An Adjunct Strategy to Address Severe Aortic Tortuosity in Endovascular Management of Aortic Aneurysm

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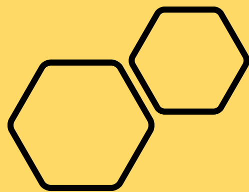
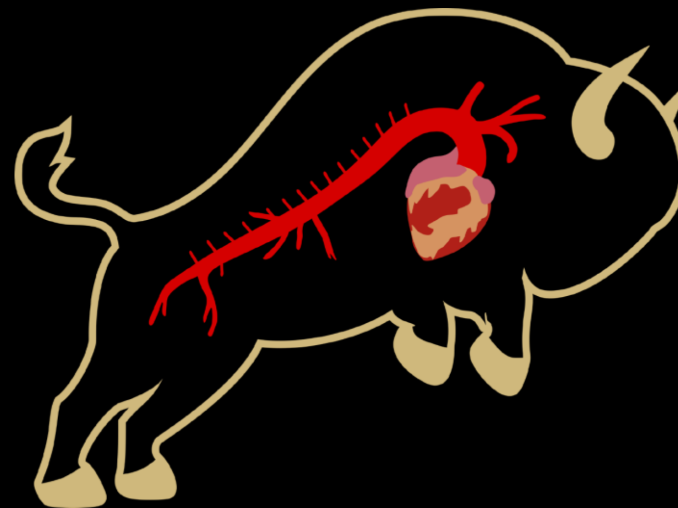
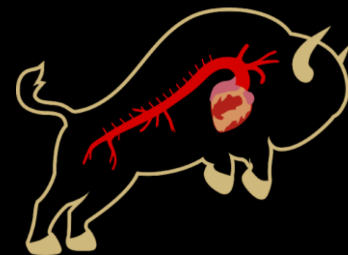


No disclosures



Introduction

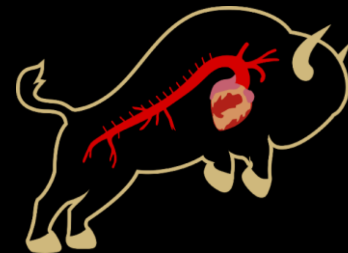


- Aortic tortuosity can pose significant difficulties in endovascular management of aortic disease
- In addition to the operative difficulty of navigating a tortuous aorta, ensuring an ideal aortic position for successful stent-graft placement is paramount
- Given the rarity of severe aortic tortuosity, describing technique allows for development of strategies for management of complex anatomy

Aim

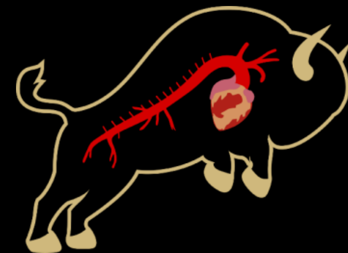
- To describe the case of a patient who required a complex, modified TEVAR technique for treatment of a descending thoracic aorta aneurysm in a severely tortuous aorta

Methods

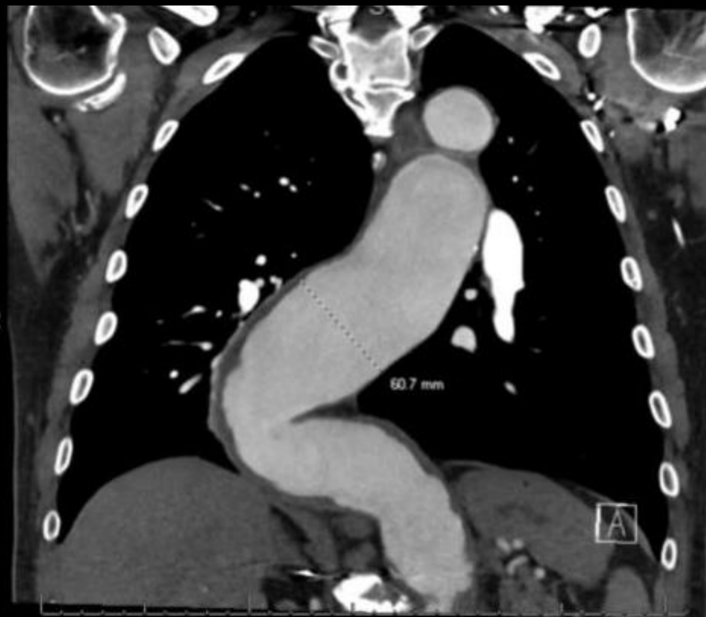


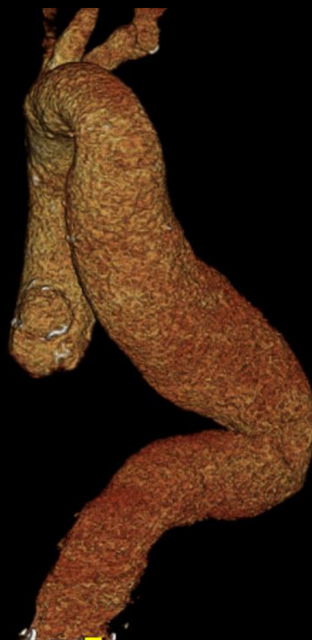
We discuss the case of a 73-year-old male with a severely tortuous aorta and a history of prior infrarenal EVAR who presented with an extensive large descending thoracic and abdominal aortic aneurysm for a planned TEVAR and 4v-PMEG

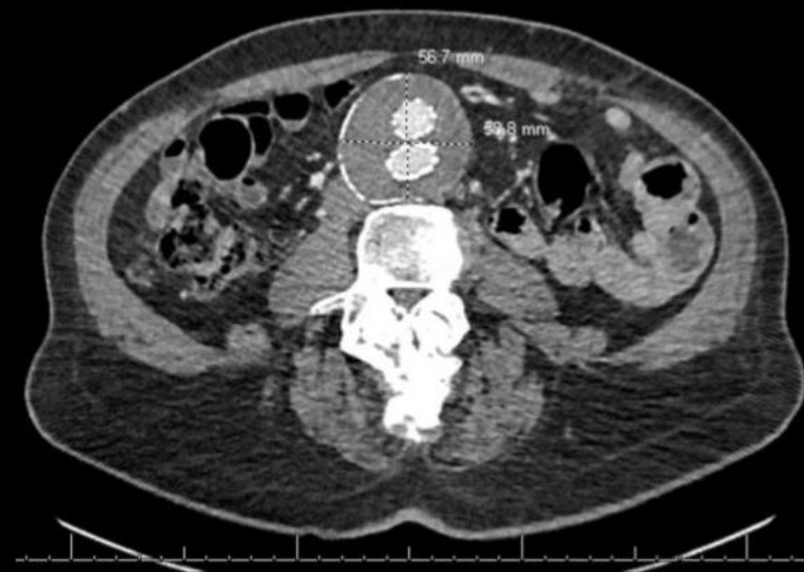
Pre-operative Imaging

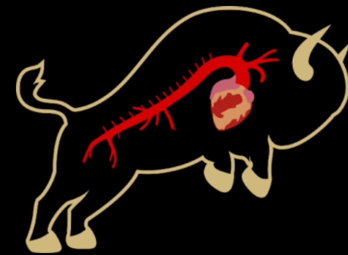


- Pre-operative imaging demonstrated a 6cm descending thoracic aorta aneurysm and severely tortuous aorta with significant angulation just above the diaphragm, approximating a 62-degree angle



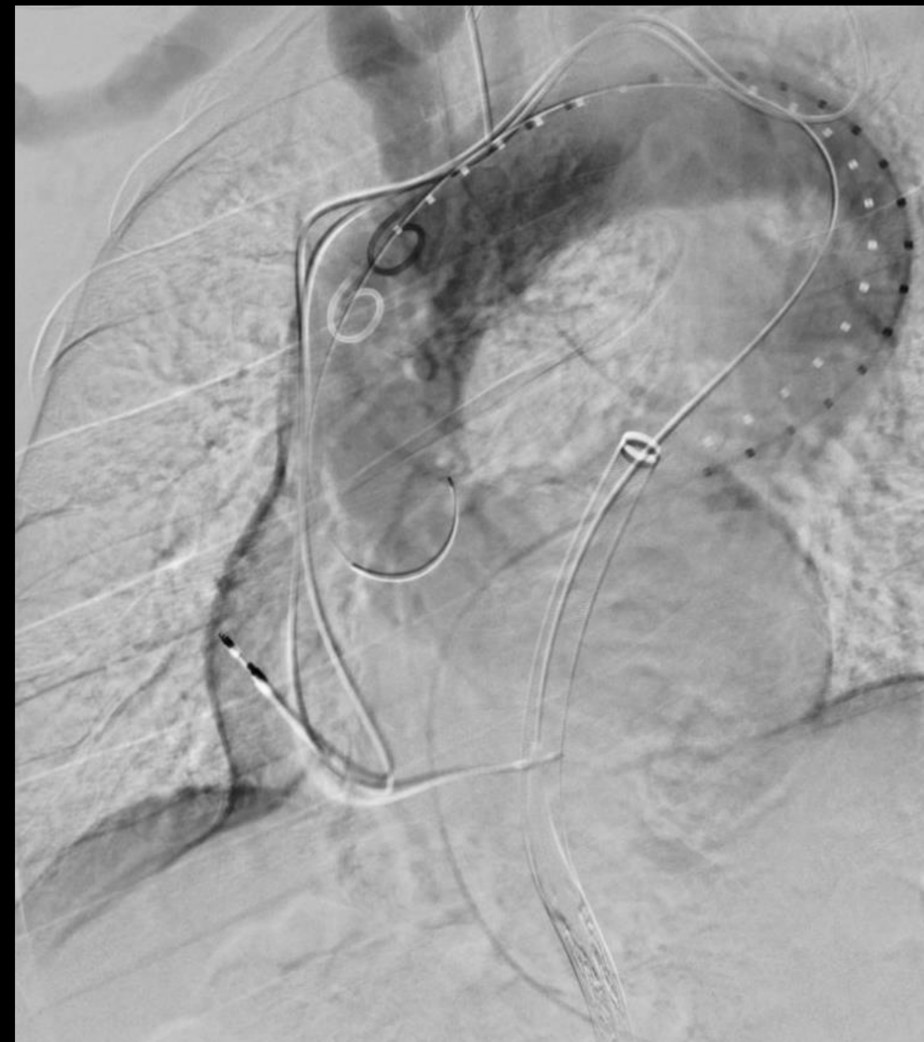




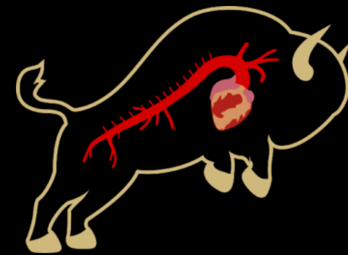


Operative Course

- For the initial TEVAR, in order to advance the thoracic stent-graft, a 22Fr 65cm Dryseal sheath was exchanged to straighten out the aorta
- This was then cut at the proximal end to allow for retraction and full release of the endograft, which was placed just distal to the left subclavian



Operative Course

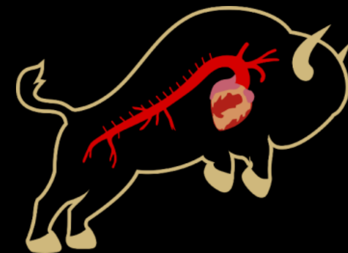


- After defining the visceral aorta through the aortogram, the Treo PMEG was oriented
- The second thoracic stent graft, a 36-32 x 150mm relay Pro thoracic stent graft was then advanced and deployed just superior to the celiac fenestration
- Graft lost seal with PMEG due to aortic tortuosity when deployed
- Attempt to balloon resulted in more distal stent graft to migrate even further

Operative Course

- A 34 x 100 mm Gore C TAG thoracic stent graft was then required to bridge the distal thoracic graft with the PMEG graft
- A trilobed balloon was again used for the overlaps, this time resulting in good seal without coverage of the celiac fenestration
- The celiac artery, superior mesenteric artery, and right renal artery were then cannulated, and the Treo graft was fully deployed
- Following the placement of visceral fenestration and iliac stents, final angiography was done showing patency of all stented vessel
- Post-intervention angiography without endoleak

Conclusions



- Management of severely tortuous aortas can be challenging and complex
- May potentially require immediate modification of existing techniques in the operating room
- Multidisciplinary collaboration at high volume aortic center is necessary when severe tortuosity is present

Questions?