



Paris Vascular
Insights Course

Complete fracture of abdominal aortic endograft

Arnaud Kerzmann, MD^{1,2}, L. Bouffioux²,

E. Boesmans¹, V. Tchana-Sato¹

¹Cardiovascular and Thoracic Surgery Department



²Vascular and Thoracic Surgery Department

CHR East Belgium Verviers

Belgium

12-14 December 2024

Carrousel du Louvre,

Paris

#PVI24

Statement of financial interest

I currently have, or have had over the last two years, an affiliation or financial interests or interests of any order with a company or I receive compensation or fees or research grants with a commercial company :

- Consultant

Boston Scientific, BD, Artivion

- Grant support

Medicor, iVascular, Medtronic, Biotronik, DMB Medical

Introduction

- Incidence of overall type III endoleak has been reported in the range of 1,5% to 1.9%.¹
- Incidence of type III endoleaks has probably decreased with endografts improvements.
- Type IIIa endoleaks correspond to component disconnection, type IIIb to fabric perforation.
- We report one case about complete fracture of abdominal aortic endograft, leading to type IIIb and type Ia endoleaks.

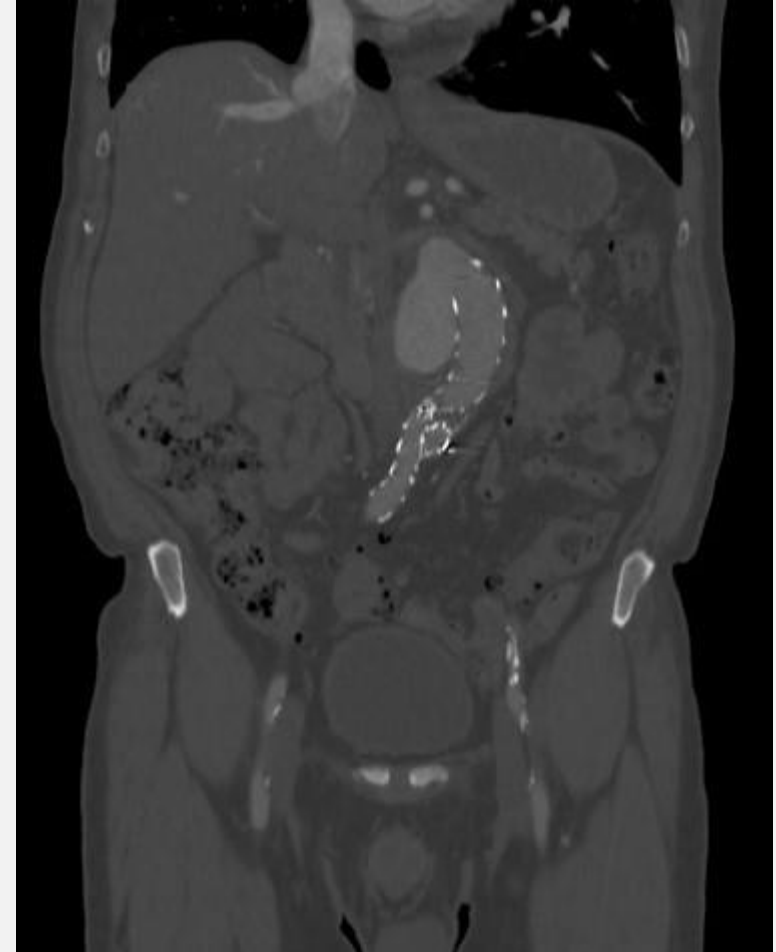
¹ Corriere M, Feurer I, Becker S, Dattilo J, Passman M, Guzman R, et al. Endoleak following endovascular abdominal aortic aneurysm repair: implications for duration of screening. Ann Surg 2004;239:800-7.

Case report

- 70-year-old man
- Past-history :
 - permanent atrial fibrillation
 - COPD Gold 3
 - smoking cessation 8 years ago
 - type 2 diabetes
 - arterial hypertension
 - dyslipidemia

Case report

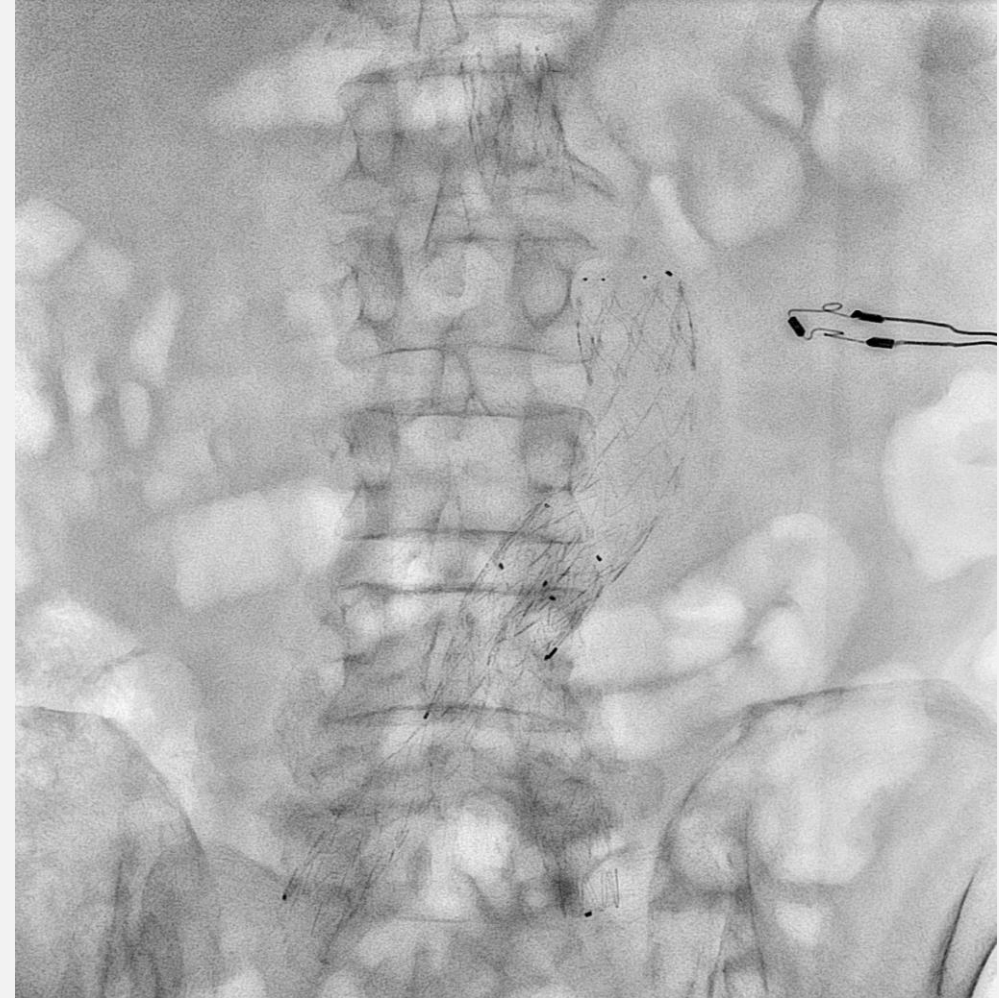
- Elective EVAR performed 6 years ago for infrarenal AAA
- Bifurcated endograft with suprarenal fixation
- No complication
- Computed tomography angiography (CTA) once per year, every year
- After 6 years follow up : complete fracture of the main body between the uncovered suprarenal fixation stent and the covered part, sac enlargement of 7 mm
- No complaint



Case report : CTA

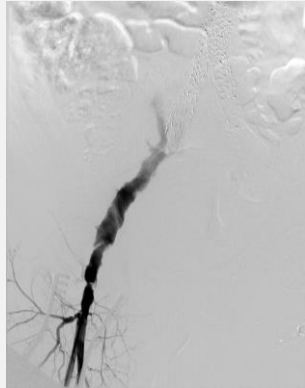


Case report : CTA and fluoroscopy

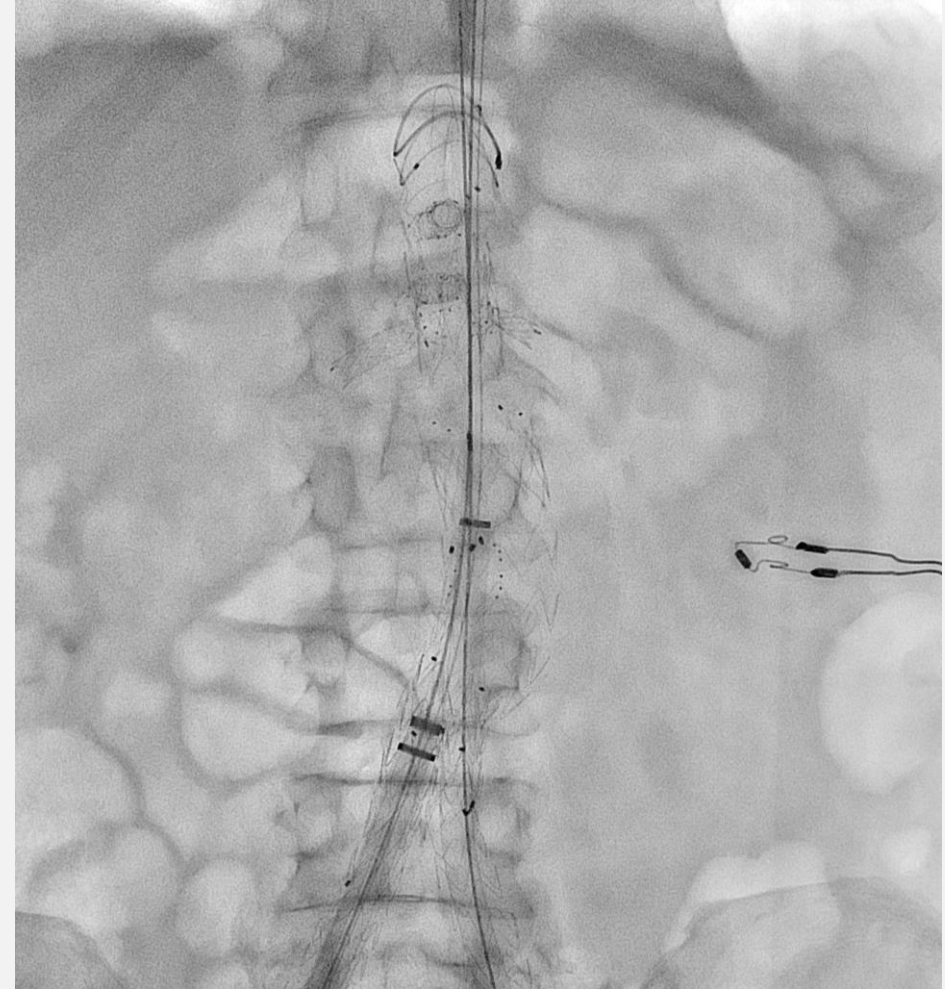


Case report

- Relining with 4 fenestrated FEVAR
- At the end of the procedure, rupture of the right external iliac artery, requiring covered stents

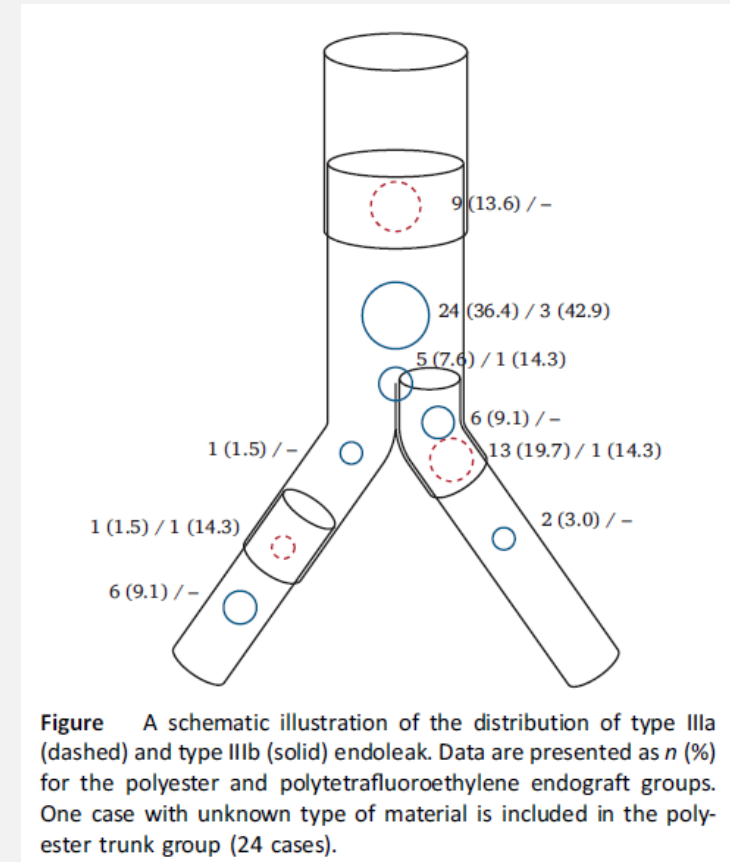


- After 2 years follow up, no endoleak or sac enlargement, right buttock claudication



Discussion

- The etiology of type IIIb endoleak may be multifactorial.²
- In our case, fracture mechanism could not be clarified. Broken suture line?
- Diagnosis of type IIIb endoleak can be challenging.²
- Type III endoleak may occur at different levels of the endograft.³
- Treatment is endovascular only in 61,3% to 84,6% for elective repair and 13,3% to 50% for ruptured cases.^{2,3}



² Kwon J, Dimuzio P, Salvatore D, Abai B. Incidence of stent graft failure from type IIIB endoleak in contemporary endovascular abdominal aortic aneurysm repair. J Vasc Surg. 2020;71(2):645-653.

³ Grandhomme J, Vakhitov D, Kuntz S, Lejay A, Chakfé N. What we know from reports on type III endoleak in the literature. EJVES Vasc Forum 2024;61:81-84.

Conclusion

- Type IIIb endoleak following device tear may appear at **different levels** of the endograft.
- It can occur **late**, justifying long term **follow up** with CTA, duplex scan or contrast enhanced ultrasound.
- Most of type III (a and b) endoleaks can be managed with **endovascular** repair.