Single center experience for peripheral arterial interventions via percutaneous brachial artery access using a 4F sheath

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Disclosure

Speaker name:
Daniel Kretzschmar

I have the following potential conflicts of interest to report:

☐ Consulting
☐ Employment in industry
☐ Stockholder of a healthcare company
☐ Owner of a healthcare company
☐ Other(s)

☐ I do not have any potential conflict of interest
Need for alternative access

- recent intervention to CFA
- severe aortoiliac-femoral occlusive disease
- femoral aneurysms/pseudoaneurysm
- groin hematomas
- obesity
- infections
- need for bilateral interventions and/or simultaneous accesses
Options

- axillary, radial, ulnar arteries
- translumbar approach
- Brachial artery:
  - favourable route of entry in caudally oriented visceral arteries
- left > right
  • -> crossing only one brain supplying artery
  • -> shorter/more direct way (distal lesions)
  • -> handedness
Preparation

- Doppler/Ultrasound performed:
  - before, d1, d30, d120
  - -> brachial artery diameter, flow velocity BA, RA, UA
- arm extended/supinated on arm board
- Puncture 20-G micropuncture needle
- Insertion 4F radial sheath
The Fortress introducer sheaths have a friction lowering PTFE liner with a polymer embedded stainless steel coil shaft design. This construction offers great flexibility and kink and deformation resistance.

The Fortress coil reinforced sheath does not oval when curved – non-ovaling – thus diameter is maintained.

Standard competitive non-reinforced sheath ovals when curved - thus diameter reduced.
## Demographics and puncture site

<table>
<thead>
<tr>
<th>Variables</th>
<th>n</th>
</tr>
</thead>
<tbody>
<tr>
<td>Investigations</td>
<td>119</td>
</tr>
<tr>
<td>Patients</td>
<td>110</td>
</tr>
<tr>
<td>Age (years, mean, range)</td>
<td>67 (46-85)</td>
</tr>
<tr>
<td>Male gender</td>
<td>92 (77 %)</td>
</tr>
<tr>
<td>Female gender</td>
<td>27 (23 %)</td>
</tr>
<tr>
<td>Left brachial artery</td>
<td>109 (92 %)</td>
</tr>
<tr>
<td>Right brachial artery</td>
<td>9 (8 %)</td>
</tr>
<tr>
<td>Puncture failure</td>
<td>1 (1 %)</td>
</tr>
</tbody>
</table>
## Arterial region treated

<table>
<thead>
<tr>
<th>Region</th>
<th>N (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>no intervention</td>
<td>34 (29 %)</td>
</tr>
<tr>
<td>subclavian</td>
<td>2 (2 %)</td>
</tr>
<tr>
<td>aorto-iliac</td>
<td>58 (69 %)</td>
</tr>
<tr>
<td>femoral</td>
<td>32 (38 %)</td>
</tr>
<tr>
<td>unilateral intervention</td>
<td>75 (89 %)</td>
</tr>
<tr>
<td>bilateral intervention</td>
<td>9 (11 %)</td>
</tr>
</tbody>
</table>
Sheath size for intervention

Total = 84

- 4 F Sheath
- 5 F Sheath
- 6 F Sheath
## Complications

<table>
<thead>
<tr>
<th>Typ</th>
<th>N (%)</th>
<th>Sheath size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Puncture failure</td>
<td>1 (0,8 %)</td>
<td></td>
</tr>
<tr>
<td>Hematoma</td>
<td>1 (0,8 %)</td>
<td>4 F</td>
</tr>
<tr>
<td>Pseudoaneurysm need repair</td>
<td>2 (1,7 %)</td>
<td>5/6 F</td>
</tr>
<tr>
<td>Pseudoaneurysm conservatively</td>
<td>5 (4,2 %)</td>
<td>4/6 F</td>
</tr>
<tr>
<td>Brachial artery dissection</td>
<td>1 (0,8 %)</td>
<td>6 F</td>
</tr>
</tbody>
</table>
Example-4F
Conclusion

- BA access is reliable/effective option
- offers full range of interventions
- earlier mobilization
- low complication rate
- \( \Rightarrow \) especially with 4F-Intervention (2.5 % complication rate)
- postprocedural vigilance is paramount
Thanks

- Marcus Thieme

Stefan Betge
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