New Approaches To Limb Salvage In CLI Due To Very Distal Disease: Pedal Loop, Transcollateral And Small Artery Access In The Foot: Techniques, Tips And Tricks

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Step-by-step approach in CTOs

- Antegrade approach
  1. Endoluminal
  2. Subintimal
- Retrograde approaches
  1. Pedal-plantar loop technique
  2. Trans-collateral approach
  3. Retrograde percutaneous puncture:
     - Retrograde pedal/plantar
     - Antegrade pedal/plantar
     - Retrograde digital/metatarsal

Retrograde approaches: Background & History

- Antegrade approach
- Retrograde pedal/plantar
- Antegrade pedal/plantar
- Retrograde digital/metatarsal

Retrograde approach: the pedal-plantar loop technique

The aim of this technique is to open the forefoot distribution system.

The difficulty is to understand when it must be used because it is essential to emphasize that a good distal distribution system must always be respected and, if possible, not touched.

Use this technique only in case of severe foot vessel disease!
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Pedal Puncture after Failed Subintimal Dissection
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**Antegrade pedal/plantar puncture**

No stumps available for AT or PT

**Antegrade pedal/plantar puncture**

Pedal artery antegrade puncture and retrograde wiring coronary-like of plantar and posterior arteries (Pilot 200, 2 mm x 4 cm Amphirion Deep)
1. Digital artery puncture

- Chose the best digital branch for access
  - First/Second dorsal digital branches are the best option
- Use correct radiological projections
- Prepare for the stick
  - Verapamil [5 mg/2 ml] diluted to 10 ml, inject 9 ml of this solution intra-arterially, close to the foot. Local anesthesia is performed in subcutaneous tissue along with 1 ml diluted Verapamil to avoid spasm.
- Stick the artery
  - Use dilatation or contrast dye injection as a target

2. Wiring the Digital branch

- 0.018” wires
  - 0.018” wire (Cook)
  - 0.018” wires have stronger support than 0.014” wires and can help in positioning the micropuncture or support catheter
  - Dedicated Micro-Sheath (Cook) permits wires exchange, supports catheters and balloons introduction
- Check-Flo® hemostasis valve
- Micropuncture® introducer
- Combined intraluminal and subintimal technique
- Rendez-vous with the antegrade catheter
- Antegrade wiring
- Reach the pedal arch and the ankle

3. Retrograde recanalization

- Combined intraluminal and subintimal technique
- Rendez-vous with the antegrade catheter
- Antegrade wiring

4. PTA & Hemostasis

- Long-balloon for definitive PTA in the foot and tibial vessels
- Final hemostasis of the digital puncture site using a 1.5 mm balloon inflated at nominal pressure

- Needle and artery must be aligned!
56 yr old male
DM
CLI, TcPO2 = 3 mmHg
Gangrene I, II and III toes
Two consecutive antegrade failures

1. Puncture
2. V18 Wiring
3. Retrog Plantar
4. Retrog PT
5. Rendez-vous
6. Puncture Sealing

1. BTK-CLI angioplasty is slowly going out of a pioneering & artisanal era: we must organize our strategies in a methodical step-by-step approach
2. Pushing the wire in an antegrade approach is not always sufficient to get a successful recanalization: retrograde approaches are a fundamental bailout resource

THANKS FOR YOUR ATTENTION