Fenestrated and Branched Grafts for Chronic Dissections

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Chronic Dissection

• Definition & Indication for Treatment:
  Post-Dissection Aneurysm
• Extension: Thoraco-abdominal

Post-Dissection TAAA

Specific Anatomical Points of Attention

• Small True Lumen
• Stiff Dissection Flap
• Target Vessels originating from True/False lumen

Post-Dissection TAAA

Specific Planning Problems

• How big to size main graft
• Choice between branches/fenestrations
• Distal landing zone
Experience Nürnberg (N=32)
(Oct 2010 - October 2015)

- 23/32 after previous surgery:
  - Proximal stent-grafting for type B (N=15)
  - Open surgery for type A (N=8)
- Type of Graft:
  - Combination of Fenestrations/Branches (N=15)
  - Fenestrations only (N=16)
  - Branches only (N=1)

Surgical Outcome

- Technical Success (endovascular): N=31 (97%)
  - 1 Assisted (Retrograde renal catheterisation)
- 30-d Mortality: N=2 (6.25%)
  - MOF (N=1)
  - Cardiac (N=1)
- SCI: N=5
  - Paraplegia (N=1), improvement to paraparesis
  - Paraparesis (N=4), complete recovery

Late Results: Target Vessels
F/U: 20 months (1-54 months)

- Target vessel occlusion: N=4 (RRA N=3, CA N=1)
  - 2 Patients asymptomatic (CA, RRA)
  - 1 Iliac-renal Bypass
  - 1 Dialysis (known occlusion of LRA)

Late Results: Target Vessels
F/U: 20 months (1-54 months)

- Endoleak: N=13
  - Type Ib Endoleak Target Vessel (n=5)
    (3x LRA, 1x RRA, 1x LRA&SMA)
  - Type Ib Iliac Endoleak (n=2)
  - Type II Endoleak LRA (n=1)
  - Type II Endoleak (n=5)
Late Results: Reinterventions
F/U: 20 months (1-54 months)

- Reinterventions due to Endoleak
  - Stent graft extension for LRA (n=3)
  - LRA&SMA (n=1)
  - Bridging Stent LRA (n=1)
  - Re-flairing stent for RRA (n=1)
  - IBD bilaterally (n=1)
  - Coil Embolization Type II (n=1)

Type I EL (left renal artery)

Distal landing in dissected CIA
(N=8)

Distal landing in dissected CIA
Complete sealing during F/U: (N=5)

Persisting endoleak @ 9 months

Reintervention: Bilateral IBD
Fate of False Lumen
Thrombosis in 77% of cases

Post-op  CT 1 year

Post-op  CT 1 year

Post-op  CT 1 year

Post-op  CT 1 year

Post-op  CT 1 year

Post-op  CT 1 year
Sac Diameter Regression during F/U

- $67.4 \pm 6.4\, mm \rightarrow 53.1 \pm 7.5\, mm$ \ ($p=0.005$)

Conclusions

- F/B grafts are a realistic option to treat “Post-dissection TAAA”
  - Careful planning and technical execution required
- “Early” Follow-up seems promising
  - False lumen shrinkage/thrombosis
- Rigorous FU required; Significant reintervention rate