Treatment Of A Type 3b Endoleak With Off-Label Use Of A Device Used In Structural Heart Disease

Jos C. van den Berg, MD PhD
Ospedale Regionale di Lugano, sede Civico, Lugano
University of Bern
Switzerland

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Conflict of interest
• No disclosures

Type 3 endoleak-definition
• Type 3a
  – Disconnection of modular components
• Type 3b
  – Fabric tear/defect
  – Graft disintegration

Type 3 endoleak-incidence
• Incidence lower with newer devices
• Has been described with almost all commercially available devices
• Occurrence 0.9%-2.7%

Type 3 endoleak-diagnosis
• Cumbersome
• Oftentimes confused with type 1 or type 2 (that may be concomitant)

Type 3b endoleak-causes
• Stent fracture
• Suture breakage (without stent fracture) with excessive abrasion
• After implantation of BMS/vascular plug (hypogastric artery)
• Manufacturing issue
Type 3b endoleak-causes

Wanhainen A et al JVS 2008;48:723-726

McWilliams RG A et al JET 2016;23:229-232

Type 3b endoleak treatment

• Relining (may be challenging, especially when close to flow divider)
  – Aortic cuff or iliac limb
  – Complete relining
    • Bifurcated graft
    • AUI
    • EVAS (off-label)
• Sealing fabric tear
  – Vascular plug/septal occluder
  – ‘pledget’ (open surgery)
• Conversion

Type 3b endoleak-relining (bifurcated)

Teutelink A et al JVS 2003;38:843-846

Type 3b endoleak-relining (AUI)

Duvnjak S Int J Angiol 2016;25:e111-e114

Type 3b endoleak-relining (EVAS)

van den Ham LH et al JET 2016;23:29-32
Type 3b endoleak-pledget

Case presentation

- 78-year old male
- EVAR October 2009 (Endurant)
- CT March 2016
  - Growing aneurysm
  - Endoleak type 1a

CT March 2016

CT March 2016

Extension cuff April 2016

Duplex April 2016
CT April 2016

Angiography

4F diagnostic catheter

Sizing plug

Placement plug

Main use: para-valvular leak

4F long sheath (in 6 F access sheath)

Placement plug

Placement plug

Deployment distal segment

Deployment proximal segment, and ‘testing’
**Placement plug**

**Type 3b endoleak-plug**

**CT July 2017**

**CT July 2017/2018**

**Type 3b endoleak-septal occluder**

**Conclusions**

- The diagnosis of type 3b endoleak can be difficult
- Various endovascular treatment options exist (relining and embolization with plug-like devices)
- Occurrence of late type 3b endoleaks underscores need for continuous surveillance after EVAR

McWilliams RG et al. JET 2017;24:262-264