

Total Percutaneous Aortic Arch Repair Using a Surgeon-Modified Fenestrated Endograft for an 8.3cm Aneurysm in a High-Risk Patient

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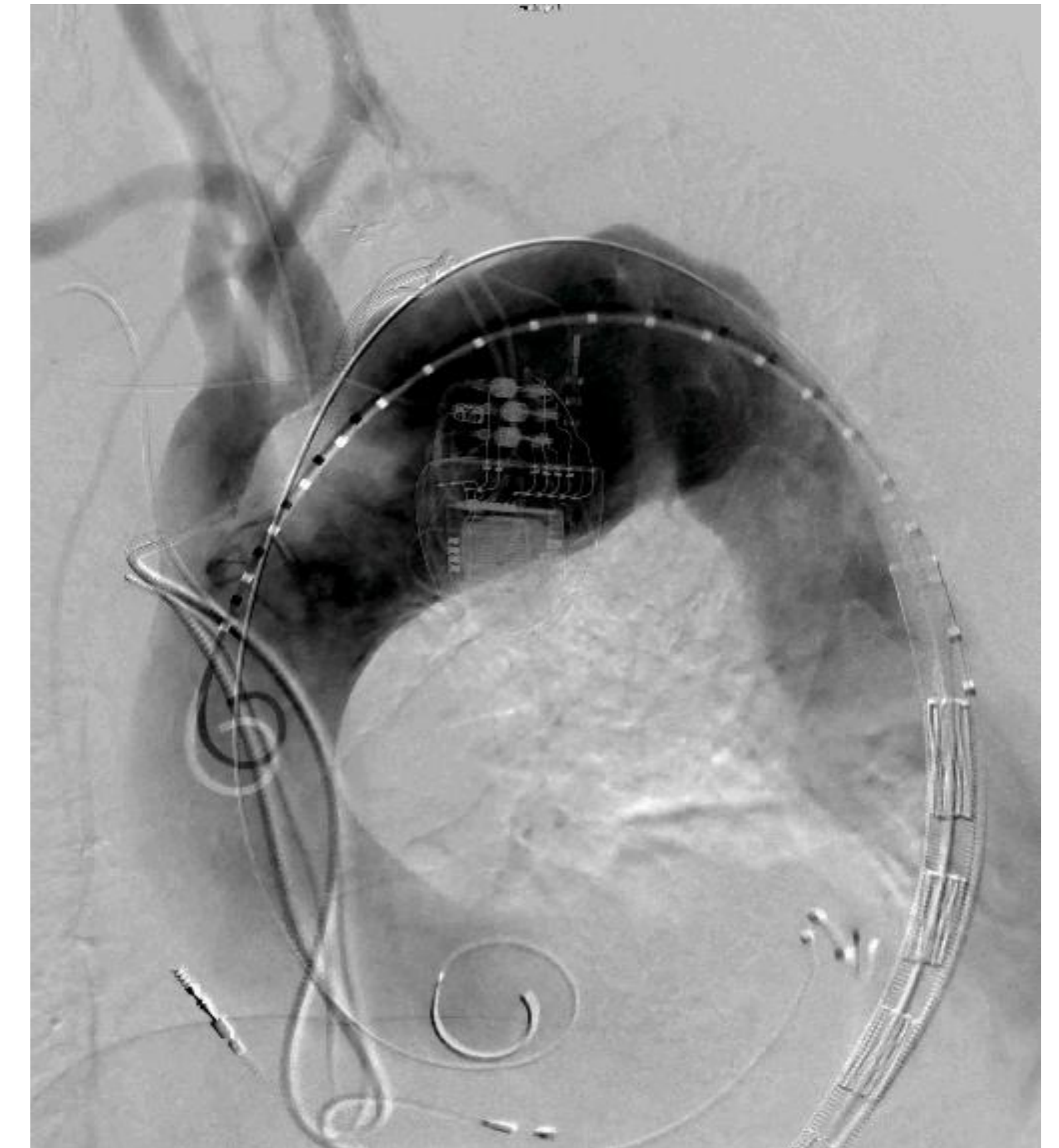
Patient Presentation

- 89 YOF with a PMH of AV block (s/p pacemaker), A-fib on anticoagulation, CHF, stage IV CKD, and a known 6 cm arch aneurysm presenting with worsening hoarseness and L shoulder pain
- CT revealed aneurysmal growth to 8.3cm
- Patient was unfit for open repair or standard Zone 2 TEVAR.
- Palliative care discussed, but patient opted for intervention
 - Commercial endograft options required adequate landing zones outside of zone 2, which were not present in this case.
 - Off-label physician-modified endograft was offered on a compassionate use basis.

Surgical Planning

Surgery was performed in a staged manner:

1. Staged L carotid–subclavian bypass performed.
2. Graft fenestrated for the innominate and L CCA.
3. Cook Zenith Alpha thoracic endograft placed via femoral access. Followed by branch stents.
4. Proximal L subclavian artery embolized.
5. Endograft relined and ballooned.



Post-op

- Postoperative imaging shows successful exclusion of the aneurysm.
- She was discharged to a skilled nursing facility on postoperative day 13 after blood pressure optimization and rehabilitation support.

Discussion & Key Takeaways

- **Poor candidate for open repair** → required intervention for rapidly expanding arch aneurysm
- **No commercial device available** → surgeon-modified endograft provided a safe, total percutaneous solution in our patient
- **Future relevance** → underscores urgent need for wider branched/fenestrated device availability and innovation
- **Key message** → In no-option patients, PMEGs bridge the gap between palliation and definitive therapy