

Advances in surgery for acute type A aortic dissection.



M.E.S.H. Tan

Cardiochirurg
St. Antonius Hospital,
Nieuwegein

INTRODUCTION

This thesis focuses on the surgical treatment of acute type A aortic dissection, a catastrophic disease that remains difficult to treat.

From 1974 to 2002, more than 300 patients underwent surgical treatment for acute type A aortic dissection at the department of cardiothoracic surgery of the St. Antonius Hospital, Nieuwegein. During the past years, several therapeutic and diagnostic advances have been introduced to improve the treatment outcomes. These include deep hypotherm circulatory arrest, open distal anastomosis, aortic root reconstruction, and antegrade selective cerebral perfusion.

The aim of this thesis was to summarize and to evaluate the operative results, to estimate the influence of preoperative and operation-related variables on outcome, to assess the benefits of various surgical modalities and to examine long-term postoperative aorta- and surgery-related events, with special emphasis on the management of aortic root dissection, aortic arch dissection, cerebral protection, and lower extremity malperfusion.

Recent improvements in early mortality and morbidity have resulted from more expeditious diagnosis and surgical treatment, improved perioperative care and advances in surgical techniques.

Established principles are:

- Resection of intimal tear and replacement of concomitant aorta. If tear is not identified in ascending aorta, inspection of distal ascending aorta or arch under circulatory arrest.
- We tend to shift towards more use of antegrade selective cerebral perfusion, especially when arrest time is expected to be more than 30 minutes.
- Avoidance of aortic clamping.
- Repair or replacement of aortic root with obliteration of false lumen. Patients with Marfan's syndrome or annuloaortic ectasia should undergo a Bentall procedure or root reimplantation.
- Preservation or resuspension of morphological normal aortic valve without dilated annulus, otherwise replacement of the valve.
- Obliteration of false lumen at distal anastomosis to reestablish primary flow into true lumen.
- Replacement of arch if this segment contains intimal tear, although we shift towards more aggressively replacing the arch in younger patients or Marfan's syndrome.