Step by step: Infrapopliteal recanalization

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Disclosure

Speaker name:

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I have the following potential conflicts of interest to report:

☐ Consulting

☐ Employment in industry

☐ Stockholder of a healthcare company

☐ Owner of a healthcare company

☐ Other(s)

☐ I do not have any potential conflict of interest
Infrapopliteal Arteries: Patterns of Disease

Long segment disease

Focal disease
Infrapopliteal Arteries: Long segment disease

Low-profile PTA catheters available with
→ small diameters
→ long balloon lengths
Infrapopliteal Arteries: Wires

Cardiologists / angiologists: 0.014\" and 0.018\" GWs  To attempt an intraluminal passage

Radiologists / vascular surgeons: 0.035\" guidewires

To attempt a subintimal passage
Subintimal Infrapopliteal PTA

- 0.035“ hydrophilic Terumo GW
Subintimal Infrapopliteal PTA
Subintimal Infrapopliteal PTA

Exchange for a 0.018“ guidewire and low-profile balloon
Subintimal Infrapopliteal PTA

Anterior tibial artery occlusion
Subintimal Infrapopliteal PTA

Terumo 0.035" provides good support, risk of perforation is higher
Subintimal Infrapopliteal PTA

Reentry-flap
0.014” Guidewires for BTK CTOs

• > 150 guidewires available

• Hydrophilic, polymer-coated, low tip-load
  ✓ e.g. 0.014” PT2 (Boston Scientific)

• To attempt intraluminal passage

• Support by low-profile balloon or support-catheter

• Balloon first choice, support-catheters for difficult cases
0.014“ Guidewires for BTK CTOs

Distance of wire-tip to tip of the support-catheter determines over stiffness of the guidewire.
0.014” Guidewires for BTK CTOs

- If 0.014” GW fails to pass due to calcification

- Switch to CTO-GW like
  - e.g. MiracleBroth 12 g (Asahi)
  - e.g. CTO-GW 18 g or 25 g (Cook)
Infrapopliteal Guidewires

- If lack of push using the 0.014“ GW is the problem

Prolapses into the trunk

- Switch to 0.018“, hydrophilic, polymer-coated (V-18, BS)
Micro- or Support-Catheters

- Low-profile, stiff
- Possibility to exchange from 0.014“ to 0.018“ GW
- QuickCross (Spectranetics)
- CXI (Cook), braided, OD 2.6 French
Infrapopliteal Arteries: Long segment disease

- small balloon diameter (1.2mm – 4mm)
- long balloon length (up to > 20 cm)
- crossing profile < 1mm
- tapered balloons available

Low profile balloons have been specifically designed for the treatment of BTK arteries
Infrapopliteal Arteries: PTA catheters

- Advance 14LP (Cook)
- Sleek (Cordis)
- Nanocross (Medtronic)
- Tercross (Terumo)
- Amphirion (Medtronic)
- Armarda14 (Abbott)
Infrapopliteal Arteries: Long segment disease

- High restenosis / reocclusion rate
- Flow-limiting dissections – need for stenting

Potential for speciality balloons to reduce vessel barotrauma and intimal injury
Cutting balloons and focal force balloons

- Cutting balloon (Boston Scientific)
- Angiosculpt (Spectranetics)
- Vascutrak (BARD)

Single-arm studies show high technical success in calcified BTK lesions
Speciality Balloons

- No first-line therapy in standard lesions
- Potential in calcified lesions, especially in long lesions where DES are not appropriate
- Can play a role to prepare calcified lesions
  - for drug coated balloons
  - bioabsorbable stents
- Studies needed to confirm their clinical benefits
Drug-Eluting Stents Below-The-Knee

52 years, DM, Rutherford 5 Cypher 3,5/33mm
Randomized Trials DES BTK

- **YUKON**: Yukon BMS vs. Sirolimus coated stent (no polymer)

- **DESTINY**: BMS (Multilink Vision) vs. Xience V (Everolimus)

- **ACHILLES**: Balloon vs. Cypher Select (Sirolimus)
Step by step: Infrapopliteal recanalization

- Antegrade access

- 0.014" wires or 0.018" wires for intraluminal wire passage

- Dedicated BTK-balloons for long segment disease

- Best results for Drug eluting stents for focal lesions
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