Radial Artery Access: First and Best Option For Intra-Abdominal And Lower Extremity Interventions: Tips, Tricks, Equipment Needed and Pitfalls: How to Make it Safe

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DISCLOSURE
Consultant:
- Terumo Interventional Systems
- Medtronic
- Boston Scientific
- Baylis Medical
- GE
- Guerbet

First and Best Option For Intra-Abdominal And Lower Extremity Interventions

• Immediate ambulation (back pain, access to restroom
• Greater patient satisfaction
• Shorten length of stay, faster recovery

NOT ONLY FOR OBESE PATIENTS OR HOSTILE GROINS
First and Best Option For Intra Abdominal And Lower Extremity Interventions

- Fewer access site complications (bleeding)

First and Best Option For Intra Abdominal And Lower Extremity Interventions

- Cost savings opportunity
  - No closure device
  - No deflectable sheath in difficult anatomy

Radial access: patient selection

- Patients > 70 years (existing Chest CT?)
- History of stroke
- Calcified Aortic arch

Equipment to check eligibility

US and O2 pulse detector = Complete palmar arch?

Introducer sheath | Outer diameter
--- | ---
6 - Fr | 2.6 mm
7 - Fr | 3.1 mm
6 – Fr (Slender) | 2.4 mm

Diagnostic angiogram: Radial artery > 1.6 mm (AP diameter); good for 5-Fr Slender sheath
Contra-indications to Radial access

- Radial artery too small to accommodate a device
- Larger sheath needed > 7F
- Barbeau D waveform

Radial access: Indications

Angioplasty/stenting:
- Carotid artery
- Subclavian artery
- Renal artery
- Celiac trunk, SMA
- Common/External Iliac arteries
- Proximal Superficial Femoral artery

Left Radial access – technique

Safe Radial access
Arterial puncture under US guidance

Lab set-up

C-arm, table, arm set up
- Arm in 45-90 degrees abduction
LEFT arm positioning in 45-90 degrees abduction = 3X reduction in radiation exposure

Prone position: simultaneous endovascular (radial) and percutaneous translumbar accesses
Endoleaks and visceral pseudoaneurysms

Radiation Safety

Prone position: simultaneous endovascular (radial) and percutaneous translumbar accesses

VASOSPASM AND THROMBOSIS PREVENTION

Radial artery cocktail

Heparin:
- IV Bolus: 50 UI/Kg
- Additional doses as needed

Vasodilators:
- Nitroglycerine 200 ug (beginning / end of the case)
- Verapamil 2.5mg at the beginning of the case only

Forearm angiograms at the beginning of the case

Short sheath and diagnostic catheter 1st
Get access to the descending aorta first

Guidewires
Support for PAD
- Long
- Stiff
- 0.035"
- Ideally: 350-450 cm
- 0.014" (Viper)
- 0.018" (V18, Advantage)
Diagnostic Angiogram catheters

- MPA catheter 4 or 5-Fr 125-150 cm
- Sarah or Jacky catheter 5-Fr 110 cm
- PERFORMA® Ultimate 2 4-5Fr 125 cm

PAD CASE, RADIAL ARTERY 2.5 MM
Destination slender 6Fr 119 cm

Destination slender introducer 5-7 Fr, 119 and 149 cm
Radial Access –
Introducer sheath
Peripheral
- 4 – 7Fr

Radial Access –
Guiding catheters
Visceral/Peripheral

Destination
Slender Introducer
5-7 Fr, 119 and 149 cm

4-7 Fr Flexor sheaths
- up to 110 cm

Radial Access –
Sheathless
Guiding catheters
Visceral/Peripheral

Railway, 5-7 Fr, 136 cm

RADIAL ACCESS: 5/6-FR BALLOONS

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<th>PTA balloon</th>
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<th>Diameter mm</th>
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6Fr Self-expandable stents

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PATENT HEMOSTASIS AT THE END...

Radial compression devices

PATENT hemostasis: “Pressure Hemostasis to maintain flow through the artery”

RADIAL ARTERY HEMOSTASIS

Risk of stroke

5-year period: ~ 500,000 patients

Rate of stroke 0.11-0.20% radial access

Successful Radial to Peripheral Program

Radial access: simple technique
Attention to details, be meticulous

Key points:
- Patient selection
- Eligibility
- US guided puncture
- Initial forearm angiogram
- Fluoro while getting access to the descending aorta
- Radial cocktail
- Adequate devices
- Patent hemostasis technique