Fenestrated and Branched Endografts after previous aortic surgery

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Personal Experience F&B Grafts

After previous surgery

• FEVAR for complex AAA 430
  – After previous open surgery: 39 (9%)
  – After previous EVAR: 32 (7.4%)

• TAAA 187
  – After previous surgery: 77 (41%)
    • TAAA: 62/167 (37.1%)
    • Chronic Dissections: 15/20 (75%)

Total 148 (24%)

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Juxtarenal AAA
Reasons for failure of primary surgery

**EVAR**
- Extension of Disease
- Migration
- Poor initial planning
  - Short initial neck
  - Undersized stent-graft
  - Low stent-graft placement

**Open Surgical Repair**
- Extension of Disease
- PAA Formation
Treatment options with fenestrated grafts

**Configuration**

- Bifurcated Device
- Composite System
- Fenestrated Cuff
Technical Issues
(after open and EVAR)

I. Short working length
Technical Issues (after EVAR)

II. Catheterization of the previous stent-graft

Inner stent struts
Technical issues (after EVAR)

III. Target vessel catheterisation through previous stents

2 proximal Cuffs + 2 Palmaz stents
Technical issues (after EVAR)

III. Target vessel catheterisation through previous stents
## Juxtarenal Aneurysms Experience

<table>
<thead>
<tr>
<th></th>
<th>After EVAR $n=32$</th>
<th>After Open Repair $n=39^*$</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Cuff</strong></td>
<td>75% (n=24)</td>
<td>23% (n=9)</td>
</tr>
<tr>
<td><strong>Composite</strong></td>
<td>19% (n=6)</td>
<td>72% (n=28)</td>
</tr>
<tr>
<td><strong>Bifurcated</strong></td>
<td>6% (n=2)</td>
<td>5% (n=2)</td>
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**Time Interval:**
- After EVAR: $41 \pm 32$ months
- After Open Repair: $126 \pm 80$ months

*Two cases with Aptus Endostaplers*  
*One case after EVAR + CONVERSION*
Juxtarenal Aneurysms
Technical Success

29/32 (91%) after EVAR
- 1 conversion
- 1 RRA catheterization failure
- 1 LRA catheterization failure

39/39 (100%) after Open Repair
- 1 lumbotomy for (retro) LRA catheterization
Juxtarenal Aneurysms
Perioperative results

• Mortality 0% in both groups

• Major Complications:
  2 (6.3%) after EVAR group
    – 1 permanent dialysis after RRA catheterization failure
    – 1 temporary renal insufficiency after conversion
  2 (5.1%) after Open group
    – 1 MI after lumbotomy
    – 1 NSTEMI due to vasospasm
Juxtarenal Aneurysms
Follow-Up

After EVAR group

Mean FU 30 months

- 5 aneurysm unrelated deaths
- 1 aneurysm related death
  • (RAAA but due to type Ib endoleak)
Juxtarenal Aneurysms
Follow-Up

After EVAR (N=32)

4 (12.5%) Reinterventions

- 2 Type Ib endoleak
  - embolisation+limb extension
  - rupture, conversion, exitus
- 1 Type II endoleak: IMA embolisation
- 1 limb occlusion: fem-fem Bypass
Juxtarenal Aneurysms
Follow-Up

After Open Repair (N=39)

Mean FU 39 months

- 8 aneurysm unrelated deaths
- No reintervention required
TAAA (N=62)
Previous Aortic Surgery

- OPEN Abdominal: 43 (69.4%)
- EVAR: 3 (4.8%)
- OPEN Thoracic: 8 (12.9%)
- TEVAR: 3 (4.8%)
- OPEN Abdominal & Thoracic: 4 (6.5%)
- OPEN Abdominal & TEVAR: 1 (1.6%)

Time Interval: 98.3 ± 50.4 months
Perioperative Results

- Perioperative Mortality: 5/62 (8.6%)
  - 3x MOF, 1x GI bleeding, 1x Subdural hematoma
- Major Complications
  - Paraplegia: 2 (3.2%)
  - Paraparesis: 4 (6.5%)
  - Respiratory: 4 (6.5%)
  - Cardiac: 3 (4.8%)
  - Renal: 4 (6.5%)
TAAA
Estimated Survival

80 ± 6.7% at 1 year
62 ± 9% at 2 years
Conclusions

• F&B grafts are a valuable alternative to open surgery to treat failed prior open or endovascular surgery

• Additional challenges

• Results depend on
  – Type of previous procedure
  – Primary technical success