Technique of 2 Chimney and 2 Sandwich Parallel Grafts For Suprarenal and Thoracoabdominal Aneurysms: They Can Produce Very Secure Repairs

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Disclosures

- IDE for Fenestrated and Branch Aortic Graft
  - (no financial Conflict)
- Proctor for Zfen and P Branch grafts
- Scientific Advisory Board Bolton Medical
Number of Parallel Grafts

- It has been shown that more than two snorkel stents theoretically displaces the main body endograft too much or creates too large of a gutter, or both


- Urgent endovascular treatment of thoraco-abdominal aneurysms using a sandwich technique and chimney grafts--a technical description. Eur J Vasc Endovasc Surg, 41 (2011), pp. 54–60
The Effect of Number of Chimney Grafts (CG) on Main Graft Compression

<table>
<thead>
<tr>
<th>Number of CG’s</th>
<th>Gutter Area (cm²)</th>
<th>Aorta Final Area (cm²)</th>
<th>Main Graft Compression %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>0.441</td>
<td>5.88</td>
<td>14.6</td>
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<tr>
<td>2</td>
<td>0.516</td>
<td>8.31</td>
<td>43.2</td>
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<tr>
<td>3</td>
<td>0.648</td>
<td>11.18</td>
<td>61.8</td>
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<tr>
<td>4</td>
<td>0.817</td>
<td>15.39</td>
<td>76.2</td>
</tr>
</tbody>
</table>

- Optimal Chimney Graft Configuration in an Abdominal Aortic Aneurysm: A Finite Element Analysis- Universidade Católica Portuguesa Faculdade de Engenharia, AMSA Valério - 2014
History of Present Illness

- 67 year old male transported via air from Dominican Republic

- He presented with abdominal and back pain after using sexual enhancing medication

- CTA revealed a type B thoracic dissection and large juxtarenal aneurysm
Intervention-I

- Angiogram
- IVUS
Intervention-II

- Left Carotid subclavian bypass
- Left subclavian artery embolization
- TEVAR
Intervention-III

- 4 vessel snorkels (double sandwich technique)
Postoperative Course

- Uneventful
- Discharge to rehab POD 4
HPI: 78Y M with a PMH of HTN, HL, nonobstructive CAD, PAD, COPD, BPH s/p EVAR (2005) complicated by migration of iliac artery wallstent during EVAR implantation. Free floating wallstent in aorta was retrieved. During retrieval there was a stent fragment embolization to left renal artery, requiring renal stent placement and Aortic Palmaz was also implanted at OSH. Pt had recent onset of increasing back pain. Referred for further management.

PMH & PSH:
- Per HPI
Options:

- Open conversion
  - Not an emergent procedure
- Continue Endovascular Repair
  - Contrast volume
  - Anesthesia Time
- Abort Procedure
  - Celiac/SMA well perfused
  - Proximal cuff placement
  - Repeat CTA and evaluate
Follow up CTA
Post-op

- POD 1-2:
  - AVSS
  - Incisions c/d/i, no hematoma
  - Labs WNL
  - OOB
  - d/c home on ASA/Plavix
Follow up

- Doing well until one month ago when developed Type 3 endoleak from Palmaz erosion through stent. Treated with aortic cuff.
- Possible Osteomyelitis of vertebral bodies at the level of the fractured aortic Palmaz stent
Conclusion

- Two Vessel Snorkel and Sandwich Parallel Stent grafting is a safe and effective method of treating complex Thoracoabdominal and suprarenal aneurysms.