

Hybrid repair of an infected ascending aortic arch pseudoaneurysm in a patient with Takayasu Arteritis

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INTRODUCTION

- Re-operative aortic arch pathology in patients with Takayasu arteritis presents significant technical challenges and carries substantial operative risk
- This is particularly true in infected fields.
- We present a case of successful staged hybrid repair of a contained aortic arch pseudoaneurysm rupture using coil embolization, cervical debranching, thoracic branch endovascular repair, and long-term antibiotic suppression.

PATIENT PRESENTATION

- Prior History:
 - 48 year old female with history of Takayasu arteritis who previously underwent multiple prior thoracic aortic operations- ascending and total arch replacement with elephant trunk reconstruction
 - Chronic immunosuppression secondary to steroid use for arteritis
- Presentation (May 2026):
 - Chest pain, palpitations, MRSA bacteremia
 - Imaging with findings concerning for persistent flow to previously coiled arch pseudoaneurysm with contained rupture
- Not a surgical candidate for open repair

IMAGING

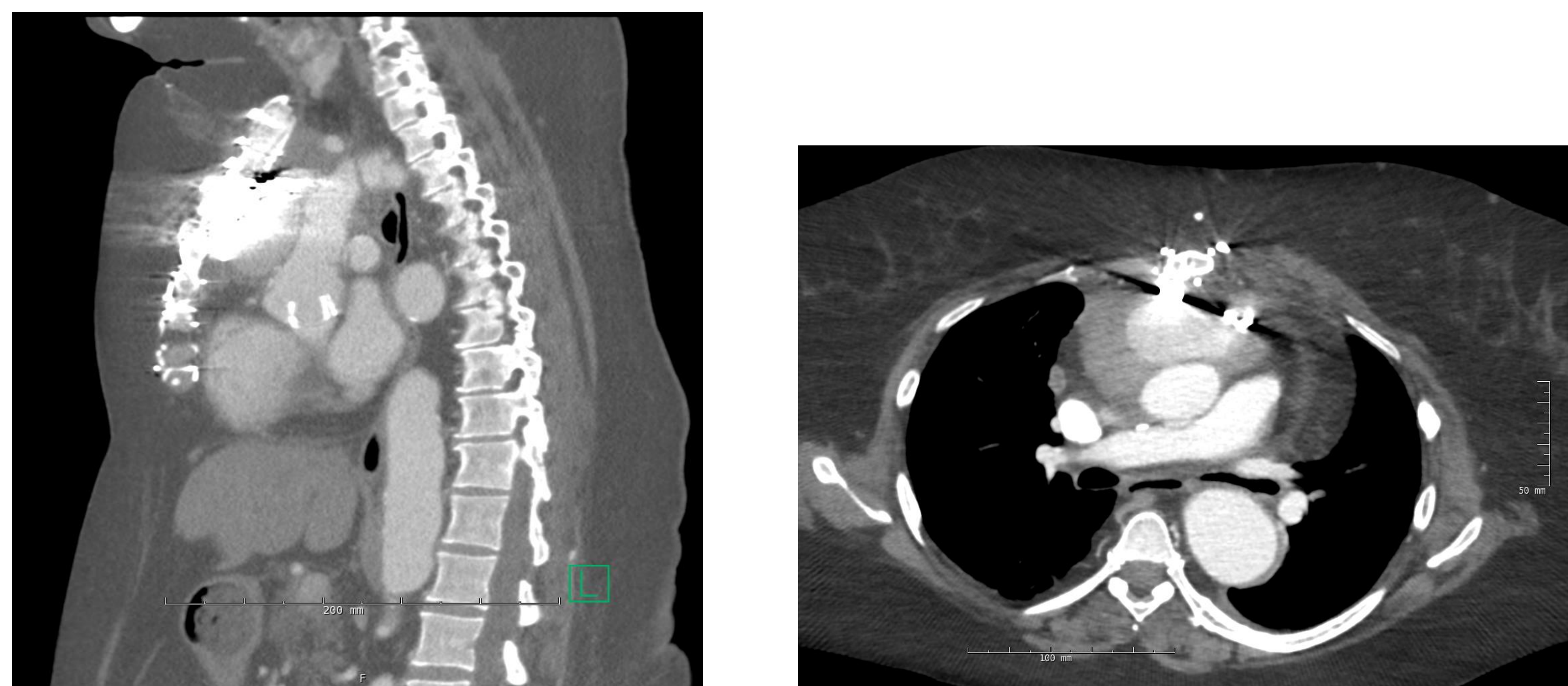


Figure 1. CTA imaging of previously coiled pseudoaneurysm demonstrating persistent flow.



Figure 2. a) Intraoperative angiography demonstrating patent cervical debranching bypass b) Completion angiography following Zone 0 TBE with innominate stent placement

RELEVANT SURGICAL HISTORY

- Ascending arch replacement, CABG x 1 SVG to RCA (2006)
- Re-do sternotomy, total arch replacement with debranching, elephant trunk, aortic valve replacement (07/2023)
- Coil embolization of arch anastomotic pseudoaneurysm (09/2025)
- Carotid-carotid, carotid-subclavian bypass (05/2026)
- Zone 0 TBE, L CCA stent placement, coil embolization of R innominate bypass (05/2026)

RESULTS

- Hybrid repair was completed with successful exclusion of pseudoaneurysm while maintaining perfusion to supra-aortic vessels without evidence of a type I or type III endoleaks
- The patient recovered uneventfully
- Discharged on long term antibiotics and longitudinal imaging surveillance

CONCLUSION

- Staged hybrid cervical debranching combined with TBE repair is an effective salvage strategy for complex re-operative aortic arch pathology
- Highlights importance of expanding role of endovascular in combination with open surgery