Novel 6Fr Articulating OCT Guided Directional Atherectomy Catheter for Infra-popliteal Disease

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Disclosures

Consultant to:

- Abbott Vascular
- Bard Peripheral Vascular
- Boston Scientific
- Cardiovascular Systems, Inc.
- Cook Medical
- Medtronic
- Spectranetics
- Terumo
Objectives

• Differences between OCT guided directional atherectomy for ATK vs. BTK
• Overview of 6Fr platform with variable catheter jog
• Review of CLI case highlighting differences between fluoroscopic vs. OCT guidance
• OCT guided vessel measurement for accurate BTK luminal sizing
Difference Between ATK + BTK Anatomical Requirements

**ATK (8Fr + 7Fr):**
- Shaft occlusion for blood flow in large vessel lumens
- Nose cone drops to expose cutter
- Apposition balloon for luminal gain up to 7mm

**BTK (6Fr + 5Fr):**
- No balloon system required for occlusion in smaller vessel anatomy
- Variable shaft jog element for apposition
Variable Cobra Jog Element for Cutter Apposition

- Scallop cutter blade for fibro-calcific engagement
- Monorail 0.014 wire lumen
- Adjustable jog element (controlled at handle)
Transition Between Closed (Packed) and Open (Active) Cutting Mode
## Pantheris 6F - BTK

<table>
<thead>
<tr>
<th>Attribute</th>
<th>Specification</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nosecone Diameter</td>
<td>6.0 Fr</td>
</tr>
<tr>
<td>Shaft Diameter</td>
<td>4.72 Fr</td>
</tr>
<tr>
<td>Catheter Working Length</td>
<td>135 cm</td>
</tr>
<tr>
<td>Nosecone Length</td>
<td>4.6 cm</td>
</tr>
<tr>
<td>Cutter Diameter</td>
<td>0.060 in</td>
</tr>
</tbody>
</table>
More Accurately Size BTK Vessels
QCA often under sizes true lumen

QCA = 3.5mm
More Accurately Size BTK Vessels

QCA often under sizes true lumen

- QCA places distal TPT lumen at 3.5 mm
- OCT demonstrates lumen is 1mm larger in diameter

Min Diameter = 4.2mm   Max Diameter = 4.4mm   Stent Area = 16.8mm²
Tissue Capture

Cut #1, Posterior Tibial
11.4 mg

Cut #2, Posterior Tibial
11.7 mg

Cut #3, Posterior Tibial
20.9 mg
Histologic Validation of OCT Precision

Plaque | 98.8%
Media  | 0.8%
EEL/Adventitia | 0.4%
Conclusions

- BTK atherectomy in the setting of CLI requires precision and safety to preserve distal outflow
- OCT guidance accurately characterizes plaque morphology and eccentric distribution
- OCT measurements more accurately size vessel lumen vs. QCA
- Novel 6Fr OCT guided directional atherectomy catheter with variable apposition jog may be a valuable tool for treating CLI
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