An Overview of Transradial Patient Set-up

Susan R. Cooney RN, BSN, CCRN
Durham VAMC Cardiac Catheterization Lab
Duke University School of Nursing
Advantages of the Transradial Approach from a Nursing Perspective

- Less bleeding complications post procedure
- Sheath is removed by the operator immediately following the procedure
  - Expedites recovery time-Usually 1-2 hour as opposed to 4-6 for the femoral approach
  - Negates the need for nurse/tech to remove the sheath
- Patients can ambulate after the procedure
  - Reduces need for transfer assistance
  - Patient can be taken to recovery in a wheelchair which reduces room turn around time
Transradial Set-up

- Requires very little additional time when compared to femoral set-up

- Proper set-up is essential for a successful case
  - Factors affecting set-up
    - Patient size-Girth
    - Ability to maintain proper arm position
      - Previous injury or previous surgery to the arm that may affect the patient’s ability to keep the arm flat or at the proper angle
Transradial Set-up

- The first step in setting up the patient for a Transradial catheterization is performing an Allen’s Test.
- The Allen’s Test is essential to determine if the Radial Artery can be safely utilized during the procedure.
- Ensure that your lab monitoring system is configured to display the pulse oximetry wave form as this is the most accurate way to verify the Allen’s.
- To eliminate confusion, classify the results of the Allen’s as normal or abnormal.
Equipment
Equipment
Equipment
Transradial Set-up

- The “Banjo Board” is placed with the large end near the controls
- This is an extremely important step in the set up process
  - Failure to properly position this board could result in equipment falling from the table
  - This could be critical during a PCI
    - If there is a gap between the controls and the board it is difficult to maintain a rail for device insertion
    - Based on experience, the balloon inflation device and other equipment can fall through the gap
Proper Board Placement for Right Radial
Stabilization of the Wrist

- Place the pediatric arm board on the dorsal side of the wrist
- Roll the wash cloth and place it behind the wrist to slightly hyperextend the wrist
- Secure the arm to the board with the Co-ban
- Place the standard arm board beneath the upper arm
  - This aids in keeping the arm close to the torso and adds stability
  - Place towels on the board to enhance patient comfort.
    - Maintain a level surface
Right Radial Set-up
Right Radial Set-up
Right Radial Set-up
Radial Prep

- Clip the hair on the radial area of the wrist
- Always prepare the right groin as a back up site
  - This saves time in the event that radial access is aborted
  - Maintains sterility
  - Prepares the patient for the possibility of femoral access
- Cleanse the sites with Chloraprep
Clip the site
Prep the site
Protect the Site While Draping
Application of the Femoral Drape
Femoral Drape Modification
Application of the Brachial Drape
Drape Application
Right Radial Set-up
Left Radial Set-up

- Basically the same as right radial set-up with modifications to the arm height
- Keep in mind that the operator will remain at the right side of the patient once access is obtained
  - The height of the arm is an important factor for this reason
  - A stable platform is needed to support the arm
    - Use of 2 banjo boards is ideal
- Keep the patient’s arm as close to the body as possible
- Left Radial PCI cases are more challenging if the arm is not positioned properly
Arm Board Placement
Stabilization of the Left Arm
Elevation of the Left Arm
Left Radial Set-up
Draping of the Left Radial
Left Radial Set-up
Right Heart Cath Via Venous Access in the Right Upper Extremity

- Advantages
  - Alternative to femoral vein access
    - Sheath pulled by the operator
    - Does not require the patient to remain in a supine position post procedure
    - Less bleeding complications
    - Patient can be transported via wheelchair post procedure
    - Can be used in conjunction with a Left Heart Cath via the Right or Left Radial
Right Heart Set-Up

- First step is to evaluate the patient’s arm for a possible IV site
- Site should ideally be located in the medial area of the AC
- IV size should be 22 Gauge to 18 Gauge
- A more distal site may be chosen.
  - Have your operator evaluate
  - A site that is too distal results in the inability to obtain a wedge pressure
Right Heart Cath Set-up
Right Heart Cath Set-up
Right Heart Set-Up
Right Heart Set-Up
Right Heart Set-Up
Right Heart Set-Up
Right Heart Set-Up
Right Heart Set-Up
Right Heart Set-Up
Right Heart Cath Set-Up
Right Heart Cath/Left Heart Cath
Right Heart Cath/Left Heart Cath
Right Heart Cath/Left Heart Cath
Right Heart Cath/Left Heart Cath
Right Heart Cath/Left Heart Cath
Recovery

- Sheath is removed by operator
- Compression device is applied to the radial site as the sheath is removed
- There are several compression devices available
- The compression device shown in the following slides is the TR Band by Terumo
  - The TR Band utilizes an air bladder that is inflated by the provider with a provided syringe
TR Band Application- RRA
TR Band Application - LRA
Recovery Orders

- Vital signs every 15 minutes X 4, every 30 minutes X 2, then 1 hour until post sheath removal
- Listen for bruits at the access site
- Assess for sensation and briskness of capillary refill in the distal fingers and nail beds Q 15 mins until the TR Band is removed
Recovery - Air Release Orders

- For Interventional Procedures
  - Air removal can begin 90 minutes after the sheath removal
  - Release 3 ml every 15 minutes until the air bladder is empty
  - If bleeding occurs air should be injected in increments of 3 ml until hemostasis is achieved. Once bleeding has stopped, the TR-Band deflation process can recommence after 30 minutes
  - Once the TR Band is empty of air it can be removed and an occlusive dressing applied to the site
  - It is also recommended to keep the arm secured to the pediatric arm board until the TR Band has been removed
Recovery- Diagnostic Procedure

- All orders the same except:
  - Air removal can begin 30 minutes after the procedure rather than 90
Post TR Band Removal

- Patients may be discharged/transferred after TR Band removal
- Limit bending of the affected wrist for 24 hours
- No lifting greater than 5 pounds with the affected wrist for 24 hours
- No driving for 24 hours
- ** Many facilities have same day discharge protocols for transradial interventional patients/↓ length of stay!!
Final Points

- Transradial Advantages
  - Set-up requires very little additional time when compared to femoral cases once a routine is established
  - Allows the patient to be transported to recovery via a wheelchair
  - Allows the patient to ambulate much earlier than transfemoral access
  - Faster room turn around times
  - Less bleeding complications
  - No time consuming sheath pulls
  - Decreased overall recovery time/length of stay
Final Points

- Right Heart Cath via Right Upper Extremity Venous Access
  - Allows the patient to sit up immediately post procedure
  - Sheath is removed by the operator
  - Allows for transfer via wheelchair
  - Less bleeding complications
  - Allows for early ambulation
  - Decreased overall recovery time
Radial Set-up

• Questions?
Questions?

• susan.cooney@duke.edu