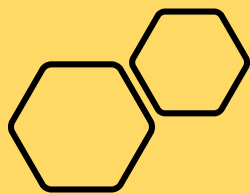


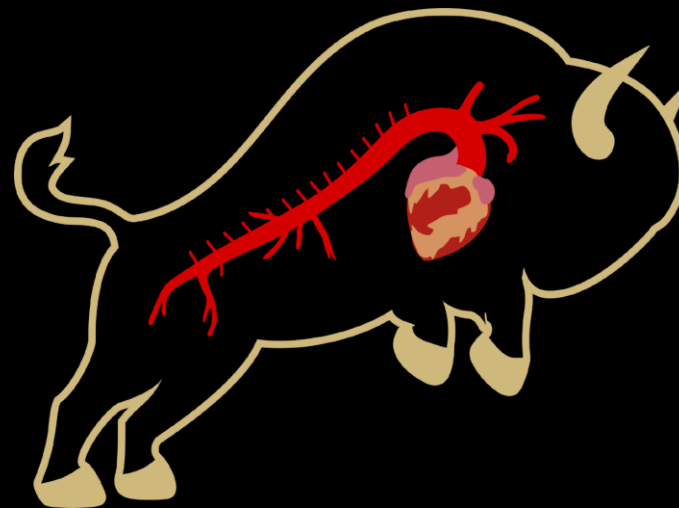
A stylized anatomical illustration of the heart and aorta. The heart is shown in shades of red and purple, with the aorta extending downwards. A red stent is depicted as a series of vertical lines along the length of the aorta. The background is dark with light-colored, abstract outlines of the heart and aorta.

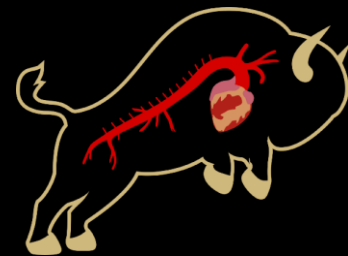
Development and Management of Aortic Pseudoaneurysm after Stenting for Aortic Coarctation

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No disclosures

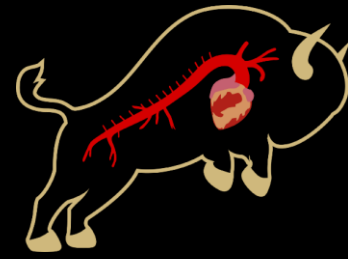




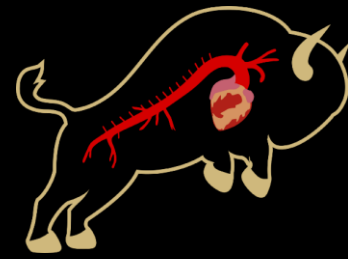
Introduction

- Severe coarctation of the aorta can be challenging to treat, frequently requiring re-operation causing further increased risk
- Intravascular stent graft therapy is a well-established therapeutic option, however, proper positioning and shape of the graft is critical
- Angulation of stent graft may lead to disruptions in laminar flow, potentially resulting in aortic pathology

Aim

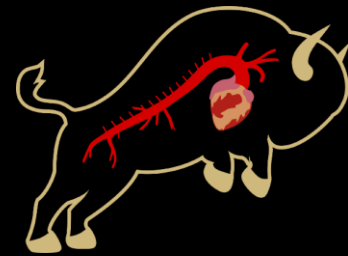


To describe the case of a pediatric patient who likely developed a pseudoaneurysm, requiring re-operation, due to the angulation created by the initial stent graft



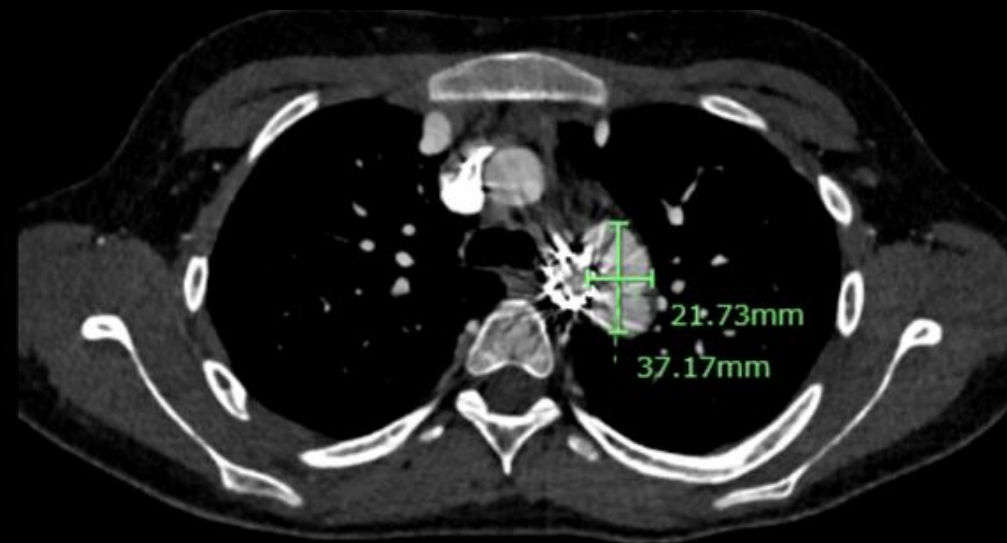
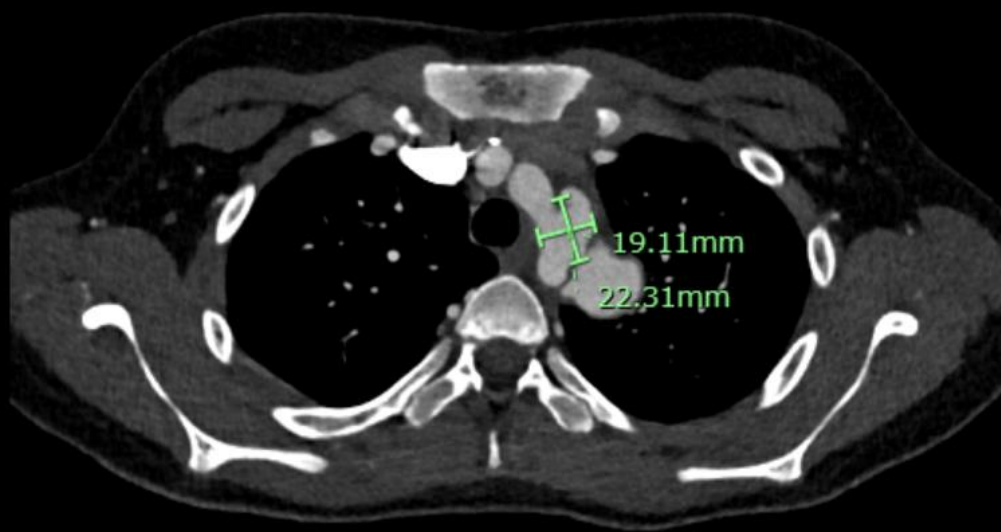
Methods

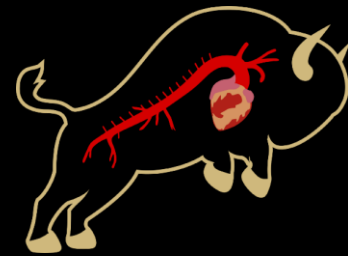
- We discuss the case of a 14-year-old male who was found to have a near complete interruption of his aorta at the site of a coarctation involving the distal transverse arch and descending thoracic aorta
- Patient had previously had a stent graft placed across this interruption, but the placement of the graft created an angulation with the patient's distal arch
- The patient developed bacteremia and was found to have developed a multi-lobular pseudoaneurysm proximal to the previously placed stent graft



Pre-operative Imaging

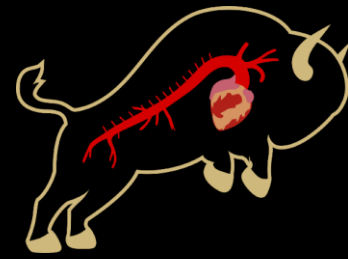
- Pre-operative imaging demonstrated a multi-lobular pseudoaneurysm proximal to the stent
- Portion between the take-off of the left carotid and left subclavian arteries measures 19 x 22 x 20 cm
- Portion lateral to the proximal stent measures 37 x 21 x 26mm





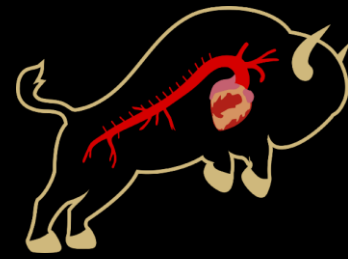
Operative Course

- Graft may have caused erosion into the aorta or due to the angulation created between the graft and the patient's distal arch leading to stasis of blood flow
 - Likely due to stent graft not being congruent with the patient's coarctation anatomy
- Taken to OR for resection
 - Noted to have severe peri-graft inflammation involving vagus nerve and the recurrent laryngeal nerve
 - Inflammatory and pseudoaneurysm tissue were resected, stent graft removed
 - An 18mm antibiotic-soaked dacron graft, was then sized and inserted



Operative Course

- An anastomosis of this graft was carried out to the proximal aorta with a small incision created up onto the left carotid artery to enlarge the anastomosis to treat the hypoplastic transverse arch
 - Goal to create less angulation with transverse arch, reducing potential for static flow
- Post-procedure echo demonstrated a mildly increased velocity of 2.1 m/s at anastomosis, proximal to the left common carotid, with otherwise normal aortic flow pattern and normal left ventricular systolic function
- The patient's post-operative course was otherwise uncomplicated, and the patient was discharged with oral antibiotics on hospital day 12 at baseline neurologic status



Conclusions

- For patients with distal aortic arch coarctation, consideration of aortic shape and angulation is critical in treatment, given the potential for disruptions in laminar flow
- Although managed successfully in this case, therapies such as thoracic branched endografts or more novel technologies suited for the transition from the arch to the descending aorta, should be considered
- These therapies may provide more coverage and create a better landing zone, thus reducing angulation and optimizing blood flow

Questions?

