Staged repair in endoTAAA to reduce SCI

- Staging TEVAR implantation
- Staging “Open Branch”
  - Sac perfusion branch
  - Leaving branch open
  - Stent between SG components
  - Don’t connect iliac limb

Staged repair in EndoTAAA

- General:
  - CSF drainage
  - BP management
  - Preserve LSA and HA perfusion
  - Limit limb ischemia
- Since June 2012
  - Staging by only TEVAR first (type II TAAA)
  - B/FEVAR:
    - Spinal cord function monitoring (MEP)
    - Last branch: 15 min balloon occlusion
    - Decision to leave branch open (MEP > 50%)

Can we identify patients at risk?

- MEP monitoring (MEP)
  - Last branch: 15 min balloon occlusion
  - Decision to leave branch open (MEP > 50%)

Disclosures

- Proctor for COOK Medical
MEPS @ Crawford extent 2 endo TAAA repair with multivessel BEVAR

Maastricht Experience

Without MEPs (n=34)
- M/F: 23 / 11
- Age (mean): 73
- TAAA Ø: 70 mm (57-97)
- Proc. Time: 326 min (70-660)
- Contrast: 203 mm (80-450)
- 30 day-mort: 8,8%
- SCI: 5,6%

With MEPs (n=57)
- M/F: 46 / 11
- Age (mean): 70
- TAAA Ø: 71 mm (57-109)
- Proc. Time: 271 min (121-487)
- Contrast: 128 mm (30-300)
- 30 day-mort: 8,8%
- SCI: 12,3%

Maastricht Experience

Without MEPs (n=34)
- 30 day-mort: 8,8%
- SCI: 5,6%
- 24% “Historical” staging
- 0% “TEVAR” staging
- 0% “open branch” staging

With MEPs (n=57)
- 30 day-mort: 8,8%
- SCI: 12,3%
- 35% “Historical” staging
- 9% “TEVAR” staging
- 33% “open branch” staging
- 3% both TEVAR&open branch

Pitfall

- MEPs 100% @ branch test
- 4 branches connected
- Completion angio: endoleak
- Delayed paraparesis
- Cta: thrombosis endoleak

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- General:
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- Since June 2012
  - Staging by only TEVAR first (type II TAAA)
  - B/FEVAR:
    - Spinal cord function monitoring (MEP)
    - Last branch: 15 min balloon occlusion
    - Decision to leave branch open
      - MEP >50%
      - Endoleak on angiography
      - Aneurysms Sac Pressure

With or Without Blocking Backbleeding

Systemic RR: 140/70 mmHg
RR Aneurysm: 80/40 mmHg

SINCE 2 YEARS
Revised Protocol

**Results**
- 28 patients
- 30-day mort: 3.5%
- SCI: 7% (partial reversible): both walking again

64% (18 pts) NO "open branch" staging: 5% (1 pt) SCI
36% (10 pts) "open branch" staging: 10% (1 pt) SCI

**BECAUSE:**
- No (reliable) Branch-Occlusion test (3 pts)
- Sac pressure (1 pt)
- Endoleak (1 pt)
- Sac pressure + endoleak (4 pts)
- MEP decrease + Sac pressure + endoleak (1 pt)

Conclusions

- Aneurysm sac pressure measurements and/or angiography can confirm sac exclusion during MEP measurement.
- Combination of MEPs, sac pressure measurements and angiography
  - 36% "open branch" staging
  - 64% No staging
  - With (overall) 7% SCI, with no permanent paraplegia