DEBATE?

3x-4x FEVAR is the Way to go

Eric Verhoeven, MD, PhD.
Paracelsus Medical University, Nuremberg, Germany

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• William Cook Europe/Cook Inc.
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  – Consulting
• Bentley
  – Consulting

Lay-Out

• Sensible Arguments
  – Aim at best choice for your patient!
  – Take “extension of disease” into consideration!
  – Go for most durable repair possible!
• Practical Examples
• Scientific Evidence
  – Is 3-4xFEVAR associated with a higher M&M?

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Case #1: Failed 2xFEVAR

F372
Partial opening of graft...

Case #2: 4xFEVAR

- 61 YO Male
- AAA 65mm
  - EVAR 4 yrs ago

Plan

- 4x FEVAR
  - Easy CT and SMA
  - Adequate sealing zone
  - Proximal extension still possible

Case #3: 3xFEVAR

- 65 YO Male
- Juxtarenal AAA
  - Dmax: 53 mm
  - Saccular

- Co-morbidity
  - CAD
  - PAD

Proximal Neck

→ Proximal neck length: 0 or 40 mm?
Plan

• 3x FEVAR

CTA @ 5 Yrs

Case #4: 3xFEVAR (wrong choice)

• 71 YO Male
• 2011
  – Juxtarenal AAA
    • Dmax: 54 mm

• Co-morbidity
  – CAD

Proximal Neck

→ Proximal neck length: 4-5mm, conical

Problem: Dilated Thoracic Aorta

→ Dmax above Celiac trunk: 36-37mm...

Plan

• 3x FEVAR
Postop CTA

CTA @ 6 years

Treatment Plan

- Redo F/BEVAR
  - 1x ↓ Branch for CA
  - 3x Fenestrations

Catheterisation via Fenestrations

CTA @ 1 Month

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Comparison of outcomes for double fenestrated endovascular aneurysm repair versus triple or quadruple fenestrated endovascular aneurysm repair in the treatment of complex abdominal aortic aneurysms

- Standard (2x) FEVAR
- Complex (3x-4x) FEVAR

Stent-graft Design

- Standard (2x) FEVAR
  - N=205 (45%)
- Complex (3x-4x) FEVAR
  - N=249 (55%)

Evolution of Stent-graft Design

↑ Use of Complex FEVAR over the years...

Evolution of Sealing Zone

↑ Sealing zone length over the years...

Technical Success

Overall: N=441/454 (97%)

- Standard (2x) FEVAR
  - N=201/205 (98%)
- Complex (3x-4x) FEVAR
  - N=241/249 (97%)

(P=0.6, NS)

30-Day Mortality

Overall: N=3/454 (0.7%)

- Standard (2x) FEVAR
  - N=1/205 (0.5%)
- Complex (3x-4x) FEVAR
  - N=2/249 (0.8%)

(P=0.7, NS)
**Target Vessel Patency**

- **Standard (2x) FEVAR**
  - 99.2 ± 0.4% at 1 year
  - 98.6 ± 0.6% at 3 years

- **Complex (3x-4x) FEVAR**
  - 98.7 ± 0.6% at 1 year
  - 98.0 ± 0.9% at 3 years

$P = 0.48$, NS

**Freedom from Reintervention**

- **Standard (2x) FEVAR**
  - 97.9 ± 1.2% at 1 year
  - 90.5 ± 3.1% at 3 years

- **Complex (3x-4x) FEVAR**
  - 95.4 ± 2.0% at 1 year
  - 90.1 ± 4.2% at 3 years

$P = 0.5$, NS

**Estimated Survival**

- **Standard (2x) FEVAR**
  - 95 ± 1.7% at 1 year
  - 83.4 ± 3.6% at 3 years

- **Complex (3x-4x) FEVAR**
  - 94 ± 2.4% at 1 year
  - 89.4 ± 3.5% at 3 years

$P = 0.96$, NS

**Take Home Message**

- Standard EVAR only in good neck anatomy
- 3xFEVAR has replaced 2xFEVAR
- In dilated thoracic aorta/bulging of suprarenal aorta in sagittal view: 4xFEVAR

**GOAL**

- more durable results
- easier repair in case of extension of disease...