Stent-Graft Induced New Entry Tears (SINETs) Are Common Proximally And Distally After TEVAR For TBADs – Especially With Connective Tissue Disease: Cook Has A New Dissection Specific Endograft To Decrease These SINETs: How Does It Work?

Anders Wanhainen
Professor of Surgery
Chief dep. of Vascular Surgery
Uppsala University Hospital
Sweden

Disclosure

- I have no financial disclosures to make
- We worked in collaboration with COOK engineers to develop this graft

Distal Stent-graft Induced New Entry (d-SINE) a stress induced injury

- Incidence: 7 - 58%
- Chronic (vs acute)
- Marfan patients
- Short SG (<150 mm)
- Distal oversizing
- Non-tapered


Limitations of Current TEVAR stent-grafts

- No proximal barbs
- Long (>23 cm)
- Substantial taper (usually 38 – 28)
- Two distal stents with reduced radial force
- Final stent removed “endovascular elephant trunk”

Modified Cook alpha dissection-specific SG CMD – not commercially available

- No proximal barbs
- Long (>23 cm)
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- Final stent removed “endovascular elephant trunk”
W 51 y/o Marfan syndrome post type-A dissection with proximal descending aortic aneurysm

Arch branch device + Uppsala dissection-specific SG

W 52 y/o post type-A dissection hybrid repair
5 years later d-SINE with expansion of descending aorta

Distal extension with Uppsala dissection-specific SG
cover the d-SINE + prevent future traumatic injuries

The Uppsala experience
since January 2017

- 14 patients with chronic dissection
- 9 men / 5 women
- Median age 69 (range 45-79)
- 5/14 CTD (2 Loey Dietz, 3 Marfans)
- 4 d-SINE after previous FET or TEVAR
- 3 previous A-repair with distal disease progression
- 7 no previous aortic intervention
The Uppsala experience
since January 2017

- Median follow up 16 months (range 3-21):
- Incidence of d-SINE – none
- Un-planned Re-intervention - none
- Re-modelling:
  - 11 completed treatment:
    - Aortic diameter: stable 6 / reduced 5
  - 2 awaiting further planned treatment stage:
    - Aortic diameter stable
  - 1 non aneurysm related death (trauma)

Conclusion

- d-SINE is a common and dangerous complication of standard TEVAR
- d-SINE is a stress induced injury with distal oversizing as the most important risk factor
- Dissection-specific SG:
  - Substantial taper
  - Minimal radial force
- Uppsala SG:
  - Limited single-center experience
  - Longer follow-up and multicenter expansion