Contained Giant Abdominal Aortic Aneurysm Rupture Secondary to Type I and III Endoleaks Requiring Open Repair with Endograft Explantation

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Background

- EVAR is a feasible minimally invasive method to treat AAA
- Endoleaks are a the most common complication, found in approximately 25% of individuals
- Endoleaks type I and III require urgent repair

Purpose

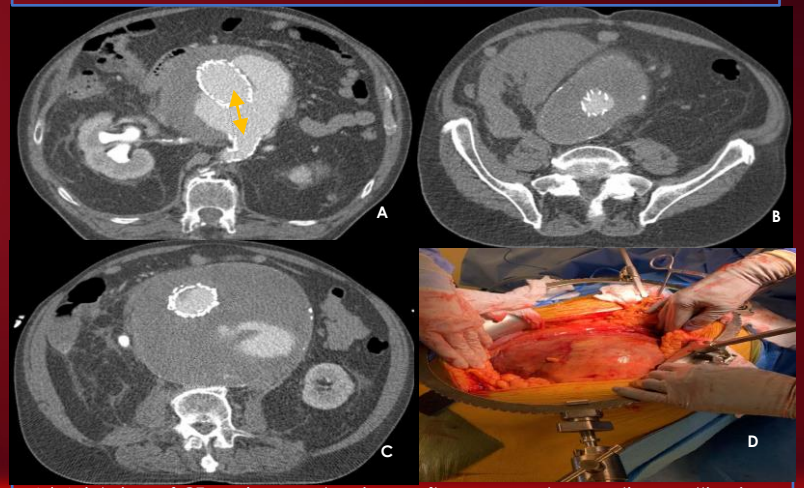
- Case presentation of a patient with a recurrent EL1a and EL3a after failed endovascular treatment

Patient Information

- 68-year-old male with a pertinent medical history of infrarenal AAA repaired by EVAR in 2009
- Presented in 2019 with Type Ia endoleak requiring coverage with thoracic endograft
- Re-presented in 2020 with Type IIIa and Type Ib endoleak requiring coverage with thoracic endograft, deployment of distal iliac extension limb, and coil embolization of the internal iliac artery

HPI & Treatment Course

- Presented with abdominal and back pain of 1 week duration
- CTA with retroperitoneal hematoma and concern for contained rupture
- Vascular surgery consulted, urgent operative intervention:
  - Explantation of previous abdominal aortic endograft
  - Repair of AAA with bifurcated Dacron graft



A.) Axial view of CT angiogram showing graft component separation resulting in EL3a B.) Axial view of CT notable for hematoma formation secondary to aneurysmal rupture C.) Axial view of CT angiogram showing aneurysm sac measuring 17.5 cm D.) Open exposure after supraceliac access during graft explantation revealing 18 cm aneurysm

Outcomes

- Uneventful hospital recovery
- Most recent follow-up March 2022

Discussion

- Post-operative surveillance with duplex US vs CTA is imperative
- Endoleaks increase the risk of AAA rupture after treatment
- Endovascular re-intervention increases risk of rupture and conversion to open

References

1. Naughton PA, Garcia-Toca M, Rodriguez HE, et al. Endovascular treatment of delayed type 1 and 3 endoleaks. *Cardiovascular and Interventional Radiology*. 2011;34(4):751-757. doi:10.1007/s00270-010-0020-y
2. Maleux G, Poorteman L, Laenen A, et al. Incidence, etiology, and management of type III endoleak after endovascular aortic repair. *Journal of Vascular Surgery*. 2017;66(4):1056-1064. doi:10.1016/j.jvs.2017.01.056
3. Stoecker JB, Glaser JD. Review of Type III Endoleaks. *Seminars in Interventional Radiology*. 2020;37(04):371-376. doi:10.1055/s-0040-1715874
4. Ameli-Renani S, Pavlidis V, Morgan RA. Secondary Endoleak Management Following TEVAR and EVAR. *Cardiovascular and Interventional Radiology*. 2020;43(12):1839-1854. doi:10.1007/s00270-020-02572-9