Update On False Lumen Occlusion Techniques And Value After TEVAR For TBADs: New Devices; When Indicated; Results And When Preferred Over F/B/EVAR In Patients With AAAs

Disclosures

- Research-grants, travelling, procuring, speaking fees, IP, royalties with Cook.
- Consultant with Philips.
- Consulting, speaking fees with Getinge.
- Shareholder Mokita Medical GmbH.
- IP, Consultant with Terumo Aortic.
- Medical Devices shown are partially not approved by FDA.

Failure to Remodel in Chronic Dissection

- Perfusion and pressure unchanged in false lumen.
- Presence of intercostals originating from false lumen.
- False lumen back flow to intercostals.
- FL-TAA in 1/3 of TEVAR patients.

Roselli et al. 2011, Ann Thorac Surg 92: 2078-84

Liu et al. 2007; J Thorac Cardiovasc Surg 155:21-29

Distal Seal in chron. Dissection

Candyplug

Candyplug

Coils, Plugs, Glue
False Lumen Occlusion Techniques

Candy-Plug

Knickerbocker

February 2016

July 2016

Cook Candyplug

CMD Candyplug I 2013

CMD Candyplug II 2017

CMD Candyplug III 2019

Candy-Plug in Hamburg

2013-2016: N=41

Technical success: 41/41

No procedural complication

SCI: 1/41 (2.4%)

30d mortality: 1/41 (2.4%)

1 death at Smooths

Reinterventions for continuous perfusion: 5/41 (12%)

Unpublished data

Candy-Plug

Candy-Plug I

Rohlffs et al. 2017; J Endovasc Ther 24:549-55

Candy-Plug in Hamburg

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Double Candy Plug

63y-old male

Chronic TBA: 10y BMT

Sudden onset of thoracic pain

LSA-Bypass + TEVAR

6.5cm -> 7cm -> 9cm

TEVAR extension + postCandy Plug x 2

Courtesy of Andrew Unzeitig, Atlanta
Double Candy Plug

- Courtesy of Andrew Unzeitig, Atlanta

Pre-TEVAR

- 6m Post-Candy Plug

Pre-Candy Plug

Other Candyplugs

- Medtronic sm-Candyplug
- Gore sm-Candyplug
- Other Candyplugs
- Courtesy of Prof. I-Hui Wu, National Taiwan University
- Courtesy of Dr. M Youssef, University of Mainz

Medtronic sm-Candyplug

- Gore/Cook sm-Candyplug

Knickerbocker in Hamburg

- 2013-2016; N=15
- Technical success 14/15
- No complications
- No 30d mortality
- No SCI
- 4 reinterventions for continuous perfusion
- Secondary FL-Thrombosis of patients

Arch-Branch & FL-Occlusion

- Chronic TDAAA
- Arch-Branch + Knickerbocker
- Arch-Branch + Candy Plug

Chronic TAAD

- A-Branch + Knickerbocker
- A-Branch + Candy Plug

Role of FL-Occlusion:

- Hamburg 2013-2018:
  - Chronic aortic dissection FL-TAAA: 73
  - TEVAR alone 10
  - False Lumen Occlusion techniques: 55
    - Candy-plug 40
    - Knickerbocker 11
    - Other (plugs, coils, glue) 4
  - Primary F/B EVAR 8
  - Secondary F/B EVAR 20
  - Secondary OAR 3
Chronic Dissection Strategy

- FL-Anneurysm in CAD
- TEVAR to the Celiac
- + FL-Occlusion
- Fen/Branch EVAR

Chronic Dissection Strategy
Chronic Dissection Strategy

FL-Aneurysm in CAD
→ TEVAR to the Celiac
→ FL-Occlusion
→ Fen/branch EVAR
→ FL-Occlusion

Conclusion

- False lumen backflow limits treatment success in chronic TBAD.
- Techniques for false-lumen embolization work:
  - Plugs, coils, glue
  - Candy-plug
  - Knickerbocker-technique
- We need an off-the-shelf device

Welcome to Hamburg!