

Selecting the Appropriate Approach for Ascending Aortic Pseudoaneurysms

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Purpose

To examine two cases of ascending aortic pseudoaneurysms that illustrate the benefits of selecting between open and endovascular management.

Materials and Methods

Patient 1: 80 yo M with the history of a prior sternotomy in 1991, and a mini mitral valve repair in 2004.

- Since MVR, developed a large ascending aortic pseudoaneurysm, measuring 6.2 cm in total diameter. Thought to be arising from a prior root vent site.

Patient 2: 52 yo M w/ PMHx of Loeys-Dietz syndrome.

- S/p mechanical root and hemiarch in 2002 for type A dissection, redo ascending and total arch reconstruction with elephant trunk in 2006, and open extent 1 TAAA repair in 2007.
- In 2020 identified to have an ascending aortic pseudoaneurysm. Unknown source with continued enlargement.

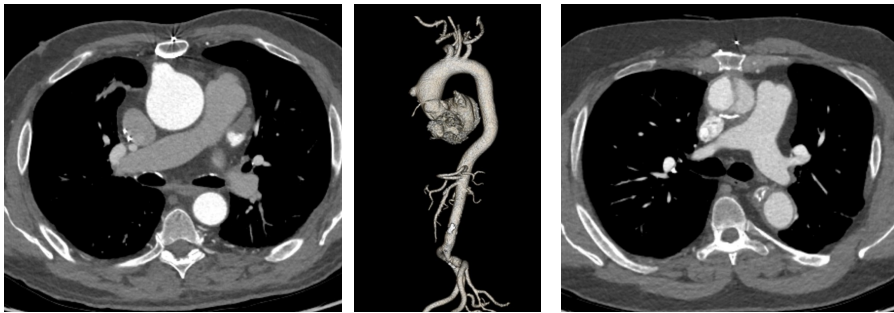


Figure 1: (A) CT scan of patient 1's pseudoaneurysm. (B) 3D reconstruction of patient 1's aortic PSA. (C) Axial CT of patient 2's PSA.

Results

Patient 1: Underwent placement of 49 mm and 53 mm ascending aortic stents as a participant in the ARISE II trial. His pseudoaneurysm was successfully excluded with these stents, and there was no leak angiographically. He was extubated on the table and taken to recovery.

Patient 2: Underwent an axillary cutdown for initiation prior to redo sternotomy. The pseudoaneurysm was encountered, and identified to be originating from the left main coronary button, which had avulsed off of the root. He underwent a challenging redo root replacement, and recovered well. He was discharged home in good condition on postoperative day 8.

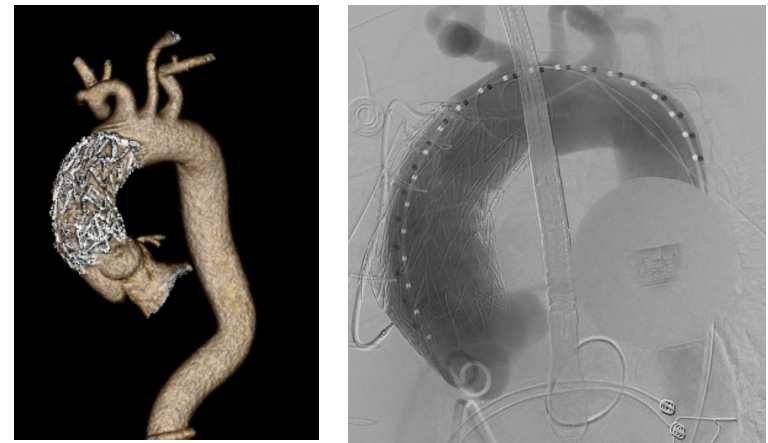


Figure 2: 3D reconstruction and aortic angiogram of patient 1's ascending aorta after stent placement.

Conclusions

- Ascending aortic pseudoaneurysm after prior cardiac surgery can present in many different ways.
- With current available technologies, there are certain cases that are more suited to endovascular treatment, and others that require open re-exploration.
- The key factors to consider include the anatomical location of the lesion, the source of the pseudoaneurysm, and the patient's overall medical condition and frailty.
- Careful clinical judgement and consideration is required to identify the optimal treatment strategy for each individual patient.