Microcatheters for complex PCI

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Potential conflicts of interest

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☑ I have the following potential conflicts of interest to report:

Receipt of grants / research supports: Abbott
Receipt of honoraria or consultation fees: Keystone Heart, MicroPort, Sinomed, Stentys
HOW CAN A MICROCATHERETER SUPPORT A GUIDEWIRE?

Concentrate rotating force for better wire control

* Marumatsu et al., Current technical and clinical features of the antegrade and retrograde approaches to percutaneous transluminal coronary intervention for chronic total occlusion - version 2013, The Egypt Heart Journal (2014) 66, 1-10
MICROCATHETER SUPPORT IN COMPLEX PCI

**Complex – CTO Antegrade approach**
- Increase wire support
- Parallel wire / See saw technique possible and easier

**Complex – CTO Retrograde approach**
- Increase wire support, and access the collaterals with the 2nd guidewire
- Provide better support to the guidewire to go more distally.
  - Exchange guidewires quickly.

**Complex – Tortuous, distal lesions**
- Provide better support to the guidewire to go more distally.
  - Exchange guidewires quickly.

**Complex – Bifurcation w/ or w/o acute side branch angle**
- Enhance guidewire tip manipulation
  - Access side branch with 2nd guidewire while 1st one is in main branch

*Marumatsu et al., Current technical and clinical features of the antegrade and retrograde approaches to percutaneous transluminal coronary intervention for chronic total occlusion - version 2013, The Egypt Heart Journal (2014) 66, 1-10*
Single Lumen Microcatheter Finecross

- **Large inner diameter**
- **2.6 Fr proximal diameter**
- **Advancement & access via distal tortuous vessels**
- **Hydrophilic coating & flexible distal segment**
- **Optimal guidewire handling**
- **PTFE inner layer**
- **Stainless steel braided shaft**
- **Tapered inner & outer diameters over entire length (2.6 Fr prox to 1.8 Fr dist)**
- **Conventional tip FineCross tip**
- **Strong guidewire Support**
- **Greater lesion Crossability**
- **Smooth guidewire handling**
- **Smaller lesion Crossability**

Allows buddy wire technique
Double markers facilitate an accurate placement to access any side branch or collaterals or the most distal stent strut.

**Specifications**
- OTW lumen exit port in between both markers
- 1 mm Distal marker on RX lumen part
- Distal marker on RX lumen part is located at 0.5 mm
ROLE OF A DUAL LUMEN MICROCATHERET

- Facilitates guidewires placement and exchange of guidewire
- Get the same route along the 1st guidewire
  - Parallel wire or buddywire after complex channel crossing
  - SB crossing especially when SB is angulated or stent struts to recross
- OTW lumen enhances\(^1,\)\(^2\) the 2nd guidewire manœuvrability and provides greater back-up support\(^3\)
- Avoid tangling of the guidewires

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\(^1\) Haase et al. Cardiovascular Interventions in Clinical Practice. UK: John Wiley & Sons, 2010
\(^2\) Ochiai. Wire Design and New CTO Technologies- You May Not Have Yet. Chronic Total Occlusion and Left Main Summit 2014
- FineDuo supported wiring of Dg-2 successful with Sion Black

Operators: Jacek Legutko, Lukasz Rzeszutko, University Hospital, Krakow, Poland
MICROCATHETER: SINGLE OR DUAL LUMEN

- 2 types for stronger support & better\(^1,2\) guidewire manipulation

**Single lumen microcatheters**
- Support in tortuous anatomy
- Collateral Access in CTO procedures

**Dual lumen microcatheters**
- Support in tortuous anatomy
- Collateral Access in CTO procedures
- Support for Side-branch
- Acute Bifurcation Lesions

* Marumatsu et al., Current technical and clinical features of the antegrade and retrograde approaches to percutaneous transluminal coronary intervention for chronic total occlusion - version 2013, The Egypt Heart Journal (2014) 66, 1-10
Microcatheters play an important role in complex PCI

Single lumen microcatheters give guidewire support and improve handling

Dual lumen microcatheter can make guidewire exchange easier and act like two microcatheters

Dual lumen microcatheters can improve side branch access

Guidewire support and penetration force will become greater compared to any OTW balloon or standard microcatheter

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1 Lo et al. TCTAP C-111 Crusade Micro-Catheter Assisted Antegrade Wiring of a Chronic Total Occlusion Lesion Located at Proximal Bifurcation of the Left Anterior Descending Artery. J Am Coll Cardiol. 2015;65(17_S):S263-S266


3 Touma et al., Chronic Total Occlusions - Current techniques and future directions, IJC Heart & Vascular 7 (2015) 28–39