Technical Lessons Learned in > 1000 Complex Aortic ENDO Procedures

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Disclosures

• Cook: Consultant, Speaker, Research Grants, Royalties

• **Bentley**: Consultant & Speaker

• **Atrium Maquet**: Consultant & Speaker

• **Siemens**: Consultant & Speaker
Lay-out

• The “Show-off” part
  – Total Numbers-Outcomes

• The “Historical” part
  – Evolution, improvements etc.

• The “Modesty” part
  – What can go wrong? CAVEATs...
Lay-out

• The “Show-off” part
  – Total Numbers-Outcomes

• The “Historical” part
  – Evolution, improvements etc.

• The “Modesty” part
  – What can go wrong? CAVEATs...
Cave-ats

- Patient & Anatomy Indication
- Planning and Execution
- Bail-out Options
- Wire Perforation
Patient Selection

- Think twice in ASA IV pts
  - ↑ Mortality
    - Early: 25% versus 6.2%
    - Late: 50% versus 13.4%

Editor’s Choice — Ten-year Experience with Endovascular Repair of Thoracoabdominal Aortic Aneurysms: Results from 166 Consecutive Patients

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Eur J Vasc Endovasc Surg (2015) 49, 524–531
Anatomical Limitations

• Respect!

• Recognize your personal limitations
  – With regard to experience and learning curve
Planning and Execution
Proximal Sealing & Fixation

- Suprarenal AAA
  - 6.5 cm
  - After open surgery (tube graft PTFE)
Check Wire Position in Target Vessels
Check appropriate Length of Bridging Stent
Reline where needed...
Bail-out Options
Bail-out #1
Flairing of Stents from Top to Bottom
Bail-Out #4
Solution: Laparotomy
How Often Does It Happen?

- FEVAR for complex AAA
  - Retrograde Approach 3 (0.4%)

- TAAA
  - Retrograde Approach 11 (2.8%)

TOTAL 14/1060 (1.3%)
Wire Perforation
1st Postoperative Day

- Decreasing Hb
  - 13→9 g/dl

- Increasing Cr
  - 1.5→2.9 mg/dl

- Flank pain right
Emergency CTA
Selective Angiography
Emergency Embolisation
Postoperative Course

- Hb stabilised
- Cr
  - 3.5→1.5mg/dl
- Pt discharged on 7th postop day
1 Month CTA
### How Often Does It Happen?

<table>
<thead>
<tr>
<th>Procedure</th>
<th>N</th>
<th>Visceral perforation (all Renal)</th>
</tr>
</thead>
<tbody>
<tr>
<td>FEVAR for complex AAA</td>
<td>677</td>
<td>6 (0.9%)*</td>
</tr>
<tr>
<td>TAAA</td>
<td>383</td>
<td>11 (2.9%)**</td>
</tr>
<tr>
<td>Renal</td>
<td>7</td>
<td></td>
</tr>
<tr>
<td>SMA</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td>Splenic</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>17/1060 (1.6%)</strong>*</td>
</tr>
</tbody>
</table>
Wire Perforation

• Quick reaction is needed
  – Clinical Suspicion!!
  – CTA/selective DSA
    • Emergency embolisation
      – Interventional (Radiology) Team available
      – Materials (microcatheters, coils etc)
      – Set-up
Conclusions
F&B Grafting

- Experience & high Volume are important but even more Logistics and Organisation!
  - Correct Indication
  - Patient Selection
  - Bail-out Options
  - Set-up
- Work meticulously
  - „Do not try to win a minute to loose an hour“
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