The Role of CTO Crossing Devices in Complex Procedures

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Disclosures Tony Das 2015

- Abbott Vascular - consultant
- Boston Scientific - MAB, consultant
- Cordis - consultant
- Covidien - consultant
- Endologix - consultant
- Medtronic - speaker, consultant
- NCP - consultant
- VIVA physicians - board member
- Trireme Medical - consultant
CTO options 2015

- Subintimal wire and re-entry
- True Lumen devices
  - Laser *(Spectranetics*)
  - Frontrunner™ (Cordis)
  - Crosser™ (Bard)
  - Wildcat™ (Avinger)
  - Viance ™ (Covidien)
  - TruePath™ (BSC)
- New CTO devices- imaging, Energy
- Re-Entry devices
- Novel techniques for CTO
True uses of CTO Devices Today
Crossing Caps, Calcium and Pop/TP lesions

- **Frontrunner**
  - Differential dissection
  - Requires microcatheter
  - No subintimal recovery

- **Crosser**
  - Vibrational Energy at 20K cy/sec
  - Limited to 5 min energy
  - 20 micron penetration

- **Widcat**
  - Mechanical True-lumen device
  - Limited Tip Deflection
  - Ergonomic assisted w/ JB

- **Viance**
  - Mechanical true-lumen device
  - Only 0.014 compatible
  - Limited steerability

- **TruePath**
  - Energy true-lumen device
  - Only 0.018 compatible
  - Limited steerability
Combatting Fibrous and Calcified Caps
Bard Crosser™ CTO Device (83% success)
Caps and Calcium: Frontrunner Technique
CTO Frontrunner for Cap Crossing
Good Technique
Recommended: Micro Guide Catheter close to FRONTRUNNER® XP CTO Catheter
Avinger Wildcat and Kittycat
Mechanism and Technique

Proximal Cap  Mid Lesion Cap  Distal Cap
True Path Technique
(80% success: Reopen Trial)

Self-contained power
Supply rotates at 13K RPM

Low-profile rotating diamond-coated distal 0.018in, 165 cm

Audio and visual feedback aids in navigating through CTOs

Audio and visual feedback aids in navigating through CTOs
Covidien™ Viance Catheter Technique
Covidien™ Viance Catheter Technique

SFA Example
OCT image enhanced CTO device

• Ocelot Catheter- Optical Coherence CTO

• CONNECT II trial: 100 patients, 97% success
### Re-entry Devices 2015

<table>
<thead>
<tr>
<th>Catheter</th>
<th>Co.</th>
<th>Features</th>
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</thead>
<tbody>
<tr>
<td>Outback</td>
<td>Cordis</td>
<td>Premounted needle on a 6Fr catheter with fluoroscopic orientation</td>
</tr>
<tr>
<td>Pioneer Plus</td>
<td>Volcano</td>
<td>IVUS guided, premounted needle, orient needle to 12 o’clock, color flow in true lumen</td>
</tr>
<tr>
<td>Enteer</td>
<td>Covidien</td>
<td>Flat balloon orients itself in subintimal space and points needle toward true lumen, 0.018 compatible</td>
</tr>
<tr>
<td>Offroad</td>
<td>Boston Sci</td>
<td>Conical balloon 5.4mm, when inflated points toward true lumen, microcatheter lancet</td>
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Unique Use of Re-entry Balloon technique
What’s New Out There?

EndoCross

RF Wire
Conclusions

• Currently available CTO devices increase crossing success from 67% to 85-90% based on clinical trials

• Each device has specific characteristics allowing crossing of lesion subsets such as fibrotic, calcified, etc.

• Familiarity with at least one CTO device and a re-entry device increases procedural success
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