Use Of The VORTEC Technique – A Clampless, Sutureless Anastomosis Using An Endograft Connector To Revascularize The Supra-Aortic Branches Simplifies Hybrid Arch Repairs: Technique And Results

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Nothing to disclose

VORTEC (2007)

Challenging vessel access

Anatomical remodelling
Difficult access
Scar tissue

DISTAL ANASTOMOSIS
DISTAL ANASTOMOSIS

≈1-2 cm

DISTAL ANASTOMOSIS

≈1-2 cm

DISTAL ANASTOMOSIS

End-to-Side to native artery

End-to-End to inflow graft

End-to-Side to inflow graft

STAT-SUTURELESS TELESCOPING ANASTOMOTIC TECHNIQUE
**SMOOTH TRANSITION**

How to choose diameter of **STENT-GRAFT**?

<table>
<thead>
<tr>
<th>Viabahn (2.5cm-5cm-10cm-15cm)</th>
<th>Target vessel</th>
</tr>
</thead>
<tbody>
<tr>
<td>5mm</td>
<td>4.0mm - 4.7mm</td>
</tr>
<tr>
<td>6mm</td>
<td>4.8mm – 5.5mm</td>
</tr>
<tr>
<td>7mm</td>
<td>5.6mm – 6.5mm</td>
</tr>
<tr>
<td>8mm</td>
<td>6.6mm – 7.5mm</td>
</tr>
</tbody>
</table>

How to choose diameter of **INFLOW GRAFT**?

<table>
<thead>
<tr>
<th>Viabahn (2.5cm-5cm-10cm-15cm)</th>
<th>Inflow (Interposition) graft</th>
</tr>
</thead>
<tbody>
<tr>
<td>5mm</td>
<td>5mm</td>
</tr>
<tr>
<td>6mm</td>
<td>5mm</td>
</tr>
<tr>
<td>7mm</td>
<td>6mm</td>
</tr>
<tr>
<td>8mm</td>
<td>7mm</td>
</tr>
</tbody>
</table>
DEGENERATIVE AORTIC ARCH ANEURYSM
OPEN DEBRANCHING ONLY

DEGENERATIVE AORTIC ARCH ANEURYSM
OPEN DEBRANCHING FOLLOWED BY...

DEGENERATIVE AORTIC ARCH ANEURYSM
OPEN- FOLLOWED BY... ENDO DEBRANCHING

DISSECTED SUPRA-AORTIC BRANCHES

RCCA dissection
UHZ FIRST RESULTS

Novel wireless telescoping anatomically revascularization technique of supra-aortic to simplify combined open endovascular patients.

30-day mortality
n=20
7.6%

6-year experience

55 patients treated with VORTEC/STAT to at least one Supra-Aortic Branch
Jan 2009 – Dec 2014
Mean FU @ June 2015 of 45.12 (r: 0-86; SD: 23) months:
- 45 patients with FU > 2 years
- 36 patients with FU > 3 years
- 23 patients with FU > 4 years

Patients: Demography and Co-morbidities

<table>
<thead>
<tr>
<th>Patients</th>
<th>55</th>
<th>100%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Male</td>
<td>37</td>
<td>68%</td>
</tr>
<tr>
<td>COPD</td>
<td>31</td>
<td>56%</td>
</tr>
<tr>
<td>Smoking</td>
<td>24</td>
<td>44%</td>
</tr>
<tr>
<td>Arterial Hypertension</td>
<td>41</td>
<td>75%</td>
</tr>
<tr>
<td>Diabetes mellitus</td>
<td>6</td>
<td>11%</td>
</tr>
<tr>
<td>CVD</td>
<td>7</td>
<td>13%</td>
</tr>
<tr>
<td>ASA III</td>
<td>47</td>
<td>86%</td>
</tr>
<tr>
<td>ASA IV</td>
<td>7</td>
<td>13%</td>
</tr>
<tr>
<td>ASA V</td>
<td>1</td>
<td>1%</td>
</tr>
</tbody>
</table>

Mean EUROSCORE 9

Patients: Underlying Pathology

<table>
<thead>
<tr>
<th>Aortic Arch Aneurysm</th>
<th>36</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arch Isolated</td>
<td>10</td>
</tr>
<tr>
<td>Arch extended to Ascendens</td>
<td>11</td>
</tr>
<tr>
<td>Arch extended to Descendens</td>
<td>15</td>
</tr>
<tr>
<td>A.Subclavia Aneurysm</td>
<td>3</td>
</tr>
<tr>
<td>RSA</td>
<td>1</td>
</tr>
<tr>
<td>Aberrant RSA</td>
<td>2</td>
</tr>
</tbody>
</table>

Dissection: 10

Type A: 4
Type B: 3
Retrograde: 3
Other Arch Pathologies (PAU, Floating thrombus): 5

Mortality and Complications

Immediate technical success: 100%

Early Complications: N
Cardiac Tamponade: 4
Pneumothorax: 2

Late Complications: 2
Graft infection: 1
Descendens Dissection: 1

Neurologic complications: 5 (9%)
Transient: 3
Permanent: 2

Inflow: Aorta Ascendens
Distal:

148 vessels
127 VORTEC
21 OS (open Surgical)
2.7 vessels per patient
Conclusions

Sutureless Telescoping Anastomotic Technique for Supra-Aortic Branches

– Reduces technical difficulties and invasiveness of aortic surgery
  • Reduces ischemia time
  • No clamping or circumferential dissection
– Allows performing anastomosis where sutured anastomosis is challenging (Dissection, IMH)
– Mid-term results confirms that this anastomosis is safe and reliable alternative to sutured one

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