The Limflow video presentation

Percutaneous arterialization of the venous system of the foot in a no-option patient

Steven Kum & Roberto Ferraresi

Bergamo – Italy

www.robertoferraresi.it
Disclosure

Roberto Ferraresi, MD

I have the following potential conflicts of interest to report: consulting, travel reimbursement, teaching courses, training, proctoring:

Medtronic, Boston Scientific, Abbott, LimFlow, Terumo, Cook, Biotronik, Asahi, Shire, Kardia, Orbus, Astra Zeneca
• 61 year old
• Ex heavy smoker
• DM
• ESRD on hemodialysis
• Pain at rest +++ & apical gangrene 3° toe
Baseline angio study (another center)

All images were provided by the patient and were published with permission of the patient.
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Angioplasty with the pedal-plantar loop (another center)
Final result after angioplasty with the pedal-plantar loop made in another center.
Diffuse severe small vessel disease: failure of the forefoot distribution system

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One month later:
- Persistent pain at rest → morphine
- Progression of 4° toe gangrene
- TcPO$_2$ 8 mmHg

The patient was accepted in our center
Baseline angio study our center, 1 month after PTA
Normal forefoot distribution system

Diffuse severe small vessel disease: failure of the forefoot distribution system
On the basis of:

1. Clinical picture: progression of gangrene, persistent pain on morphine
2. Instrumental data: TcPO2 8 mmHg
3. Angiographic imaging: "desert foot"

The patient was considered a no-option patient and was submitted to DVA
1. Get the approaches
2. Cross from artery to vein
3. Cover the AVF and the PTV to the ankle
4. Destroy distal valves

**ARTERIAL:** Antegrade 7F sheath in CFA

**VENOUS:** Retrograde 5F sheath in PTV
1. Get the approaches
2. Cross from artery to vein
3. Cover the AVF and the PTV to the ankle
4. Destroy distal valves
1. Get the approaches

2. Cross from artery to vein

3. Cover the AVF and the PTV to the ankle

4. Destroy distal valves

ALIGN ARTERIAL & VENOUS CATHETERS

GET THE TARGET VEIN
1. Get the approaches
2. Cross from artery to vein

3. Cover the AVF and the PTV to the ankle

4. Destroy distal valves

After pre-dilatazion of the AVF
1. Get the approaches
2. Cross from artery to vein
3. Cover the AVF and the PTV to the ankle
4. Destroy distal valves
1. Get the approaches
2. Cross from artery to vein
3. Cover the AVF and the PTV to the ankle
4. Destroy distal valves
1. Get the approaches
2. Cross from artery to vein
3. Cover the AVF and the PTV to the ankle
4. Destroy distal valves

Reverse-valvulotomy
1. Get the approaches
2. Cross from artery to vein
3. Cover the AVF and the PTV to the ankle
4. Destroy distal valves
FINAL RESULT

Diffuse spasm of the vein, resistant to TNG and papaverine injection.

We decided to stop the procedure.
2 days later...
Can this new condition improve blood flow to the tissues? We need something more, we need a remodeling of the vascular distribution system of the forefoot!
Percutaneous DVA represents a novel way to treat the “no-option” end-stage CLI patient. It marries the advantage of surgical DVA with those of a minimally invasive procedure. We were able to perform this safely, with no major adverse events observed within the first 30 days. From our initial experience with LimFlow, we were able to achieve the goals of wound healing, resolution of rest pain, and a rise in TcPO2.
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