Financial Obligations
I have the following financial relationships:
- Consultant to Oscor Medical
- Co-Founder of Attache Group LLC
- On Adverse Committee for EXCITE (Spectranetics)

What is new in the World of Infrapopliteal Disease Treatment?

Transpedal Access

Infrapopliteal Disease: A Different Disease than SFA

- Different Patient Population
  - Patients with CLI are typically elderly with multiple co-morbidities and limited life expectancy
  - Therefore, a procedure which is minimally invasive with reduced morbidity and mortality but lesser long-term patency, may be more appropriate than a more invasive procedure with better long-term patency.

- Different Goals:
  - Clinical success is superior to angiographic patency, because once healing has occurred, should the artery restenose or occlude, collateral flow can be sufficient to preserve tissue integrity if there is no further injury.

- Demographics:
  - >60% of my PAD cases in Texas

Transpedal Interventions for Critical Limb Ischemia
Equipments for Retrograde Pedal Access

- 21G Echogenic Tip Needle
- 4F Micropuncture Sheath
- 4F micropuncture kit + Tuohy-Borst/Copilot control valve

Retrograde Pedal Access: Dorsalis Pedis

- Advancement of micropuncture needle into right DPA

Advantages of Transpedal Access:

- Approximately 15-20% of Pts with complex tibioperoneal disease can not be crossed with standard femoral antegrade approach
- Transpedal retrograde is an excellent alternative when:
  - Failure of standard antegrade access leads to dissection and/or subintimal
  - Flushed occlusion of origin of anterior or posterior tibial
  - Has occluded SFA/popliteal

Retrograde Transpedal Intervention

- Transpedal approach with 1.25 CSI atherectomy followed by 3 and 2.5 mm PTA of the Anterior and Posterior Tibial
Advantages of Transpedal Access:
- Less contrast utilization
- Less radiation exposure
- Decreases the incidence of post-procedure femoral complications
  - Hematoma, retroperitoneal bleeding, pseudoaneurysm, and arterial venous fistula.
- Cost effective
  - Both in the inpatient and outpatient settings
  - Allows patients to go home one hour after the procedure
  - Decreases healthcare cost by keeping patients out of the hospital.

Disadvantages of Transpedal Access:
- Transpedal arterial access can be often difficult to obtain.
  - Standard use of ultrasound can be difficult with:
    - Heavily calcified arteries
    - Occluded or subtotal occlusions of the pedal arteries
    - Most patients with PAD also have small vessel disease.

Antegrade Better

Disadvantages of Transpedal Access:
- Procedural Complications:
  - Arterial spasm, distal occlusion and embolization are difficulties encountered
  - Tibial arteries are small diameter vessels and, although 4f sheaths are used, distal embolization remains a potential complication.
    - Remember: maintaining an ACT of 250 seconds during the procedure, and by giving an intra-arterial cocktail of Nitroglycerin, Nicardipine and Heparin every 30 to 60 min during the case.

Disadvantages of Transpedal Access:
- Limited Equipment:
  - Most equipment now used for lower extremity revascularization has been created for larger French-sized sheaths and there is a lack of dedicated distal-tibial re-entry devices.
  - In our experience, it is difficult to deploy stents in the SFA through a 4 or 5f sheath. It will be important in the future to modify equipment.

Disadvantages of Transpedal Access:
- Antegrade: years of experience
  - Comfortable with technique
  - Able to deliver varying equipment
  - Do not interrupt the antegrade flow
  - Do not want to lose the only vessel in the foot in our patients
Conclusions

- The incidence of complex PAD grows every year and combined with the climbing number of patient comorbidities, makes percutaneous revascularization the preferred method for revascularization.
- It is crucial that we contain cost while providing safe, high quality revascularization for patients with PAD.
- We believe that the transpedal approach for lower extremity revascularization is the way of the future.
  - The techniques we use have proven to be safe and effective in above the knee and below the knee revascularization.