## Physician - Aortic (Thoracic) Pathologies and Surgery/Endovascular Interventions

### [MEP-15]

### Arch Replacement in An Elderly Patient With Multiple Comorbidities

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Herein, we presented a case of an extensive aortic arch aneurysm in an elderly patient with significant comorbidities. A 76-year-old male with a history of inguinal hernia, chronic atrial fibrillation, and a stenotic coronary stent presented with an 8-cm ascending aorta and arch aneurysm. The patient also had a single culprit lesion in the left anterior descending artery. Computed tomography revealed the ascending aneurysm starting from the sinotubular junction (STJ) and extending to the proximal descending aorta, with a localized dissection near the subclavian artery origin. The right subclavian artery was used for arterial cannulation and unilateral anterior cerebral perfusion (ACP). After a median sternotomy, the ascending aorta appeared significantly dilated, starting at the STJ, and leaving no room for the inner curvature, making it challenging to apply a clamp. Consequently, the patient was cooled to 20°C, and ACP was initiated via the innominate artery. A 26-mm straight graft was used for the extended hemiarch replacement. After 35 min of ACP and lower body ischemia, the graft was clamped, ACP was stopped, and rewarming commenced, proximal anastomosis was done at the STJ. The saphenous vein graft was then anastomosed to the left anterior descending artery. The patient had an uneventful recovery without any neurological deficit. The one-year computed tomography scan showed a durable repair. Aortic arch aneurysms present a surgical challenge. Unilateral ACP results in excellent neurological outcomes. In this case, debranching technique was not feasible due to the insufficient length of the proximal aorta. Consequently, extended hemiarch was preferred over total arch with or without frozen elephant trunk, for a shorter ACP and lower body ischemia time. Conventional surgery remains the gold standard for arch aneurysms, even in elderly patients with comorbidities.

**Keywords:** Aneurysm, aorta, aortic arch, aortic surgery, hemiarch replacement.

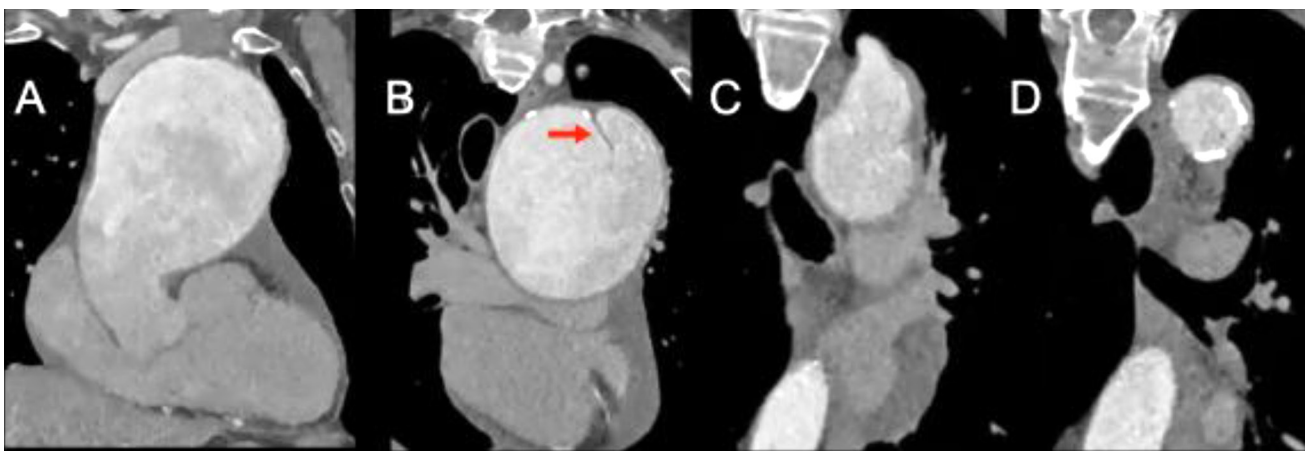


**Figure 1.** Computed tomography showing the ascending aneurysm (A) starting from the sinotubular junction, extending to the proximal descending aorta (B-D), with a localized dissection near the subclavian artery origin (arrow).

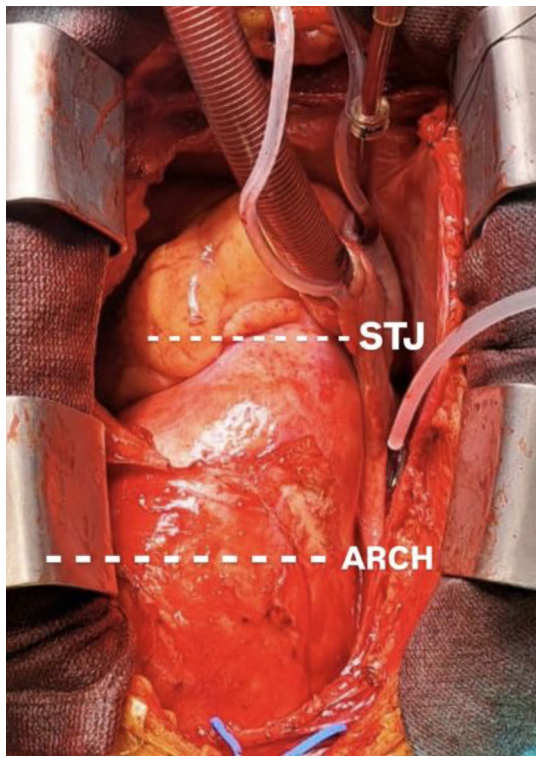


**Figure 2.** Significantly dilated ascending aorta starting from the sinotubular junction.

## References

1. Poon SS, Theologou T, Harrington D, Kuduvalli M, Oo A, Field M. Hemiarch versus total aortic arch replacement in acute type A dissection: A systematic review and meta-analysis. Ann Cardiothorac Surg 2016;5:156-73. doi: 10.21037/acs.2016.05.06.
2. Bashir M, Jubouri M, Surkhi AO, Sadeghipour P, Pouraliakbar H, Rabiee P, et al. Aortic arch debranching and Thoracic Endovascular Aortic Repair (TEVAR) for Type B aortic dissection. Ann Vasc Surg 2024;99:320-31. doi: 10.1016/j.avsg.2023.08.037.
3. Tian DH, Ha H, Joshi Y, Yan TD. Long-term outcomes of the frozen elephant trunk procedure: A systematic review. Ann Cardiothorac Surg 2020;9:144-51. doi: 10.21037/acs.2020.03.08.