

CONCLUSION: Under the guidance of these data the beating heart procedure should be assumed that it shortens the postoperative in-hospital stay and thus providing an earlier return to the normal daily life

KEYWORDS: ICU and Hospital Stay, Revascularization of Coronary Arteries Located At The Posterior Cardiac Wall, The Beating Heart Procedure, The Conventional Coronary Artery Bypass Procedure

PP 257 - SURGICAL TREATMENT FOR A GIANT POSTINFARCTION LEFT VENTRICULAR PSEUDO-FALSE ANEURYSM

Ozbek C., Yetkin U., Ozpak B., Yilik L., Yurekli I., Gurbuz A.

Izmir Ataturk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

Postinfarction ventricular pseudoaneurysm is a rare complication. These cases rarely survive and hematoma is limited with pericardium. After the acute episode a pseudoaneurysm develops due to organizing cavity. Surgical approach remains the treatment of choice.

In this study we present a case of a left ventricular (LV) pseudoaneurysm due to a previous myocardial infarction, which patch closure and coronary artery bypass was carried successfully.

We believe that morbidity and mortality rates are low for endoventricular circular "patch plasty" technique which is a reliable method for left ventricle pseudoaneurysm repair and that it improves hemodynamics and long-term functional capacity.

KEYWORDS: Giant Postinfarction Left Ventricular Pseudo-False Aneurysm, Surgical Treatment

PP 258 - MORFOMETRIK AND FLOW CYTOMETRIC ANALYSES OF PROGRESSIVE INTIMAL HYPERPLASIA IN EXPERIMENTAL VENOUS GRAFTS AND EFFECT OF NADROPARIN CALCIUM

Filizioglu H., Kaklikkaya I., Ozcan F.

Department of Cardiovascular Surgery, School of Medicine, Karadeniz Technical University, Trabzon, Turkey

Occlusive arterial diseases are one of the major public health problems in particularly developed countries in the late years. Rapid advances in technology has provided more accurate and early diagnosis in this diseases. Progress in surgical equipments and medical therapeutic options have increased the success rates. One of the most important failure causes in vascular reconstruction surgery is intimal hyperplasia. Venoarterial graft compliance discordance turbulent flow, low graft wall stretch, high graft thrombogenicity and end to side anastomoses are the hemodynamic factors which are thought responsible intimal hyperplasia genesis. The cellular mechanisms which are triggered by thrombocyte, leukocyte adhesion and aggregation as a consequence of perianastomotic endothelial cell desquamation and subendothelial layer exposure, leads to primary thrombotic and secondary luminal obliteration in graft.

In intimal hyperplasia which forms as a response to vascular injury, the arterial smooth muscle cells (SMC) in media of vessel wall change from contractile phenotype to secretory phenotype. As a result of this it is found that a collagen elastin rich extracellular matrix (ECM) is synthesized. And this stimulated SMC migrate through lamina elastic a interna and cause ECM increase in intima and luminal narrowing.

There are a lot of experimental studies which aspirin, dipyridamol, ACE inhibitors, calcium channel blockers and heparin are used in pharmacologic control of intimal hyperplasia. Heparin leads to a decrease in intimal hyperplasia formation by inhibition of SMC proliferation and migration, changing the pericellular matrix composition and stimulation of endothelial regeneration. Nadroparin calcium, a low molecular weight heparin is used in this study. In autogenous venous interposition model between vena jugularis interna and arteria carotis communis of rabbits. We have found statistically significant difference in graft intima/media rates in morfometric analyses and Go/G1, S, Pi in FMC analyses results at the end of the 1st postoperative month. We found that in the group which has received 100 IU/kg/day Nadroparin Calcium during the 1st postoperative month intimal hyperplasia genesis were less comparing to the control group.

KEYWORDS: Experimental, Intimal Hyperplasia, Flow Cytometry, Nadroparin Calcium

Table 1: Morphologic Changes in Histologic Examination of Venous Grafts (Data are shown as the mean $\pm$ the standard deviation)

	Control	Nadroparin Calcium	p value
Intima	96.10 $\pm$ 8.79	87.82 $\pm$ 11.08	0.0814
Media	139.4 $\pm$ 10.30	132.0 $\pm$ 11.47	0.1726
Intima/Media	0.69 $\pm$ 0.2	0.66 $\pm$ 0.03	0.0298*

*:Significant p value

Table 2: Flow Cytometric Analysis Changes of Venous Grafts (Data are shown as the mean $\pm$ the standard deviation)

	Control	Nadroparin Calcium	p value
Go/Gi	67.21 $\pm$ 1.96	70.20 $\pm$ 1.00	0.009
S	30.85 $\pm$ 2.23	27.83 $\pm$ 1.12	0.0019
G2/M	1.94 $\pm$ 0.86	1.97 $\pm$ 0.32	0.3058
PI	32.79 $\pm$ 1.96	29.8 $\pm$ 1.00	0.009*

*: Significant p value

PP 266 - OUTCOMES OF EUROSCORE (EUROPEAN SYSTEM FOR CARDIAC OPERATIVE RISK EVALUATION) AT OPERATED PATIENTS WITH LEFT MAIN CORONARY STENOSIS IN OUR CLINIC

Colak M., Rahman A., Aydin S.

Department of Thoracic and Cardiovascular Surgery, Faculty of Medicine, Firat University, 23119, Elazig, Turkey

BACKGROUND: The aim of the study is to evaluate the validity of EuroSCORE at operated patients with left main coronary stenosis in our clinics.

METHODS: Data were collected from 37 patients undergoing heart surgery with cardiopulmonary bypass in our institution between June 2006 and June 2008. EuroSCORE was used for risk stratification. The incidence of common risk factors were as follows; chronic pulmonary disease (9.01%), neurological dysfunction (3.3%), previous cardiac surgery (1.07%), unstable angina pectoris (25.18%), reduced left ventricular ejection fraction (24.31%), recent myocardial infarction (16.24%), and non-elective operation (2.28%). Scoring system was applied in three different risk groups. The patients with 2 or less points were allocated to low risk group, with 3 to 5 points to moderate risk group, and with 6 or more to high risk group.

RESULTS: Expected and observed mortality rates for high (n = 1), 0.02%. There wasn't any statistical difference between observed and expected mortality in all three groups (p > 0.05).

CONCLUSION: EuroSCORE is a simple, objective and up-to-date system for assessing heart surgery. EuroSCORE is a successful system for predicting the mortality at operated patients with left main coronary stenosis in our clinics.

KEYWORDS: Euroscore, Left Main Coronary Stenosis

PP 271 - CORONARY ARTERY BYPASS: IMPACT OF AGE GROUP DIFFERENCES IN PREOPERATIVE RISK FACTORS AND EARLY MORTALITY

Guerra M.¹, Mota J. C.¹, Pinho P.², Vouga L.¹

¹Department of Cardiothoracic Surgery, Centro Hospitalar de Vila Nova de Gaia/Espinho, EPE, Portugal

²Department of Cardiothoracic Surgery, Hospital de São João, Porto, Portugal

BACKGROUND: Over the past 20 years, there have been marked increases in rates of CABG among elderly in Portugal. However, there are no data comparing the age-related CABG outcomes.

METHODS: To study the effects of increasing age on outcome after CABG, 3174 patients who underwent CABG from 2003 to 2005 in five Portuguese Hospitals, were entered into a retrospective study. Patients were placed in five groups according to age: (1) 80 and older, (2) 70-79, (3) 60-69, (4) 50-59 or (5) less than 50. Selected variables included risk factors, cardiac status, preoperative hemodynamics and surgical procedures. In-hospital mortality was collected on all patients.

RESULTS: The mean age was 65.1 $\pm$ 9.9 years-old and younger patients were more often male than older patients (89.9% vs 65.2%). Preoperative cerebrovascular disease and peripheral vascular disease rates increased for those older than 60 years and decreased for those aged 30 to 49 years. Octogenarians had more congestive heart failure (53.8% vs 22.5%), unstable angina (71.5% vs 39.4%), urgent operations (52.5% vs 36.2%) and off-pump CABG (77.8% vs 57.3%) than the younger groups. Hospital mortality was less than 1.0% in patients younger than 69 years-old, 1.9% in septuagenarians and 8.9% in octogenarians.

CONCLUSIONS: While patients age at operation significantly influenced hospital mortality, this appeared to be a consequence of the increased frequency of risk factors and comorbidity together with decreased physiologic reserve in patients over 80 years of age.

KEYWORDS: CABG, age, septuagenarians, octogenarians, risk factors, mortality

PP 272 - NORMOTHERMIC BLOOD CARDIOPLEGIA VS COLD BLOOD CARDIOPLEGIA: COMPARATIVE STUDY

Garrido J. M., Maseda R., Oliva E., Miguelena J., Andrade I. G., Epeldegui A.

Servicio de Cirugía Cardiovascular. Hospital Universitario Ramón y Cajal. Madrid, Spain

INTRODUCTION: Tissue hypothermia induced during ischemic cardiac arrest when we use cold crystalloid or cold blood cardioplegia produces deleterious effects in cellular metabolism that increases cell death when normothermic reperfusion begins. On the other hand, warm (normothermic) blood cardioplegia reduces the production of reactive oxygen species and is associated with better hemodynamic recovery.

OBJECTIVES: We try to test that use of Buckberg's warm blood cardioplegia reduces the ischemia-reperfusion injury and the Troponin I elevation and thus reduces the need for inotropic treatments, producing faster recovery of patients.

METHOD: We select in retrospect way 80 patients undergoing cardiac surgery with cardiopulmonary bypass. In 40 of them we used cold blood cardioplegia and in 40 patients we used warm blood cardioplegia. Afterward we performed a comparative study evaluating the benefits of normothermic cardioplegia. Parameters collected: ischemic time, Troponin I levels, inotropic treatment, length of stay in the intensive care unit and cardiac pathology. Exclusion criterion: Troponin I >35 ng/dl.

RESULT: We found statistically significant differences in Troponin Levels (greater in the cold blood cardioplegia group).

CONCLUSION: In this study, the myocardial protection with warm blood cardioplegia could protect better than cold cardioplegia during cardiac arrest because of hypothermia is not a good method to prevent the ischemia-reperfusion syndrome.

KEYWORDS: warm blood cardioplegia normothermic blood cardioplegia

PP 273 - THORACIC DRAINAGE IN CABG PATIENTS

Basilaze L., Prangishvili A., Beria K., Goginashvili Z., Bakhutashvili Z.

Department of Cardiovascular Surgery, Emergency Cardiology Center, Tbilisi, Georgia

OBJECTIVES: Thoracic drainage is used in all patients after cardiac surgery. In most cases 3 tube drainage is used. The aim of the topic is show the priority of 2 tube drainage type.

METHODS: In 2001-2008 ys 1505 (including 1015 CABG) cardio surgical operations were performed by one surgeon. According to the thoracic drainage type after CABG the patients were divided into 2 groups. In group "A" (210 patients) we used 3 tubes placed in substernal, intrapericardial and left pleural cavity. In group "B" (805 patients) we used 2 tubes: one of them was placed substernal and right pleural spaces and another – in the left pleural cavity. Left side of pericardium was incised near the phrenic nerve to make opening for blood evacuation from pericardium to left pleura.

RESULTS: In group "A" – bleeding from the place of ventricular pacing electrode was noted in 6 (2,85%) patients. There was ischemic event due to tube compression on the anastomoses in 4 (1,9%) cases. Diagnoses were confirmed by rethoracotomy. Right sided pneumothorax was noted in 21 (10%) patients.

There was no similar complication in the group "B" patients.

CONCLUSION: The results showed that 2 tube drain method is a safe and effective.

KEYWORDS: Thoracic drainage, CABG, patients,

comparative study

Variables	COLD	NORMOTHERMIC	P value
Troponin I peak level	11.6 (5.5-21.88)	3.9 (2.5 -10.4)	< de 0.0001
Ischemic time (minutes)	58.5 (51-71.7)	61.00 (52.00-84)	< de 0.381
CPB time	80.00 (67.25-91.75)	96.00 (75.00-128.00)	< de 0.056
ICU stay	3 (2-4)	3 (2-5)	< de 0.761
Troponin levels in elective surgery	10.90 (5.7-17.57)	3.75 (2.40- 6.20)	< de 0.005
Troponin levels in urgent surgery	27.65 (13.57-33.10)	4.0 (3.4 - 14.00)	< de 0.010

PP 274 - CLINICAL OUTCOMES AND SHORT-TERM COMPLICATIONS FOLLOWING CORONARY ARTERY BYPASS GRAFTING IN AN IRANIAN TEACHING HOSPITALPishgou B.¹, Taghipour H.², Panahi Y.³, Moharamzad Y.², Hosseini M.¹¹Department of Cardiology, Baqiyatallah Medical Sciences University, Tehran, Iran²Department of Cardiac Surgery, Baqiyatallah Medical Sciences University, Tehran, Iran³Research center of Chemical Injuries, Baqiyatallah Medical Sciences University, Tehran, Iran

INTRODUCTION: Coronary artery diseases and cardiac ischemic complications are considered as one of the most important causes of mortality and disability. Coronary artery bypass grafting (CABG) is one of the common surgical operations performed in these patients. The aims of this study were to evaluate the short-term complications of this surgery in a general teaching hospital, and also to determine factors significantly affect the clinical outcome.

METHODS-MATERIALS: In this cross-sectional study, 200 patients who underwent CABG in the first trimester of 2007 were included. The clinical outcomes and surgical complications were evaluated up to three months after surgery. Short-term complications following CABG were those that occurred during one month post-operation and based on definitions of American Heart Association were consisted of death; cardiac, cerebral, and pulmonary events; infections; bleeding from operation site; and renal failure.

RESULTS: There were 156 men (78%) and 44 women (22%). Mean ($\pm$ SD) age of patients was 60.4 ($\pm$ 9.9) years. Mean ($\pm$ SD) time of aortic cross clamp was 42.31 $\pm$ 11.8 minutes and bypass time was 69 $\pm$ 18.14 minutes. The mortality rate was 1.5% (3 patients). Short-term complications were documented in 72 (36%) cases as follows: 18 patients (9%) developed myocardial infarction, 23 patients (11.5%) had pericardial effusion, one patient had bleeding from the operation site, 11 patients (5.5%) had acute renal failure, and 15 patients (7.5%) had atrial fibrillation rhythm. Infectious complications were detected in four patients (2%); two with urinary tract infection, one with pneumonia, and one with sternal wound infection. A significant statistical difference was observed between patients who developed complications and those who did not in terms of age (62.8 $\pm$ 9.8 vs. 59.4 $\pm$ 9.8; P= 0.03), left ventricle ejection fraction (43.5 $\pm$ 11.1 vs. 47.7 $\pm$ 8.8; P= 0.01), bypass time (72.1 $\pm$ 19.7 vs. 68.9 $\pm$ 17.4 minutes; P = 0.02).

CONCLUSION: Older patients with severe left ventricle dysfunction and more prolonged bypass time had more adverse events following CABG in comparison to other patients without these factors. Preventive measures (e.g., prophylactic antibiotics, intensive care unit hospitalization, etc) for patients with the mentioned poor predisposing factors should be done for improving clinical outcomes and decreasing short-term complications following CABG.

KEYWORDS: Coronary artery bypass grafting, treatment outcome, complication

PP 339 - PRE-OPERATIVE QT INTERVAL: A PREDICTOR OF MORTALITY IN PATIENTS UNDERGOING CORONARY ARTERY BYPASS SURGERY?

Foroughi M., Yousefi Z. K., Ansary Z., Ghanavati A., Bolourian A., Hekmat M., Beheshti- Monfared M., Noori A., Hassantash S.

Department of Cardiovascular Surgery and Cardiovascular Research Center, Modarres Medical Center, Tehran, Iran

OBJECTIVES: QTc interval prolongation has been shown to be associated with increased mortality in patients with coronary artery disease (CAD) and heart failure. In this study we assessed the utility of QTc interval as a predictor of mortality in patients undergoing coronary artery bypass graft (CABG) surgery.

METHODS: The data of all patients undergoing CABG in our institution with cardiac related operative mortality during a three year period was reviewed. This group of thirty patients (case group) was compared with 200 randomly selected matched group of survived patients (control group). QT intervals were measured from the beginning of QRS complex to the visual return of the T wave to isoelectric line. The value QT interval in predicting mortality in patients undergoing CABG was calculated.

RESULTS: Two hundred and thirty patients recruited into the study. No significant difference was present between the two groups regarding: gender, angiotensin converting enzyme inhibitor or diuretics use, hypertension, diabetes mellitus and history of myocardial infarction (MI). Logistic regression analysis revealed QTc prolongation (QTc>440 msec) as the only independent parameter (p=0.003) to increase operative mortality. The QTc interval of 480.7 $\pm$ 96.3 msec in the case group was significantly increased compared to 443.3 $\pm$ 49.4 msec in the survivors (p<0.045).

CONCLUSION: CABG patients with post-operative mortality had significantly longer QTc intervals compared to those whom survived surgery. Moreover, this effect was more prominent in patients with preserved preoperative left ventricular ejection fraction.

KEYWORDS: QTc Prolongation, CABG, Mortality

PP 340 - PERICARDIO-PERITONEAL SHUNT APPLICATION IN RECURRENT MALIGN PERICARDIAL EFFUSION

Bahcivan M., Doyurgan O., Celik S., Keciligil H.T., Kolbakir F.

Department of Cardiovascular Surgery, Ondokuz Mayıs university, Samsun, Turkey

Objectives: Recurrent pericardial effusion is an important complication of extended lung malignancies. This complication may be life-threatening situation due to risk of cardiac tamponade. Drainage of pericardial fluid causing cardiac tamponade improve patient clinical status. We aimed to present to apply pericardioperitoneal shunt in three patient with advanced stage lung cancer in our clinic.

Material-Methods: We detected masive pericardial effusion by echocardiography which causing right ventricular collapse in eight patients (mean age 61, four female and four male). We decided to implant synthetic graft between inferior pericardium and peritoneum because of recurrent pericardial effusion in these patients. Under local anesthesia, vertical 5-6 cm subxiphoidal incision performed to reach into the pericardial space. After removal of pericardial fluid, peritoneum is opened to by 2 cm incision. 5 cm lenght graft is anastomosed continuously to the inferior pericardium at one side and to the peritoneum at other side with 4/0 prolon. For six patients, 8 mm lenght ringed PTFE (politetrafluroetilen) graft, for two patient 10 mm dacron graft is used as synthetic graft material. Chest tube isn't required after procedure for patients.

Results: Performed surgical procedure is easily tolerated by patients. There was no postoperative morbidity and mortality. The patients who were discharged after three days with no complication controlled with echocardiography in outpatient clinics with no significant pericardial effusion.

Conclusion: In advanced stage lung cancer patient with decreased life expectancy, pericardio-peritoneal shunt is simple effective and safe surgical drainage procedure to improve life quality. This procedure is especially preferred for patient with recurrent malign pericardial effusion.

KEYWORDS: pericardial effusion, pericardioperitoneal shunt

PP 279 - RELIABILITY OF WELL'S CLINICAL PROBABILITY SCORING & D-DIMER IN THE DIAGNOSIS OF ACUTE DEEP VENOUS THROMBOSIS

Yavuz S., Kanko M., Acil C., Aksoy A., Agirbas H., Oner E., Parlak H., Aydin A., Berki T.

Department of Cardiovascular Surgery, Kocaeli University, Kocaeli, Turkey

AIM: Reaching the easiest & the cheapest reliable diagnosis of acute deep venous thrombosis (ADVT).

MATERIAL & METHOD: 80 patients suspected DVT were evaluated prospectively between the dates October 2005 – October 2007 in our CVS clinic. Well's clinical probability scoring (WCPS), D-dimer and venous duplex ultrasonography (VDU) were applied to all of the patients.

FINDINGS: 34 patients were female (42.5 %), 46 were male (57.5%). age average was 54.4 (22-74). 56 patients have left lower extremity complainings, 22 patients had right lower extremity and 2 patients had bilateral lower extremity complaining DVT was detected in 67 of patients joined in our study. Patients with normal VDU results were followed by control VDU 3 times within a week. D-dimer elevation is 100%. (41/41) in patients with high probability in WCPS, 90% (18/20) in patients with moderate probability, 83.3% (5/6) in patients with low probability.

RESULT: we concluded that, in the means of cheap and reliable diagnosis strategies, using WCPS and D-dimer, DVT treatment can be started in high and moderate probability patients, and prophylaxis can be started to low probability patients.

KEYWORDS: Acute deep venous thrombosis, D- dimer, Well's clinical probability scoring

CARDIOVASCULAR MEDICINE: CLINICAL OBSERVATION IN VARIOUS ASPECTS

Patients Evaluation

Wells clinical probability scoring	Patients with DVT scanned by using VDU	%	Patients with normal VDU results	%	High D-dimer	%	Normal D-dimer	%
High probability	41	97.6 %	1	2.4 %	41	97.6 %	1	2.4 %
Moderate probability	20	83.3 %	4	16.7 %	18	75 %	6	25%
Low probability	6	42.8 %	8	57.2 %	5	35.7 %	9	64.3 %
Total	67	83.7 %	13	16.3 %	64	80 %	16	20%

VDU: Venous duplex ultrasonography, DVT: Deep venous thrombosis

PP 281 - SIMULTANEOUS NEPHRECTOMIA, INTRACAVAL AND RIGHT ATRIAL TUMOR EXCISION, CAVAL PATCHPLASTY AND CORONARY ARTERY BYPASS SURGERY IN PATIENT WITH RENAL CELL CARCINOMA

Goksin I.¹, Eskicorapci S.², Ozcan A. V.¹, Evrengul H.³, Sungurtekin I.⁴, Tuncay L.²

¹Department of Cardiac and Vascular Surgery, Pamukkale University, Denizli, Turkey

²Department of Urology, Pamukkale University, Denizli, Turkey

³Department of Cardiology, Pamukkale University, Denizli, Turkey

⁴Department of Anesthesia and Reanimation, Pamukkale University, Denizli, Turkey

We reported herein a 54-year-old man patient with renal cell carcinoma with tumor extending into the IVC and right atrium and with together coronary artery disease who underwent successfully simultaneous nephrectomy, intracaval and right atrial tumor excision, caval patchplasty and CABG. The most common type of tumor occupying into the inferior vena cava and extending to the right atrial cavity is renal cell carcinoma (RCC). The rate of such extension in RCCs has been reported as 4 to 19%. Radical surgical approach in patients with RCC improve the prognosis even if a tumor extend to the right atrial cavity. A surgical strategy for treating RCC consistently depends on the tumor stage. Tumors were classified into four categories preoperatively according to the level of thrombus extension as described by Naves and Zincke.

CASE: A 54-year-old man patient admitted to our hospital with syncope, angina, right flank pain, hematuria and weight loss. ECG revealed sinus rhythm, left axis deviation and ischemic pattern in precordial derivation. A great renal tumor mass was determined by using abdominal ultrasound. The tumor and thrombus extension was determined by using abdominal computed tomography (CT) and transthoracic echocardiography. The tumor and thrombus was extended to the right atrial cavity. Tumor extension was on stage IV. Coronary angiography showed a 99% stenosis on proximal left anterior descending artery. We performed simultaneous nephrectomy, intracaval and right atrial tumor excision, caval patchplasty and coronary artery bypass grafting under normothermic CPB without cross clamping or cardioplegic arrest. Patient discharged from the hospital uneventfully in postoperative day 8. **Surgical Technique;** Chevron incision and median sternotomy were used together for simultaneous operation. Radical nephrectomy were performed first via retroperitoneal approach. Aortic canula was inserted in ascending aorta. The venous drainage was achieved using a proximal canula inserted in the superior vena cava and a distal canula inserted in the IVC below the renal veins via a femoral vein. Superior vena cava, intrapericardial and infrarenal inferior vena cava were encircled with tapes. Before opening the right atrium, superior vena cava and infrarenal inferior vena cava snares were snugged and right atrium was opened with classical oblique incision. Right atrial tumor and thrombus was extracted under normothermic CPB without cross clamping or cardioplegic arrest (On-pump beating heart). During the tumor excision, venous return from the hepatic veins were aspirated from the right atrial cavity by coronary suction. The whole tumor and thrombus was able to be extracted without any fragmentation through the right atrial cavity. After the closure of atrial incision, dual vascular clamp were applied in infrahepatic and suprarenal segment of vena cava. Vena cava between this areas was reconstructed with dacron graft with the preservation of contralateral renal vein due to vein wall tumor invasion. At last, LAD was revascularized with saphenous vein graft. As far as we know this is the first patients reported in literature in whom simultaneous operation (nephrectomy, intracaval and right atrial tumor excision, caval patchplasty and CABG) was performed.

KEYWORDS: Renal Cell Carcinoma, CABG, Nephrectomy, Simultaneous operation

Figure I



Masses of Nephrectomy

Figure II



Extracted Intracaval and intracardiac tumor mass.

PP 283 - SURGICAL TREATMENT OF TRAUMATIC CERVICAL ARTERIOVENOUS FISTULA CAUSED BY PENETRATING INJURY

Sacar M., Onem G., Adali F., Dereli M., Emrehan B., Coskun O., Sackan K. G., Arslan M., Baltalari A.

Department of Cardiovascular Surgery, Pamukkale University, Denizli, Turkey

Penetrating injuries including those over cervical region have high morbidity and mortality rates because of the vital tissue formation on that area. Traumatic arteriovenous fistulas are especially seen due to penetrating injuries and sometimes iatrogenic reason.

A 26 years old patient referred to our hospital with arteriovenous fistula, caused by screw leaped up from an electrical gang saw, found in the localization of left carotis artery-internal jugular vein. A large hematoma and diffuse thrill on the left part of the neck detected by palpation was observed. We performed a longitudinal incision from incisura jugularis to mastoid process. Firstly we reached to the proximal part of common carotid artery and hanged it. After 1 cc intravenous heparine was performed, internal and external carotid artery were explored carefully. Distal part of internal and external carotid artery were cross-clamped. There were lacerations on both of the distal part of common carotid artery and vena jugularis interna. Blood transition from common carotid artery to vena jugularis interna was observed. Common carotid artery was repaired with patchplasty by using saphenous vein graft. Internal carotid artery was sutured and blood flow was restored. The place of the ring-shaped screw was detected on the posterolateral side of common carotid artery and it was removed. After the operation no complication was observed.

Penetrating injuries resulted in arteriovenous fistula have to be managed urgently. In such cases, a proper and urgent management is life-saving. In the presence of vascular injury with foreign body otogenous grafts have to be used in order to avoid surgical site infections.

KEYWORDS: arteriovenous fistula, cervical, penetrating injury

PP 285 - SURGICAL APPROACH TO THE MANAGEMENT OF CARDIOVASCULAR ECHINOCOCCOSIS

Tasdemir K.¹, Akcali Y.¹, Gunebakmaz O.², Kaya M. G.², Mavili E.³, Sari B.², Tasdemir A.⁴, Ceyran H.³

¹Department of Cardiovascular surgery, Erciyes University, Kayseri, Turkey

²Department of Cardiology, Erciyes University, Kayseri, Turkey

³Department of Radiology, Erciyes University, Kayseri, Turkey

⁴Department of Pathology, Erciyes University, Kayseri, Turkey

OBJECTIVE: Echinococcosis is a serious health problem in some regions of the world. Although cardiovascular hydatid cyst is rare, its early diagnosis and surgical management is important.

METHODS: We reviewed ten patients with cardiovascular hydatid cyst who underwent surgery in our department between January 1982 and 2007. Standard cardiopulmonary bypass and antegrade cardioplegia with aortic cross-clamping were used in all but one patient. After the cysts were removed, the cavity was cleaned and then obliterated with pursestring sutures. Albendazole was used in all patients. The mean follow-up was 4.5 years.

RESULTS: The mean age was 27 years (range, 12 to 76 years). Eight patients were men. The hydatid cysts were located on left ventricle (5 patients), left atrium (2 patients), right ventricle (3 patients), right atrium (1 patient), pericardium (1 patient), and aorta (1 patient). Except for two patients who died, all were discharged without postoperative complications. There was no late cardiac mortality or recurrence.

CONCLUSIONS: Cardiac hydatid cyst should be treated surgically without delay. Although its surgical treatment carries a high complication rate, gentle handling of the heart during cardiopulmonary bypass minimizes operative risk.

KEYWORDS: Cardiovascular hydatid cyst, diagnosis, surgical management

PP 288 - COMMERREL DIVERTICULUM: CASE REPORT AND SURGICAL APPROACH TO VASCULAR RINGS

Ersoy C., Alkan-bozkaya T., Akcevin A., Turkoglu H., Paker T., Aytac A.

Department of Cardiovascular Surgery, Kadikoy Florence Nightingale Hospital, Istanbul, Turkey

INTRODUCTION: Vascular ring is a vascular compression syndrome that is characterized by dyspnoea, stridor and dysphagia usually shortly after the birth. Embryologically, it results from persistence of some of the symmetrically developing aortic arches, which otherwise should have regressed, and which therefore compress the surrounding structures (trachea/oesophagus). Recurrent respiratory tract infections generally appear earlier, whereas dysphagia occurs later. Vascular rings are complex and have mainly three types and multiple variants; Commerrel diverticulum is a very rare variant.

MATERIAL-METHOD: Four cases (ages: 6 mo -4 yrs, 3M:1F) of vascular ring were operated in our center. One of these four cases had Commerrel diverticulum (9.5 month, M) and complained of frequently recurring respiratory tract infections accompanied dysphagia. Clinical examination, echocardiography and radiodiagnostic investigations (CXR, MRI and angiographic examination) revealed presence of a vascular ring caused by Commerrel diverticulum, which is a very rare type, and urgent surgery was performed. Surgical approach was performed with left posterior thoracotomy. Subsequent to the careful dissection of the aortic arch and its branches, the ring surrounding the oesophagus and trachea was freed by division of ligamentum arteriosum. In postoperative phase, all of the cases experienced a clinically apparent respiratory relief and a decrease in the frequency of respiratory tract infections. A postoperative angiographic control was performed in this case, and neither residue nor any compression sign was observed.

CONCLUSION: Prolonged and recurrently occurring respiratory tract complaints and dysphagia in early infancy and childhood must alert paediatricians about the possibility of the vascular ring being first in line in differential diagnosis. The absence of these symptoms in early infancy does not rule out the possibility of the vascular ring and further investigations should be carried on. Nowadays, new surgical modalities like video-assisted thoracoscopic division are being reported successfully in cases of vascular ring.

KEYWORDS: Vascular rings, Commerrel diverticulum, Aortic arch anomalies

Figure 1. Angiographic aspects of the aortic diverticulum

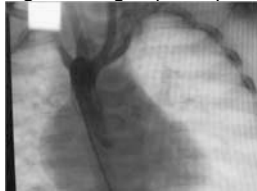


Figure 2. MRI images of compression of aortic diverticulum to esophagus and trachea

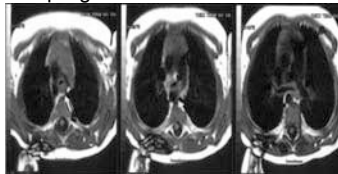
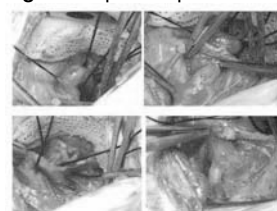


Figure 3. Operative pictures of the Commerrel diverticulum



PP 292 - COMPRESSION THERAPY FOR EDEMA AND CHRONIC VENOUS INSUFFICIENCYDilektasli M. M.¹, Turan A.², Karatas G.², Ucar H. I.³¹Department of Dermatology, Private Sincan Lokman Hekim Hospital, Ankara, Turkey²Department of Radiology, Private Sincan Lokman Hekim Hospital, Ankara, Turkey³Department of Cardiovascular Surgery, Private Sincan Lokman Hekim Hospital, Ankara, Turkey

BACKGROUND: Compression therapy has been medically recognized as one of the most effective non-invasive therapies to manage and treat the complications associated chronic or non healing wounds, chronic venous insufficiency and edema. Edema, inflammation and swelling can make treatment of the underlying injury or condition difficult. By pushing against the affected areas, compression therapy decreases fluid and pain and more rapid healing. This study presents preliminary results of compression therapy on edema, pain and activities of daily living in patients with chronic venous insufficiency in patients lower limbs.

METHODS: Thirty one cases (19 females (61.3%) and 12 males (38.7%) with mean age: 50.7 ± 11.6 years) having edema and pain in their lower limbs due to venous insufficiency were included in this study. Information about physical properties (age, body weight and height) and duration of the complaints were recorded. Leg circumference was measured in order to estimate the limb volumes. Pain intensity and impact of the problem on activities of daily living were assessed. The compression therapy was applied by the compression device to the whole extremity at the affected side. The treatment program lasted for a total of 5 sessions. The duration of each session was 30 minutes. Assessments were performed before and after the treatment program.

RESULTS: Mean duration of the complaints due to venous insufficiency was 5.2 ± 1.7 years. Body weight and body mass index values remained unchanged throughout the study. Pain intensity, limb volume and pain-free walking distance improved after application of compression therapy. Also the impact of the problem on activities of daily living reduced significantly with the treatment.

CONCLUSION: According to the findings of this preliminary study, the compression device seems to improve pain intensity, edema, pain-free walking distance and activities of daily living in cases with chronic venous insufficiency in the lower limbs. Compression and lymphatic drainage effects are considered to be the reasons of mentioned improvements. Compression therapy offers effective, proven solutions for physicians, therapists where other modalities have failed to produce substantial results and offers patients a way to manage their condition and significantly improve the quality of life over the long term.

KEYWORDS: Chronic venous insufficiency, edema, pain, compression therapy

PP 293 - TRAUMATIC EXTRACRANIAL CAROTICO- VENOUSE FISTULATION

Yasa H., Gokalp O., Gunes T., Unalp H. R., Adanir T., Yetkin U., Ozbek C., Gurbuz A.

Izmir Atatürk Training Research Hospital, Izmir, Turkey

INTRODUCTION: In case of the extracranial arterio-venoz fistulation is not treatment which may be introduce, stroke, cerebral edema, heart failure and oculo-facial pathology. Konjenital fistulas may be closure spontaneously but acquired or traumatic arterio-venouse fistulation is not closure spontaneously in the literature. In this study we present 5 traumatic extracranial arterio-venouse fistulation which is early diagnosis and performed surgical correction.

MATERIAL-METHODS: Between March 1998 and January 2008 5 patients (4 male, 1 female) with extracranial traumatic carotico-venouse fistulation underwent urgent surgery at our department. Between trauma and surgical correction time was 2.4 (2-5) hours. Only one patient had been performed arcus aortografi who had had big hematoma in the anterior mediastinum. Doppler ultrasonography was performed only one patient. The pathology was diagnosis by examination on the other three patients. All of the patients were transferred emergent unit to operation theatre.

RESULTS: There was three firearm and two stab injuries. There was three right common carotid artery and two left common carotid fistulation. Early and late mortality did not occur. Cross-clamp time was 14.3 ± 4.7 (11-19). Stay time in intensive care unit was 17.6 ± 5.4 (12-24) hours. Time to extubation was 3.8 ± 1.7 (2-7) hours. There was no major bleeding, incisional infection or sternal dehiscence. Left hemiplegia developed in a patient 2 days postoperatively. Hemiplegia resolved nearly totally on 6 month. Remaining patients were discharged without any problem.

DISCUSSION: As soon as diagnosis of the traumatic carotico-venouse fistulation was performed of the surgical correction which was useful and effectiveness, thank to this possibility of the complication on the late diagnosis may be prevented.

KEYWORDS: fistulation, traumatic, carotico-venouse

PP 294 - MODIFICATION IN ORTHOTOPIC CARDIAC TRANSPLANTATION

Sezgin A., Akay T. H., Ozkan M., Ozkan S., Gultekin B., Ozcobanoglu S., Korun O., Aslamaci S.

Baskent University, Faculty of Medicine, Department of Cardiovascular Surgery, Ankara, Turkey

Total orthotopic and bicaval cardiac transplantation techniques were developed as an alternative to standart technique. We modified the bicaval technique by plicating the left atrium in our clinic. In three patients that have undergone cardiac transplantation, we decreased the size of left atrium by plicating left atrial posterior wall between left and right pulmonary veins. A smooth surface was maintained by our suture technique. Right atrial anastomosis was performed by using bicaval technique. We performed echocardiography in the day of discharge. In these patients the diameter of left atrium was 32.5×50.5 mm, the left ventricle ejection fraction was 51-62% and there was no associated mitral valve insufficiency.

In the described technique we believe that a more anatomical and physiological left atrium is created. Therefore we expect a better cardiac performance.

KEYWORDS: Orthotopic cardiac transplantation, plication, left atrium

PP 297 - CATHETER'S COMPLICATIONS

Tasdemir H. K., Ozocak O. O., Kahraman H. C., Emirogullari O. N.

Erciyes University, Faculty of Medicine, Department of Cardiology and Cardiac Surgery, Kayseri, Turkey

INTRODUCTION: In this study, surgical treatment alternatives and early term results of catheter's complications have been investigated.

MATERIAL-METHODS: From January 1998 to April 2008, 64 patients, that have developed complications after intraarterial-intravenous catheter exercise, have been treated with surgical approach. 28 patients are male(%44), and 36 female(%56). Mean age 56,4. Most frequent reason of catheter's complication was pseudoaneurysm(37 patients). Five patients operated because of coronary arterial dissection(3 patients CABG, 2 patients pericardial tube drainage). Five patients operated because of cardiac injury (3 patients right ventricle, 2 patients right atrium). Three pediatric patients have been surgical treated during percutaneous ASD closure as a result of dislocated implant. One of these patients who has abdominal aorta, inferior vena cava and right ventricle injury was operated by sternotomy and laparotomic method. In other cases operated; five patients femoral arterio-venous fistula, four patients catheter guide removing, two patients acute arterial occlusion. Hospitalization time 11,2 days.

DISCUSSION: as a result of radiological invasive intervention methods development and most frequent usage, catheter's complications are increased which lead both mortality and morbidity increase

KEYWORDS: catheter, complication

PP 298 - SURGICAL TREATMENT OF IDIOPATHIC MAIN PULMONARY ARTERY ANEURYSM

Ipek G.¹, Omeroglu S. N.¹, Kanbur E.¹, Denli S.¹, Bitargil M.¹, Sayilgan C.², Yuceyar L.², Erolcay H.²

¹*Department of Cardiovascular Surgery, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey*

²*Department of Anesthesiology and Reanimation, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey*

Idiopathic pulmonary artery aneurysms are rare anomalies with poorly understood pathogenesis. A patient with a giant pulmonary artery aneurysm of 6 cm in diameter was referred to our institution. The etiology of the aneurysm could not be identified, therefore it was accepted as idiopathic. After median sternotomy cardiopulmonary bypass was instituted. The pulmonary artery was opened longitudinally. The wall thickness and structure of the pulmonary artery was normal. An elliptic shaped part of the anterior wall of the aneurysm of 5x2.5 cm in dimensions was resected and the pulmonary artery narrowed. After the reduction arterioplasty the patient was discharged without complications.

KEYWORDS: Aneurysm, Idiopathic aneurysm, Pulmonary artery aneurysm, Reduction arterioplasty

PP 299 - LEFT VENTRICLE PAPILLAR FIBROELASTOMA: CASE REPORT

Kutsal A.¹, Koc M.¹, Ulsan V.³, Bolat A.¹, Surer S.¹, Isik O.¹, Bas T.¹, Ocal B.², Orun U. A.², Senocak F.²

¹*Department of Cardiovascular Surgery, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey*

²*Department of Pediatric Cardiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey*

³*Department of Anesthesiology, Dr.Sami Ulus Pediatric Research and Training Hospital, Ankara, Turkey*

Papillary fibroelastomas (PFE) are uncommon neoplasias of the heart. They more frequently occur on the aortic or mitral valves but can be found anywhere in the heart. Although these tumors are considered histologically benign, they are dangerous because of the risk of embolization, which can result in transient ischemic attack, stroke, or pulmonary embolism.

CASE: A 9-yr-old otherwise healthy boy was referred with the complaint of dyspnea, and at auscultation a systolic murmur was heard at the left sternal border. Preoperative transthoracic 2D echocardiography examination demonstrated left ventricular (LV) outflow tract obstruction, and a pressure gradient across the LV outflow tract of 60 mm Hg. AV structure seemed to be normal. 12 mm cystic mass was seen at subaortic area. During surgery, standard cardiopulmonary bypass with bicaval cannulation, moderate hypothermia and multidose antegrade cardioplegia was performed. A horizontal aortotomy was made and spherical 20 mm left ventricular mass was seen under the aortic right coronary cusp. resection of the intracavitary mass was performed using a transaortic valve route, and the mass was resected with its pedicle. Postoperative pathological examination confirmed the diagnosis of a papillary fibroelastoma. The patient was discharged at 5th postoperative day. At control follow-up examination, the child was asymptomatic.

DISCUSSION: Benign primary cardiac neoplasms are uncommon but may cause significant morbidity when present. Papillary fibroelastomas are rare benign cardiac tumors arising from the normal endocardial components. It is the second commonest benign cardiac tumor and in most instances, it is valvular or located in left sided chambers. They are avascular, usually small, and are attached to valvular structures. Although histologically benign, they have a potential of causing significant morbidity and mortality by obstructing blood flow and causing arrhythmias and emboli. Aortic location and mobility are predictors of death or embolization. At mitral valve localisation stroke was the most common presentation; whereas sudden death and myocardial infarction were the most common symptoms at aortic valve involvement. In a large number of patients, PFEs were identified as incidental findings at autopsy or at cardiac surgery performed for unrelated reasons. The differential diagnosis of PFE includes tumors, valvular calcification, thrombi, vegetations, and Lambl's excrescences. Although PFEs occur in all age groups, they predominate in adults between the fourth and eighth decades sporadically. Few are congenital although familial occurrence has not been reported. Echocardiography is most suitable method for the tumor diagnosis with characteristic sea anemone like appearance with multiple ramifications held by a pedicle to endocardium, and further demonstrating whether the tumor is pedunculated or sessile and motile or not. Surgical excision of the tumor is curative and no recurrence is yet reported.

KEYWORDS: benign cardiac tumors, papillar fibroelastoma



Subaortic mass

Picture-2



Resected mass with a thin stalk

PP 300 - LIMB SALVAGE WITH A CROSSOVER FEMOROPLOPITEAL BYPASS PROCEDURE

Yetkin U., Gokalp O., Yurekli I., Durmus A., Gurbuz A.

Izmir Atatürk Training and Research Hospital, Department of Cardiovascular Surgery, Izmir, Turkey

A 78-year-old male patient was admitted to our clinic with symptoms related to critical ischemia of his left lower limb. His past medical history revealed coronary arterial disease with low ejection fraction of 25%, initially had been diagnosed 10 years ago. Moreover, he had undergone bilateral femoropopliteal bypass surgery 9 years ago. Emergent adigital subtraction angiographical examination showed occlusion of the left femoropopliteal graft. Additionally, the flow pattern on the left side was observed as static where the popliteal and crural arteries showed poor filling with a delay of 1.5-2 minutes. More distally, anterior and posterior tibial arteries showed a significantly delayed and poor filling. It was learned that this patient was referred to our clinic with his own will due to high probability of amputation risk announced at a different institute. For this case with coexisting high risk pathologies, a crossover right femoral to left distal popliteal bypass procedure was planned. Proximal anastomosis originated from the right common femoral artery and the distal anastomosis was to the below-knee left popliteal artery. Our patient did not suffer from any ischemic symptoms during postoperative period and his control arteriography carried out at 1st postoperative year showed a full patency of the graft.

Complications and morbidity associated with vascular graft occlusions continue to be a major clinical problem. An ideal result of infrainguinal bypass surgery for limb salvage includes an uncomplicated operation, elimination of ischemia, prompt wound healing, and rapid return to pre-morbid functional status without recurrence or repeat surgery. The experience of Chalmers et al. demonstrates that the crossover femoropopliteal bypass achieves satisfactory limb salvage. This operation should be considered as an alternative extra-anatomic reconstructive procedure in patients with the appropriate anatomy and who are not candidates for more standard types of vascular reconstruction.

KEYWORDS: Limb Salvage, Crossover Femoropopliteal Bypass Procedure

PP 301 - AN UNEXPECTED COMPLICATION FOR AORTIC ENDOCLAMPING: FOLDING IN ILIAC ARTERY

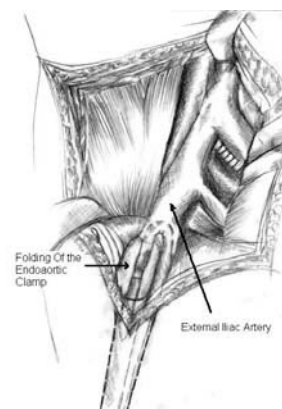
Inan K., Ucak A., Gullu A. U., Ugur M., Yilmaz A. T.

Department of Cardiovascular Surgery, Gulhane Military Medicine of Academy, Haydarpasa Training Hospital, Istanbul, Turkey

Minimally invasive cardiac surgery is still in challenge with the advents of new surgical equipments. Cardiac surgery via mini thoracotomy and videoendoscopy (robotic, videothoracoscopic) are still evolving. For minimally invasive cardiac surgery, femoro-femoral perfusion techniques are necessary. Aortic endoclamp, femoral venous cannulation are the most important parts of these surgical techniques.

Through all innovations, surgical equipments also come with their complications. The most common complications of the operation done by peripheral cardiopulmonary bypass systems are; embolisation, dissection, balloon migration, kinking of the cannulae, cerebral ischemia, local wound problems in the groin. We present here, very rare complication of aortic endoclamp cannula which was folded in iliac artery and our comments of preventive strategies.

KEYWORDS: minimal invasive cardiac surgery, endoclamping

Figure 1*The folded catheter with the balloon***Figure 2***Illustration of the folded catheter in iliac artery lumen*

PP 303 - VENA CAVA SUPERIOR SYNDROME (VCSS) DUE TO LONG TERM PERMANENT SUBCLAVIAN VEIN CATHETERIZATION FOR HEMODIALYSIS

Karacelik M., Albayrak G., Sert C.

T.C.S.B. Izmir Tepecik Teaching and Training Hospital, Izmir, Turkey

INTRODUCTION: Vena Cava Superior Syndrome (VCSS) is often associated with intrathoracic malignancies. Long term permanent subclavian vein catheterization for hemodialysis is caused VCSS by making pressure to lumens of innominate vein and vena cava superior (VCS) thus thrombus formation occurs at this sites. The total occlusion of VCS follows this process. We report three cases of VCSS which occurred long term permanent subclavian vein catheterization for hemodialysis.

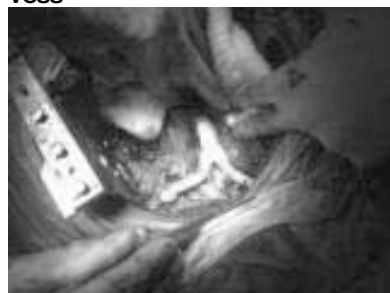
MATERIAL-METHOD: The data were collected retrospectively about the patients who diagnosed VCSS and underwent surgery in our clinic between 2004- 2008.

RESULTS: All the patients were male and their ages were 35, 38, 67-year respectively. The patients were admitted to the hospital with symptoms such as bilateral ptosis, massive venous collaterals of their neck, face and upper extremity. All the patients were assessed by thorax CT and venography preoperatively. Intrathoracic malignity was not seen in any patient. The total occlusion was determined between the innominate vein and vena cava superior (VCS) -right atrial (RA) border in the Case 1. Two total occlusion was determined between 3 cm above of the VCS-RA border and bilateral subclavian veins level in the Case 2 and 3 are assessed by venography. Surgical procedures are done under the general anesthesia via median sternotomy. Vena Cava Superior patchplasty with using pericardial patch was done to the Case 1. Vena Cava Superior-bilateral subclavian vein bypass with using Y shaped PTFE 16-8 mm vascular graft was done to the Case 2 and 3. None of the cases are applied to the cardiopulmonary bypass and need any shunt. Warfarin therapy continued after the surgery. Venous collaterals of their face and necks, infection, graft thrombosis and mortality was not seen in any cases at the midterm follow up.

CONCLUSION: The surgical treatment is a successful method and its midterm results are satisfactory for symptomatic cases of the VCSS which is caused by long term permanent subclavian vein catheterization for hemodialysis.

KEYWORDS: Vena Cava Superior Syndrome, subclavian vein catheterization, hemodialysis

VCSS



PP 304 - AXILLARY VEIN THROMBOSIS: AN UNUSUAL COMPLICATION OF INFLAMMATORY MASS OF THE BREAST

Karacelik M.¹, Ilhan E.², Sezgin A.³, Tasbakan S.⁴, Yilmaz S.², Yilmaz C.⁵

¹Izmir Teaching and Training Hospital, Cardiovascular Surgery Clinic, Izmir, Turkey

²Izmir Teaching and Training Hospital, Department of General Surgery, Izmir, Turkey

³Izmir Teaching and Training Hospital, Department of Pathology, Izmir, Turkey

⁴Ege University School of Medicine, Department of Chest Diseases, Izmir, Turkey

⁵Izmir Teaching and Training Hospital, Department of Radiology, Izmir, Turkey

Axillo-subclavian vein thrombosis generally occurs in the presence of recognizable risk factors, such as central venous catheters, cancer and infection. However, as many as 20% of patients present with apparently spontaneous episodes. The clinical picture of upper extremity deep vein thrombosis is characterized by pain, edema, and functional impairment, although it may be completely asymptomatic. We report a unique case of upper extremity deep vein thrombosis which occurred secondary to an inflammatory breast mass and treated successfully with proper antibiotherapy and long term low molecular heparin.

KEYWORDS: Upper extremity deep vein thrombosis, axillosubclavian vein thrombosis

Mass in breast



PP 305 - SPLENIC INFARCTION FOLLOWING CARDIOPULMONARY BYPASS

Eyileten Z., Baran C., Eryilmaz S., Aral A., Yazicioglu L., Ucanok K., Ozyurda U.

Department of Cardiovascular Surgery, Ankara University, Ankara, Turkey

Patients with atherosclerotic heart disease, may suffer from atheroembolic events including myocardial infarction, stroke, renal failure, peripheral gangrene, spinal cord infarction, acute pancreatitis, bowel infarction or rarely other end-organ infarction. Splenic infarction following coronary artery bypass grafting (CABG) surgery, is uncommonly encountered.

We report 3 cases of seriously symptomatic splenic infarction during early postoperative period of coronary surgery.

CASE 1: The patient was a 80-year-old man who had undergone coronary artery bypass surgery 20 years ago. Because of chest pain and previous saphenous vein graft occlusion, we performed off-pump LAD-LIMA anastomosis.

CASE 2: The patient a 74-year-old man with unstable angina and dyspnea. He underwent diagnostic angiography during which; critical lesions in four coronary arteries according with severe mitral insufficiency were detected. He underwent four-vessel CABG surgery and mitral valve replacement with an unremarkable operative course.

CASE 3: A 79-year of male was diagnosed serious occlusion in left main artery. He was not diabetic but hypertensive preoperatively. Conventional coronary artery bypass grafting operation was performed for 4 coronary arteries. The patient was weaned from the cardiopulmonary bypass easily with the assistance of intraaortic balloon pump.

The median time to develop symptoms in our patients was 8 hours. Hemodynamic instability, severe metabolic acidosis (persisting despite efforts to directly correct it with appropriate volumes of bicarbonate infusion), lactic acidosis, increasing inotrop requirement were detected in all patients. The abdominal examination was significant for pain with deep palpation. Peritoneal signs were present in only one patient. Rectal examination demonstrated hemocult negative stool. Laparotomy was performed with the suspected diagnosis of intestinal ischaemia. At laparotomy; although none of the patients showed signs of ischaemic bowel, gross evaluation of the spleens revealed evidence of ischaemia. Splenic infarction was diagnosed and all patients were treated with urgent splenectomy, which were curative. Microscopic evaluation of the spleen also confirmed splenic infarction.

Postoperative hemodynamic data were improved in all patients. Second patient died in postoperative 48 hour because of additive cardiac problems. First patient did well postoperatively and was discharged 6 days after splenectomy. Third patient is still being followed in our clinic because of respiratory complications.

Ischaemic complications after CABG may be associated with prolonged cardiopulmonary bypass time, use of intraaortic balloon pump, low cardiac output state and the use of vaso-active agents. Presence abdominal pain, a persistent and refractory metabolic acidosis, lactic acidosis, hyperkalemia should also raise the possibility of underlying splenic infarction. It is likely that only a high index of suspicion in "at risk patients" will lead to early diagnosis and consequently life saving intervention.

KEYWORDS: splenic infarction, cardiopulmonary bypass

PP 306 - ASYMPTOMATIC IDIOPATHIC MAIN PULMONARY ARTERIAL ANEURYSM

Eyileten Z.¹, Eryilmaz S.¹, Baran C.¹, Hasde A. I.¹, Sirlak M.¹, Ozenci M.², Ozyurda U.¹

¹Department of Cardiovascular Surgery, Ankara University, Ankara, Turkey

²Department of Cardiology, Ankara University, Ankara, Turkey

Pulmonary arterial aneurysm is a rare disease entity. It is found in approximately 1 of 14000 autopsies. The majority of cases are associated with congenital cardiovascular diseases (47%), infection, and trauma; idiopathic pulmonary artery aneurysm is extremely rare. We report a young asymptomatic patient with idiopathic pulmonary artery aneurysm of the main pulmonary artery.

CASE: A 38-year-old woman was referred to our department for investigation due to an unusual chest X-ray finding of parahilar opacity. The patient was asymptomatic at admission. Echocardiography showed the aneurysmatic dilatation of pulmonary artery with maximal diameter of 4.4 cm. Both ventricles were non-dilated, with normal wall motion. Both atria were dilated. CT scan also, detected large (4.5 cm in diameter) aneurysm of the main pulmonary artery. On cardiac catheterization, for pulmonary artery branches again 4.1 cm aneurysm of main pulmonary artery was confirmed.

Further investigations did not show any disorder that could lead to the aneurysmatic dilatation of the pulmonary artery. We did not find any sign of systemic disease, various infections (syphilis, pneumonia), connective tissue disorders, Marfan Syndrome, vasculitis or shunt lesion. Therefore, the diagnosis of idiopathic aneurysm of the pulmonary artery was made.

RESULT: On the basis of current knowledge with the absence of straightforward guidelines regarding therapy of this unique pathology, we did not indicate surgical correction of this clinically asymptomatic aneurysm. We started oral anticoagulation therapy. The patient is now under regular 6-months follow-up, still asymptomatic. CT exams do not show any progression of the aneurysm.

DISCUSSION: Surgical correction is the method of choice in the treatment of symptomatic pulmonary artery aneurysm. However, there is no consensus regarding the treatment of asymptomatic aneurysms in current literature. There are some case reports suggesting conservative approach to such patients especially in cases without pulmonary hypertension and in the absence of the underlying left-to right intracardiac shunt lesion. Therefore we decided to manage our patient conservatively with regular follow-up by using CT scans. It is probably safe to monitor the patient at regular intervals and check the cardiac situation including pressure of pulmonary artery. In case of progressive and constant increase in the diameter of the aneurysm (more than 0.5-1 cm in 6 months) and/or for those that are symptomatic, surgical repair can be recommended.

KEYWORDS: pulmonar artery, aneurysm, treatment

PP 307 - WHAT CAN WE DO FOR RECURRENT ACUTE REJECTION IN HEART RECIPIENTS?

Altintas G., Ulas M. M., Tosya A., Taskaya E., Kucuker S., Ozatik M. A., Pac M.

Türkiye Yüksek İhtisas Hospital Cardiovascular Surgery Clinic, Ankara, Turkey

Recently high-dose steroid therapy was the sole option for the treatment of acute transplant rejection. This therapy is very effective in up to 80 % of rejection episodes in many series. Low-dose oral prednisone (0.5-1 mg/kg) was demonstrated to be an adequate therapy for most acute rejection episodes with low morbidity and no associated hemodynamic compromise. And also recurrent rejections demand more potent immunosuppressive intervention. We here describe a heart recipient who received re-pulse oral prednisolone (100mg/day) therapy for recurrent rejection and her recovery. 23 years-old female heart recipient was admitted to our clinic with cardiac failure symptoms because of giving up all immunosuppressive medications. In her cardiac biopsy, we found ISHLT grade 3 rejection. After hospitalization of the patient we immediately gave oral prednisolone (100mg/day, pulse therapy) for 3 days and after 3th day we began to reduce the dose (5mg every other day). On the 15th day, cardiac biopsy was performed and the same biopsy findings (grade 3 rejection) were found. Therefore, we used oral prednisolone (100mg/day, for 3 days) re-pulse therapy and we began to reduce the dose again. After 15 days of the last therapy, cardiac biopsy was performed and it was ISHLT grade 1. The patient was discharged after clinical recovery and she is still receiving 20mg/kg prednisolone therapy. So, we conclude that re-pulse oral prednisolone therapy is effective in recurrent rejection.

KEYWORDS: Heart transplantation, pulse therapy, rejection, prednisolone

PP 308 - THE EFFECT OF INHALATED PENTAMIDINE FOR PNEUMOCYSTIS CARINII PNEUMONIA PROPHYLAXIS IN A HEART TRANSPLANT RECIPIENT WHO HAS ALLERGIC HISTORY FOR TRIMETHOPRIM SULFAMETHOXAZOLE

Altintas G., Ulas M. M., Diken A. I., Kocabeyoglu S., Kucuker S., Ozatik M. A., Pac M.

Türkiye Yüksek İhtisas Hospital Cardiovascular Clinic, Ankara, Turkey

Pneumocystis carinii pneumonia poses a high morbidity and mortality risk to heart transplant recipients. Despite adequate therapy, pneumocystis infections after heart transplantation have been reported to result in a mortality of up to 34 %. The use of trimethoprim-sulfamethoxazole (TMP-SMZ) prophylaxis virtually eliminates the risk of infection; however many patients can not tolerate TMP-SMZ as our patient. Here we describe a 59-year-old male who underwent orthotopic heart transplantation for cardiomyopathy. Postoperative immunosuppression consisted of cyclosporin, prednisolone and mycophenolate Na. He was discharged on the 21st postoperative day. We knew his allergic history of TMP-SMZ, therefore we used inhaled 300 mg of Pentamidine monthly. After 4 months of his treatment with Pentamidine there is no any clinical picture of pneumocystis pneumonia and he is well. So we conclude that inhaled Pentamidine is an alternative drug to TRP-SMZ for pneumocystis pneumonia prophylaxis after heart transplantation

KEYWORDS: Pentamidine, Trimethoprim Sulfamethoxazole, Pneumocystis Carinii, Heart Transplantation

PP 309 - NECKLACE FISTULA FOR COMPLICATED DIALYSIS ACCESS PATIENTS

Eyileten Z., Sirlak M., Eryilmaz S., Cakici M., Inan B., Kaya B., Ozyurda U.

Department of Cardiovascular Surgery, Ankara University, Ankara, Turkey

The number of patients undergoing dialysis has grown annually by 9%. Since its first description in 1966, the arteriovenous fistula (AVF) has been the preferred vascular access for dialysis. However, vascular access dysfunction remains the principal reason for hospitalization in patients undergoing dialysis, and it is not uncommon for all usual AVF sites to fail, often in patients for whom neither peritoneal dialysis nor transplantation is an appropriate option.

We describe our experience with complex (extra-anatomic) access procedure in a patient with difficult vascular access problems.

CASE REPORT: A 7-year-old female patient, undergoing hemodialysis in whom previous six upper extremity arterio-venous fistulae in both sides failed, admitted to Cardiovascular Surgery Clinic of Ankara University. The preoperative assessment included duplex scanning of both venous outflow and arterial inflow. Because of uncertainty regarding vein patency, a venogram was obtained. Venography revealed total occlusion of both left internal jugular vein and brachiocephalic vein, while normal flow of right subclavian vein was detected.

Necklace bypass (axillary artery to contralateral axillary vein) was created with 6 mm, internally reinforced prostheses made of expanded polytetrafluoroethylene (Gore-Tex Intergrating Vascular Graft).

Follow up results pointed the vascular access was functional at tenth month follow up.

The necklace (axilloaxillary) bypass has been described previously, although no long-term results in series have been reported. We advocate use of this bypass in patients with exhaustion of all access possibilities in the arm who have a patent superior vena cava or patients with a unilateral subclavian vein or artery occlusion. The necklace bypass is also useful in patients at high risk of steal syndrome because it has only rarely been associated with this problem

There is no "hopeless case" for vascular access, even if the procedure required to provide it is highly complex. Despite efforts in recent years to maximize access, prosthetic bridge grafts are still necessary in about half of patients, despite inferior patency results. The reasonable patency and minimal complications associated with our complex bypass show that this procedure is worth trying and that, with close follow-up, patients can gain some good-quality time.

KEYWORDS: Necklace fistula, dialysis.

PP 310 - CARDIOVASCULAR SURGERY CENTER OF TOURISM REGION:FIRST OUTCOMES

Ozen Y., Zengin M., Bayezid O.

Medicalpark Hospital, Antalya, Turkey

BACKGROUND: In this study, we present the outcomes of open Heart surgery cases had been done for 16 months at Anatolia Hospital, Antalya,

METHODS: In our center, there had been performed totally 510 open heart surgery operations between september 2006 and may 2008. The mean age was 65.03. (356 men, 164 women).The number of patient undergoing coronary bypass surgery on pump was 395 and the number of off-pump was 26. Aortic valve replasman operation had been performed to 22 patients, mitral valve replasman operation had been performed to 33 patients. The number of patient had undergone AVR and MVR was 3.The redo coronary bypass operation had been done for 4 patients.Priamary repair of ASD was 3. The left atrial mixoma extirpation was 1.And 21 patient had undergone to combine surgical procedure.

Naturally we had mostly Turkish patient, and the 9 patient were from foreign country.

RESULTS: The hospital mortality was %2.74 (14 cases) Only 1 of these patients was foreign and he had been taken to theatre in emergency situation with acute MI.

CONCLUSION: The early results of our open Heart surgery cases we had performed since 2006 are acceptable.

KEYWORDS: CABG,mortality, tourist,outcome

PP 311 - DIAGNOSIS OF TOXOPLASMOSIS IN A SERONEGATIVE AND TREATMENT-RESPONSIVE HEART TRANSPLANT RECIPIENT

Unlukaplan M.¹, Celasun B.¹, Sengel S. S.², Korun O.³, Sezgin A.³, Demirhan B.¹

¹Department of Pathology, Baskent University, Ankara, Turkey

²Department of Infectious Diseases, Baskent University, Ankara, Turkey

³Department of Cardiovascular Surgery, Baskent University, Ankara, Turkey

Toxoplasma gondii infections in heart transplant recipients are generally seen as acquired infections of the immunocompromised sero-negative patient from an exogenous source, usually the donor organ. We report a 19-year-old heart transplant recipient who developed a collapse of heart functions, 28 days after the transplantation. Histopathological examination of the endomyocardial biopsy revealed T. gondii infection. After the appropriate medical therapy regimen, the patient's ejection fraction recovered dramatically. The control endomyocardial biopsy of the patient revealed any histopathologic sign of T. gondii infection or acute rejection. In both preoperative and postoperative serologic tests of the recipient, T. gondii IgG values were negative. Although a seroconversion of T. gondii IgG/M was not detected, a two fold rise was significant in the titer of IgG. Unfortunately the serologic status of the donor was not known, but the recipient of liver of the same donor is known to have an infection-free course. However, the heart transplant recipient died on the 65th day of transplantation because of other reasons. Our case demonstrates that the histological diagnosis of T. gondii is precious for recovery. In conclusion, T. gondii infection should be kept in mind while interpreting endomyocardial biopsies of transplanted heart. It is significant to distinguish its histopathologic symptoms from a possible rejection because the therapy of these two entities are completely different and depends on the pathological diagnosis.

KEYWORDS: Toxoplasmosis, heart transplantation, endomyocardial biopsy

PP 312 - DELAYED STERNAL CLOSURE BY USING THE THYMUS IN THE NEWBORN COULD NOT TOLERATE PRIMARY STERNAL CLOSURE

Kolbakir F., Bahcivan M., Demirag M. K., Yucel S.

Department of Cardiovascular Surgery, Ondokuz Mayis University, Samsun, Turkey

AIMS: The purpose of this presentation is to assess the cardiopulmonary performance associated with delayed sternal closure after infant cardiac operations by using the thymic tissue.

METHODS: Of 55 newborns undergoing open cardiac surgery at Ondokuz Mayis University Faculty Hospital, Samsun, from August 2007 to May 2008, 3 could not tolerate primary sternal closure. We used their own thymuses as a mediastinal closure material. All newborns were male and ranged in age 1 to 4 days. Their cardiac pathologies were simple transposition of the great arteries (sd-TGA)in 2, cardiac type total anomalous pulmonary venous return (TAPVR). All patients were operated on with standardized techniques. We performed arterial switch (Jatene procedure) and totally correction operation in patients with sTGA and TAPVR respectively.

RESULTS: The essentially indication of infants with delayed sternal closure were enable tolerate primary sternal closure concerning to myocardial distention or chest wall edema. Successful sternal closure was achieved in the patients at a mean of 3.67 ± 1.15 days after opening. There were significant decreases in right atrial pressure (16.3 ± 1.53 to 10.33 ± 2.08 mm Hg) between primary and delayed sternal closure. The peak inspiratory pressure, delivered breaths per minute, and fraction of inspired oxygen all significantly increased during primary sternal closure. No mortality and morbidity were seen all patients having delayed sternal closure.

CONCLUSIONS: Although delayed sternal closure after complex operations for congenital heart disease is often necessary in the operating room because of edema, unstable hemodynamic conditions, or bleeding, it can also be used electively to aid in hemodynamic and respiratory stability in the initial postoperative period. Thymus is ready to use in newborn as an enough closure material and live tissue barrier feeding with diffusion. It needn't any process for using. It is free of charge and compatible because of own tissue.

KEYWORDS: Sternal closure, thymus, congenital heart disease, surgery, neonate

PP 315 - CARDIAC SURGERY IN OCTOGENARIANS

Eris C., Yavuz S., Turk T., Sezen M., Tiryakioglu O., Ozyazicioglu A. F.

Department of Cardiovascular Surgery, Bursa Yuksek Ihtisas Education and Research Hospital, Bursa, Turkey

BACKGROUND: The patients whom older than 80 years old are perceived as too fragile to undergo open heart surgery. With the improvement of cardiopulmonary bypass technology and surgical procedures older patients can be operated with reduced mortality and morbidity. In our study we analyzed postoperative complications in patients with elderly patients (80 years or more).

METHODS: We have performed a retrospective analysis of 20 consecutive patients who underwent cardiac surgery from 2005 to 2008 at our hospital. Their demographic profiles, operative data, perioperative results and long term outcomes were recorded and analyzed.

RESULTS: Eight women and 12 men with an age range 80 to 86 years had open heart surgery over the study period. The complication rate was 60% overall, consisting of 20% respiratory, 5% hemorrhagic, 15% infectious and 20% new arrhythmia occurred. The overall mortality rate was 5% and average hospital stay was 13.5 days with an intensive care unit stay of 6 days

CONCLUSIONS: With improving techniques and cardiopulmonary bypass technology even patients older than 80 years can be operated safely with acceptable mortality and morbidity.

KEYWORDS: cardiac surgery, aged, octogenarian

PP 316 - IS DIRECT CANNULATION OF THE AXILLARY ARTERY AS ARTERIAL INFLOW SITE A SAFE MEANS IN AORTIC SURGERY?

Yavuz S., Eris C., Turk T., Sezen M., Ata Y., Goncu M. T.

Department of Cardiovascular Surgery, Bursa Yuksek Ihtisas Education and Research Hospital, Bursa, Turkey

OBJECTIVES: The axillary artery cannulation has been preferred by many surgeons as an alternative to femoral artery cannulation in aortic surgery. The aim of our study was to evaluate the safety and efficacy of direct cannulation of the axillary artery in patients undergoing surgery of the ascending aorta and/or the aortic arch.

METHODS: From January 2002 to August 2008 arterial perfusion via the right axillary artery was performed in 63 patients (47 male, 16 female) aged 56 (28–80) years. Indications for operation were acute type A aortic dissection in 51 patients, ascending aortic aneurysm in 9, aortic dissection after previous aortic valve replacement in 1, aortic pseudoaneurysm after aortic valve replacement in 1, and severely atherosclerotic aorta in 1. The arterial inflow site for perfusion in all patients was performed by direct cannulation of the axillary artery.

RESULTS: Conversion to femoral artery cannulation was not necessary in any patients. In all patients, adequate perfusion flows of 2.4 l/m²/min were achieved during surgical procedures. There were no complications related to the technique of direct axillary cannulation, such as local vascular injury, brachial plexus injury, axillary artery thrombosis, upper extremity ischemia or local wound infection. No patient had a new postoperative stroke.

CONCLUSIONS: Direct cannulation of the axillary artery is a safe and effective means of providing arterial inflow during cardiopulmonary bypass in surgery of the ascending aorta and aortic arch. It may be used not only in aortic surgery but in other such complex cardiac procedures as redo-operations. Unilateral antegrade cerebral perfusion also may be provided by direct axillary cannulation.

KEYWORDS: axillary artery cannulation, aortic surgery, arterial perfusion, aortic dissection

PP 318 - SURGICAL TREATMENT OF DOUBLE-CHAMBERED RIGHT VENTRICLE ACCOMPANIED WITH VENTRICULAR SEPTAL DEFECT AND RIGHT HEART ENDOCARDITIS

Ipek G.¹, Omeroglu S. N.¹, Kanbur E.¹, Gode S.¹, Bitargil M.¹, Sayilgan C.², Yuceyar L.², Eroglu A. G.³

¹*Department of Cardiovascular Surgery, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey*

²*Department of Anesthesiology and Reanimation, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey*

³*Department of Pediatrics, Istanbul University, Cerrahpasa Medical School, Istanbul, Turkey*

Double-chambered right ventricle is a form of right ventricular outflow tract obstruction characterized by anomalous muscle bands that divide the right ventricle into a proximal high-pressure chamber and a distal low-pressure chamber.

A 6-year-old male patient was referred to our clinic for the surgical treatment of ventricular septal defect, severe obstruction of right ventricular outflow tract and endocarditis. Perimembranous ventricular septal defect, multiple vegetations at the infundibulum of the pulmonary artery and 100 mmHg systolic gradient was measured between right ventricle and pulmonary artery at echocardiography. The biggest vegetation was of 15x6 mm in dimensions.

The perimembranous ventricular septal defect was closed at the operation. There were 2 totally separated chambers in the right ventricle. Only two small defects connected these two chambers. The two defects were unified and the ventricle enlarged resecting the hypertrophied muscular bands. Six vegetations, found on the right ventricular outflow tract, were resected, and the outflow tract enlarged using a pericardial patch. Weaning from cardiopulmonary bypass was easily performed. Residual stenosis of the right ventricular outflow tract was not detected at postoperative echocardiography and the pulmonary blood flow was natural.

Double-chambered right ventricle is often accompanied by a ventricular septal defect, but the complication of the double-chambered right ventricle with endocarditis is quite rare reported in literature.

KEYWORDS: Double-chambered right ventricle, endocarditis, pericardial patch, ventricular septal defect.

PP 324 - CARDIAC SURGERY ON THE BEATING HEART (OFF-PUMP AND ON-PUMP): OUR EXPERIENCE

Unlu Y., Becit N., Ceviz M., Karaca Y., Keskin O., Kocak H.

Departments of Cardiovascular Surgery, Ataturk University, Erzurum, Turkey

BACKGROUND: Cardiac surgery on the beating heart is a well performed frequently method. In this study, we present our experience with cardiac surgery on the beating heart.

METHODS: Between April 2001 and May 2008, 60 patients, 42 men and 18 women aged 54 (9-80) years were included in the study after informed consent. Off-pump surgery was used in 39 patients (65%), and on-pump surgery on the beating heart was used in 21 patients (35%). 48 patients have been operated with coronary revascularization, 39 off-pump and 9 on-pump. In the remaining 12 patients procedures on-pump were left ventricular aneurysmectomy (4 patients), right atrial thrombus excision (3 patients), tricuspid valve replacement (2 patients), mitral valve ring annuloplasty (1 patient), tricuspid valve ring annuloplasty (1 patient), primary repair of ASD (1 patient) and left anterior descending artery myotomy for muscular bridge (1 patient).

RESULTS: There were no operative mortality, early graft insufficiency, myocardial infarction and cerebrovascular accident. Two patients had re sternotomy for bleeding. The mean intensive care unit (ICU) stay was 32 hours, and the mean hospital stay was 7 days. Atrial fibrillation was seen in 2 patients, all were returned so sinus rhythm by medical therapy.

CONCLUSION: Beating heart surgery reduced ICU and hospital stay and the post-operative morbidity and mortality. So, this could change in the future as surgeons develop better techniques for cardiac surgery on the beating heart.

KEYWORDS: Beating heart. Off-pump. On-pump.

PP 325 - THE RESULTS OF OUR OPEN HEART OPERATIONS IN PATIENTS OF 8TH AND 9TH DECADES

Yavuz S., Kanko M., Acil C., Aksoy A., Kilic M., Baris O., Parlar H., Akman H., Berki T.

Department of Cardiovascular Surgery, Kocaeli University, Kocaeli, Turkey

AIM: In present times conditions the open heart operations are made in many different centers, further aged people are also taking place in these centers. Our aim is evaluating 8th and 9th decade patients analysis retrospectively.

MATERIAL & METHOD: Between May 2005 – 2008 open heart surgery was applied to 152 patients between 8th-9th decade. Data of these patients was analysed based on our hospitals database. All of the patients were controlled by polyclinic visits.

FINDINGS: 48 (31,6%) of evaluated patients were female, 104 (68,4%) male. Age average was 79,2 (71-89). Coronary Bypass Grafting was applied to 125 (82,3%) patients (CABG), Aorta Valve Replacement operation was applied to 8 (5,2%) patient, Mitral Valve Replacement was applied to 4 (2,6%) patient, AVR + CABG to 6 (3,9%) patients, MVR + CABG to 6 (3,9%) patients, CABG + Carotis Endarterectomy (CE) to 3 (1,9%) patients. The mortality rate of operated patients was 3,2%, the rate of mediastinitis was found 1,9%. The mortality rates given in literature for further aged patients is 3-6%. For the reason comorbidity risk is high in further aged patients, postoperative healing period may be longer. Longer hospitalisation period in this group of patients is elevating the costs. This period is changing between 6 days – 3 months in our patients.

RESULT: Open heart surgery results are in considerable levels in 8th and 9th decade patients in present times conditions. Morbidity problems should be challenged in appropriate multidisciplinary hospitals.

KEYWORDS: Patients of 8th and 9th decades, open heart surgery

Patients Classification

operation	Preoperative EF< 30%	Preoperative EF 31-60 %	Preoperative EF >60%
CABG	32	71	22
AVR	0	5	3
MVR	0	4	0
AVR+ CABG	1	4	1
MVR+ CABG	1	5	0
CABG+ CE	0	3	0
Total	34	92	26

operation	Postoperative dialysis	DM	HT	PAD	Preoperative creatine >1.8
CABG	8	20	97	14	6
AVR	0	2	2	1	0
MVR	0	0	20	0	0
AVR+ CABG	1	1	1	0	0
MVR+ CABG	1	0	2	0	1
CABG+ CE	0	0	1	1	0
Total	10	23	105	16	7

operation	IABP	Postoperative AF	Mediastinitis	Mortality
CABG	6	48	3	2
AVR	0	1	0	0
MVR	0	1	0	0
AVR+ CABG	1	1	0	1
MVR+ CABG	1	1	0	1
CABG+ CE	1	0	0	1
Total	9	52	3	5

DM:Diabetes Mellitus, HT: Hipertansion, PAD: Peripheral arterial occlusive disease, IABP: Intraortic baloon pump, CE: Carotis endarterectomy

PP 328 - HEPATOCELLULAR CARCINOMA WITH INVASION IN TO THE RIGHT ATRIUM

Goksin I.¹, Dereli M.¹, Sacar M.¹, Bir F.², Coskun O.¹, Adali F.¹

¹Department of Cardiovascular Surgery, Pamukkale University, Denizli, Turkey

²Department of Pathology, Pamukkale University, Denizli, Turkey

A 70 years old man presented with dispnea and fatigue showed a tumor mass involving inferior vena cava (IVC) and right atrium (RA). Transthorasic echocardiography revealed a large mass occupying almost whole RA causing obstruction of the tricuspit valve. No vegetations were seen in right atrium (Figure 1).

Median sternotomi was applied and hypothermic cardiopulmonary bypass (CPB) using aortic and bicaval venous cannulation was performed. The patient was cooled down to 28 C core temperature. Aorta cross clamped under cool blood Cardioplegia. Excision of the encapsulated right atrial mass was achieved via right atriotomy. The mass was adherent to the right atrial wall and atrial ostium of VCI. The mass was also extended to hepatic veins through the VCI. Vena Cava inferior was occluded completely. The tumor was manually separated from the endotelium of the right atrium and hepatic vein (Figure 2). Bleeding problem didn't occurred immediately after surgery.

There was no other complication happened in the post operative period and the patient was discharged at the seventh day after operation. Patient delivered to oncology department for future follow-ups.

Metastatic tumors of the heart and pericardium are more common than primary cardiac and pericardial neoplasms with reported rates of 1.5-21% (1) Metastatic cardiac tumors may result from contiguous extension, lymphatic spread, or hemotogenous spread. Metastatic cardiac tumors are frequently bronchogenic carcinomas, breast carcinomas, melonomas, renal cell carcinomas (1), and various sarcomas. Patients with Hepatocellular carcinoma (HCC) 5-10% have cardiac metastasis (2).

There is no consensus on the treatment of cardiac metastasis of malignant neoplasms currently. The prognosis of these patients is poor, and because of the obscure cardiac symptoms, the operative mortality rate is high. Dyspnea on exertion, heart murmurs and syncope are the most common symptoms. Without treatment, survival is limited to days or months from the time of diagnosis. Surgical excision remains an effective palliative treatment for these serious patients. Prolonged life period for 1-15 months has been reported with successful excision of metastatic HCC from the right atrial cavity (3).

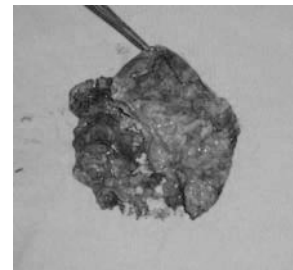
In conclusion, the strategy for the treatment with isolated intracavitary cardiac metastasis of HCC should be individualized with multidisciplinary approach, including surgery, radiotherapy, chemotherapy and possible transcatheter embolization to control both the primary and metastatic lesions.

KEYWORDS: Hepatocellular carcinoma, intracardiac mass

Figure 1



Figure 2



PP 329 - IATROGENIC SYSTEMIC VENOUS RETURN ABNORMALITY

Tiryakioglu O.¹, Demirtas S.¹, Goncu T.¹, Ari H.², Vural H.¹, Ozyazicioglu A.¹, Yavuz S.¹

¹Department of Cardiovascular Surgery, Bursa Yuksek Ihtisas Education and Research Hospital, Bursa, Turkey

²Department of Cardiology, Bursa Yuksek Ihtisas Education and Research Hospital, Bursa, Turkey

47 year old female patient who underwent repair with pericardial patch due to Vena cava superior type secundum atrial septal defect (ASD) in another center 8 months ago, had a complaint of dyspnea that gradually increased after the surgery. Transthoracic echocardiography performed in postoperative 2nd month was assessed as normal and interatrial septum was assessed as intact. Patient was called for intermittent controls after her medical treatment was arranged. Echocardiography was performed on the patient again upon the findings of dyspnea, increase in rapid exhaustion and bloody expectoration in her postoperative 8th month control. Interatrial septum was found to be intact. Septal band was observed in left atrium. Other anatomic structures were assessed as normal. It was decided to perform contrast echocardiography to rule out systemic venous return abnormality by opening separate venous vessel routes from upper and lower extremities. In contrast echocardiography, it was found that contrast administered from upper extremity passed to left atrium through vena cava superior and that a very small portion passed to right atrium. Patient was taken to surgery under elective conditions; median sternotomy and arterial cannule placement to aorta were performed. Venous cannules, vena cava superior and vena cava inferior were selectively cannulated. Right atriotomy was applied by entering heart lung pump. It was observed that interatrial septum was intact and vena cava superior orifice did not open to right atrium (Fig 1). Septum was longitudinally opened from the level of interatrial septum vena cava superior. Band in left atrium, superior vena cava orifice and mitral valve were observed and band was excised afterwards (Fig 2). Atriotomy incision was extended to include vena cava superior. Septum anatomy was re-formed keeping vena cava superior in right atrium preparing a pericardial patch fixed with glutaraldehyde. Right atriotomy was closed by expanding vena cava superior (using pericardial patch) (Fig 3).

KEYWORDS: Atrial septal defect, iatrogenic Systemic Venous Return Abnormality

Figure 1



Figure 2



Figure 3

**PP 330 - COEXISTENCE OF LEFT-SIDED INFERIOR VENA CAVA, DVT OF THE UPPER AND LOWER EXTREMITY AND PROTHROMBOTIC POLYMORPHISMS IN A YOUNG PATIENT: CASE REPORT**

Sirlak M., Eyileten Z. B., Cakici M., Eryilmaz S., Aral A., Kaya B., Ozyurda U.

Ankara University, Medicine School Department of Cardiovascular Surgery, Ankara, Turkey

Literature review suggests an interaction between an anomaly of the inferior vena cava and thrombophilia in the pathogenesis of deep vein thrombosis. Genetic thrombotic abnormalities have been found in some of the subjects having venous thromboembolic diseases. We report a young male presenting with venous thrombosis of the upper and lower extremities, left-sided vena cava inferior and with combination of heterozygosity of the mutation of the genes Methylenetetrahydrofolate reductase (MTHFR) 677 and Factor V (FV) 1691.

CASE: A 36-year-old man admitted to hospital with significant right lower extremity swelling and pain and endurance of the right antecubital region. Duplex ultrasound (USG) scan demonstrated deep venous thrombi in the right femoral, left popliteal vein and superficial venous thrombosis of the left greater saphen vein as well as thrombosis of the right axillary vein, brachial vein and antecubital vein. Abdominal USG revealed left sided inferior vena cava. For further evaluation, we performed 3-dimensional (D) venography and it revealed the left sided inferior vena cava. Initial laboratory results and workup for thrombophilia showed low protein S activity, high D-dimer levels and low fibrinogen levels revealed a defect predisposing to thrombophilia. Genotyping the factor V, MTHFR and prothrombin mutations were performed by rapid cycle PCR using the LightCycler TM (Roche Molecular Biochemicals). The results pointed that he had heterozygotic mutations of FVL 1691 and MTHFR 677. The patient was treated with intravenous heparin and warfarin. On the 12th day of hospitalization repeat USG revealed good recanalization of the lower deep veins and poor recanalization of the axillary vein. The patient was discharged on oral warfarin therapy with 10 days of outpatient low molecular weight heparin medication.

DISCUSSION: Inferior vena cava anomalies may predispose to venous thrombosis because of resultant stasis. The phenomenon of abnormalities of IVC has been described in a variety of ways such as absence, agenesis, ablated, anomalous and interruption of a particular segment (infrahepatic, prerenal, renal or infrarenal). It is important to diagnose the disorder, primarily because of the high risk of complications associated with the accompanying abnormalities and the possible risk of developing thrombosis of the distal venous network leading to venous insufficiency of the lower limbs.

Aforementioned suggestions may explain the lower extremity DVT of our patient but lacks to explain the upper extremity DVT of the patient. Together with the normal homocysteine levels, factor V was the only thrombophilic risk factor for the genesis of the DVT of the upper and lower extremities in our case.

We believe that therapy must be focused on the prevention of complications such as thrombosis. We emphasize that the diagnosis should be considered in young patients suffering from deep venous thrombosis without apparent causes.

KEYWORDS: inferior vena cava; deep venous thrombosis; thrombophilia

PP 334 - ALGORITHM FOR THE SUCCESSFUL RESECTION OF A HYPER-NEPHROMA INVOLVING THE INFERIOR VENA CAVA

Parissis H., Krawczyk A., Blach A., Veerasingham D., Dacosta M.

Department of Cardiothoracic Surgery, Galway University Hospital, Ireland

OBJECTIVES: To report our experience for the treatment of a complex pathology: Renal tumors invading the IVC into a variable length

METHODS: A stepwise algorithm of the surgical strategies would be discussed.

RESULTS: Plan of action: Detailed investigations, including MRI to determine the extent of IVC involvement. Preoperative TOE to analyse the extent and mobility of the tumor. Close cooperation with anesthetics and Urologists. Start with mobilization of the affected kidney. No irrevocable steps until resection guaranteed, mobilization of IVC infra and supra hepatically. If IVC is involved always institute CPB. Venous cannulae: SVC, Right femoral vein. Prepare to use brief period of Total Circulatory Arrest (TCA) if the tumor is involving the suprahepatic IVC and protruding into the Right atrium. Repair the Cavotomy with the use of a pericardial patch.

CONCLUSIONS: Success of IVC surgery depends on careful patient selection and attention to detail. Total clearance of the IVC from a well adherent tumor (using endarterectomy knives and a bloodless field) could be the single most important factor for prognosis.

KEYWORDS: Renal tumors with venous involvement, Hypernephroma involving the IVC

PP 335 - THE USE OF NEAR-INFRARED SPECTROSCOPY DURING EXTRACORPOREAL CIRCULATION ABLE TO DETECT SEVERE BRAIN INJURY IN CARDIAC SURGICAL PATIENTS?

Huebner N.¹, Rees W.², Jochen P.², Henning W.², Uwe C.¹

¹*Department of Cardiac Anesthesiology, Schuechtermann-Klinik, Bad Rothenfelde, Germany*

²*Department of Cardiac Surgery, Schuechtermann-Klinik, Bad Rothenfelde, Germany*

INTRODUCTION: Cerebral injury after cardiac surgery is a serious and costly healthcare problem. Early detection of cerebral ischemia is the only feasibility to prevent of serious and prolonged neurologic deficit. The near-infrared spectroscopy (NIRS) is a well known, non-invasive, continuous monitoring of the cerebral oxygenation mostly used during carotid endarterectomy. The aim of our study was to evaluate NIRS in detection of severe cerebral injury during cardiac surgical procedures.

MATERIAL-METHODS: During a six month period from 01/2006 to 05/2006, out of a total population of 1500 patients, 993 patients with EuroSCORE medium and high risk for perioperative mortality and morbidity were measured.

The cerebral oxygenation (CSO₂) measurement with NIRS was performed with the cerebral oxymeter INVOS-4100 (Somanetics Corp., Troy, MI, USA). We measured four CSO₂ values: before bypass(I), after onset of bypass(II), lowest value during bypass(III) and after weaning from bypass(IV).

RESULTS: Cerebral injury (stroke, coma) occurred in 2.1% (32/1500) perioperatively during the first twentyfour hours.

The CSO₂ values from all patients, mean and standard deviation, are shown in table 1. The values of the injured patients are shown in table 2.

Table 1. All patients (n = 1500)

	CSO ₂ I	CSO ₂ II	CSO ₂ III	CSO ₂ IV
Mean	63,11	57,24	54,87	62,23
SD ±	8,43	8,51	8,69	8,08
Min	30	26	15	18
Max	95	90	90	87

Table 2. Brain injury (n = 32)

	CSO ₂ I	CSO ₂ II	CSO ₂ III	CSO ₂ IV
Mean	62,62	58,37	53,62	62,37
SD ±	6,89	6,36	6,43	8,33
Min	46	45	15	46
Max	78	76	67	78

The NIRS of cerebral oxygenation shows a decrease after onset of the cardiopulmonary bypass and increased after weaning from bypass. We have seen no significant difference between the patients with cerebral injury and without.

CONCLUSION: Our study findings demonstrate that the cerebral oxygenation in patients undergoing extracorporeal circulation decreased significantly after beginning cardiopulmonary bypass and increased after weaning from bypass to initial values. A difference between injured and non-injured patients could not be seen.

We can conclude that the NIRS measurement of cerebral oxygenation during extracorporeal circulation in cardiac surgical patients alone is not able to detect and protect the patients of severe brain injury like stroke or coma during the perioperative period.

KEYWORDS: Cerebral Injury, Cardiac Surgery

PP 337 - PERICARDIO-PERITONEAL SHUNT APPLICATION IN RECURRENT MALIGN PERICARDIAL EFFUSION

Bahcivan M., Keceligil H. T., Kolbakir F., Doyurgan O., Celik S.

Department of Cardiovascular Surgery, Ondokuz Mayıs university, Samsun, Turkey

OBJECTIVES: Recurrent pericardial effusion is a rare complication of extended lung malignancies. This complication may be life-threatening situation due to risk of cardiac tamponade. Drainage of pericardial fluid causing cardiac tamponade improve patient clinical status. We aimed to present to apply pericardioperitoneal shunt in three patient with advanced stage lung cancer in our clinic.

MATERIAL-METHODS: We detected masive pericardial effusion by echocardiography which causing right ventricular collapse in three patients(mean age 61, one female and two male). We decided to implant synthetic graft between inferior pericardium and peritoneum because of recurrent pericardial effusion in these patients. Under local anesthesia, vertical 5-6 cm subxiphoidal incision performed to reach into the pericardial space. After removal of pericardial fluid, peritoneum is opened to by 2 cm incision. 5 cm lenght graft is anastomosed continuously to the inferior pericardium at one side and to the peritoneum at other side with 4/0 prolene. For two patient, 8 mm lenght ringed PTFE (politetrafluoroetilen) graft, for one patient 10 mm dacron graft is used as synthetic graft material. Chest tube isn't required after procedure for patients.

FINDINGS: Performed surgical procedure is easily tolerated by patients. There was no postoperative morbidity and mortality. The patients who were discharged after three days with no complication controlled with echocardiography in outpatient clinics with no significant pericardial effusion. In advanced stage lung cancer patient with decreased life expectancy, pericardio-peritoneal shunt is simple effective and safe surgical drainage procedure to improve life quality. This procedure is especially preferred for patient with recurrent malign pericardial effusion.

KEYWORDS: pericardial effusion, pericardioperitoneal shunt

PP 338 - SURGICAL THERAPY OF THORACIC AORTIC ANEURYSM AND TYPE A AORTIC DISSECTION: SEVENTEEN YEARS' EXPERIENCE IN 892 PATIENTS

Cetin S. M., Evagelopoulos N., Grammozis Y., Ak S., Beckmann A., Krian A.

Heart Center Duisburg, Clinic for Thoracic and Cardiovascular Surgery, Germany

BACKGROUND: Several innovative approaches have been introduced for surgical treatment of thoracic aortic aneurysms (AA) and type A aortic dissections (AAD). This study examines the effects of introducing these new techniques on early outcomes of operated patients.

METHODS: Records of patients who underwent surgery for AAD and AA during a 17-year interval were reviewed. 892 consecutive patients underwent aortic surgery: 623 patients were operated on for AA, and 269 patients underwent operations for AAD. Three types of aortic operations were performed: subcoronary (80%), or supracoronary replacement (19.6%) of the ascending aorta, and unclassified repair of the aortic root (0.4%). The David procedure was performed in 5.1%.

RESULTS: Hospital mortality for the entire cohort was 2.67% and 8%, respectively. Compared with the early patients group (1990-1999), the late patient group (2000-2006) is characterized by significantly improved operative management. Changes in practice were associated with a substantial decrease in operative mortality (7.9% vs. 0%); early mortality (6% vs. 0.7% in the AA group and 14.7% vs. 10.8% in the AAD group); overall complications (15.1% vs. 6.8%), and a shorter stay in the hospital.

CONCLUSIONS: The implementation of various refinements in surgical and anaesthetic techniques improved early outcomes and reduced the risk of neurological events.

KEYWORDS: thoracic aortic aneurysms, type A aortic dissections, supracoronary replacement, subcoronary replacement, David procedure, early outcom

- A -		Altintas, G.	PP 308, PP 307
Abacilar, A. F.	OP 112	Altun, G.	PP 178
Abdel Aal, K. M.	INT-OP 51	Aluzum, H.	PP 188
Abugov, C. A.	INT-OP 60	Alwi, M.	INT-OP 16
Acar, C.	INT-OP 26, INT-OP 32, INT-OP 40	Alyan, O.	OP 224
Acar, G.	PP 055	Alyan, O.	OP 115, PP 166
Acil, C.	PP 279, PP 325	Anasiz, H.	OP 168, OP 184
Adademir, T.	OP 001, OP 078, OP 103	Andrade, I. G.	PP 272
Adali, F.	PP 283, PP 328	Andrievskaya, S.	INT-OP 30, INT-OP 34
Adanir, T.	PP 293	Ang, E.	OP 003
Agarwal, R.	INT-OP 18	Ansary, Z.	PP 339
Agarwal, S.	INT-OP 37	Apaydin, M.	PP 006
Agirbas, H.	PP 279	Ar, C.	OP 084
Agostini, M.	INT-OP 58	Aral, A.	PP 330, PP 062, PP 305
Ak, K.	OP 001, OP 078, OP 103	Arbatli, H.	INT-OP 09, OP 134, OP 227, OP 234, OP 080
Ak, S.	PP 338	Ardal, H.	OP 080, OP 134, OP 227, OP 234
Akan, H.	PP 125	Ari, H.	OP 174, PP 329
Akay, H. T.	OP 161, OP 225, PP 294, OP 160	Arsan, S.	OP 001, OP 078, OP 103, OP 038
Akbulut, B.	PP 234, PP 208	Arsan, C.	OP 179
Akcali, Y.	PP 285	Arsan, M.	OP 231, PP 283
Akcay, A.	PP 055, PP 176	Arsan, S.	PP 159
Akcevin, A.	PP 288	Arslanoglu, Y.	OP 030, OP 107, OP 181
Akgul Ercan, E.	PP 227	Aslamaci, S.	PP 294, OP 160, OP 161, OP 225, OP 031
Akgun, S.	OP 038	Aslan, A.	OP 004
Akkaya, I.	OP 161	Aslan, O.	PP 185, OP 029
Akman, H.	PP 325	Aslan, S.	PP 110
Akpinar, B.	OP 132, OP 137	Ata, Y.	PP 109, PP 316, PP 167
Akpinar, M. B.	OP 112	Atahan, E.	OP 037
Aksoy, A.	PP 279, PP 325	Atalan, N.	OP 078, OP 001, OP 038
Aksoy, R.	PP 142	Atalay, S.	PP 062
Aksu, T.	OP 229	Atay, H. T.	OP 031
Aksun, M.	OP 148, OP 149, OP 150, PP 121, PP 119	Ates, A.	PP 110, PP 004
Akyuz, M.	PP 074, PP 115, PP 184	Ates, M.	OP 139
Al Okda, H. E.	INT-OP 65	Ates, S. M.	INT-OP 33, OP 105
Alayunt, E. A.	OP 112	Atik, C.	OP 030, OP 107, OP 181
Albayrak, G.	PP 303	Ayabakan, C.	PP 078, PP 077
Alessandri, G.	INT-OP 06, INT-OP 26, INT-OP 27, INT-OP 32, INT-OP 41, INT-OP 45, INT-OP 67, INT-OP 68	Ayaz, F.	OP 224, OP 115
Alessandri, N.	INT-OP 06, INT-OP 26, INT-OP 27, INT-OP 32, INT-OP 41, INT-OP 45, INT-OP 67, INT-OP 68	Aybek, T.	INT-OP 33, OP 105
Alhamoud, A. M.	INT-OP 23	Aydin, S.	OP 215
Alhan, C.	OP 088, OP 098, PP 128	Aydin, A.	PP 279
Alizadeh Ghadidel, A.	INT-OP 17	Aydin, C.	OP 033, OP 184
Alkan, P.	PP 142	Aydin, H.	PP 086
Alkan bozkaya, T.	PP 288	Aydin, S.	PP 129, PP 266
Alkara, U.	PP 072	Aydinalp, A.	OP 160
Alp, M.	OP 168	Aydogan, H.	OP 179
Alpagut, U.	PP 104, PP 105, PP 069, PP 072	Aytac, A.	PP 288
Alper, F.	PP 004, PP 110	Aytacoglu, B. N.	OP 093
Alsalehi, S.	OP 184	Ayva, E.	OP 004
Altinbas, A.	PP 191	Azak, S.	PP 216, PP 129
		Azariades, P.	PP 090, PP 092
- B -			
		Badem, S.	PP 104, PP 105
		Bademci, M.	PP 150, PP 075, PP 005
		Baghaee, R.	INT-OP 15

Baghai, M.	INT-OP 66	Bolat, A.	OP 036, PP 082, PP 151, PP 152, PP 299, PP 058, PP 083
Baharestani, B.	INT-OP 17	Bolourian, A. A.	PP 339
Bahcivan, M.	PP 312, PP 125, PP 337, PP 340	Bolshak, O.	INT-OP 34
Bakhtiary, F.	INT-OP 33	Borches, D.	INT-OP 14
Bakhutashvili, Z.	PP 273	Borger, M. A.	INT-OP 52
Bakkaloglu, B.	OP 105	Borrero, M. J.	INT-OP 69
Balci, A. Y.	OP 139, PP 142	Bosanquet, D.	INT-OP 02, INT-OP 29, INT-OP 57
Balci, M.	OP 002	Boysan, E.	OP 147, OP 172, PP 252
Balkanay, M.	OP 168, OP 096	Bozdemir, N.	PP 126
Balkanay, O. O.	OP 116, OP 117, OP 226, PP 081	Bozkurt, O.	PP 167
Baltarli, A.	PP 283, PP 140	Brezing, R.A.	INT-OP 82
Baltali, S.	OP 135	Bruszewski, W.	INT-OP 09
Banerjee, A.	INT-OP 37	Bulbul, S.	OP 085, OP 086
Baran, C.	PP 187, PP 305, PP 306	Burgueros, M.	INT-OP 14
Bardakci, H.	PP 252	Burma, O.	OP 030, OP 107, OP 181
Baric, D.	INT-OP 43	Buyukbayrak, F.	OP 033
Baris, O.	PP 325	Buyukokuroglu, M. E.	OP 004
Bas, T.	PP 082, PP 151, PP 152, PP 299, PP 086, PP 058, PP 083, PP 148		
		- C -	
Basciu, A.	INT-OP 04	Cagil, H.	PP 128
Basel, H.	PP 001	Cagli, K.	OP 089, PP 076, PP 123, PP 144, OP 083, OP 138, PP 117
Basilaze, L.	PP 273		
Battaloglu, B.	PP 118, PP 146, PP 246	Cagli, K. E.	OP 083, OP 138
Bayazit, M.	OP 171, OP 172	Cakalagaoglu, C.	OP 086, OP 085
Bayezid, O.	OP 104, OP 106, PP 310	Cakici, M.	PP 330, PP 062, PP 309
Baykan, A.	PP 102	Calik, E. S.	PP 004
Bayrak, S.	PP 250, PP 005	Candan, I.	PP 227
Bayram, A. S.	OP 003	Canik, S.	OP 028, OP 042
Bayramoglu, Z.	OP 132, OP 137	Canikoglu, M.	OP 230, OP 032, OP 228
Bayserke, O.	OP 179	Capci, S.	PP 234
Becit, N.	OP 200, PP 214, PP 114, PP 124, PP 324	Cassinelli, M. A.	INT-OP 69
		Catav, Z.	OP 146
Beckmann, A.	PP 338	Caynak, B.	OP 132, OP 137
Bedi, H. S.	INT-OP 61	Cebeci, E.	PP 068
Beheshti Monfared, M.	PP 339	Cehreli, S.	PP 227
Belet, U.	PP 125	Cekirdekci, A.	OP 004
Bergonzini, M.	INT-OP 04	Celasun, B.	PP 311
Beria, K.	PP 273	Celik, S.	PP 125, PP 337, PP 340
Berki, T.	PP 279, PP 325	Celik, M.	OP 029
Bertora, M.	INT-OP 58	Cemek, M.	OP 004
Besbas, S.	OP 105	Cengiz, M.	OP 003
Beyazit, M.	OP 167	Cetemen, S.	OP 179
Beyer, M.	INT-OP 43	Cetin, E.	OP 147, PP 252
Bhat, K.	INT-OP 18	Cetin, S. M.	PP 338
Bicakhan, B.	OP 135	Cetin, E.	OP 146
Bicer, M.	OP 003	Cetin, G.	OP 035, OP 230, OP 135, OP 032, OP 228
Biocina, B.	INT-OP 43, INT-OP 54		
Bir, F.	PP 328	Cetingok, U.	INT-OP 53
Birincioglu, C. L.	OP 167, OP 146, PP 008, OP 147, OP 171, OP 172, PP 252	Ceviker, K.	OP 135, OP 032
		Cevirme, D.	OP 033, OP 168, OP 184
Bitargil, M.	PP 298, PP 318	Ceviz, M.	PP 124, PP 214, PP 114, PP 324
Bitir, N.	OP 038		
Blach, A.	PP 334	Ceviz, N.	OP 200
Bogomolov, M. S.	INT-OP 70, INT-OP 71	Ceyran, H.	PP 106, PP 285
		Ceyran, H.	
		Chandrinou, E.	INT-OP 10

Chang, P.	INT-OP 46	Diken, A. I.	PP 308, OP 089
Chark, D.	INT-OP 46	Dikmengil, M.	OP 093
Chaubey, S.	INT-OP 66	Dilektasli, M. M.	PP 292
Cheema, F.H.	INT-OP 82	Diler, M. S.	PP 114
Cherian, K. M.	INT-OP 18	Dillon, J.	INT-OP 16, INT-OP 35
Chkhaidze, Z. A.	INT-OP 01, INT-OP 03	Dimitrakakis, G.	INT-OP 02, INT-OP 29, INT-OP 57
Cihan, H. B.	PP 118, PP 146, PP 246		
Cikirikcioglu, M.	INT-OP 09	Disli, O. M.	OP 036, PP 082, PP 083
Cimen, S.	OP 095, OP 075	Dogan, S.	INT-OP 33
Cinar, T.	PP 138, PP 105	Dogan, A.	PP 102
Cingoz, F.	OP 231	Dogan, E.	OP 183
Ciotti, G.	PP 090	Dogan, K.	OP 037
Citterio, E.	INT-OP 04	Dogdu, O.	PP 102
Colak, A.	PP 004, PP 124	Donmez, A.	OP 160, OP 161
Colak, M. C.	PP 127, PP 216, PP 126, PP 129, PP 012, PP 266	Doyurgan, O.	PP 337, PP 340
		Drinkwater, D. C.	INT-OP 46
Comakli, H.	PP 001	Durmus, A.	PP 177, PP 300
Concistrè, G.	INT-OP 21, INT-OP 49	Duvan, I.	INT-OP 33, OP 105
Conte, O.	INT-OP 49		
Corsini, B.	INT-OP 21, INT-OP 49	- E -	
Cortis, G.	INT-OP 04	E. Cil, B.	PP 127
Coskun, I.	PP 245	Edovina, L. N.	INT-OP 70, INT-OP 71
Coskun, O.	PP 283, PP 140, PP 328	Ekici, B.	PP 227
Crowe, B.	INT-OP 82	Ekim, H.	PP 001
Cumhur, T.	OP 089	El Helw, M. A. E.	INT-OP 65
Cura, L.	INT-OP 69	El nahas, A. e. M. M.	PP 156
		El Sebaie, A. A.	INT-OP 65
- D -		Elbey, M.	PP 159
Dacosta, M.	PP 334	Eleftherakis, N.	PP 092
Danou, F.	INT-OP 10	Elfiky, M. M.	INT-OP 65
Dark, J.	PP 217	Emeka, K. B.	INT-OP 20
Dave, D.	INT-OP 18	Emir, M.	PP 003, PP 111
Dayioglu, E.	PP 105, PP 069, PP 104, PP 138, PP 072	Emirogullari, O. N.	PP 297
		Emmiller, M.	OP 004
Deac, R. F.	INT-OP 74	Emrecan, B.	PP 155, PP 283, PP 140
Degirmenci, M.	PP 140	Engin, E.	OP 117
Del Cerro, M. J.	INT-OP 14	Epeldegui, A.	PP 272
Demir, A.	OP 174, PP 167	Erbas, F.	PP 118, PP 146, PP 246
Demir, I.	PP 001	Erbasan, O.	OP 104, OP 106
Demir, M.	PP 109	Erdem, O.	OP 104, OP 106
Demir, Y.	OP 165	Erdil, N.	PP 118, PP 146, PP 246
Demir Korkmaz, F.	OP 163	Erdogan, D.	OP 099, PP 251
Demirag, M. K.	PP 125, PP 312	Erel, O.	OP 096
Demirbag, R.	OP 096	Eren, E.	OP 179
Demircin, M.	PP 179	Eren, T.	OP 179
Demirhan, B.	PP 311	Erentug, V.	OP 033, OP 168, OP 184
Demirkan, I.	OP 004	Ergun, K.	PP 076
Demirkilic, U.	OP 231	Ergunes, K.	PP 064, PP 115, PP 119, PP 177, PP 184, PP 256
Demirtas, E.	PP 252		
Demirtas, M. M.	OP 095, OP 075, OP 139	Erguney, M.	PP 068
Demirtas, S.	OP 174, PP 329	Eris, C.	PP 109, PP 315, PP 316, PP 167
Demirturk, O. S.	PP 235, PP 245		
Deniz, A.	PP 179	Erk, Z.	OP 183
Denli, S.	OP 226, PP 081, PP 298	Erkan, A. F.	PP 227
Dereli, M.	PP 155, PP 283, PP 328	Erkus, B.	OP 098
Desai, J.	INT-OP 66	Erkut, B.	OP 200, PP 004, PP 110, PP 214, PP 114, PP 124
Deser, B.	OP 116, OP 117		
Dhareshwar, D. J.	INT-OP 59	Eroglu, A. G.	PP 318
Digregorio, V.	INT-OP 58	Eroglu, T.	PP 118, PP 146, PP 246

Erolcay, H.	OP 094, OP 117, PP 298	Goktas, B.	PP 072, PP 104, PP 138, PP 069
Ersek, B.	OP 229	Goktogan, T.	OP 149, OP 150, PP 150, PP 119, PP 184
Ersoy, C.	PP 288	Golbasi, I.	OP 104, OP 106
Ersoy, O.	PP 008	Goncu, M. T.	PP 316, OP 174, PP 329
Eryilmaz, S.	PP 330, PP 187, PP 305, PP 306, PP 309	Gould, K.	PP 217
Eskicorapci, S.	PP 281	Grammozis, Y.	PP 338
Eusebio, A.	INT-OP 04	Graziotti, P.	INT-OP 04
Evangelopoulos, N.	PP 338	Grbolar, A.	PP 061
Evrengul, H.	PP 281	Green, R.A.	INT-OP 82
Eyileten, Z. B.	PP 062, PP 187, PP 305, PP 306, PP 309, PP 330	Grossi, C.	INT-OP 58
- F -		Guden, M.	OP 109
Fansa, I.	PP 118, PP 146, PP 246	Guerra, F.	PP 157
Farsak, B.	PP 234	Guerra, M.	PP 271
Fasel, J.	INT-OP 09	Gulcan, O.	PP 245
Fedakar, A.	OP 033	Guler, A.	PP 002, OP 231, OP 103
Filizcan, U.	OP 179	Gullu, A. U.	PP 301
Filizlioglu, H.	PP 258	Gulmen, S.	OP 186, OP 180, OP 039, OP 183, OP 232, PP 168, PP 251
Fino, C.	INT-OP 58		
Fiore, G.	PP 157	Gultekin, B.	PP 294, OP 160, OP 161, OP 225, OP 233
Fischer, S.	INT-OP 63	Gunay, R.	OP 075, OP 139
Fiskin, A.	OP 163	Gunebakmaz, O.	PP 106, PP 285
Foroughi, M.	PP 339	Gunes, T.	OP 148, OP 149, OP 150, PP 121, PP 115, PP 180, PP 184, PP 147, PP 293
- G -			
Gallotti, R.	INT-OP 04	Guney, I.	OP 215
Gandjbakhch, I.	INT-OP 68, INT-OP 06, INT-OP 26, INT-OP 32, INT-OP 40, INT-OP 45	Guney, M. R.	OP 095
		Gurbuz, A.	PP 005, PP 235, OP 148, OP 149, OP 150, PP 121, PP 150, PP 006, PP 065, PP 074, PP 075, PP 080, PP 080, PP 257, PP 064, PP 115, PP 119, PP 177, PP 185, PP 180, PP 184, PP 147, PP 250, PP 256, PP 300, PP 293
Garrido, J. M.	PP 272		
Gasparovic, H.	INT-OP 43, INT-OP 54	Gurbuz, O.	OP 003
Gaur, A.	INT-OP 59	Gurer, O.	OP 215
Gedik, H. S.	PP 117, PP 123	Gursoy, M.	OP 035, OP 230, OP 135
Genta, F.	INT-OP 69	Gursu, O.	OP 001, OP 078, OP 103
Gercekoglu, H.	OP 229	Guvener, M.	PP 235, PP 234, PP 245
Ghafari, R.	INT-OP 07	Guzel, G.	OP 030, OP 107, OP 181
Ghanavati, A.	PP 339	Guzelmeric, F.	OP 096
Gholampour Dehaki, M.	INT-OP 17	Guzeltas, A.	OP 135, OP 230, PP 081
Gill, J. S.	INT-OP 61	Gyrtoenko, O.	INT-OP 50
Giovannelli, A.	INT-OP 06, INT-OP 26, INT-OP 27, INT-OP 32, INT-OP 40, INT-OP 41, INT-OP 45, INT-OP 67, INT-OP 68	- H -	
Gisi, K.	PP 176	Hacoioglu, G.	OP 163
Giusti, G.	INT-OP 04	Halit, V.	PP 188
Givtaj, N.	INT-OP 07, INT-OP 15	Hanedan, O.	PP 144
Gode, S.	PP 081, PP 318	Hasde, A. I.	PP 187, PP 306
Goginashvili, Z.	PP 273	Hassantash, S. A.	PP 339
Gokalp, F.	PP 062	Hassouna, A.	INT-OP 63
Gokalp, O.	OP 148, PP 064, PP 119, PP 250, PP 300, PP 293	Hatemi, A. C.	OP 035, OP 230, OP 135
Goksedef, D.	OP 033, OP 168, OP 184, OP 084, OP 094, OP 116, OP 117	Hatemi, A.	OP 032, OP 228
Goksel, O. S.	PP 105, PP 069, PP 072, PP 104, PP 138	Haverich, A.	INT-OP 63
Goksin, I.	PP 328, PP 155, PP 281		

Hazan, E.	OP 029	Kapan, S.	OP 099,
Hazar, A.	PP 001	Kapan, S.	PP 001
Hazirolan, T.	PP 179	Kapucuoglu, N.	OP 039
Hekmat, M.	PP 339	Karaarslan, K.	OP 029
Henning, W.	PP 335	Karabacak, K.	PP 002
Hessheimer, A.	INT-OP 46	Karabay, C.	OP 137, PP 234
Hidiroglu, M.	PP 111	Karaboyun, T.	PP 008
Hiyasat, B. A.	INT-OP 52	Karabulut, H.	OP 088, OP 098, PP 128
Hosseini, M. A.	PP 274	Karaca, K.	OP 093
Huebner, N.	PP 335	Karaca, Y.	PP 004, PP 110, PP 214, PP 114, PP 124, PP 324
Huh, J.	INT-OP 46		
Huzmeli, H.	OP 132	Karacelik, M.	PP 304, PP 303
- I -		Karadag, B.	OP 084, OP 116, OP 117
Ibrism, E.	OP 186, OP 099, OP 180	Karagoz, H.	OP 105
Ilhan, E.	PP 304	Karahan, N.	PP 115
Ilhan, G.	PP 064	Karahan, O.	OP 037
Inan, B.	PP 309	Karahan, Z.	OP 224, OP 115, PP 166
Inan, K.	PP 301	Karakelleoglu, S.	PP 159
Inanc, T.	PP 102	Karamustafa, H.	PP 011
Indelen, C.	OP 085	Karanasios, E.	PP 089
Ipek, G.	OP 084, OP 094, OP 116, OP 117, OP 226, PP 081, PP 298, PP 318	Karatas, G.	PP 003, PP 292
		Karck, M.	INT-OP 63
Irdem, A. K.	OP 151	Karpuzoglu, E. O.	OP 229
Isbir, S.	OP 001, OP 078, OP 103	Katrancioglu, N.	OP 037
Iscan, Z. H.	OP 147, OP 171, OP 172, PP 252, OP 167, PP 008	Kaya, B.	PP 330, PP 187, PP 309
Isik, O.	OP 036, PP 082, PP 151, PP 299, PP 086, PP 058, PP 083, PP 148	Kaya, M. G.	PP 106, PP 285, PP 102
		Kaya, O.	OP 183
Isikli, O. Y.	PP 140	Kayacioglu, I.	OP 139
Ismail, F.	INT-OP 16	Kaynak, M.	PP 246
Iyem, H.	OP 224, OP 115, PP 166	Kececioglu, T.	OP 163
Iyigun, M. K.	OP 042	Keceligil, H. T.	PP 125, PP 337, PP 011, PP 340
- J -		Kelechi, O. E.	INT-OP 20
Jamjoom, A. A.	PP 088	Keles, C.	OP 033
Jebelli, M.	INT-OP 08	Kemaloglu, C.	OP 104
Jochen, P.	PP 335	Kervan, U.	OP 147
Jones, D. A.	INT-OP 13, INT-OP 47	Kervan, U.	PP 008
		Keser, S.	OP 086
- K -		Keskin, O.	PP 110, PP 324
Kabakci, B.	OP 137	Kestelli, M.	OP 149, OP 150, VPP 121, PP 005
Kadan, M.	PP 002		
Kadirogullari, E.	PP 226	Ketenci, B.	OP 095
Kahraman, A.	PP 129	Khan, S. R.	INT-OP 55
Kahraman, H. C.	PP 297	Khodeli, N. G.	INT-OP 01, INT-OP 03
Kaklikkaya, I.	PP 178, PP 213, PP 258	Khorshid, L.	OP 165
Kalangos, A.	INT-OP 09	Kilic, A. T.	OP 037
Kalavrouziotis, G.	PP 090, PP 089, PP 092	Kilic, M.	PP 325
Kalayci, S.	OP 096	Kilic, Z.	OP 094, OP 226
Kanber, E. M.	PP 072	Kilinc, A. G.	PP 129
Kanbur, E.	OP 084, PP 298, PP 318	Kimbrow, B.	INT-OP 82
Kanko, M.	PP 279, PP 325	Kirali, K.	OP 033, OP 168, OP 184
Kansiz, E.	OP 035, OP 230, OP 135, OP 032, OP 228	Kiris, I.	OP 186, OP 005, OP 180, OP 232, PP 168, OP 039, OP 183
Kantarci, M.	OP 200		
Kantarci, O.	OP 085, OP 086	Kisa, U.	OP 139, PP 142
		Kiziltepe, U.	PP 252
		Kloppenburg, G.	INT-OP 28
		Knyshev, G.	INT-OP 39, INT-OP 50

Koc, M.	PP 012, OP 036, PP 082, PP 151, PP 152, PP 299, PP 058, PP 083	Manoli, E.	PP 089
Kocabeyoglu, S.	OP 167, OP 171, PP 308, PP 144, PP 226	Mansour, S. A. s.	INT-OP 65
Kocak, H.	PP 114, PP 124, PP 324	Mansuroglu, N.	PP 166
Kocakoc, E.	PP 012, PP 126	Martinelli, L.	INT-OP 21
Kocogullari, C. U.	OP 004, OP 134, OP 227	Maseda, R.	PP 272
Kocyigit, A.	PP 251	Mataraci, I.	OP 033, OP 168, OP 184
Kolbakir, F.	PP 312, PP 337, PP 340	Maugeri, O.	INT-OP 04
Konstandopoulou, G.	PP 089, PP 092	Mavili, E.	PP 102, PP 106, PP 285
Konukoglu, O.	OP 184	Mavioglu, L.	OP 167, OP 151, OP 147, OP 171, OP 172
Kopjar, T.	INT-OP 54	Medich, G. E.	INT-OP 13, INT-OP 47
Kork, I.	OP 030, OP 107, OP 181	Mehmood, M.	INT-OP 82
Korkmaz, A. A.	OP 109	Mehta, D.	INT-OP 29
Korkmaz, F.	OP 109, PP 117, PP 123	Merkle, F.	INT-OP 78, INT-OP 79, INT-OP 80
Koroglu, S.	PP 055, PP 176	Mete, A.	OP 104, OP 106
Korun, O.	PP 294, OP 160, OP 225, OP 233, PP 311	Metin, K. S.	OP 029
Kotsis, V.	INT-OP 10	Miguelena, J.	PP 272
Kouerinis, I.	PP 092	Mizerski, J. K.	INT-OP 11
Kourtesis, A.	PP 092	Mohamed, N. A. H.	INT-OP 42
Krawczyk, A.	PP 334	Moharamzad, Y.	PP 274
Krian, A.	PP 338	Mokhtar, E. A.	INT-OP 51
Kucukarslan, N.	PP 002	Mokracek, A.	INT-OP 38
Kucuker, S.	PP 307, PP 308	Molochkov, A. V.	INT-OP 60
Kucukoglu, S.	OP 035	Montero, H.	INT-OP 69
Kulatilake, N.	INT-OP 02	Mota, J. C.	PP 271
Kumtepe, G.	OP 003	Mukerjee, K.	INT-OP 37
Kuralay, E.	OP 186, OP 180, OP 183, OP 232, PP 168	Muppiri, V.	INT-OP 37
Kuran, C.	OP 030, OP 107, OP 181	Murtaza, G.	INT-OP 82
Kurkluoglu, M.	PP 002	Musa, A. F.	INT-OP 16, INT-OP 35
Kurt, I. H.	PP 057, PP 134	- N -	
Kurtoglu, M.	INT-OP 33, OP 105	Nakhaeezadeh, R.	INT-OP 17
Kutlay, F.	OP 085, OP 086	Nappi, F.	INT-OP 26, INT-OP 32, INT-OP 40
Kutsal, A.	OP 036, PP 082, PP 151, PP 152, PP 299, PP 058, PP 083, PP 148	Narang, S.	INT-OP 37
- L -		Narin, C.	OP 039
Lafci, B.	PP 075, PP 080, PP 147, PP 005	Nawaytou, O.	INT-OP 66
Lafci, G.	OP 089, PP 076, PP 123, PP 144, PP 226, OP 083, OP 138, PP 117	Nazli, N.	PP 179
Leprince, P.	INT-OP 06	Nebigil, R. M.	OP 036, PP 082, PP 083, PP 148
Linardakis, I.	INT-OP 10	Nisanoglu, V.	PP 118, PP 146, PP 246
Loukopoulou, S.	PP 089	Noori, A.	PP 339
Lucas, D. M.	INT-OP 13, INT-OP 47	Nottin, R.	INT-OP 67
Luckraz, H.	INT-OP 57	Numan, F.	OP 134, OP 227, INT-OP 09
Lukyanov, Y. V.	INT-OP 70, INT-OP 71	- O -	
- M -		O'keefe, P.	INT-OP 29
Mafi, M.	INT-OP 09	Oc, B.	PP 235, PP 234
Mali, S.	INT-OP 17	Oc, M.	PP 235, PP 179, PP 234
Malik, N.	INT-OP 82	Ocak, E.	PP 140
Mandegar, M. H.	INT-OP 08	Ocal, B.	OP 036, PP 082, PP 151, PP 299, PP 058, PP 083, PP 152, PP 148
Manduz, S.	OP 037	Odabasi, D.	PP 001
		Oertel, F.	INT-OP 43
		Okeefe, P.	INT-OP 02, INT-OP 57
		Okur, F. F.	OP 112

Okutan, H.	OP 186, OP 180, PP 191, OP 005, OP 097	Ozturk, E.	PP 008
Olawole, A. A.	INT-OP 20	Ozturk, S.	PP 140
Oliva, E.	PP 272	Ozyazicioglu, A. F.	OP 174, PP 167, PP 315, PP 329
Olodapo, A. P.	INT-OP 20	Ozyuksel, A.	PP 179
Olsun, A.	OP 095	Ozyurda, U.	PP 330, PP 062, PP 187, PP 305, PP 306, PP 309
Omar, R.	INT-OP 35		
Omay, O.	PP 077, PP 078		
Omeroglu, S. N.	OP 084, OP 094, OP 116, OP 117, OP 226, PP 081, PP 298, PP 318	- P -	
		Pac, M.	PP 308, PP 144, PP 307, OP 083, OP 138
Omrani, G.	INT-OP 07	Paker, T.	PP 288
Onan, B.	OP 132, OP 137	Panagiotopoulos, I.	INT-OP 10
Onem, G.	PP 140, PP 283	Panahi, Y.	PP 274
Oner, E.	PP 279	Papadopoulos, G.	PP 090, PP 092
Ongun, H.	OP 166	Paphitis, C.	PP 090, PP 089, PP 092
Onk, A.	OP 033	Parissis, H.	PP 217, PP 334
Ornaghi, D.	INT-OP 04	Parlar, A. I.	OP 002
Orun, U. A.	OP 036, PP 082, PP 151, PP 299, PP 058, PP 083, PP 152, PP 148	Parlar, H.	PP 279, PP 325
		Parodi, E.	INT-OP 49
Oto, O.	OP 029	Partsakhashvili, D. D.	INT-OP 01, INT-OP 03
Oz, B. S.	OP 045, PP 009, OP 185	Parusova, E. V.	INT-OP 70
Oz, D.	OP 229	Passerone, G.	INT-OP 21, INT-OP 49
Ozatik, M. A.	PP 308, PP 226, PP 307	Pavie, A.	INT-OP 06, INT-OP 26, INT-OP 32, INT-OP 40, INT-OP 68
Ozaydin, M.	OP 099, PP 191		
Ozbek, C.	PP 150, PP 257, PP 064, PP 115, PP 180, PP 147, PP 293, PP 005	Paytoncu, S.	OP 029
		Pazderkova, P.	INT-OP 38
Ozcaliskan, O.	OP 030, OP 107, OP 181	Pekbay, A.	PP 061, PP 188
Ozcan, A. V.	PP 155, PP 281	Peker, O.	OP 180, OP 186
Ozcan, F.	PP 213, PP 258	Peker, R. O.	OP 099, OP 183, PP 191, PP 251
Ozcelik, N.	OP 005		
Ozcem, B.	PP 180, PP 256	Peker, T. T.	OP 099
Ozcobanoglu, S.	OP 160, OP 031, PP 294	Pektok, E.	INT-OP 09
Ozdemir, B.	OP 003	Pellegrini, R. V.	INT-OP 13, INT-OP 47
Ozdemir, F.	PP 142	Perrotti, A.	INT-OP 06, INT-OP 26, INT-OP 27, INT-OP 32, INT-OP 40, INT-OP 41, INT-OP 45, INT-OP 67
Ozdemir, H.	PP 127, PP 216		
Ozelci, A.	PP 006, PP 119, PP 177, PP 180, PP 250, PP 256, PP 005	Perrotti, A.	INT-OP 68
		Pinar, A.	PP 234, PP 235
Ozen, Y.	PP 310	Pinho, P.	PP 271
Ozenci, M.	PP 306	Pishgou, B.	PP 274
Ozeren, M.	OP 093	Popov, V.	INT-OP 30, INT-OP 34, INT-OP 39, INT-OP 50
Ozgen, H.	OP 137		
Ozgol, I.	OP 228, OP 230	Popova, A.	INT-OP 30, INT-OP 34
Ozguler, M.	PP 127	Popova, K.	INT-OP 39
Ozisik, K.	PP 086	Popova, V.	INT-OP 50
Ozkan, M.	OP 160, OP 161, OP 225, OP 031, PP 294	Pospisilova, H.	INT-OP 38
		Pour, H. A.	OP 163
Ozkan, S.	OP 160, OP 161, OP 225, OP 031, PP 294	Pour Abbasi, M. S.	INT-OP 07, INT-OP 15
		Pozzi, M.	PP 090
Ozler, A.	OP 095, OP 215	Prangishvili, A.	PP 273
Ozmen, O.	OP 029	Prapas, S.	INT-OP 10
Ozocak, O. O.	PP 297	Pravosudova, Y. S.	INT-OP 71
Ozpak, B.	PP 150, PP 065, PP 074, PP 080, PP 257, PP 180	Proietti, P.	INT-OP 40, INT-OP 41
		Protogeros, D.	INT-OP 10
Ozsoyler, I.	OP 148, OP 149, PP 177, PP 185, PP 250, PP 256, OP 150, PP 121		

- R -

Rabus, M. B.	OP 096
Rahman, A.	PP 127, PP 216, PP 129, PP 012, PP 266, PP 126
Rama, A.	INT-OP 45
Rao, P. S. R.	INT-OP 57
Rees, W.	PP 335
Rezk, A.	INT-OP 64
Ribeca, C.	INT-OP 21, INT-OP 49
Roberts, H.G.	INT-OP 82

- S -

Saba, D.	OP 003
Sacar, M.	PP 283, PP 140, PP 328
Sackan, K. G.	PP 283
Sade, L. E.	OP 161
Saglam, M.	PP 068
Sahin, M. A.	PP 002
Sahin, O.	OP 004
Sahin, A.	PP 150, PP 064
Sahin, M. A.	OP 231
Saied, E. M.	PP 156
Salehi, S.	INT-OP 15, INT-OP 17
Saltik, L.	OP 230
Sanchez, J.	INT-OP 14
Sanisoglu, I.	OP 132
Sanri, U. S.	OP 037
Sariosmanoglu, N. O.	OP 029
Saritas, A.	PP 252, OP 146, OP 151, OP 147
Sarli, B.	PP 285
Sarsilmaz, A.	PP 006
Sarzaem, M. R.	INT-OP 08
Sasmazel, A.	OP 168
Savas, K.	PP 213
Savaskan, D.	OP 042
Sayarlioglu, H.	PP 176
Sayed, S. A. E. r. M.	INT-OP 63
Sayilgan, C.	OP 084, OP 094, OP 116, OP 226, PP 081, PP 298, PP 318
Saylam, G. S.	OP 029
Secici, S.	PP 146
Sedov, V. M.	INT-OP 70, INT-OP 71
Sen, N.	PP 076
Sen, O.	OP 132
Senay, S.	OP 088, OP 098, PP 128
Sengel, S. S.	PP 311
Senkaya, I.	OP 003
Senocak, H.	PP 159
Senocak, M.	OP 215
Senocak, F.	OP 036, PP 082, PP 151, PP 299, PP 058, PP 083, PP 152, PP 148
Senol, S.	PP 129
Sensoz, Y.	OP 139
Serag, A. R.	PP 156
Serag, A. R.	PP 156
Sersar, S. I.	PP 087, PP 088

Sert, C.	PP 303
Sertbas, B. C.	OP 215
Serter, F. T.	PP 234
Servet, E.	OP 035
Setina, M.	INT-OP 38
Settepani, F.	INT-OP 04
Sevinc, D.	OP 215
Sezen, M.	PP 315, PP 316, PP 167
Sezen, Y.	OP 096
Sezgin, A.	PP 304, PP 294, OP 160, OP 161, OP 225, OP 233, PP 311

Shabalkin, B. V.	INT-OP 60
Shah, S. A.	INT-OP 46
Shengelia, O. S.	INT-OP 03
Simsek, S.	OP 179
Singh, D. M.	INT-OP 59
Singh, H.	INT-OP 37
Singh, S. S.	INT-OP 61
Sinha, S.	INT-OP 59
Sirlak, M.	PP 330, PP 187, PP 306, PP 309
Smolinsky, A. K.	INT-OP 48
Sokmen, A.	PP 055, OP 166
Sologashvili, T. D.	INT-OP 03
Sologashvili, T. J.	INT-OP 01
Songur, M.	OP 168
Sonmez, B.	INT-OP 09, OP 134, OP 234, OP 080, OP 227
Soylu, O.	OP 179
Stavropoulou-empeira, P.	PP 092
Subramaniam, K. G.	INT-OP 18
Suciu, H.	INT-OP 74
Sucu, N.	OP 093
Sulda, M.	INT-OP 38
Sultan, M. W.	INT-OP 60
Suner, A.	PP 055
Sungun, M. B.	PP 188
Sungurtekin, H.	PP 281
Surer, S.	OP 036, OP 036, PP 082, PP 151, PP 152, PP 299, PP 086, PP 058, PP 148
Sutcu, R.	OP 039, OP 099
Szafranek, A.	INT-OP 57
Szpakowski, E.	INT-OP 11
Szumbariski, J.	INT-OP 11

- T -

Taghipour, H.	PP 274
Talas, Z.	OP 116, OP 117, OP 226
Tanrikulu, N.	OP 028
Tanriverdi, H.	PP 155
Tarelli, G.	INT-OP 04
Tasbakan, S.	PP 304
Tasdemir, A.	PP 106, PP 285
Tasdemir, K.	PP 106, PP 285, PP 297
Taskaya, E.	PP 307
Taskesen, T.	OP 224
Taskin, A.	OP 096

Tasoglu, I.	OP 089, PP 076, PP 123, PP 226	Uguz, E.	OP 045, PP 009, OP 185
Tatar, H.	PP 002, OP 231	Ulas, M. M.	PP 308, OP 089, PP 076, PP 123, PP 144, PP 226, PP 307, OP 083, OP 138, PP 117
Tavlasoglu, M.	PP 002		
Tekeli, A.	OP 103, OP 078, OP 001, OP 038	Uluc, E.	PP 121
Tekin, A.	PP 245	Ulucan, K.	OP 215
Telli, A.	OP 112	Ulus, A.	OP 171, OP 167, OP 002, OP 172
Tempe, D.	INT-OP 37		
Tetik, S.	OP 001	Uluslan, V.	PP 151, OP 036, PP 082, PP 299, PP 058, PP 083, PP 152
Thanopoulos, V.	PP 092		INT-OP 20
Tireli, E.	PP 104, PP 138, PP 105, PP 069, PP 072	Umar, A.	PP 138
		Umaroglu, S.	OP 147, PP 252, OP 146, OP 151
Tiryakioglu, O.	PP 315, OP 174, PP 329	Unal, U.	
Tok, M.	PP 234		
Tokel, K.	PP 078, PP 077	Unalp, H. R.	PP 293
Toker, A.	PP 104	Unic, D.	INT-OP 43
Tokgoz, N.	PP 011	Unlu, S.	PP 148
Toklu, H.	OP 085, OP 086	Unlu, Y.	PP 114, PP 124, PP 324
Tongut, A.	OP 035, OP 230	Unlukaplan, M.	PP 311
Toraman, F.	OP 088, OP 098, PP 128	Ureyen, C.	OP 094, OP 226
Torchio, P.	INT-OP 58	Ustunel, L.	PP 216, PP 129, PP 012
Tore, H. F.	PP 227	Ustunsoy, H.	OP 030, OP 107, OP 181
Torlak, Z.	PP 105, PP 069, PP 072	Usul Afsar, C.	PP 068
Tosya, A.	PP 307	Uwe, C.	PP 335
Trykozko, A.	INT-OP 11	Uyar, I. S.	OP 112
Tsiorva, A. A.	INT-OP 10	Uysalel, A.	PP 062
Tsukui, H.	INT-OP 13, INT-OP 47	Uz, E.	OP 005
Tukenmez, F.	OP 080	Uzunhasan, I.	OP 035
Tuncay, L.	PP 281		
Tuncel, C.	OP 147, PP 252	- V -	
Tuncer, A.	OP 168	Vado, A.	INT-OP 58
Tuncer, C.	PP 055	Vayansky, C.	INT-OP 13, INT-OP 47
Tuncer, E.	OP 033, OP 184	Veerasingham, D.	PP 334
Tunel, H. A.	PP 245	Verdi, D.	PP 140
Tur, L.	OP 004	Vezir, O.	OP 093
Turan, A.	PP 003, PP 292	Victor, A. O.	INT-OP 20
Turan, N. N.	OP 002	Villagra, F.	INT-OP 14
Turk, T.	PP 109, PP 315, PP 316, PP 167	Von Oppell, U.	INT-OP 02, INT-OP 29
		Vouga, L.	PP 271
Turkay, C.	OP 104, OP 106	Vural, H.	OP 174, PP 329, PP 167
Turkay, M.	OP 106	Vural, K.	OP 151
Turkoglu, H.	OP 183, PP 288	Vural, U.	PP 142
Turkoz, R.	PP 077, PP 078	Vuran, C.	PP 077, PP 078
Turkvatan, A.	OP 089		
Tutar, E.	PP 062	- W -	
Tuygun, A. K.	OP 042, OP 215, OP 139, PP 142	Walpoth, B.	INT-OP 09
		Wei, L. M.	INT-OP 47
Tuygun, A. G.	OP 215, OP 095, PP 142	Williams, J. B.	INT-OP 46
Tzanavaras, T.	INT-OP 10		
		- Y -	
- U -		Yagan, N.	OP 080, OP 234
Ucak, A.	PP 301	Yagci, S.	OP 085, OP 086
Ucanok, K.	PP 305	Yakut, C.	OP 033, OP 168, OP 184, OP 096
Ucar, H. I.	PP 179, PP 234, PP 003, PP 111, PP 235, PP 292		
		Yakut, N.	PP 185
Ucar, T.	PP 062	Yalcin, Y.	OP 028
Ugur, M.	PP 301	Yalcinkaya, A.	OP 089, PP 076, PP 123, OP 083, OP 138, PP 117
Ugurlu, B. S.	OP 029		

Yapici, F. M.	OP 215, OP 095	Yurtman, V.	OP 112
Yasa, H.	PP 064, PP 115, PP 119, PP 177, PP 185, PP 184, PP 005, PP 293	Yurtseven, N.	OP 028, OP 042
Yasar, E.	PP 252	- Z -	
Yasim, A.	PP 055	Zbanov, I. V.	INT-OP 60
Yavas, S.	OP 171, OP 172, PP 252, OP 146, OP 147, OP 167	Zengin, M.	PP 310
Yavuz, S.	PP 279, PP 325, PP 109, PP 315, PP 316, PP 329	Zeybek, C.	OP 028, OP 184
Yavuz, T.	OP 180, OP 186		
Yazicioglu, L.	PP 305		
Yekeler, I.	OP 139, PP 142		
Yener, A. U.	OP 089, PP 144		
Yener, O.	OP 089		
Yener, U.	OP 146, OP 172		
Yerci, O.	OP 003		
Yetkin, U.	PP 150, PP 006, PP 065, PP 074, PP 075, PP 080, PP 257, PP 064, PP 115, PP 119, PP 177, PP 185, PP 180, PP 184, PP 147, PP 250, PP 256, PP 300, PP 293		
Yigiter, B.	OP 085, OP 086		
Yildiz, A.	OP 096		
Yilik, L.	OP 148, OP 149, OP 150, PP 121, PP 257, PP 177, PP 185, PP 180, PP 184, PP 250, PP 256		
Yilmaz, A.	INT-OP 28		
Yilmaz, C.	PP 304		
Yilmaz, H. R.	OP 005		
Yilmaz, R.	OP 096		
Yilmaz, S.	PP 304		
Yilmaz, A. T.	PP 301		
Yilmaz, A.	PP 166		
Yilmaz, H.	OP 106		
Yilmaz, M.	OP 179		
Yilmaz, N.	OP 039		
Yilmaz, O.	OP 080, OP 134, OP 227, OP 234		
Yilmaz, S.	OP 002		
Yilmaz, U.	OP 233		
Yorgancioglu, C.	PP 234		
Yoruker, U.	PP 077, PP 078		
Yousefi, Z. K.	PP 339		
Yuce, M.	OP 109		
Yucedag, E.	PP 216, PP 129		
Yucel, S.	PP 312		
Yuceyar, L.	OP 084, OP 094, OP 116, OP 117, PP 081, PP 298, PP 318		
Yuksel, A.	PP 011		
Yumun, G.	OP 174		
Yurdakul, S.	PP 068		
Yurekli, I.	OP 148, OP 149, OP 150, PP 006, PP 065, PP 074, PP 075, PP 257, PP 185, PP 147, PP 250, PP 256, PP 300		