Disclosure

Speaker name:  Florian Wolf

I have the following potential conflicts of interest to report:

- Consulting
- Employment in industry
- Stockholder of a healthcare company
- Owner of a healthcare company
- Other(s)

☒ I do not have any potential conflict of interest
Overview

- Step 1: Pre-Interventional Planning
- Step 2: Arterial Access
- Step 3: Standard techniques
- Step 4 (Optional??): Advanced techniques
Step 1: Pre-Interventional Planning

- Pre-Interventional Imaging mandatory!
- Imaging of complete pelvic and leg vessels
- CT-Angiography
- MR-Angiography
- Stents: CTA
- Heavy calcifications, diabetics: MRA
- Imaging for intervention planning
  - Less contrast media and radiation
  - Shorter intervention time
  - In some cases only one puncture necessary
- Prepare Catheters/Balloons/Stents
Step 2: Arterial Access

- Double- or Single wall puncture
- Retrograde +/- Cross-Over
- Antegrade
- Optional:
  - Trans-popliteal
  - Trans-pedal
- Arterial Puncture
  - **Without guidance**
  - With ultrasound guidance
  - With fluoroscopy guidance
- Short 10cm standard sheath
  - 4F – 7F
- Long sheath
  - X-Over or antegrade
Step 3: Standard Techniques

- **Standard wire:**
  - Bentson 0.035”, straight configuration
  - non hydrophilic, non traumatic

- **Advanced Standard wire:**
  - Hydrophilic, stiff, angled (straight), 0.035” (Terumo, ZIPP wire, etc.)
    - Hydrophilic, traumatic, easy to loose – take care!
  - Stiff wire like Amplatz straight or J

- **My standard catheter**
  - Multipurpose 5F
  - 4F Omni SOS Catheter or 5F Sidewinder I for Cross-Over
Case 1

Step 3: Standard Techniques – quick and easy case!

- 76 y/o male patient
- PAOD IIb, Occlusion CFA and SFA
- X-over recanalisation SFA after surgical patch left CFA
Case 1

- Cross-Over with Omni-SOS catheter, 45cm 6F sheath left CFA
- Diagnostic angiography – short occlusion left SFA
Case 1

- Intraluminal recanalization not possible - subintimal recanalization possible – but no way back to true lumen!
- Outback-catheter – not possible due to heavy kinking iliac vessels, no steerable catheter
Step 3: Standard Techniques

• Standard wire:
  • Bentson 0.035”, straight or J-configuration
  • not hydrophilic, not traumatic

• Advanced Standard wire:
  • Hydrophilic, stiff, straight or angled, 0.035” (Terumo, ZIPP wire)
  • Hydrophilic, traumatic, easy to lose – take care!

• My standard catheter:
  • Multipurpose 5F
  • 4F Omni SOS Catheter or 5F Sidewinder I for Cross-Over
Step 4: Advanced Techniques

- Subintimal Recanalisation
- Trans-popliteal access
- Trans-pedal access
- Outback Catheter
- Snare-Loop – pull-through maneuverer
- Etc…
Step 4: Advanced Techniques

- Subintimal Recanalisation
- Trans-popliteal access
- Trans-pedal access
- Outback Catheter
- Snare-Loop – pull-through maneuverer
- Etc…
Step 4: Advanced Techniques

Popliteal access

1. Prone position
   + stable position, easy to puncture
   - for many patients not possible and no simultaneous access

2. Supine position (flexion in the knee and outside rotation of the hip)
   + no rearrangement of the patient necessary
   + simultaneous transpopliteal und antegrade/X-Over access
   - Ultrasound-guided puncture of the popliteal artery not easy
Step 4: Advanced Techniques

Popliteal access

Simultaneous X-Over access from the right side (6 French) and trans-popliteal access (4 French)
Case 1

- Easy intra-luminal recanalization from popliteal
  - 4F multipurpose catheter and 0.035" stiff angled hydrophilic wire
  - Completion of the whole intervention via popliteal access (0.018" wire)
Case 1

- 7/40mm stent implantation and PTA with 6mm balloon
- Minimal residual stenosis due to heavy calcification
- Manual compression of popliteal artery, AngioSeal occlusion right CFA
Another Case

- Recanalization attempt from popliteal with 4F MP catheter and 0.018”/0.035” wire – also not possible to reach true lumen
- 5mm snare loop from right femoral access – pull-through maneuver of 0.018” wire
Case 2

- 73y/o female patient
- PAOD Iib
- Occlusion P1/P2
- Calcification P3
Case 2

- Antegrade puncture left CFA
- 6F sheath
- Diagnostic angiography
Case 2

- 5F Multipurpose Katheter
- Subintimal recanalization with stiff, hydrophilic, angled guidewire
- Not possible to reach the true lumen again!
Step 4: Advanced Techniques

- Subintimal Recanalisation
- Trans-popliteal access
- Trans-pedal access
- Outback Catheter
- Snare-Loop – pull-through maneuver
- Etc…
• Outback catheter \(\rightarrow\) excellent visibility true/false lumen
• One puncture with outback needle – 0.014\\textquoteleft wire to true lumen
Case 2

- Dilatation with POBA 3/80
- Stent implantation Smart Flex 6/200mm
Case 2
Conclusion

✓ Every intervention - Step-by-step approach

✓ In order to succeed in (almost) all cases you need
  ✓ Flexible and highly trained technicians
  ✓ large portfolio of techniques
  ✓ large portfolio of material

✓ There is no “easy” intervention!

✓ The most simple intervention quickly can get complex!
Step by Step – How I treat SFA lesions

Florian Wolf

www.florianwolf.at

Division of Cardiovascular and Interventional Radiology
Department of Biomedical Imaging and Image-Guided Therapy
Medical University of Vienna