TREATMENT OPTIONS FOR POST DISSECTION AORTIC ANEURYSMS

Stéphan Haulon,
J Sobocinski, T Martin-Gonzalez, R Clough,
R Spear, A Hertault, R Azzaoui

Aortic Center,
Lille University Hospital, France
Disclosures

• Research support, Consulting, IP
  - Cook Medical, GE Healthcare
Surgical Options
OPEN

EMC
Surgical Options
TEVAR
Chronic Dissections

- Proximal and Distal Sealing
- Narrow true lumen
- Target vessels perfused by false lumen
No Compromise on Proximal Seal - Open Surgery
Post Type A Repair
Branched Arch Endograft
Pre-operative CT

2-year control
TEVAR
DISTAL SEAL?
Failure to Remodel in Chronic Dissection

- Perfusion and pressure unchanged in false lumen
- Presence of Intercostals originating from false lumen
- False lumen back flow to Intercostals

Courtesy Tilo Kölbel
TEVAR in Chronic Dissections

TEVAR induces aortic remodeling:
• False lumen thrombosis
• True lumen expansion

But this remodeling is Limited to the DTA along the stentgraft
Distal False Lumen Occlusion in Aortic Dissection With a Homemade Extra-Large Vascular Plug: The Candy-Plug Technique

Tilo Kölbl, MD, PhD; Christina Lohrenz, MD; Arne Kieback, MD; Holger Diener, MD; Eike Sebastian Debus, MD, PhD; and Axel Larena-Avellaneda, MD, PhD
Candy-Plug

Kölbel et al. 2013; J Endovasc Ther 20: 484-9
Fenestrated Distal Extension?
GE Discovery IGS 730
GE DISCOVERY IGS 730
Left Renal Perfused by (2) False Lumen
Staged Approach

- 50 yo patient

- Step 1 (2009): Acute type A dissection with ascending aortic replacement

- Step 2 (2013): Redo sternotomy
  - Tirone David + Arch repair and elephant trunk
TEVAR
Step 3: TEVAR from Elephant Trunk and CT
Step 4
Aorto Bi-Iliac Open Repair

Goal:
Perfusion of
- Both Internal Iliac
- Distal lumbar arteries
Step 5: Fenestrated Endograft
Small tear in front of the right renal
Expansion of true lumen

Post TEVAR

Post FEVAR
Post TEVAR

Post FEVAR
# DATA

**Table I.—Results of three single centre series of patients with chronic aortic dissections treated with fenestrated/branched endografts.**

<table>
<thead>
<tr>
<th></th>
<th>Verhoeven Numberg, Germany 2012</th>
<th>Kitagawa CCF, USA 2013</th>
<th>Haulon Lille, France 2014</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. of patients</td>
<td>6</td>
<td>15</td>
<td>15</td>
</tr>
<tr>
<td>Median age (mm - median, range)</td>
<td>62 (44-71)</td>
<td>58 (33-71)</td>
<td>61 (31-77)</td>
</tr>
<tr>
<td>Maximal diameter (mm - median, range)</td>
<td>69 (64-73)</td>
<td>64 (43-97)</td>
<td>67 (56-79)</td>
</tr>
<tr>
<td>Connective tissue disease</td>
<td>NA</td>
<td>6 (40%)</td>
<td>3 (20%)</td>
</tr>
<tr>
<td>Arch involvement</td>
<td>0</td>
<td>1 (7%)</td>
<td>6 (40%)</td>
</tr>
<tr>
<td>Previous aortic surgery (including T-EVAR)</td>
<td>NA</td>
<td>12 (80%)</td>
<td>11 (73%)</td>
</tr>
<tr>
<td>Median nb of fenestrations/branches</td>
<td>3 (0-4)/1 (0-4)</td>
<td>NA</td>
<td>4 (0-4)/2 (0-2)</td>
</tr>
<tr>
<td>Median time elapsed (in months) between acute onset and complex EVAR (median, range)</td>
<td>32 (10-123)</td>
<td>124 (24-408)</td>
<td>48 (12-360)</td>
</tr>
<tr>
<td>Staged procedure (TM only)</td>
<td>NA</td>
<td>78%</td>
<td>45%</td>
</tr>
<tr>
<td>Technical success</td>
<td>100%</td>
<td>NA</td>
<td>100%</td>
</tr>
<tr>
<td>30d-mortality</td>
<td>0</td>
<td>0</td>
<td>1 (7%)</td>
</tr>
<tr>
<td>Reintervention</td>
<td>NA</td>
<td>8 (53%)</td>
<td>2 (13%)</td>
</tr>
<tr>
<td>Mean FU (months)</td>
<td>9 (3-15)</td>
<td>20 (1-62)</td>
<td>12 (1-36)</td>
</tr>
</tbody>
</table>
Early Experience of Endovascular Repair of Post-dissection Aneurysms Involving the Thoraco-abdominal Aorta and the Arch

R. Spear a, J. Sobocinski a, N. Settembre b, M.R. Tyrrell c, S. Malikov b, B. Maurel a, S. Haulon a, *

a Aortic Center, Hôpital Cardiologique, CHRU Lille, France
b Vascular Surgery, CHU Nancy, France
c King’s Health Partners, London, UK

Table 4. Early outcomes.

<table>
<thead>
<tr>
<th></th>
<th>Major adverse events, n (%)</th>
<th>In hospital mortality, n (%)</th>
<th>Spinal cord ischemia, n (%)</th>
<th>Secondary procedures, n (%)</th>
<th>Type 1 endoleak, n (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Aortic arch aneurysm (n = 7)</td>
<td>2 (28.5)</td>
<td>1 (14)</td>
<td>0 (0)</td>
<td>2 (28.5)</td>
<td>1 (14)</td>
</tr>
<tr>
<td>TAAA (n = 16)</td>
<td>3 (19)</td>
<td>1 (6)a</td>
<td>1 (6)a</td>
<td>0 (0)</td>
<td>1 (6)</td>
</tr>
<tr>
<td>Total (n = 23)</td>
<td>5 (22)</td>
<td>2 (8.7)</td>
<td>1 (4.4)</td>
<td>2 (8.7)</td>
<td>2 (8.7)</td>
</tr>
</tbody>
</table>
CONCLUSIONS

• Simple to very complex
• 3D WS analysis
• No compromise