TOTALLY PERCUTANEOUS BYPASS
The best of two worlds

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Disclosure

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☐ I do not have any potential conflict of interest for this purpose
Introduction

Endovascular: first choice procedure
Despite long term results worst / surgical bypass

Why?
Endovascular is lighter
Why?
Percutaneous!
local anesthésia, no scare, no (few) pain, quick recovery and comfort

Bypass:
better long term results, less redo
higher morbi-mortality+++ 
dyscomfort for the patient, pain, rehabilitation periode, scars…

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Bypass is not always “a peace of cake”

- multi-scarred wound
- elderly
- bad skin conditions
- obesity

In all these cases, percut bypass has potential advantages
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Percutaneous bypass

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Percutaneous bypass

The best of two worlds?

**LIGHT** as percutaneous

**EFFICIENT** as a bypass

Endovascular
light procedure
local anesthésia
no scare

Bypass
feasible in many cases
better long term results
less reinterventions

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Percutaneous bypass: Technique

Step 1:
- Controlateral femoral (US guided) puncture
- Long sheath (90cm)
- Crossover
Percutaneous bypass : Technique

Step 2:
- Ipsilateral retrograde puncture
- US guided
- 5 cm under bifurcation
- Inside SFA occluded
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Step 3:

- “Rendez-vous” technique and extraction of the guide wire
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Percutaneous bypass: Technique

Step 4:
- antegrade puncture of popliteal artery
- US guided
- close to the reopening segment

Above the knee

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Percutaneous bypass : Technique
Percutaneous bypass : Technique

Step 5:

- Externalizing of the tip of the sheath
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Step 5:
Tunnelisation

join the distal sheath (anatomic or Sus facial)
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Step 5:
Re-introduction in the distal vessel lumen
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Percutaneous bypass

long sheath:
all-the-way down to the distal vessel
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Step 7: deploying self expandable covered stent (Viabahn) and remodeling
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Control

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No need of compression
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Percutaneous bypass: Technique

Below the knee
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Percutaneous bypass

Below the knee
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Percutaneous bypass

Quality of aspect

Surgical bypass like (or better)

Hemodynamic shape
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smooth junctions

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Open bypass

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Open bypass

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Percutaneous bypass : Results

- From January to October 2018
- 8 TPB: 6 patients (male =5, age: 62-89 mean = 76)
- 5 : critical limb ischemia (CLI)
- 3 : severe claudication
- 2 : endovascular revascularisation failures,
- 3 : multi-bypasses failures,
- 1 : early iterative severe restenosis.
- 3 : adverse skin conditions for a surgical approach :
  - multiscares =2,
  - lymphoedema with inguinal surinfection = 1.
- femoro-popliteal bypasses :
  - 6 above the knee,
  - 2 below the knee.
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Percutaneous bypass: Results

- **Technical success** = 100%
  - no conversion
  - clinical resolution
  - Duplex scan: satisfying blood flow throughout the bypass
- **30 days patency** = 100%
- death = 0 - major complication = 0
- minor complication = 2 (hematomas)
- quick recovery and standup
- Comfort++
- **Follow-up**: (1-10 months – mean = 5 months)
  - primary patency 7 (88%)
  - secondary patency 8 (100%)
Conclusion: Percutaneous bypass

Feasible

Reproducible

Adapted to large amount of cases

Light outcome, bypass patency expectation

Early and short term study, further evaluation is required

Encouraging initial results
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Thank you

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