Indications, Techniques and Results of PPL and Transcollateral Angioplasty: Tips and Tricks for Metatarsal Artery Access

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Italian Flowchart of Strategies and Techniques

Step-by-step crossing strategy

# Antegrade approach
1. Endoluminal approach
2. Subtalar approach

# Retrograde approach
1. Pedal Plantar Loop Technique
2. Trans-collateral approach
3. Retrograde percutaneous puncture

When BTA Treatment/Arch Reconstruction/PPL? Our Indications

- Non Healing Surgical Wounds;
- TMA;
- Foot Ulcers involving more than one angiosome;
- No tibial outflow;
- Improving foot outflow in BAD;

Improving Forefoot Outflow Through ARCH

T.L. 82 yo male
Type 2 DM, Ischemic Neuropathy, Hypertension;
Left Forefootgangrene; TcPO2=7 mmHg;

PPL reconstruction sample
Poor Working Forefoot Distribution

P.A., 52 yo female
DM, smoker, Hypercolesterolemia
TcPO2 < 22mmHg
Better Working Foot Distribution after Recanalization

The value of the PEDAL ARCH

Recanalization through Collaterals - Foot

Type 2 DM, Ischemic Neuropathy, Hypertension; Right 1st Toe TUC 2C lesion; TcPO2=7 mmHg;
Pre-medication: Nitrate 200 microg/2ml
0,014 Abbott Pilot 200 x Armada RT 1,5 x 20 mm

1. Digital artery puncture
2. Wiring the digital artery
3. Retrograde foot and tibial arteries recanalization
4. PTA + haemostasis

Indications and Purposes of Metatarsal Access

Tips and Tricks for Metatarsal Access

Correct projection criteria

Tips and Tricks for Metatarsal Access

1. Digital artery puncture
- Chose the best digital branch for access
- Correct Radiological Projections
- Prepare for the stick
- STICK the artery

Para/Peroneal/Dorsal digital branch are the best option
Verapamil [5 mg/2 ml] diluted to 10 ml, inject 9 ml of this solution intra-arterially close to the foot, local anaesthesia is administered in the subcutaneous tissue along with 1 ml diluted Verapamil to avoid spasm.
Use calcifications or CM injection.
Tips and Tricks for Metatarsal Access

1. 21G Needle Micropuncture Set
   - Needle and Artery Must be Aligned!

2. Wiring the Digital branch
   - 0.018”-in guide wire provides good support
   - Through the first dorsal branch reach the pedal arch
   - Micro-sheath and support catheter
   - Intraluminal wiring and recanalization of digital branch and pedal arch

3. Retrograde recanalization
   - Combined intraluminal and subintimal technique
   - Rendez-vous with the antegrade catheter
   - Antegrade wiring
   - Intraluminal wiring and recanalization of digital branch and pedal arch

4. PTA and Haemostasis
   - Low-profile-OTW catheter balloon PTA for 3-5 min.
   - Long-balloon for definitive PTA in the foot and tibial vessels

When BAD
- Trans Collaterals is feasible;
- Protect Collaterals with use of Drugs;
- Dedicate Wires and Caths;
- Metatarsal Retrograde when failures;
- PPL is useful for Improving Outflow first;

CONCLUSIONS