

Simultaneous Hybrid Arch, Frozen Elephant Trunk, Thoracoabdominal Aortic Aneurysm Repair

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A 54-year-old gentleman with a preoperative diagnosis of chronic type B dissection, thoracoabdominal aortic aneurysm, aberrant right subclavian artery and aneurysmal Kommerell diverticulum was assessed for surgical repair by our vascular team at LHSC Victoria Hospital. It was decided the patient would require complex complete aortic reconstruction spanning the ascending aorta and bilateral common iliac arteries. The cardiac surgery team at LHSC University hospital was consulted and the decision was made to perform a simultaneous repair. Not only would this be the first procedure of its kind in North America using a Thoraflex Hybrid stent graft but careful planning and teamwork would be essential for a successful outcome.

The patient was brought to our non-cardiac centre operating room after extensive preoperative planning. The operative procedure included:

CARDIAC

1. Ascending aorta replacement
2. Hybrid arch and frozen elephant trunk reconstruction with a Thoraflex Hybrid stent graft
3. Separate head vessel reconstruction: right carotid artery, left carotid artery, left subclavian extra anatomic bypass from aortic arch to left axillary artery
4. Moderate hypothermic circulatory arrest with continuous antegrade cerebral perfusion and intermittent lower body perfusion

VASCULAR

1. Thoracoabdominal aneurysm repair: endovascular stent grafts (TEVAR)
2. Open abdominal aortic aneurysm repair with placement of supraceliac to bilateral common iliac bifurcated graft
3. Visceral debranching with trifurcated graft to the celiac, superior mesenteric, and right renal arteries
4. Splenectomy
5. Left nephrectomy

Postoperative transesophageal echo demonstrated well biventricular function with normal aortic valve and no aortic insufficiency. Following improved hemostasis the patient was transferred in stable but critical condition to the Intensive Care Unit.