Next steps in BTK revascularization

Below-the-ankle arterial disease

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Disclosure

Speaker name: ROBERTO FERRARESI

I have the following potential conflicts of interest to report:

- Consulting: Medtronic, Abbott, Cook, LimFlow

No conflicts with this presentation
1. BTA vessel disease: prevalence & risk factors

2. To treat or not to treat BTA vessels?

3. CTOs crossing strategy

4. Hydrodynamic boost: a new technique for reentry in BTA arteries
Obstructive disease distribution in a series of 1624 pts with CLI (RTF 5-6)


5% ATG

55% FEM-POP

93% BTK

71% BTA
We considered 4 big foot vessels:

1. retromalleolar posterior tibial artery
2. dorsalis pedis artery
3. lateral plantar artery
4. medial plantar artery

Plantar arch was considered separately, as the distal arch originating from lateral plantar artery, giving the forefoot distribution system and connecting to dorsalis pedis artery through the 1st perforating branch.
Obstructive disease distribution in a series of 1624 pts with CLI (RTF 5-6)

Obstructive disease distribution in a series of 1624 pts with CLI (RTF 5-6)


Arch disease according to risk factors

- DM-/ESRD- (166 pts)
- DM+/ESRD- (993 pts)
- ESRD+/DM- (74 pts)
- DM+/ESRD+ (216 pts)

24%
1. Foot vessel disease is present in >70% of patients with CLI

2. Foot vessel disease is particularly represented in DM-ESRD pts

Conclusion:
BTA disease: prevalence & risk factors
Below-the-ankle disease

1. BTA vessel disease: prevalence & risk factors

2. To treat or not to treat BTA vessels?

3. CTOs crossing strategy

4. Hydrodynamic boost: a new technique for reentry in BTA arteries
The first commandment in treating BTA vessel is to respect what is well functioning. Go BTA only if clearly necessary by a clinical and vascular point of view:

- Is the wound really ischemic?
- Could it heal with the vascular supply provided by the collateral vessel network?
- Is it possible to open an occluded native vessel without damaging the collateral network?

2° Conclusion:
To treat or not to treat BTA vessels?
Below-the-ankle disease

1. BTA vessel disease: prevalence & risk factors
2. To treat or not to treat BTA vessels?
3. CTOs crossing strategy
4. Hydrodynamic boost: a new technique for reentry in BTA arteries


Step-by-step approach in CTOs crossing strategy

- Antegrade approach
  1. Endoluminal
  2. Subintimal
- Retrograde puncture
- Transcollateral
  1. Pedal-plantar loop technique
  2. Peroneal artery branches PTA

Tips and tricks for a correct “endo approach”

R. FERRARESI, L. M. PALENA, G. MAURI, M. MANZI

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Step-by-step approach in CTOs crossing strategy

- **Antegrade approach**
  1. Endoluminal
  2. Subintimal

- **Retrograde puncture**
- **Transcollateral**
  1. Pedal-plantar loop technique
  2. Peroneal artery branches PTA

Results:
- ENDO successful 56%
- SUBI successful 34%
- SUBI+RETRO successful 10%

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Is it possible to standardize the endovascular treatment of BTK-CTOs?

I proposed a reasonable step-by-step approach in order to follow a well defined operative flow chart
1. BTA vessel disease: prevalence & risk factors

2. To treat or not to treat BTA vessels?

3. CTOs crossing strategy

4. Hydrodynamic boost: a new technique for reentry in BTA arteries
Dorsalis pedis artery
Lateral plantar artery
Key points in hydrodynamic boost re-entry technique: when to do it

1. **Small vessels: ankle & foot level.** Don’t use this technique in big vessels (FEM-POP-HighBTK)

2. **"Compact" subintimal space: no-predilatation!**

3. **"Perfect" distal target vessel:** don’t use this technique in diseased distal vessels

4. **No calcium**

5. **Catheter tip and target vessel must be as close as possible**

Advantages of the hydrodynamic boost re-entry technique

1. Cheap

2. In the majority of the cases we were able to re-enter into the true distal lumen in the first 1 cm of the target open distal vessel

3. Guide wire passage after the boost was always easy
Hydrodynamic boost is a novel technique to re-enter into the true distal lumen in subintimal BTA angioplasty.

*It is only a “toy”!!!*

The most important thing is to recognize every different type of subintimal and endoluminal space in order to respect the distal target vessel!!!
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