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New horizon for treatment of the arch pathologies

Initial experience with the Jotec reversed-branched arch device

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Disclosure
Speaker name: Marwan Youssef

I have the following potential conflicts of interest to report:

Dr. Marwan Youssef is speaker and consultant for:
- **Jotec**
- Bolton medical
- Endologix
- Cook
Introduction:

therapeutic options of the aortic arch pathologies

- conventional open repair (with / without FET.)
- Hybrid-approach
- Total endovascular repair
Open surgery of the aortic arch

The gold standards:
- HLM & selective perfusion
- Hypothermia
- Circulatory arrest

Considerable mortality and morbidity rate in high-volume centers and in low risk patients:
9% mortality
4-12% stroke


https://www.klinikum.uni-heidelberg.de/
Hybrid-procedure: Debranching & TEVAR

- Initially introduced to high-risk patients

- Better Outcome?

**Hybrid Vs. OR:**

No Significant Difference:

Stroke & Mortality

- In-hospital mortality: 11.9 VS. 9.5%.
- Stroke rate: 7.6 VS. 06.02%  
  
Total-endo: CMDs fenestrated / branched endografts

- Technology still in development ..
- Few manufacturers / restricted technology!
- The experience is still limited
- Outcome depends on the learning curve


- bTEVAR: 1/14 stroke , No Mortalities
Challenges of endo arch repair

various Pathologies…

various anatomies

- Outer & inner curvature
- Varied origins of the arch vessels
- Dynamic environment:
  - Graft dislocations
  - Migrations
  - Fractures
Challenges of endo arch repair: Morphological criteria

Many Endo candidates: rejected!

Unsuitability: Ca. 30% after type A-repair

“Graft too short or too large, major graft kink.”
Concept of novel arch device: reversed inner branch technique

First implantation
Juni 2016 / Mainz

Jotec aortic device with reversed double Branches
Graft design

**Isometric View**
Graft design: inner reversed branch technique
Why reversed not conventional antigrade?

End of the wires supracoronary

Working in Z0

Working in Z2/3

Working transfemorally

VS.
the branched graft can be positioned with rotation of 180 degrees distal to LSA, and thus enables liberal implantation into the curved vasculature and increases the technical feasibility for the varied and difficult arch anatomies
Why reversed not conventional antigrade?
length of extension = length of the needed LZ
more liberal Landing
treatment of more morphologies with shorter LZ

You don't have to cross the valve!
Personal series and preliminary outcomes

- 10 Pat: 100% technical success
- No Mortalities
- 2/10 major strokes
- Maximum FU (14 months)
- 2 EL Ia & III in one case, treated using graft extensions
- Ongoing study....
Aortic arch
Thank you for your attention!

http://domcam.bistummainz.de/