Why Is The Right Axillary Approach The Best For Inserting Chimney Grafts: Tips And Tricks For Inserting Multiple Chimneys Safely

Ross Milner, MD
Professor of Surgery
Co-Director, Center for Aortic Diseases
42nd Annual Veith Symposium
November 20, 2015

Disclosure
• Consultant – Boston Scientific, Cook, Medtronic, WL Gore, and Trivascular

ChEVAR
• Complex anatomy
• Off the shelf availability
• Off-label

Questions
• Brachial or axillary?
• Single-side or bilateral?
• Technique?
• Is the Right side safe?

Brachial or axillary?

502/517 had no evidence of a type 1a endoleak (97.1% success rate)
<table>
<thead>
<tr>
<th>Brachial or axillary?</th>
<th>Axillary Artery Conduit</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left or right arm out - makes full lateral imaging a challenge</td>
<td></td>
</tr>
<tr>
<td>Prep is easier</td>
<td></td>
</tr>
<tr>
<td>Anesthesia doctor can use both arms</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Brachial or axillary?</th>
<th>Single-side or bilateral?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Left or right arm out - makes full lateral imaging a challenge</td>
<td>4 sheaths can be placed on one side</td>
</tr>
<tr>
<td>Prep is easier</td>
<td></td>
</tr>
<tr>
<td>Anesthesia doctor can use both arms</td>
<td></td>
</tr>
<tr>
<td>Axillary!</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Single-side or bilateral</th>
<th>Single-side or bilateral?</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 sheaths can be placed on one side</td>
<td></td>
</tr>
<tr>
<td>1 or 2 sheaths – direct arterial puncture through a previously placed purse-string with a pledget</td>
<td></td>
</tr>
<tr>
<td>&gt; 2 sheaths: axillary conduit</td>
<td></td>
</tr>
</tbody>
</table>
Single-side or bilateral?

- Single-side!

Technique

- Early experience, selectively catheterize vessel and then place 7 Fr sheath
- Now, all sheaths placed to navigate arch anatomy and then vessel selection accomplished

Sheath Insertion

- Conduit when needed
- 7 Fr, 70 cm Ansel Sheath
- Place all necessary sheaths and then select visceral vessels
- Balloon-expandable stents put in place prior to placement of endograft
- Deploy chimney grafts sequentially after endograft deployed
Right side?

- Anecdotally, right side is less safe due to stroke risk
- But, it is easier to work from the right side due to C-arm

U of C Experience

- 26 patients (18 right side)
- 7/8 successful from left and 15/18 from the right
- 14 with > 1 sheath; 11/14 an axillary conduit was used
- No TIA or stroke from either side
- One rupture – left subclavian

Right side?

- Safe in terms of neurologic outcomes
- May be more challenging to cannulate visceral vessels due arch tortuosity and renal artery location

Summary

- ChEVAR works
- Single side access is feasible
- Use of axillary conduit when > 2 sheaths
- All sheaths inserted prior to vessel cannulation
- Right side is safe