Bi-diretional Wiring in BTK/BTA Intervention

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Disclosure

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I have the following potential conflicts of interest to report:

Consulting: Nipro Corp.
Toray medical Corp.
Medicos Hirata
CTO recanalization device

Frontrunner

TruePath™ CTO Device

No Capital Equipment Required

Low-profile rotating diamond-coated distal tip nearly half the size of competitive offerings

Audio and visual feedback aids in navigating through CTOs
Re-entry device

OUTBACK LTD Re-Entry Catheter
True Lumen Re-Entry Technology

- Unique Re-Entry technology
- Highly visible “L” and “T” markers
- Helps reduce time under fluoroscopy
- Braided catheter shaft

Get back into the true lumen

OffRoad™ Re-Entry Catheter System

Pioneer
A Variety of 0.014inch wires

◆ Terumo
  • Runthrough Ph, Naveed 4 (Tapered 1, Floppy 1, Hard 15/30/50)
◆ ASAHI INTEC
  • Cruise (Regalia), X-treme PV, Agosal XS, Treasure XS
  • Astato XS 9-12/9-40
  • Gradius, Halberd
◆ Abbott
  • Command, Winn 40/80/200T
◆ CORDIS
  • Chevalier (Floppy, tapered 3/15/30, PL-X, Universal)
◆ Lifeline
  • Wizard PV 1/3/6/X, joker PV
◆ Kaneka
  • Athlete Ruby (Soft, Intermediate, Hard, Superhard, Support)
◆ Boston
  • Aguru (Floppy, Support, Ultra, Pierce, HC)
Complex BTK/BTA CTO lesions

Antegrade approach

- Long CTO
- Severe Calcification
- Thin vessel
- Tortuousness
- Poor run off

Failure

Bi-directional approach

Success rate

- Antegrade approach: ~70%
- Bi-directional approach: ~95%
Bi-directional approach

✔ Utilize collateral (Trans-collateral approach)

✔ Utilize existing Artery to Artery connection (e.g. Trans-pedal arch approach)

✔ Distal puncture
Trans-collateral approach

◆ Approach
  ✔ 4.5~6F Sheathless guiding Cath.
  • Ipsilateral >> contralateral

◆ Channel selection
  ✔ Short > Long
  ✔ Thick > Thin
  ✔ Straight > Tortuous
  ✔ Convergence angle
    Obtuse angle to proximal
Trans-collateral approach

◆ Support Catheter
  ✓ 0.014inch compatible micro catheter
    (Prominent BTK, Mizuki FX, Corsair)

◆ Guidewire
  ✓ 0.014inch hydrophilic soft wire
    Regalia, Chevalier floppy, Commando
  ✓ After Crossing the channel
    Tapered wire, CTO wire
Trans-collateral approach
Trans-collateral approach
Trans-collateral approach

Wire Rendez-vous
Trans-collateral approach
Trans-pedal arch approach

- **Approach**
  - ✔️ 4.5~6F Sheathless guiding Cath.
  - • Ipsilateral >> contralateral
- **Support Catheter**
  - ✔️ 0.014inch compatible micro catheter (Prominent BTK, Mizuki FX, Corsair)
- **Guidewire**
  - ✔️ 0.014inch hydrophilic soft wire (Regalia, Chevalier floppy, Commando)
- ✔️ After Crossing the canal
  - Tapered wire, CTO wire
Trans-pedal arch approach
“figure-of-eight”

DPA

lateral plantar
Trans-pedal arch approach
First Angiography
Total occlusion of the posterior tibial artery (PTA) and the dorsalis pedis artery (DPA)
Rupture

Trans-pedal arch approach

Wizard PV3 and Cruise
Trans-pedal arch approach
POBA and channel dilation

TREK RX 1.2*6mm
Wire Rendez-vous

Athlete RUBY Hard

Agosal XS 300cm
SHIDEN 2.0*100mm
Final imaging
Distal Puncture

- Under local anesthesia
- 0.014 inch polymer-coated guidewire through 22G intravenous catheter or 21G needle
Distal Puncture

- No sheath
- Microcatheter or low profile OTW balloon backup

Prominent (Tokai Medical Products)

Coyote™ ES (Boston Scientific)
Plantar A. puncture

Admission
Plantar A. puncture
Plantar A. puncture
Plantar A. puncture

Wire Rendez-vous
Plantar A. puncture
Plantar A. puncture

Trans-collateral approach

Wire Rendez-vous
Plantar A. puncture
Plantar A. puncture
Conclusion

• Employing a bi-directional approach considerably increases the probability of procedural success to more than 90%, even for BTK disease.

• A usage of 0.014inch wires are mandatory when we perform a complex BTK/BTA intervention, We must acquaint ourselves with how to use them.
Where there’s a will there’s a way!
Bi-directional Wiring in BTK/BTA Intervention

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