Below The Knee Intervention pedal-plantar loop technique

가톨릭대학교 서울성모병원 심장혈관센터
김수익

Indication & contraindication of BTK Intervention

※ Indication

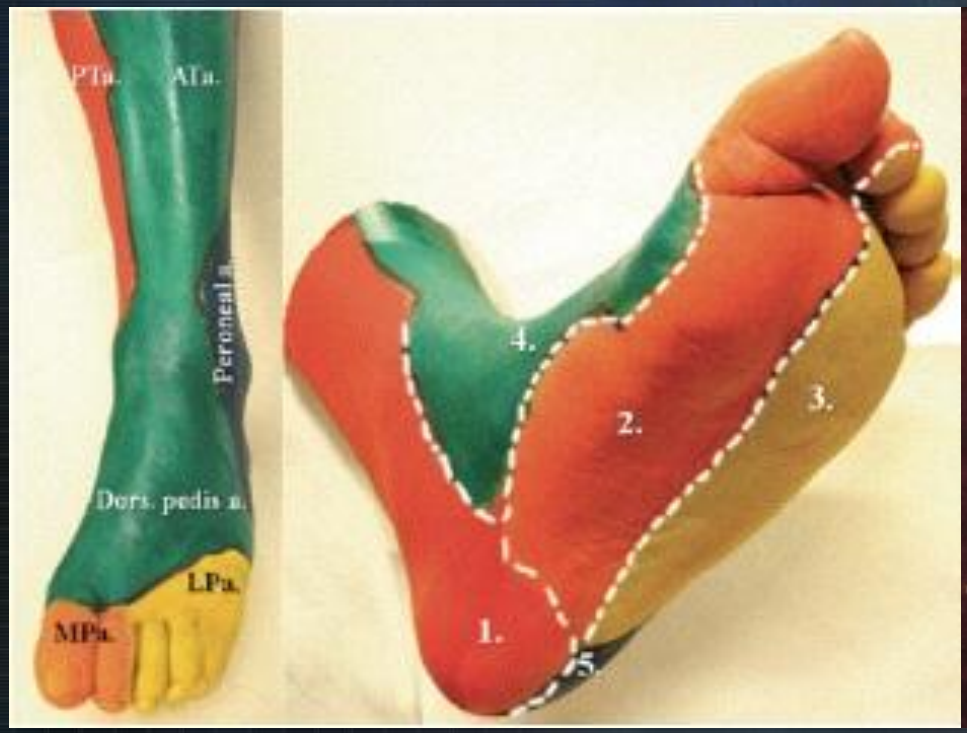
- rest pain or non healing ulcer/gangrene
- Significant flow limiting stenosis

※ contraindication

- Medically unstable
- Uncorrectable bleeding disorder
- Pregnancy
- Buerger disease
- Impaired renal function

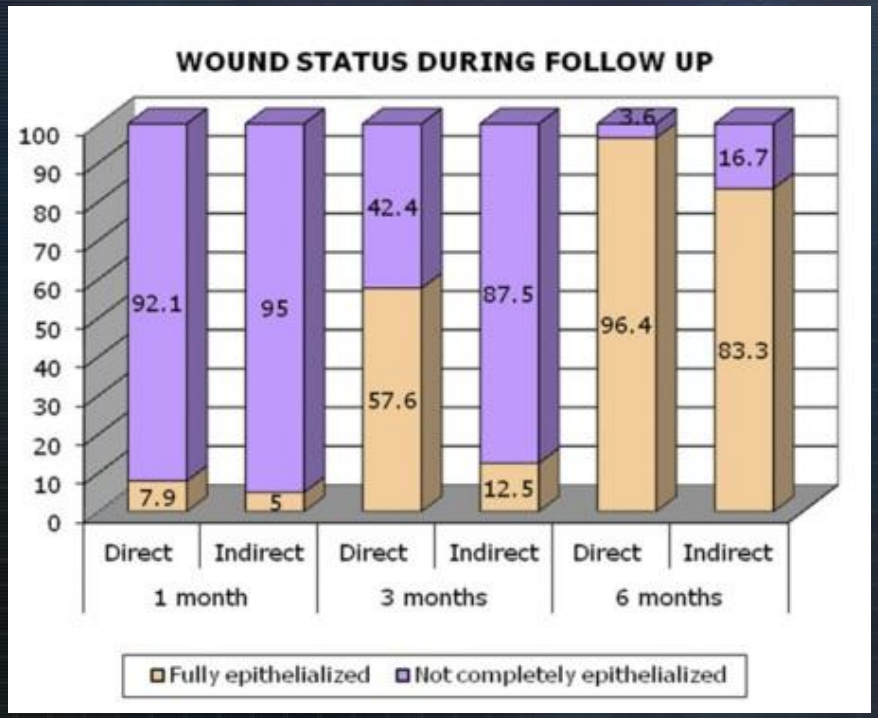
CIRSE

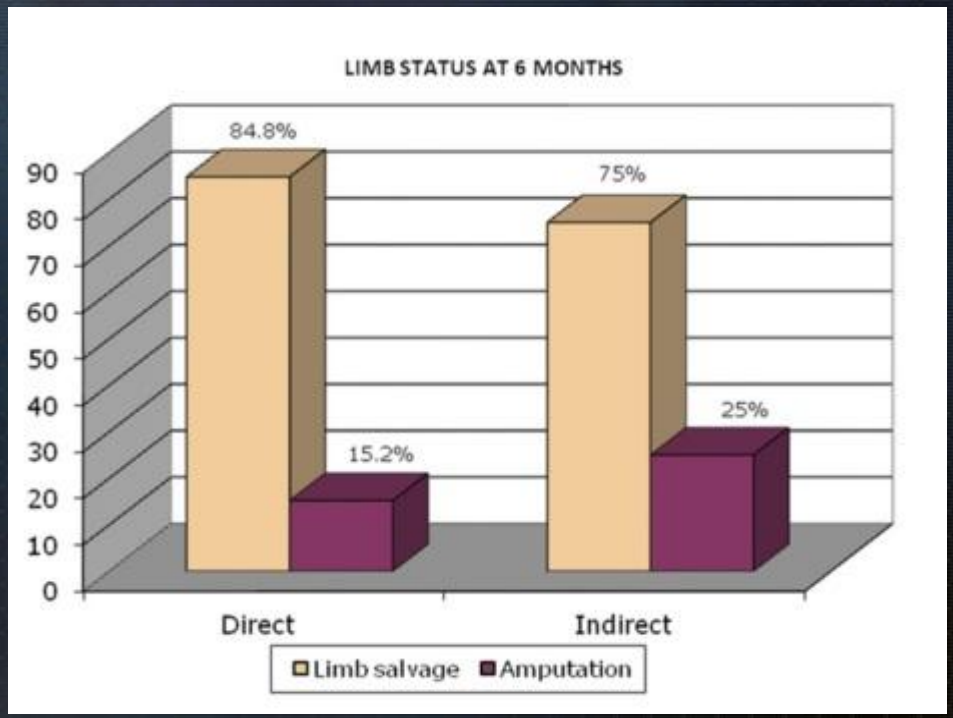
Angiosome concept



Alexandrescu VA et al. J Endovasc Ther 2008;15:580-593

Outcome of Angiosome and non-angiosome targeted revascularrization in CLI





To attain better ulcer healing rates combined with higher limb salvage, direct revas cularization of the ischemic angiosome should be considered whenever possible. R evascularization should not be denied to patients with indirect perfusion of the isc hemic angiosome as acceptable rates of limb salvage are obtained.

Kabra A, Suresh KR, Vivekanand V, Vishnu M, Sumanth R, Nekkanti M.
J Vasc Surg. 2013 Jan;57(1):44-9. doi: 10.1016/j.jvs.2012.07.042. Epub 2012 Oct 9.

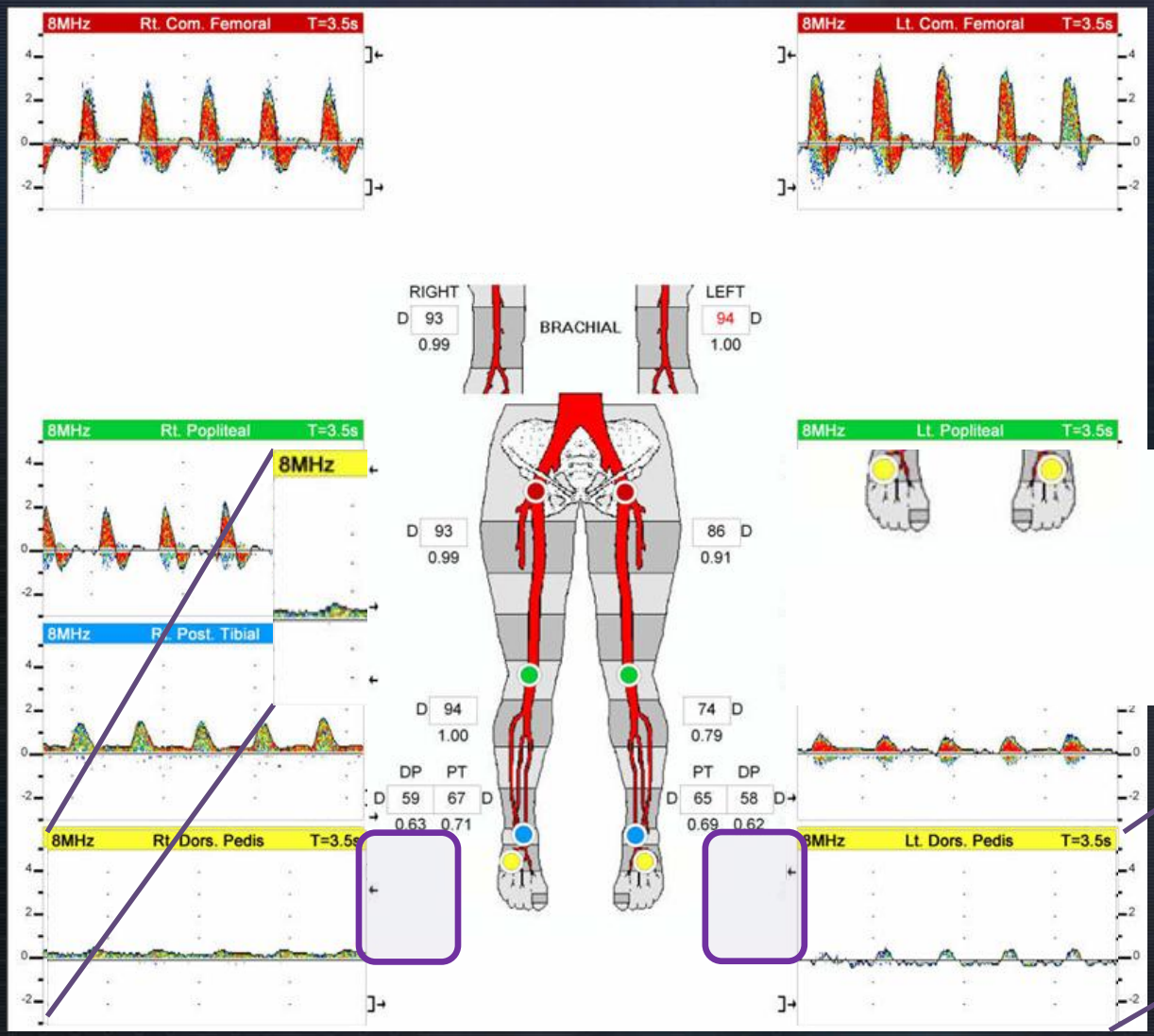
CASE

- **Patient**
  75/M

- **Chief Complaint**
  Right 2nd,3rd toe rest pain

- **Present illness**
  1. CAD(2VD) PCI on pLAD
  2. ASO, both
  3. COPD
  4. Hyperlipidemia

Doppler waveform analysis



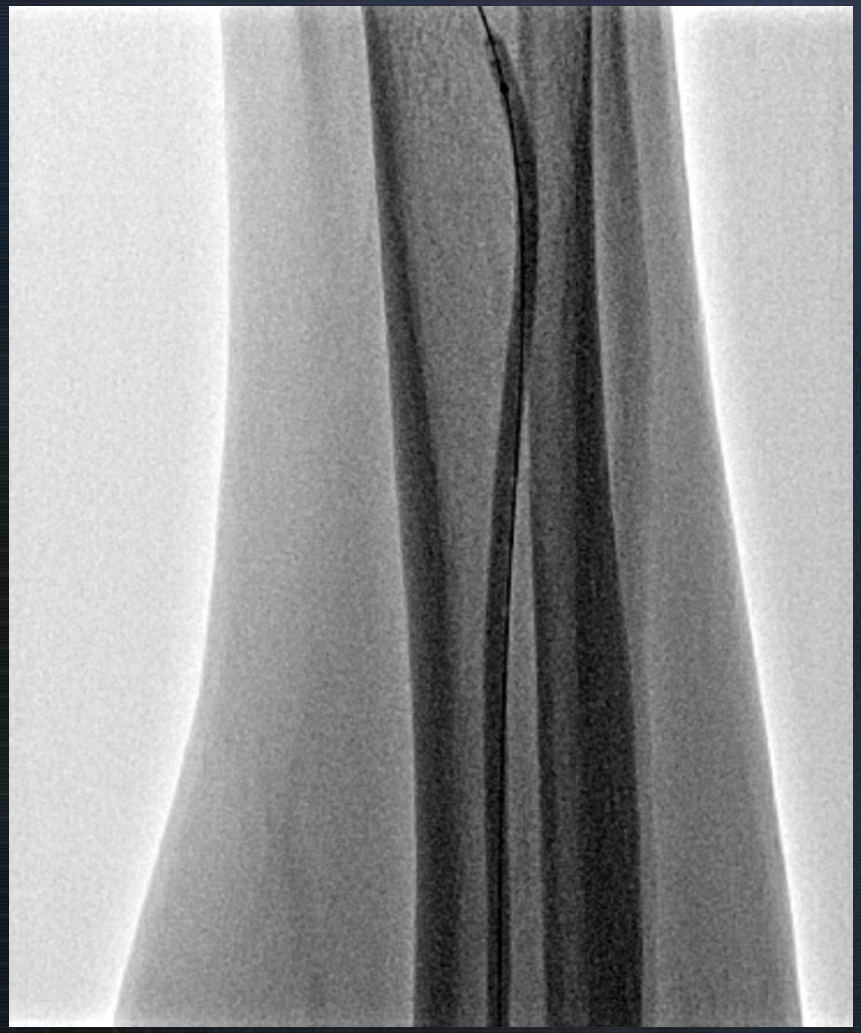
CT low extremity angio

1. Focal occlusion involves th e left tibioperoneal trunk. The posterior tibial, perone al & plantar arteries are pa rtly reconstituted by collat erals.
2. Non-opacification of the di stal portion of the left ant erior tibial artery and left dorsalis pedis artery. R/O c hronic occlusion.
3. Non-opacification of the rig ht posterior tibial & peron eal arteries. R/O Chronic o cclusion. The plantar artery is reconstituted by collater als.

Angiography

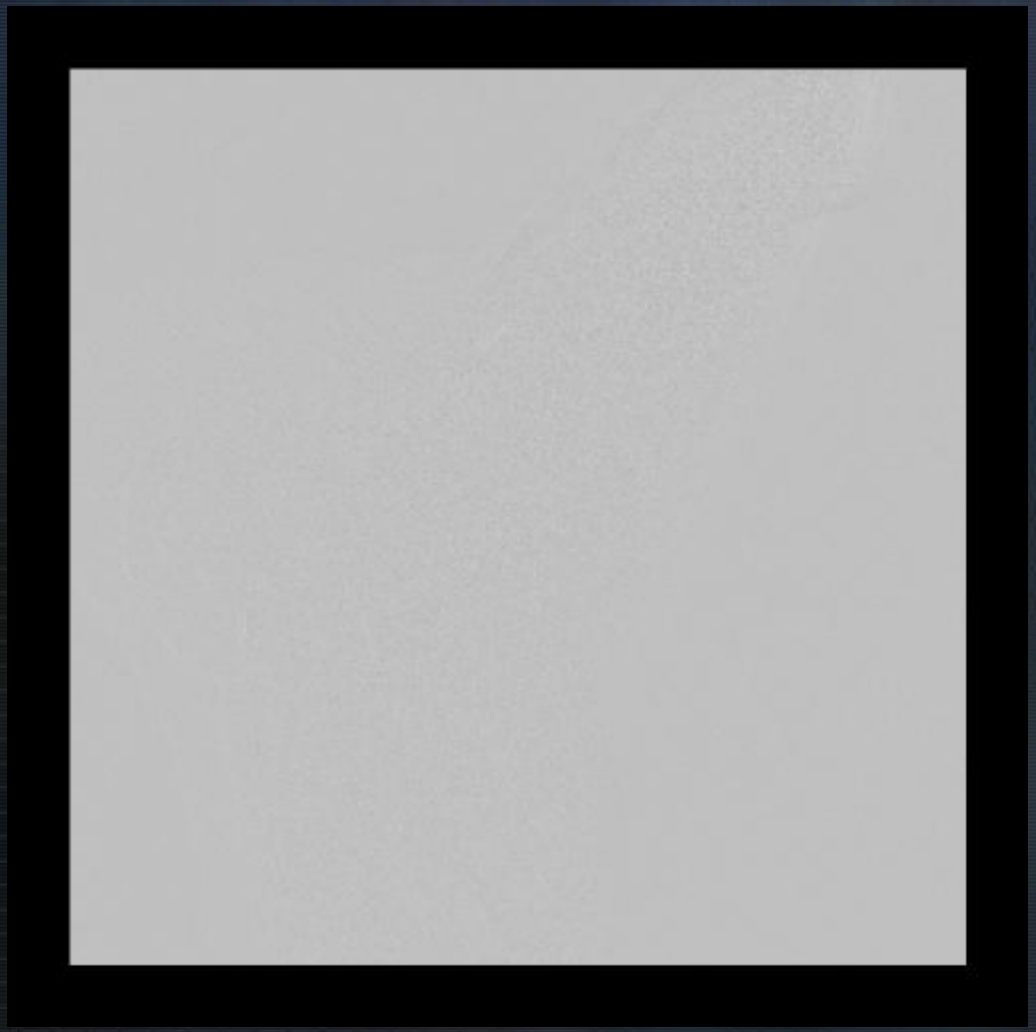
6Fr Ansel 1 Guiding Sheath (Anterograde puncture)

Percutaneous angioplasty (PA)



V-18(0.018) guide wire PTA wiring fail. CXI Catheter + PT2(0.014) guide wire wiring success.
Cordis Savvy 3.0-150mm ballooning

Pedal-plantar loop technique



CXI Catheter 이용,
plantar artery
Angiography 시행

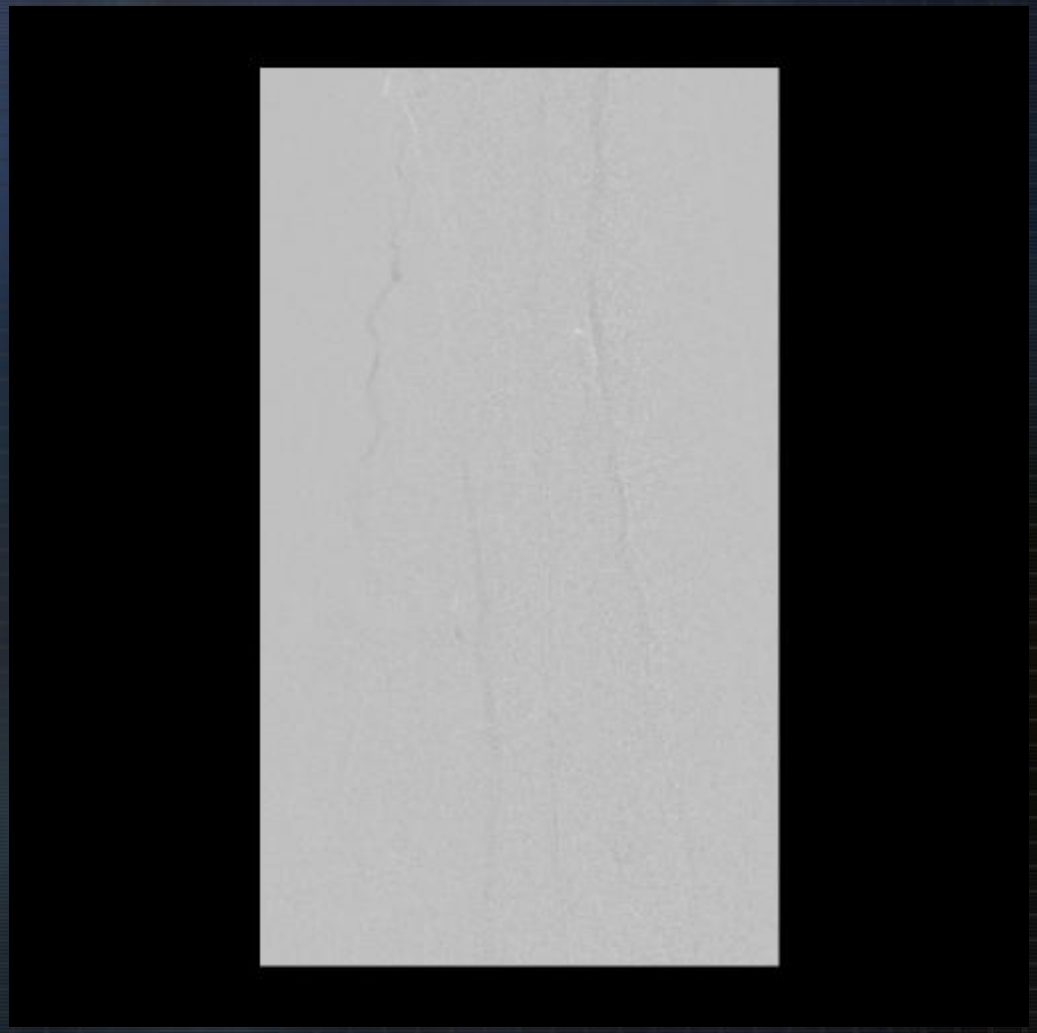
Plantar arch Wiring for Dorsal-Plantar Loop Technique

Boston CHOICE PT2 Wire * 2 wiring success

Ballooning

Medtronic Amphirion 2.0mm - 80mm balloning

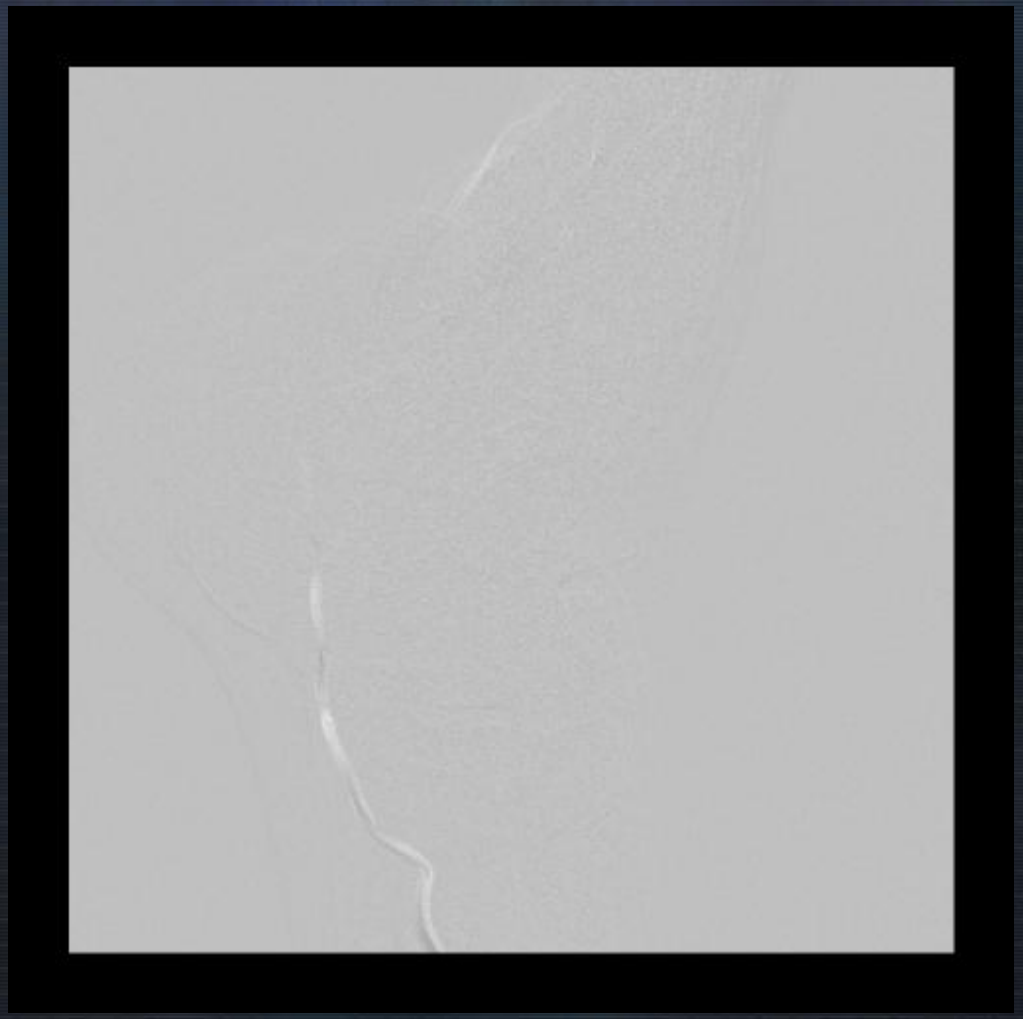
Percutaneous angioplasty (ATA)



Boston scientific PT2(0.014) guide wire wiring success.

ATA Amphirion 2.5mm - 150mm balloning

Final



Sucessful PTA!!

Material

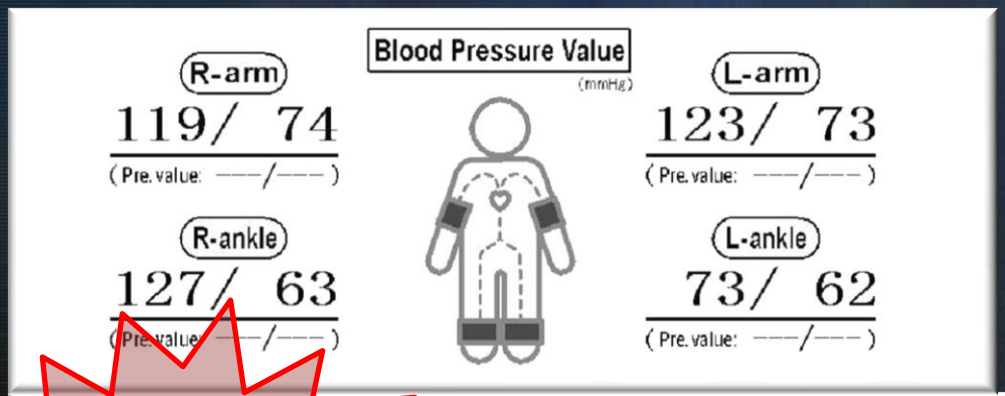
◎ sheath & catheter
- Terumo 6Fr Sheath
- Cook 6Fr Ansel Sheath
- Terumo 4Fr Glide catheter

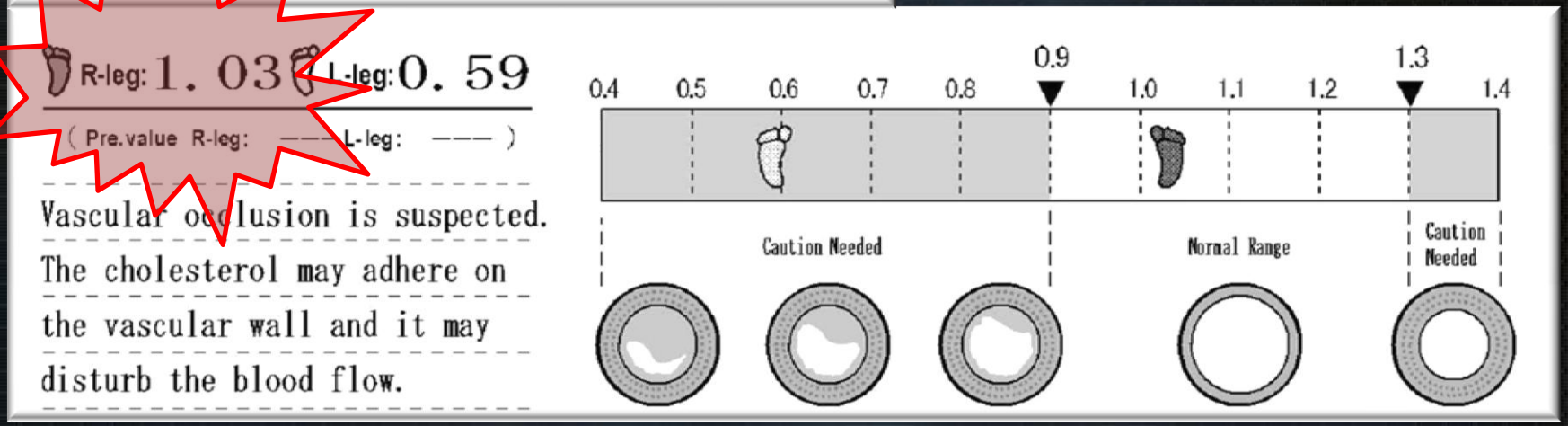
◎ Guide wire
- Boston V-18 control wire(.018 wire)
- Boston CHOICE PT Guidewire(.014 wire) * 2

◎ support device
- Cook 2.6Fr CXI suppot catheter 90Cm

◎ balloon
- Cordis Savvy 3.0-150mm
- Amphirion 2.0mm - 80mm
- Amphirion 2.5mm - 120mm

f/u ABI





Post PTA next day f/u ABI
Right : 1.03
Left : 0.59

Clinical result of Pedal-plantar loop technique

Clinical results of below-the knee intervention using pedal-plantar loop technique for the revascularization of foot arteries.

Manzi M, Fusaro M, Ceccacci T, Erente G, Dalla Paola L, Brocco E.

Interventional Radiology Unit, Foot and Ankle Clinic, Abano Terme Clinic, Abano Terme, Padua, Italy. marco.manzi2@tin.it

Abstract

AIM: Recent registries and randomized trials support the role of percutaneous revascularization in patients with critical limb ischemia (CLI) due to below-the-knee (BTK) atherosclerotic disease, as percutaneous transluminal angioplasty (PTA) for BTK disease has shown to be feasible and safe in this foot rest

MET usin succ ankl reho

RES tech arter the tech impr succ

(P<0.001).

CONCLUSIONS: Percutaneous revascularization of foot arteries in patients with CLI is feasible and safe, and appears to provide positive clinical results at both acute and mid-term follow-up.

Acute success was achieved for tibial PTA in 100% of the cases, with ability to position and inflate the balloon and achieve adequate angiographic results without peri-procedural complications in all, whereas acute success for the pedal-plantar loop technique was 85%. Clinical improvement in functional status was obtained and maintained after an average of 12 months, with a significant improvement of transcutaneous oxygen tension after 15 days, 59+/-16 mmHg in the group of patients in which the foot arteries revascularization was successfully feasible, versus 42+/-12 mmHg in patients achieving patency of two BTK vessels at the ankle level with partial out-flow in the foot

J Cardiovasc Surg (Torino). 2009 Jun;50(3):331-7.

Discussion Point

- What new technique for foot artery intervention?