Pedal Access Made Easy

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Disclosures

- Consultant: Cardiovascular Systems Inc.
Why Pedal Access

• Improves success rates in CLI cases where antegrade crossing has failed:
  
• Sabri SS, et al. JVIR 2015
  – 99 CLI cases using pedal access
  – 89% technical success rate
  – Limb salvage 76% at 6 months

• Walker C. J Cardiovasc Surg 2014
  – 228 CLI patients using pedal access
  – 93% technical success rate
  – No pedal access bleeding complications, 1 occlusion

Why Pedal Access

• In addition to technical success:
  – Because of CTO cap morphology
  – Lesions often crossed faster
  – Increases intraluminal crossing

• Mustapha JL, et al.
  – TAMI (Tibiopedal Arterial Minimally Invasive retrograde)
    • Poor femoral access options
    • Patients who can not lay flat
    • Morbidly obese

Why Pedal Access

• Caution:
  – Long term rates of occlusion at the access site have not been established
  – Especially when placing larger sheaths

• Pedal access is a significant advance in the treatment of CLI
Normal Tibial Anatomy
Normal Pedal Arch Anatomy

Lateral View

AP View
Selecting Level of Access

- Main working zone is lower third of leg - below gastrocnemius insertion
- Accessing higher increases chance of compartment syndrome
US Guided Pedal Access

- Leg Positioning
- Identify artery
- Select best access point
- Use 21G micro-puncture needle in axial projection for access
- Pass 0.018 guidewire
- Place 3F, 4F, 5F catheter or 4F sheath
- Administer vasodilator
US Guided Access: Positioning

AT or DP Access

PT Access
US Guided Access: 
Probe Selection

• Linear Probe
  – Readily available

• Hockey Stick Probe
  – Better resolution
  – Smaller foot print
  – More expensive
US Guided Access: Identify Artery

Normal Posterior Tibial Artery
US Guided Access: Identify Artery

Diseased Occluded Posterior Tibial Artery
US Guided Access: Scan Vessel
US Guided Access
US Guided Access:
21G needle in axial view
US Guided Access:
Visualize wire in longitudinal view
Secure Access

4-F Catheter with Check Flow

4-F Sheath
Fluoro Guided Access

- Leg positioning
- Place a catheter as far distal as possible to perform contrast runs
- Vasodilators
- Visualize target vessel
  - Calcium
  - Roadmap
  - Puffs of contrast
- 21G needle directly down to vessel under fluoroscopy
• Pedal access can be obtained using both US- and Fluoro-guided techniques

• Pedal access:
  – Another tool in the toolbox to treat complex disease of CLI
  – Can increase success rates and decrease overall time of procedure
Thank You!