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A – Open and Endovascular Aortic Repair
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Title:
Type II Thoracoabdominal Aortic Aneurysm Repair - How We Do It
Abstract
Body:
Objective(s):
Thoracoabdominal Aortic Aneurysm (TAA) repair is a technically complex procedure. Here, we present a patient with a prior aortobifemoral bypass for an abdominal aortic aneurysm (AAA) who successfully underwent repair of a Type II TAA extending from the left subclavian to the aortoiliac bifurcation using deep hypothermic circulatory arrest (DHCA) and selective visceral organ perfusion.
Methods:
A 72-year-old male presented with chest and back pain. Computed tomography angiography demonstrated aneurysmal dilatation of the descending and abdominal aorta secondary to a chronic Type B dissection and contained rupture of the descending thoracic aorta. Cardiac catheterization showed severe right coronary artery disease (CAD).
Results:
A left thoracoabdominal incision was performed. A retroperitoneal plane was developed and the entire aorta was exposed. The left common femoral artery and vein were cannulated for cardiopulmonary bypass. The diaphragm was divided in a circumferential fashion. The posterior descending artery was bypassed using a vein graft. Under DHCA, the distal aspect of the arch was transected and the proximal anastomosis was completed with a 28 mm graft. Next, antegrade perfusion to the brain and heart was established and distal perfusion was achieved by clamping the previous graft. Cold blood perfusion was delivered to the celiac, superior mesenteric (SMA) and right renal arteries. The limbs of a trifurcation graft (TG) were then anastomosed in an end-to-end fashion to the celiac, SMA and right renal arteries. The distal aortic graft was anastomosed to the prior aortobifemoral graft. The proximal end of the TG was sewn to the abdominal portion in an end-to-side fashion. The patient had an uncomplicated hospital course.
Conclusions:
A complex Type II TAA repair can be successfully performed under DHCA and selective visceral perfusion in a patient with a prior aortobifemoral bypass and concomitant CAD. The use of a TG in TAA repair also allows for simplification of visceral vessel anastomoses.