The retrograde approach
- when and how to do it

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What is a retrograde recanalization?

- Common femoral puncture
  - Standard procedure e.g. iliac intervention or crossover intervention in the other leg

- SFA puncture at various levels (distal, proximal, In-stent)

- Popliteal artery puncture

- High anterior tibial artery puncture

- Peroneal artery puncture

- Distal puncture (Anterior tibial artery, posterior tibial artery)
## Success of an Endovascular Treatment of CTOs

<table>
<thead>
<tr>
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<th>Failure-rate</th>
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<tr>
<td>- Dorros, <em>Circulation</em> 2001</td>
<td>27%</td>
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<td>- Soder, <em>JVIR</em> 2000</td>
<td>39%</td>
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Indications for retrograde crural recanalisation

Patients with critical limb ischemia
AND failed antegrade attempt
   → due to perforation,
   → or subintimal recanalisation without ability to re-enter distally

Possible in patients with severe claudication refusing surgery or having no surgical option
Subintimal recanalization:

**Problem:**

Re-Entry from the subintimal space into the true lumen is not possible
Occlusion of the TPT left, Perforation
Materials for retrograde access

BTK: 21 Gauge needle 4 cm and 7 cm

SFA/Pop: 21 Gauge needle 9cm (or 15 cm)
Material for retrograde access
- Sheathless approach -

- 0.014“ GW (e.g. Gladius14, PT2, Pilot or HT Command) and OTW low-profile balloon

- 0.018“ GW (e.g. Command, Gladius, V18, Connect) and support catheter (e.g. Quick-Cross, Seeker, Trailblazer, CXI)
Retrograde SFA-Recanalization

Sheathless

21 Gauge needle + 0.018" V-18 Control-GW (Boston Scientific)

Sheathless approach in less calcified CTOs:
- Support-catheter
  - QuickCross (Spectranetics)
  - CXI (COOK)
  - TrailBlazer (Covidien)
- or OTW-balcono
Retrograde SFA-Recanalization

0.025", 10cm (Terumo)
Passage of the CTO
- 4F angled support-catheter
- Angled GlideCath
- Supportcatheters
Retrograde SFA-Recanalization

4F Judkins Right for snaring of the guidewire
Haemostasis after retrograde access

Balloon

Sheath

RR-cuff
Sheathless Transpedal Approach

Medical preparation: 200µg Nitroglycerine, 5000 IE heparin

21 Gauge needle

0.014“ or 0.018“ guidewire
  hydrophilic 300 cm

- OTW low-profile balloon or

Support-catheter:
  e.g. CXI (Cook)
Sheathless Transpedal Approach

posterior

anterior
Advantage of a Supine Patient-Position:
“Double Approach Technique” Possible
The Double Balloon-Technique
The Double Balloon-Technique
Summary

• The retrograde access for femoro-popliteal and tibial occlusions is mainly used in CLI-patients

• is safe and highly successful.

• The technique might need some training.
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