Difficult Wiring, Tips and Tricks

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Coronary Wire

First Coronary Angioplasty By Gruntzig

First Reported By John Simpson

Short Guidewire Attached To Balloon Catheter
Purpose of Wire

*Alpha and Omega*

- To Reach Far End of the Vessel
- To Rail the Devices Into Coronaries
- To Access the Lesion
- To Cross the Lesion Atraumatically
- To Provide Support For Interventional Devices
- To Perform Measurements (ex. FFR)
Innovation of Coronary Wire and Technique in CTO

<table>
<thead>
<tr>
<th>Composite core (Dual coil)</th>
<th>Tip load (g)</th>
<th>Tip taper</th>
<th>Hydrophilic coating</th>
<th>Polymer jacket</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fielder FC</td>
<td>-</td>
<td>0.8</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Fielder XT</td>
<td>-</td>
<td>0.8</td>
<td>+ (0.009&quot;)</td>
<td>+</td>
</tr>
<tr>
<td>Fielder XT-R</td>
<td>+</td>
<td>0.6</td>
<td>+ (0.010&quot;)</td>
<td>+</td>
</tr>
<tr>
<td>Fielder XT-A</td>
<td>+</td>
<td>1.0</td>
<td>+ (0.010&quot;)</td>
<td>+</td>
</tr>
<tr>
<td>SION</td>
<td>+</td>
<td>0.7</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>SION BLUE</td>
<td>+</td>
<td>0.5</td>
<td>-</td>
<td>+ (uncoated distal 15mm)</td>
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<tr>
<td>SION BLACK</td>
<td>+</td>
<td>0.8</td>
<td>-</td>
<td>+</td>
</tr>
<tr>
<td>Gaia 1st</td>
<td>+</td>
<td>1.5</td>
<td>+ (0.010&quot;)</td>
<td>+</td>
</tr>
<tr>
<td>Gaia 2nd</td>
<td>+</td>
<td>3.5</td>
<td>+ (0.011&quot;)</td>
<td>+</td>
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<tr>
<td>Gaia 3rd</td>
<td>+</td>
<td>4.5</td>
<td>+ (0.012&quot;)</td>
<td>+</td>
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<tr>
<td>Miracle</td>
<td>-</td>
<td>3,6,12</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Conquest pro</td>
<td>-</td>
<td>9,12</td>
<td>+</td>
<td>+(uncoated tip)</td>
</tr>
</tbody>
</table>

The Hybrid Algorithm for CTO PCI

1. Ambiguous proximal cap
2. Poor Distal Target
3. Interventional Collaterals
4. Length < 20mm

Workhorse Wire

1. Nitinol
   • BMW
   • Turntac/Versaturn
   • Runthrough, Minamo

2. Composite Core
   • Sion Blue, Suoh 03

3. Dual Coil
   • Samurai RC

4. Stainless Steel
   • HT Floppy

The Advantage of “Old Friend”
BMW wire
Atraumatic Tip
The Ability to Retain Tip Configuration

The Dis-advantage
Calcified Lesion
Tortuous and Long Lesion
Tip Shape

Stable Wire Position

Looping Tip
Perforation due to “RUN THROUGH” Wire

Successful Embolization by Gelfoam
Very Tortuous Vessel

Abnormal Origin of LAD

Daughter Catheter plus Strong Backup Wire
Buddy Wire
Cause of Failure To Cross The Lesion

**Cause**

- Highly Stenotic/Calcified
- Suboptimal Guidewire Tip
- Tortuosity
- Poor Support

**Solution**

- Change Tip Shape
- Different Guide-wire
- Microcatheter
Wiring Through Angulated Bifurcation
Wiring Through Angulated Bifurcation

Cautious Situation
Cautious Situation
Wire Protection for Side Branch !!

*Don’t Make Complicated Situations*
Wire Protection for Side Branch!!

*Don’t Make Complicated Situations*

CTO technique may be helpful for the situation with difficult wiring.
Side Branch Rewiring in Two Stent Technique

No Special Wire. Used One.
Easy Rewiring Through Side Branch in Two Stenting

Pre-conditioning For Rewiring

High-Pressure at LCX Ostial Stent Before Crush

Main Branch Stent Optimization

Xience 3.0mm after deployment at NP (9 ATM)

After POT (3.5 mm proximal)
Summary

- In the difficult situation for wiring, imagination and smart choice for strategy and device are more important than manual technique itself.
- Please do not make a complex situation
- Please make the precondition for easy wiring
- Learning CTO technique may be helpful in the situation for difficult wiring.