Guidewires, snares and externalization guidewires

Khaldoon Alaswad, MD, RVT, FSCAI, FACC
Director, Catheterization Laboratory
Henry Ford Hospital and Health System
Detroit, MI
Objectives

• The CTO PCI wires functional view.
• Externalization wires
• Snairs
Unless the wire connects the true lumens proximal and distal to the occlusion the procedure is not successful.
General wire rules for CTO PCI

• Do not be a Doc of all wires and a master of none

• Poke & Dissect

• Trust the knuckle
<table>
<thead>
<tr>
<th></th>
<th>Fielder XT</th>
<th>Fielder FC</th>
<th>Sion</th>
<th>Pilot 200</th>
<th>Confianza Pro 12</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Coating</strong></td>
<td>Polymer</td>
<td>Polymer</td>
<td>Slip Coat</td>
<td>Polymer</td>
<td>Hybrid Coating</td>
</tr>
<tr>
<td></td>
<td>Jacket</td>
<td>Jacket</td>
<td>Hydrophilic</td>
<td>Jacket</td>
<td>Coating</td>
</tr>
<tr>
<td><strong>Tip Load</strong></td>
<td>1.2 gm</td>
<td>1.6 gm</td>
<td>0.7 gm</td>
<td>4.1 gm</td>
<td>12.4 gm</td>
</tr>
<tr>
<td><strong>Tip Diameter</strong></td>
<td>0.009”</td>
<td>0.014”</td>
<td>0.014”</td>
<td>0.014”</td>
<td>0.009”</td>
</tr>
<tr>
<td><strong>Functions</strong></td>
<td>Microchannels &amp; Dissection</td>
<td>Collateral True lumen</td>
<td>Collateral Crossing (epicardial)</td>
<td>Penetration Dissection</td>
<td>Penetration Cap or Flap</td>
</tr>
</tbody>
</table>
Guide Wire Functions in the CTO

- Wire crossing true to true
- Microchannel probing & crossing
- Collateral crossing
- Proximal or distal cap penetration
- Knuckle dissection
Two Kinds of Guidewires For CTO

- Polymer-jacketed, less tactile feedback
  - Tapered
    » Fielder XT
  - Non-tapered
    » Fielder FC
    » Sion
    » Pilot 200

- Non-polymer-jacketed, good tactile feedback
  - Confianza Pro 12
The Heart Floss Wires
Long Wires for Wire Externalization
## Externalization Guide Wires

<table>
<thead>
<tr>
<th>Manufacturer</th>
<th>RG-3</th>
<th>Viper wire</th>
<th>R-350</th>
<th>Rotowire</th>
</tr>
</thead>
<tbody>
<tr>
<td>Asahi</td>
<td>CSI</td>
<td>Vascular Solutions</td>
<td>Boston Scientific</td>
<td></td>
</tr>
<tr>
<td>Diameter</td>
<td>0.010”</td>
<td>0.014”</td>
<td>0.013”</td>
<td>0.009’</td>
</tr>
<tr>
<td>Usable length</td>
<td>330cm</td>
<td>335cm</td>
<td>350cm</td>
<td>330cm</td>
</tr>
<tr>
<td>Coating</td>
<td>Slip coat for 170mm and silicone for 160mm</td>
<td>Stainless steel spring coiled with silicone coating</td>
<td>Silicone wiped without hydrophilic coating</td>
<td>Stainless steel non-coated</td>
</tr>
<tr>
<td>Comments</td>
<td>Best in class Not available in US Likely to be available in Dec 2014 via 510k</td>
<td>Stiff but kink resistant</td>
<td>Floppy but not easily kinkable</td>
<td>Difficult to advance and very kink prone</td>
</tr>
</tbody>
</table>
Four Wires Cover Almost All Lesions

**Antegrade Wire Escalation or Retrograde Approach**

When to choose:

- **Hydrophilic Wires**
  - “Visible” Channel
  - Undetermined vessel course
  - Calcified and/or angulated

- **Non-hydrophilic Wires**
  - To puncture and advance for a short distance.
Start with the Fielder XT for Antegrade Wire Escalation

Functions

• Tip load: 1.2 g
• Tip diameter tapers to 0.009"

• Finding antegrade microchannels
• Knuckling and dissection, antegrade or retrograde
• Occasionally for collateral crossing
Knuckle Dissection with Fielder XT or Pilot 200
Pilot 200
Stiff Polymer Jacketed Non-Tapered

- Tip load: 4.1g
- Coating: Hydrophilic
- Penetration of a cap or a dissection flap.
- When the vessel course is not certain.
- Knuckling and controlled dissection.
Confianza Pro 12 Functions. 12.4 tip load, 0.009” tip

1 to 1 torque, Guided Spear

Do not Push Far with Anatomic Ambiguity

- Antegrade wire escalation
  - After XT failure when vessel course is straight/understood
- To puncture the cap before controlled dissection
- Re entry
  - First wire for re entry during LAST
- Retrograde
  - CART or rCART re entry when there is a thick ring of plaque to penetrate
Wire Selection for Collateral Crossing

- Collaterals
  - Septal
    - Epicardial
  - Sion
  - Fielder FC
ASAHI® SION and Sion

Core Wire

Twist Wire

Coil

Ropecoil

SLIP COAT coating 28cm
Fielder FC Functions

- Collaterals Crossing
- Similar to Whisper wire.
- Finding the true lumen after dissection.

• Tip load: 1.6 g

M Ochiai, WCC 2006
A Simplified Approach to Guidewire Escalation

Fielder XT

Course of occluded vessel known?

yes  ➔ CPro 12

no  ➔ Pilot 200
**Special Guide wires**

**Miracle 12 / MIRACLEbros 12**

- Tip load ......................... 12.0 g
- Tip radiopacity .................... 11 cm
- PTFE coating over the shaft

A tip load of 12g. It is indicated for complex chronic occlusion cases such as thick, hard fibrous caps and calcification.

**ASAHI SION blue**

- Tip load ......................... 0.5 g
- Tip radiopacity .................... 3 cm
- SLIP-COAT® coating over the spring coil
- PTFE coating over the shaft

First choice guidewire with proprietary composite core construction for greater tip flexibility and support performance. Silicone coating for 15mm from tip for safer procedures. Easily-discernible shaft color for differentiation from other ASAHI wires.
Snares for Wire Externalization
• Interlaced Nitinol loops
• When capturing the retrograde wire in the Aorta 18-30 mm with 6F catheter, 27-45 mm with 7F or 8F catheter
• For capturing the wire in the coronary arteries 2-4 mm or 4-6 mm
Amplatz GooseNeck® Snare Kit

- Snare loop forms a true 90° angle
- Device remains coaxial to the lumen
Kal Alaswad, MD
Mobile: 313-693-8972
kalaswa1@hfhs.org

CTOfundamentals.org