Online address: www.hsforum.com/vol6/issue3/2003-01000.html

ERRATA

Abstracts from the 6th Annual NewEra Cardiac Care: Innovation & Technology. Heart Surg Forum 6:102-23.

The title of the following abstract was incorrectly identified, based on the title originally submitted by the speaker; following is the correct title and abstract as presented at the January 2003 NewEra meeting.

A Cost Comparison of Robotic Atrial Septal Defect and Mitral Valve Repair Versus Open Cardiac Surgery

Jeffrey A. Morgan, MD, Barbara A. Thornton, MS,
Karen W. Hollingsworth, MM, Aftab R. Kherani, MD,
Deon W. Vigilance, MD, Faisal H. Cheema, MD, Eric A. Rose, MD,
Craig R. Smith, MD, Mehmet C. Oz, MD, Michael Argenziano, MD

Background: Robotically assisted cardiac surgery has many potential benefits including decreased morbidity and improved recovery. However, some have suggested a prohibitively high cost. In this study, we compare actual hospital costs of open and robotically assisted cardiac procedures.
Methods: Clinical and financial data were obtained from our hospital database for patients undergoing atrial septal defect (ASD) or mitral valve repair (MVr). Procedures were performed by sternotomy or minithoracotomy (OPEN, n = 68), or with robotic assistance (ROBO, n = 30) using the Da Vinci system (Intuitive Surgical, Mountain View, CA). Total cost was subdivided into operative and postoperative cost.
Results: Total cost for robotic ASD and MVr was $27,622 ± $10,290 and $32,088 ± $11,895, respectively, as compared to $24,734 ± $11,082 and $29,122 ± $10,108 for open ASD and MVr, respectively (p = 0.447 and p = 0.434). Intraoperative cost for robotic ASD and MVr was $16,264 ± $5,780 and $20,549 ± $4,079, respectively, as compared to $12,404 ± $5,911 and $16,363 ± $5,607 for open ASD and MVr, respectively (p = 0.069 and p = 0.022). Postoperative cost was $11,358 ± $6,430 and $11,539 ± $10,619 for robotic ASD and MVr, respectively, as compared to $12,330 ± $8,818 and $12,759 ± $7,197 for open ASD and MVr (p = 0.725 and p = 0.687).
Conclusions: Robotic technology did not increase total hospital cost beyond the initial capital investment. A less costly postoperative course offset higher intraoperative costs for robotic procedures. This was likely due to a trend toward decreased ICU and hospital stay for robotic patients. The benefits of minimally invasive surgery may justify investment in this technology.

The following abstract was submitted separately after publication of other NewEra abstracts.

Utility of a Descending Aortic Device for the Treatment of Aortic Insufficiency: A Computer-Based Model

Jeffrey A. Morgan[1], MD, Marc L. Dickstein[2], MD, Aftab R. Kherani[1], MD, Deon W. Vigilance[1], MD, Faisal H. Cheema[1], MD, Nicholas J. Colletti[1], BS, Karen W. Hollingsworth[1], MM, Mehmet C. Oz[1], MD

[1]Division of Cardiothoracic Surgery, College of Physicians and Surgeons, Columbia University, New York, NY; [2]Department of Anesthesiology, College of Physicians and Surgeons, Columbia University, New York, NY

Purpose: A percutaneous approach to treating aortic valve insufficiency (AI) could significantly reduce associated morbidity and mortality. We sought to determine the hemodynamic effects of placing an accessory valve into the descending aorta in the setting of AI.
Methods: A multiple compartment elastance computer model was developed that allowed for turning on and off the accessory valve under conditions of varying degrees of severity of AI. Aortic arch BP, descending aorta BP, left ventricular end-diastolic pressure (LVEDP), left ventricular end-diastolic volume (LVEDV), left ventricular stroke volume (LVSV), right ventricular stroke volume (RVSV), ejection fraction (EF), cardiac output (CO), regurgitant volume, and regurgitant percentage were recorded before and after simulated placement of the valve.
Results: For mild AI, there was minimal change in regurgitant volume, regurgitant percentage, LVEDP, LVEDV, and CO with insertion of the valve. In contrast, placement of the valve produced a notable effect in hemodynamic parameters in the setting of severe AI [Table].
Conclusions: Placement of a valve into the descending aorta for AI does not seem to significantly impact hemodynamics except in severe AI. In this setting, a percutaneous approach may have a role, particularly, in patients who are high-risk for an open, conventional repair.

	Regurgitant Percentage (%)	LVEDP (mmHg)	Head BP (mmHg)	Body BP (mmHg)	CO (L/min)
No AI	0	5	125/90 (108)	125/90 (108)	4.2
1+ AI	25	9	139/91 (116)	139/91 (116)	4.5
1+ AI + Valve	24	9	139/86 (113)	139/96 (118)	4.5
2+ AI	45	19	149/83 (118)	149/83 (118)	4.6
2+ AI + Valve	41	17	147/64 (108)	149/105 (128)	4.7
3+ AI	65	42	161/71 (120)	161/71 (120)	4.6
3+ AI + Valve	56	26	162/43 (107)	166/124 (146)	5.1