Ischemia/infection/amputation: when, what, and how to intervene

Vincenzo Foppa, 1462
“The miracle of the salvaged foot”
Cappella Portinari, S. Eustorgio Church
Milan, Italy

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Disclosure

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In the last 2 years I have the following potential conflicts of interest to report:

**Consultant:** Medtronic, Abbott, Boston Scientific, Contract Medical International, Cook, Asahi, Ivascular, Biotronic, Limflow, Spectranetics, Shire, Kardia, Astra Zeneca, Orbus, Bard

**Virtual shareholder:** Limflow
1. Ischemia
2. Infection
3. Amputation

when, what, and how to intervene
Untreated CLI: 1y follow up
- 54% mortality,
- 46% amputation


There was a statistically significant decrease in every category of amputation, which correlated precisely with the increasing rate of dorsalis pedis artery bypass.

- Dorsalis pedis bypass is durable with a high likelihood of ischemic foot salvage over many years.

- Saphenous vein is the preferred conduit when available.

- These results justify the routine use of pedal arterial reconstruction for patients with diabetes with ischemic foot complications.
- PTA as the first choice revascularisation procedure is feasible, safe and effective for limb salvage in a high percentage of diabetic patients.

- Clinical restenosis was an infrequent event and PTA could successfully be repeated in most cases.

- In patients with diabetes, PTA is effective in avoiding major amputation, provided recanalization occurs in at least one tibial artery down to the foot. In a few patients, re-canalization of the peroneal artery alone is not sufficient to avoid major amputation.
Endo or Open revascularization?

Treatment of peripheral arterial disease in diabetes a consensus of the italian societies of diabetes (sid, amd), radiology (sirm) and vascular endovascular surgery (sicve)

Antimo Aielloª, Roberto Anichiniª, Enrico Broccoª, Carlo Caravaggiª, Agatina Chiavettaª, Roberto Cioniª, Roberto Da Rosª, M. Eugenio De Feoª, Roberto Ferraresiª, Francesco Florioª, Mauro Gargiuloª, Giuseppe Galzeranoª, Roberto Gandiniª, Laura Giuratoª, Lanfranco Grazianiª, Lorena Manciniª, Marco Manziª, Piero Modugnoª, Carlo Setacciª, Luigi Ucciolia
- Pts with untreated CLI have a poor prognosis in term of amputation and death

- Revascularization is the key treatment of every CLI pt

- The choice between Endo or Open approach must be done according to the clinical scenario, following a patient–centered approach
1. Ischemia
2. Infection
3. Amputation
Infection dramatically increases the likelihood of non-healing and major amputation.
- Significant relationship between the amputation level and the number of days elapsed before surgical debridement.

- In severe infected diabetic foot, prompt drainage of infection with or without partial foot amputation takes priority over revascularization.
The best antibiotic is the blade n° 10

The best antidiabetic is the blade n° 10
If insufficient blood flow to the extremities impairs delivery of antibiotics or oxygen, rev. should be done as soon as the major infection has been adequately addressed.

Aggressive control of infection..... as well as prompt revascularization once infection is controlled are keys to managing this cohort of difficult pts.

A delay in the surgical debridement of a deep space abscess increases the amputation level. Accuracy in the diagnosis of PAD and immediate revascularization yield similar outcomes in pts with or without PAD.
Infection dramatically increases the likelihood of non-healing and major amputation.

Debridement must be done as soon as possible!

Time is tissue!

Rev. must be done within 2 days after the urgent surgical operation.
1. Ischemia
2. Infection
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when, what, and how to intervene
Patient’s goal is maintaining independence; the key is maintaining ambulation via limb salvage or prosthesis

Think biomechanics!

Prof Chris Attinger

VSS, JVS 10:108, 1995
Buzato MA, ãcta Chir Belg 102:248, 2002
Limb salvage, wound healing and time-to-healing are wonderful targets in the physician’s mind, however we must save something useful for walking!

Fighting for an “impossible mission” in BTK-CLI can lead to months of:

- Inability to walk
- Chronic wound
- Need for daily dressing
- Repeated infections
- Repeated hospitalization
- Personal & family desperation
Active pts demand function

Patients with good neuromuscular capacity can have an active life wearing a modern prosthesis.
Fragile pts demand independence

Risk of not wearing prosthesis

- 10x: non-ambulatory pre-op
- 4.4x: AKA
- 2.7x: > 60 yy
- 3x: homebound
- 2x: CAD

Taylor S, JVS 42:227, 2005
Courtesy Prof Chris Attinger
Ambulation via limb salvage or amputation is the ONLY goal.

Salvage or amputation should be viewed as giving the pt a new leg and should be done with equal attention to detail.

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