Anatomy
Angiography and Angiosomes

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Disclosures

- Consultant
  - Cook Medical
  - Daiichi Sankyo
  - Lake Region Medical
  - Volcano
  - Asahi
  - Abbott Vascular
  - CSI
  - Medtronic
  - Terumo

- Research
  - Boston Scientific
  - CloSys
  - Daiichi Sankyo
  - Flexible Stenting Solutions
  - Medtronic
  - Volcano
  - Mercator

- Speaker
  - Abbott Vascular
  - CSI
  - Cook Medical
  - Spectranetics
  - Medtronic

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Background

- Approximately **8 million Americans** over the age of 40 have PAD.
- Three Growing Epidemics:
  - **Age**: 40.3 million Americans > 65
  - **DM**: 10.9 million Americans > 65
  - **Kidney Disease**: 26 million Americans
- These 3 epidemics result in:
  - Multilevel disease
  - Chronic total occlusions
- At its worst, PAD results in failing to heal wounds, amputation and a high likelihood of death.

1. U.S. Census Bureau, 2010
2. 2011 National Diabetes Fact Sheet Found on American Diabetes Association Website Searched on 27 Sept, 2012
Arterial Vasculature of the Lower Leg
“Think Outside the Box”

Common and Internal Iliac Arteries—Buttock pain

External Iliac Arteries – Thigh pain

SFA and Popliteal Arteries – Calf pain
Angiosomes of the Body

**Angiosome Concept:** Introduced by Taylor and Palmer in 1987 which divides the body into 3-dimensional vascular territories supplied by specific source arteries and drained by specific veins.
Angiosomes of Source Arteries (Lower leg)

- Anterior Tibial Artery (anterior/lateral)
- Posterior Tibial Artery (medial)
- Peroneal Artery (posterior)
Angiosomes of Source Arteries (Foot)
Ulcer on the Medial Aspect of the Left Ankle

Which Artery is Affected?
Ulcer on the Medial Aspect of the Left Ankle

Angiogram

Endovascular Intervention
Ulcer on the Medial Aspect of the Left Ankle – Post Intervention
Posterior Tibial Access

Frog Leg Access
Posterior Tibial Access

What’s wrong?  Happy?
Posterior Tibial artery supplies the sole of the foot via:

- *Calcaneal branch*
- *Medial plantar branch (big toe)*
- *Lateral plantar branch (pinky toe)*
Case 2

- 80 y/o male
- IDDM, HTN, and Hyperlipidemia
- Non-healing ulcer on the heel of his foot

Which Artery is Affected?
Selective Angiography of the Left Lower Extremity

Antegrade Peroneal approach – Unsuccessful
Now What?
Access Peroneal Artery (LAO 40 degrees)
Post-Intervention
Peroneal Artery

- Peroneal artery supplies the:
  - Lateral anterior upper ankle (anterior perforating branch)
  - Plantar heel (calcaneal branch)
Case 3: Ulcers on the Lateral Aspect of the Right Lower Leg and Dorsum of the Foot

Which Artery is Affected?
Ulcers on the Lateral Aspect of the Right Lower Leg and Dorsum of the Foot

Angiogram

Intervention
Ulcers on the Lateral Aspect of the Right Lower Leg and Dorsum of the Foot; Post-Intervention
Thank You

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