Radial-to-Peripheral Interventions For Lower Extremity Arterial Lesions (PAD): An Update On Available Tools And Techniques And Precautions: What's Possible And What's Not

Craig M. Walker, MD

Clinical Professor of Medicine
Tulane University School of Medicine
New Orleans, LA

Clinical Professor of Medicine
LSU School of Medicine
New Orleans, LA

Founder, President and Medical Director
Cardiovascular Institute of the South
Houma, LA

Founder, Chairman
New Cardiovascular Horizons
Lafayette, LA

Clinical Editor
JAVELIN Journal
Vascular Disease Management

Cardiovascular Institute OF THE SOUTH

Disclosures

- Consultant:
  - Abbott
  - Bard
  - Boston Scientific
  - Cordis
  - Lake Regional Medical
  - Medtronic
  - Philips
- Speaker's Bureau:
  - Abbott
  - Asahi-Intecc
  - Bard
  - Boehringer-Ingelheim
  - Bristol-Myers-Squibb/Sanofi
  - Esperion Therapeutics
  - Gore
  - Janssen Pharmaceuticals
  - Philips

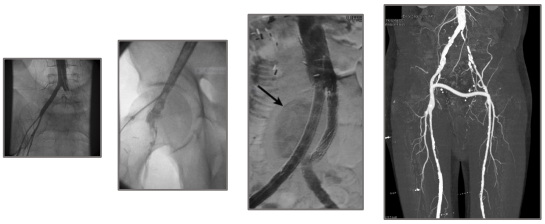
Major Stockholder:
- Cardioflow
- Efemoral
- Euphrates Medical
- Micromedical
- Peytant Solutions

PVD Training
- Abbott
- Asahi
- Bard
- Boston Scientific
- Cordis
- Philips

Why Radial Approach for Peripheral Intervention?

- Much less bleeding complications
  - Patient comfort
  - Obese and underweight patients
  - Early ambulation and discharge
  - Less cost (No VCD's required)
  - Patients who can't stop anticoagulants
- No compression of the treated artery
- Less radiation exposure
- Can approach all peripheral arteries in antegrade fashion

Why Radial Access? *(ANATOMY)*



What can be treated via radial access

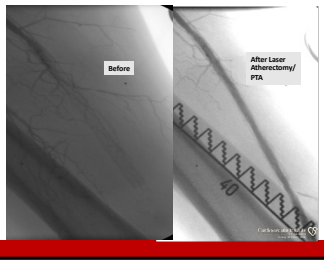
- Brachial and Axillary
- Subclavian
- Carotid
- Mesenteric Vessels
- Renals
- Aortoiliacs
- Femoral
- Popliteal
- Infrapopliteal vessels (dependent on patient height) – in average height patients, can reach to ankle and occasionally the foot

Radial Length Devices Available

- Wires
  - 460 mm .035
  - 475 cm .014 Viper wire (no long specialty .014 wires)
- Balloons (Multiple 200 cm delivery length balloons)
- Orbital Atherectomy up to 200cm and 355nm laser
- DCB (Medtronic has DCB with 200 cm delivery)
- Stents (Cordis 190 cm, Terumo 200 cm delivery length)
- No (DES, Wire Interwoven nitinol stents, covered stents)
- No (coronary DES for BTK)
- No (Lithoplasty Balloons)

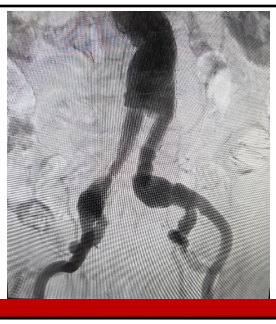
Orbital Atherectomy Cases Severe IP Disease

355nm Laser, DCB Instent Restenosis



Limitations of Radial Peripheral Cases

- Should have a radial artery diameter of at least 2mm
- Radial artery spasm may be problematic
- Less backup to cross lesions and deliver devices
- Limited sheath size based on size of radial artery
- Limited devices
- Longer sheaths are more likely to thrombose during a procedure, must meticulously flush

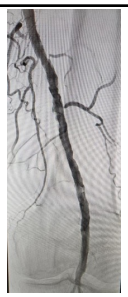


Calcified Popliteal Stenosis

Orbital Atherectomy

Low Pressure Balloon 3atm

Final Result



Conclusions

- Radial access has low bleeding risk
- Radial access allows bilateral extremity treatment
- Radial access is useful in downward sloping vessels
- Radial access tools are evolving (at present they are limited)
- Present devices can routinely reach the infrapopliteal vessels and occasionally the foot vessels
- Radial artery access is being used more frequently in peripheral vascular intervention
- We are waiting on more devices with radial length