Uncommon causes leading to conversion after EVAR


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Disclosure

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I have the following potential conflicts of interest to report:
☐ Travel expenses for congress (Medtronic)
Introduction

• Excellent results of EVAR for infra-renal AAA are primarily achieved in patients with favourable anatomy.

• We report two patients who initially seemed optimal for EVAR but eventually needed conversion and explantation of endograft.
Case 1

- 68-year-old male
- acute bilateral lower limb ischemia

The patient reported not adequately controlled arterial hypertension (>170mmHg) the last few days.

- 26 days ago: EVAR (Gore Excluder)

CT angiography: 1. collapse of the endograft 2. Expansion of the aneurysm (from 5.3cm to 5.5cm)
Treatment

Emergent explantation of the endograft and repair with tube (18mm) Dacron graft.
Collapse of an abdominal endograft in less than 30 days?
All minimal requirements for commercially available endografts were met.
what went wrong?

1. Migration? 
   \(\rightarrow\) endoleak 1a \(\rightarrow\) folding \(\rightarrow\) collapse

2. Bird-beaking? 

3. Inadequately controlled arterial hypertension?
Case 2

- 67-year-old male
- bilateral lower extremity rest pain
- Clinical examination: pulseless lower extremities

Medical history: BMI>30, DM, alcoholism

- 11 months ago: EVAR (Vascutek Anaconda)

- CT angiography revealed thrombosis of the entire endograft
Treatment

Urgent endograft explantation and aortobifemoral bypass (Dacron 18x9mm).
Why it’s so peculiar?

• Limb occlusion 3–7.5%

• Bilateral limb occlusion 0.6–1.4%

• Thrombosis of the entire endograft just below renal arteries?
30mm
R 1217x130mm
LT 1219x130mm

evar
Follow up

- First month: ok
- Three months: claudication of right extremity on 300m
  → duplex scan: stenosed right SFA ~ 50%
- Six months: Claudication of left lower extremity
  → CT scan: Patency of endograft, intraprosthetic mural thrombus, type II endoleak
- Nine months: Worsening of symptoms
  → Dual antiplatelet therapy
- 11 months: bilateral lower extremity rest pain
  → CT angio: total occlusion of the endograft

Preoperatively: palpable arteries on both extremities, no claudication
what went wrong?

- Iliac artery angulation >60°
- Calcification >50%
- Endograft limb oversizing >15%
- Extension to external iliac artery

- Hypercoagulability
- BMI

No obvious mechanical or technical reason was identified.

Blood clotting disorders (including tumor marker tests) were ruled out.
Intraprosthetic mural thrombus (IPT)

- Incidence ~33% of EVAR cases
- Perini et al (2018) suggested that IPT is not significantly associated with thromboembolic events (endograft thrombosis or distal embolization)
Conclusion

- Although they are gradually declining, complications after EVAR (even in optimal cases) create the “Achilles heel” of endovascular therapy.

- Comorbidities may contribute with an insidious and underestimated way.
References


Thank you!