

ASCENDING-DESCENDING AORTIC BYPASS FOR RECURRENT COARCTATION

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"Case Vignettes"

Recurrent aortic coarctation (CoA) after primary surgical repair is a challenging diagnosis associated with significant surgical morbidity (e.g. risk of recurrent laryngeal nerve and thoracic duct injury as well as mediastinal adhesions). While there is no consensus about the ideal approach for repair of recurrent coarctation, an extra-anatomic ascending-to-descending aortic bypass approach can be performed as a single-stage repair via median sternotomy with low morbidity and mortality¹.

We present a 66 year old female with recurrent CoA after initial CoA repair at age 10 years with an interposition tube graft via a left thoracotomy. She also underwent surgical closure of a secundum atrial septal defect (ASD) via right thoracotomy 6 months later. Clinically the patient was asymptomatic but had developed paroxysmal atrial fibrillation. Echo demonstrated a bicuspid aortic valve with no significant stenosis or regurgitation. Cardiac MRI revealed mild left ventricular hypertrophy and a 30 mmHg gradient between upper and lower extremities (Fig 1). Subsequent cardiac catheterization showed 50 mmHg gradient across the interposition graft. These findings along with systemic hypertension prompted surgical intervention to address recurrent CoA.



Figure 1. Pre-op Cardiac MRI CoA

We proceeded with a median sternotomy, left atrial appendage excision, bi-atrial Maze procedure, residual ASD closure, and an ascending-to-descending aortic bypass with an 18 mm dacron conduit (Fig 2,3). Post-operative transesophageal echo revealed good biventricular function and no intracardiac shunting. The patient's post-operative course was complicated by non-sustained atrial tachycardia which was managed medically. She was discharged 12 days later and has been doing well on follow up (Fig 4) with no gradients in upper and lower extremities.

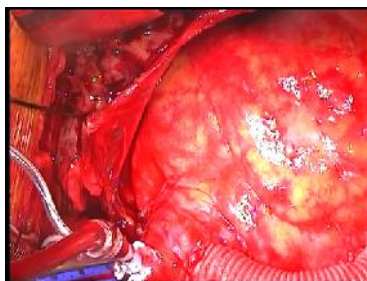


Figure 2. Proximal anastomosis

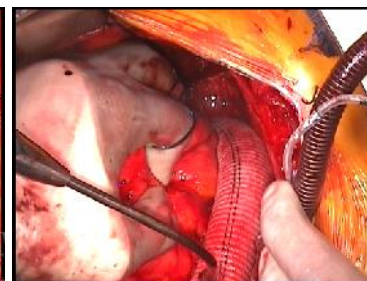


Figure 3. Distal anastomosis



Figure 4. Post-op CT of aortic bypass

Reference

1. Said SM, Burkhart HM, Dearani JA, Connolly HM, Schaff H V. Ascending-to-descending aortic bypass: a simple solution to a complex problem. *Ann Thorac Surg*. 2014;97:2041–2048.