Transradial Access for Peripheral Intervention: What Tools Are Missing?

Robert Lookstein MD FSIR FAHA
Professor and Vice Chair
Chief, Division of Interventional Radiology
Icahn School of Medicine at Mount Sinai
New York, NY

Disclosures:
- Consultant: Boston Scientific, Cordis, The Medicines Company
- Speakers Bureau: Penumbra, Covidien
- Research Support: BTG, Venite, Spectranetics, Boston Scientific, Philips Healthcare, Merit Medical
- DSMB/CEC: Shockwave

I AM A RADIALIST!!

Why Radial?
- Fewer vascular complications
- Lower rate of access site bleeding
- Greater patient satisfaction
- Immediate ambulation
- Procedure cost savings
- Long term cost savings?
- LESS INVASIVE!

Background
First report of lower extremity intervention via transradial access: Stent placed through left radial 6Fr sheath.

Advantages and Disadvantages of TR Approach
- Obese patients
- Patients with groin sensitivity
- No closure device
- Less bleeding complications
- Immediate ambulation
- Arterial size, spasm
- Anatomic variants
- Severe tortuosity

Contraindications
- Radial artery too small < 2mm
- Larger sheath needed (greater than 7F)
- AV fistula / dialysis patient
- Severe aortic tortuosity
- Barbeau D waveform

Case Reports
Transradial Stenting of the Iliac Artery: A Case Report
Frank A. Hochstetm, UC, NCC, MC, Tobias Wolf, UC, Werner G. Daniel, UC, NCC, MC, and Josef Ludwig, UC
First report of lower extremity intervention via transradial access: Stent placed through left radial 6Fr sheath.

Technique - Catheters Used

- 5F Sarah Radial 110cm (Terumo)
- 5F Cobra 100cm (Terumo)
- 5F Jacky Radial 110cm (Terumo)
- 4F Aqua 125cm (Cordis)
- 4F Cobra 100cm (Cordis)
- 5F Envoy 100cm Guidecath (Terumo)
- 5F Jacky Radial 110cm (Terumo)
- 5F Bern 120cm (Penumbra)
- 5F Sherpa AL1 Guide (Medtronic)
- 5F Sherpa HS1 Guide (Medtronic)
- 5F Launcher Guide (Medtronic)
- Other shapes (Champ, MPI, RDC, MAC, IMA, SCR, SCL)

Longest Lengths in our lab:
- Guiding sheath: 110cm
- Guiding catheter: 125cm
- Diagnostic catheter: 150cm

Catheter Length Issues

Obese patient with CFA stenosis and claudication

- Medtronic Pacific Plus 018 OTW 180cm Shaft

What is needed?

- Longer Equipment!!!

- Sheaths/Guides
  - Longest guide is 125cm
  - Longest sheath is 150cm
- Wires
  - Longest wire is typically 300cm
  - Few are 350cm or above
- Balloons
  - Longest is 180cm with largest diameter of 7mm
- Stents
  - Longest is 80cm with largest diameter of 7mm
- CTO/Reentry 165cm/150cm
- Atherectomy 145-150cm
53 y/o male with chronic mesenteric ischemia

Case Report:
Successful recanalization of chronic total occlusion of the superior mesenteric artery by transradial approach
Woo Tae Kim, Sang Gyun Ahn, Jin-Won Lee, Jong Kyung Sung, Sung Hwan Lee, Junghan Yoon
(Received: January 30, 2014; Revision received July 15, 2014; Epub ahead of print 14 July 2014)

Failed TFA, TRA performed successfully

Successful TRA recanalization

History
- 85 yo female with CAD, s/p EVAR (aorto-Uni with cross-fem), and HTN now with rising Cr.
- Cr 0.9 -> 2.4 in 1 yr
In conclusion......

- Increasingly, all Peripheral, Mesenteric and Renal interventions are being performed via transradial approach.
- We already have the equipment in the form of guidecaths.
- The anatomy is ideally suited for delivery of balloons and stents.
- Future applications include:
  - Gastrointestinal Hemorrhage
  - Visceral Aneurysms
  - Atherectomy??