Proximal Scalloped Endografts (Bolton) for TEVAR to maintain left subclavian flow: Advantages, limitations and midterm results

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Disclosures
- I have no commercial interest in Bolton Medical
- Worked with and accepted hospitality from Bolton Medical

TEVAR Proximal landing zone
- Proximal seal zone ideally:
  - Within IFU
  - Parallel walls
  - > 2cm distal to L subclavian
  - Not angulated
  - Outer curve = inner
  - No thrombus

Reality
- Difficulties:
  - Inadequate length of seal zone
  - Inner curve shorter than outer
  - L subclavian origin
  - Entry tear for type B dissections
  - Angulation leading to "bird beaking"

Reality
- Need a graft to:
  - Perfuse the L subclavian
  - Extend the seal zone
  - Conform to the angle
  - Prolong the inner curve

Debranching
Debranching

- Braided, Hydrophilic outer sheath for support during advancement and maneuvering through access vessels
  - Provides good support to gain aortic access.
  - Hydrophilic coating and braided design enhances navigation.
  - Remains stationary to protect access vessels during manipulation of inner sheath.

Graft design

- Pre-curved
- Dual-sheath
- Proximal tip capture
- Stable deployment

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  - Proximal 260

Fluoroscopy
Evidence

Scalloped thoracic aortic graft for treatment of acute aortic dissection with unruptured leaking zones.

N=25
Median age 71 (37-80) years
Male 12 patients
Hypertension 17/25
Smoking 13/25
Diabetes 1/25
Renal insufficiency 6/25
Coronary artery disease 9/25

Imperial proximal scallop experience
**Imperial proximal scallop experience**

<table>
<thead>
<tr>
<th>53-183 weeks</th>
<th>%</th>
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<tbody>
<tr>
<td>Technical success</td>
<td>100</td>
</tr>
<tr>
<td>Accuracy</td>
<td>&gt;80</td>
</tr>
<tr>
<td>LSA patency</td>
<td>100</td>
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<tr>
<td>Migration</td>
<td>0</td>
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<tr>
<td>Endoleak III</td>
<td>f</td>
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<tr>
<td>Retrograde dissection</td>
<td>f</td>
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<tr>
<td>Birdbeaking</td>
<td>f</td>
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</tbody>
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**Indication for intervention**

- Saccular aneurysm and PAU, N=12
- Type II thoracoabdominal aneurysm N=4
- Descending thoracic fusiform aneurysm N=7
- Aneurysmal dilatation following type B dissection N=2
- Seven patients underwent hybrid repair (3 arch, 4 visceral).

**Trans-cranial Doppler**

**Advantages**

- Avoids debranching
- Avoids subclavian ligation/plug
- Allows a more proximal seal zone
- Allows further customisation
- Can accommodate vertebral artery anomalies

**Limitations**

- Cost
- Delays/availability
- Manipulation in the arch
- Some anatomies need a fenestrated approach

**Fenestrated graft**
Conclusions

• Clear advantages
• Applicable to most cases
• Specific advantages over debranching
• Favourable deployment
• Good mid term results
• Need a Registry