

Successful Acute Type A Aortic Dissection Repair in a Nonagenarian

Edward Ansari, MD, Alexander Blehm, MD, Udo Boeken, MD, PhD, Arthur Lichtenberg, MD, PhD

Department of Cardiovascular Surgery, Heinrich Heine University, Medical Faculty, Moorenstrasse 5, 40225 Dusseldorf, Germany, Europe

ABSTRACT

Surgical repair in older patients with acute type A aortic dissection (ATAAD) evokes a higher peri- and postoperative mortality, it therefore remains controversial in nonagenarians. The authors present a case of a surgically managed ATAAD in a nonagenarian, a 94-year-old man presented with an uncomplicated ATAAD, necessitating emergency surgical repair. The subsequent postoperative course was uneventful, and the patient was discharged after uncomplicated recovery. Aggressive surgical approach should be feasible in select nonagenarian patients with ATAAD, depending on the clinical presentation and prior patient history.

INTRODUCTION

Acute type A aortic dissection (ATAAD) carries a very poor prognosis and high mortality rate without prompt surgical intervention [Neri 2001; Kazui 2002; Siegal 2006]. Older age has been indicated as a risk factor for perioperative mortality [Kazui 2002]. Little has been published on whether the risk of surgical intervention is too high in patients 90 years and older with ATAAD to justify the procedure. The International Registry of Acute Aortic Dissections (IRAD) reported an in-hospital mortality rate of 50% in patients 85 years and older who underwent surgical intervention versus 62.5% for those treated medically [Mehta 2002; Tsai 2006]. This indicates an aggressive surgical approach is not unreasonable with select elderly patients with ATAAD. Surgeons will encounter this issue more frequently, due to an aging population and increasing human lifespan. The decision to operate should be based on evidence and postoperative quality of life and not on age alone. In this case report, we present our experience of the surgical management and outcome of an acute type A aortic dissection in a 94-year-old man.

CASE PRESENTATION

A 94-year-old man with an unremarkable medical history was admitted to our institution with acute onset chest pain radiating between the scapula and one syncopal episode. CT

angiography (Figures 1 and 2) revealed an ascending aortic dissection starting from level of sinus of Valsalva to the brachiocephalic artery and a large pericardial effusion highly suggestive of hemopericardium. After right subclavian artery cannulation, a median sternotomy was performed. Incision of the pericardium relieved 1000 ml of blood. The venous cannula was inserted in the right atrium. Cooling of the heart for myocardial protection was achieved at 12°C to 15°C. The ascending aorta was cross-clamped. Moderate hypothermic (30°C) circulatory arrest and bilateral antegrade selective cerebral perfusion allowed aortic arch inspection and replacement. The dissected ascending aorta was resected and repaired with a supracoronary termino-terminal anastomosis between the aorta and a 28-mm Dacron prosthesis. Reentry in the arch area necessitated partial aortic arch resection. The aortic arch

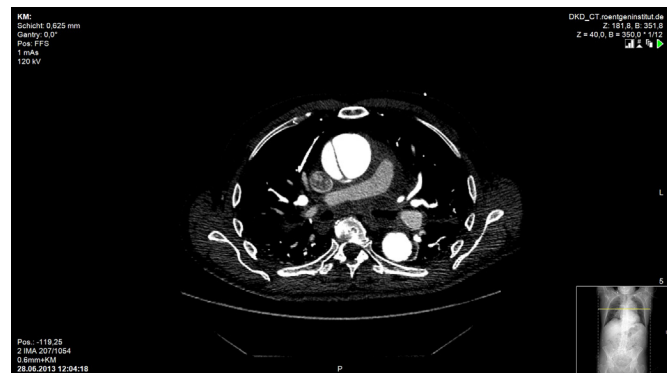


Figure 1. Preoperative, transverse CT-scan of the dissected aorta ascendens.

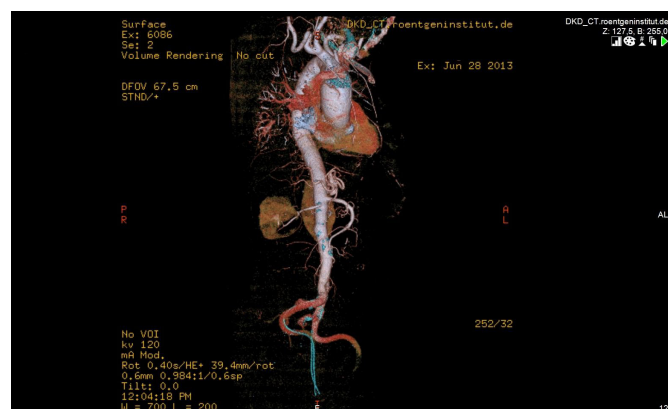


Figure 2. Preoperative 3D CT-reconstruction of the aorta.

Received February 19, 2014; accepted April 16, 2014.

Correspondence: Udo Boeken, Department of Cardiovascular Surgery, Heinrich Heine University, Medical Faculty, Moorenstrasse 5, 40225 Dusseldorf, Germany, Europe; +49-(0)211-8118331; fax: +49-(0)211-8118333 (e-mail: udo.boeken@med.uni-duesseldorf.de).

was replaced by the same 28-mm Dacron prosthesis with open anastomosis. Finally, de-airing maneuvers, reperfusion of the coronary blood flow, release of the brachiocephalic trunk, and decannulation was performed. The patient recovered well, without significant ischemic or neurologic complications, and was discharged on postoperative day 17.

DISCUSSION

Due to the limited number of patients with ATAAD in the nonagenarian population, the scientific literature on the surgical repair of the disease has been scarce. Surgical therapy in this age group still is a matter of debate.

In this case report, the patient had an uncomplicated case of ATAAD, and therefore facilitated surgical intervention. Clinical presentation has been viewed as the main predictor of in-hospital mortality [Santini 2007]. A recent study in the octagenarian population presenting with acute type A aortic dissection reported that patients admitted with stroke, paraplegia, coma, visceral ischemia, and cardiopulmonary resuscitation were associated with an extremely high in-hospital death rate, and therefore considered to be exclusion criteria for surgical intervention [Piccardo 2013].

In this patient, quality of life after surgery remained satisfactory, and the patient was able to pick up his daily activities after discharge from the hospital. In articles within the octagenarian age group, quality of life was reported to be satisfactory for those patients who survived surgical repair [Kazui 2002; Piccardo 2013].

In some studies, the extent of the aortic replacement was associated with increased in-hospital mortality. We think that because of the relative short life expectancy in nonagenarians, arch replacement should only be performed when arch rupture is estimated to be unavoidable due to an intimal lesion.

We believe the foremost argument in the decision making in very elderly patients needs to be the ability of the intervention to prevent the fatal outcome associated with ATAAD. Put differently, surgical treatment should not be denied on the sole

basis of age; it should only be performed on the grounds that survival will be disastrous without it.

CONCLUSION

This case report indicates that an aggressive surgical approach is feasible in select nonagenarian patients with ATAAD without adverse effects. However, given the limited amount of data available with patients 90 years and older, caution should be exercised with proposing surgical repair. Surgical intervention should depend on the clinical signs and symptoms. Age should not be used as a sole criterium to exclude patients from undergoing repair of acute type A aortic dissection.

REFERENCES

- Kazui T, Washiyama N, Bashar AH et al. 2002. Surgical outcome of acute type A aortic dissection: analysis of risk factors. *Ann Thorac Surg* 74:75-81.
- Mehta RH, Suzuki T, Hagan PG et al. 2002. International Registry of Acute Aortic Dissection (IRAD) Investigators. Predicting death in patients with acute type A aortic dissection. *Circulation* 105(2):200-6.
- Neri E, Toscano T, Massetti M et al. 2001. Operation for acute type A aortic dissection in octogenarians: is it justified? *J Thorac Cardiovasc Surg* 121:259-267.
- Piccardo A, Le Guyader A, Regesta T et al. 2013. Octogenarians with uncomplicated acute type A aortic dissection benefit from emergency operation. *Ann Thorac Surg* 96(3):851-6.
- Santini F, Montalbano G, Casali G et al. 2007. Clinical presentation is the main predictor of in-hospital death for patients with acute type A aortic dissection admitted for surgical treatment: a 25 years experience. *Int J Cardiol* 115(3):305-11.
- Siegal EM. 2006. Acute aortic dissection. *J Hosp Med* 1:94-105.
- Tsai TT, Evangelista A, Nienaber CA et al. 2006. Long-term survival in patients presenting with acute type A aortic dissection: insights from the International Registry of Acute Aortic Dissection (IRAD). *Circulation* 114(1 Suppl):350-356..