2-Year Comparison of F/B/EVAR and Ch/EVAR for Complex Aneurysms In A Single Institution: Both are Effective and Have a Role in Their Treatment: Advantages and Limitations of Each

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Disclosure

WL Gore – Consultant
Bolton Medical – SAB
Cook IDE for Fenestrated and Branch Grafts – no Financial benefit
Spectranetics – SAB
Abbott Medical – Speakers Panel

Single center two year outcome with use of fenestrated and parallel grafts for the treatment of complex aortic aneurysms

To assess the outcome of fEVAR and pEVAR in endovascular management of JRA, SRA, and TAAA at a single institution

To evaluate mortality, morbidity, graft patency and re-intervention rates for fEVAR and pEVAR for the repair of complex aortic aneurysms

Methods I

• This is a retrospective review of prospectively collected database
• Inclusion criteria:
  – All consecutive patients with JRA, SRA, or TAAA who underwent endovascular repair from August 2014 to March 2017 at our institution
• Exclusion criteria:
  – Aortic rupture

Methods II

• Type of repair was a single surgeon decision based on anatomy and urgency of repair
• Patient demographics, hospital course, and follow up visits were analyzed
• Outcome measures analyzed:
  – Perioperative mortality
  – Graft patency
  – Re-intervention rates
  – Survival

Fenestrated Endograft Technique

• Hybrid Suit. Siemens Artis Zeego
• Standard Cook Zfen Endograft
• Local or General Anesthesia
• Percutaneous femoral access
• Renal artery balloon expandable endografts (iCast, VBX)
• Selective SMA self expanding bare metal stent
Parallel Endograft Technique

- Parallel Endografts
  - Visceral and renal antegrade access via subclavian/axillary cut-down
  - 20-30% over sizing
  - Self expanding (Viabahn) or balloon expandable (iCast, VBX) endografts
  - Snorkel-Sandwich technique if more than 2 parallel grafts needed
  - Long stent graft configuration to increase opposition
  - Staged procedure if long coverage needed with spinal drain

Statistical Analysis

- Kaplan-Meier with Cox proportional hazard model
- Significance level of 0.05 was assumed for all tests

RESULTS

117 complex endovascular aortic repairs were performed
100% technical success rate

Demographics

<table>
<thead>
<tr>
<th>Groups</th>
<th>pEVAR</th>
<th>pEVAR</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age (Years)</td>
<td>75.1 ± 8</td>
<td>76.5 ± 12</td>
<td>0.5</td>
</tr>
<tr>
<td>Female (%)</td>
<td>28%</td>
<td>39.5%</td>
<td>0.4</td>
</tr>
<tr>
<td>Aortic size (cm)</td>
<td>6.44</td>
<td>6.36</td>
<td>0.9</td>
</tr>
</tbody>
</table>

No difference between two groups

Comorbidities
Perioperative Mortality

- fEVAR: 3.1% (1/32)
- pEVAR: 2.6% (1/38)

Reintervention

- fEVAR: 5.3% (5/94)
- pEVAR: 7.3% (8/109)

Reinterventions
- fEVAR group:
  - 2 renal stent occlusions
  - 1 colonic ischemia
  - 1 iliac limb occlusion
  - 1 perinephric hematoma
- pEVAR endografts:
  - 3 endoleaks
  - 2 renal thrombosis
  - 1 celiac thrombosis
  - 1 renal stent kink
  - 1 gutter leak embolization

Freedom from Aortic Mortality

- Median follow-up was 12 months (1 – 32 month range)

Overall Survival

- fEVAR: 78%
- pEVAR: 58%

Reintervention Free Survival

- fEVAR: 74%
- pEVAR: 58%

Overall Survival and Reintervention Free Survival graphs show survival rates over time.
Conclusions

- pEVAR and fEVAR have acceptable perioperative mortality in treating JRA, SRA, TAAA
- Parallel branch endografts have acceptable patency rates with low rates of reinterventions
- Snorkel-sandwich technique appears a viable option if 4 vessel off-the-shelf reconstruction is needed
- Staged procedure is critical when long segment of aorta is treated such as type II/III TAAA

Thank you