

Cardiac Cath Lab: Radial Vascular Access, Intraprocedure Care

Site Applicability

SPH Cardiac Catheterization Laboratories

Practice Level

Specialized: Registered Nurses who have completed the required education and provide nursing care in the Cath Lab.

Need to Know


- The radial artery is prone to vasospasm.
- Heparin is used to prevent thrombosis of the radial artery in all cases, whether diagnostic or interventional.
- An Allen's test or equivalent should be performed prior to vascular puncture to assess for adequate circulation. This is performed by the attending physician or delegate.
- IV is ideally inserted into the opposite arm.
- The attending physician may order a variety of medications to prevent vasospasm in the radial artery.
- Following the procedure, the radial sheath will be removed in the Cath Lab.


Equipment and Supplies

1. Standard SCA Procedure Kit
2. 0.035 175 cm J Emerald™ Guidewire with 1.5 mm curve radius
3. Radial Patient Drape
4. 25 G needle for lidocaine syringe
5. Radial sheath (physician preference)
6. Heparin syringe
7. Nitroglycerin spray
8. Patient arm rest (or substitute)
9. **Colourless** (untinted) Chlorhexidine Gluconate 2% aseptic solution for radial site
10. **Tinted** Chlorhexidine Gluconate 2% aseptic solution for femoral site
11. Radial vascular compression device for hemostasis

Procedures

Steps

CIRCULATING NURSE	
Site Preparation and Set-up:	Rationale
1. Confirm radial vascular access site (refer to Pre-Procedure Orders).	
2. Patient ID and allergy bracelet must be transferred to the wrist not cannulated.	
3. If necessary, clip hair from radial artery puncture site with hair clippers.	
4. Prepare bilateral femoral artery puncture sites in usual manner using <i>tinted</i> Chlorhexidine Gluconate	The femoral artery sites are prepped and easily accessible in the event of radial artery access failure.
5. Drape patient armrest with sterile towel	
6. With patient arm bent at a maximum of 90 degrees have patient place arm onto armrest.	
7. Prepare patient's arm from fingertips to elbow using <i>colourless</i> Chlorhexidine Gluconate	Using colourless chlorhexidine solution allows the staff to assess the hand for signs of cyanosis.
8. Prepare and administer procedural sedation and analgesia as per physician's orders.	
2. Prepare other medications as directed by physician. <ul style="list-style-type: none"> Assist scrub nurse to draw up medication for sterile field. Medications are prepared by the scrub nurse and given by the physician. 	Verapamil or Nitroglycerin is given intra-arterially to prevent radial artery vasospasm. Heparin intra arterially is given to prevent thrombosis of the radial artery.
SCRUB NURSE	
Site Preparation and Set-up:	Rationale

1.	Prepare sterile table as per standard SCA case	
2.	Drape patient with standard sterile drape.	
3.	Place fenestrated drape from sterile SCA tray on armrest where patient's wrist will lay. Instruct patient to lower arm onto armrest.	 <p>Fenestrated drape is used to hyper-extend the wrist and allow for easier radial artery puncture-</p>
4.	Drape radial artery site with sterile radial drape.	
5.	Prepare lidocaine <ul style="list-style-type: none"> Attach 25 G needle to lidocaine syringe. 	Physician will freeze radial artery puncture site.
6.	Lubricate outside of sheath with heparinized NS.	Allows for smooth advancement of sheath into the artery.
7.	Prepare a combination of medications as directed by the physician: <ul style="list-style-type: none"> Draw up medication from circulating nurse. 	Medications are prepared by the scrub nurse and given by the physician
8.	Prepare diagnostic catheters for procedure as per usual. May use FL3.5, FR4, Pigtail, Kimney or TIG Diagnostic Catheter (physician preference) **Flush all catheters immediately after removal from sterile packaging**	

Following Case:	Rationale/Interventions:
1. Removal of radial sheath: <ul style="list-style-type: none"> • (Scrub nurse) Assist physician or delegate with removal of radial sheath and application of radial compression device. • Choose <i>Regular</i> or <i>Large</i> size of Terumo TR Band™ depending on patient's wrist. The size refers to the length of the band only. 	The physician will: <ul style="list-style-type: none"> • withdraw the radial sheath from the radial artery by 2 to 3 cm • Align the green marker on the Terumo TR Band™ over the puncture site. The band should fit snugly around the wrist • Inject 13 mL of air into the air injection port using the Inflator syringe and remove the radial sheath • Confirm hemostasis • If bleeding occurs inject air into the air injection port with the inflator syringe. Physician may re-position the band if the green marker is not over the puncture site.
2. Instruct and assist patient to immobilize affected arm	
3. (Scrub nurse): Prior to leaving lab, check patient's radial pulse distal to puncture site, below the radial compression device.	
4. Transfer patient to CSSU for further post-procedure care. Refer to B-00-13-10063 - Cardiac Cath Lab: Post Procedure Care Ensure TR Band Inflator syringe transfers with the patient to CSSU.	

Documentation

Document all assessment and care given using GE Mac Lab system.

Cerner documentation includes but is not limited to venous and/or arterial sheath size and location, anticoagulant or antiplatelet medications given, infusion started intra procedure, radial compression device and time of application. During Cerner downtime, downtime paper Cardiac Short Stay Unit tri-fold must be used.

Patient and Family Education

- Team members will introduce themselves to the patient and family members present at the bedside.
- The RN's in the procedure room will explain to the patient what they will be doing to get the patient prepped for the procedure once inside the room. (i.e. transferring onto the procedure table, setting up for the procedure, connecting to equipment)

Related Documents

1. [B-00-13-10063](#) - Cardiac Cath Lab: Post Procedure Care
2. [B-00-13-10024](#) – Cath Lab: Care of Patients During Diagnostic and Interventional Procedures
3. [B-00-13-10090](#) – Cardiac Short Stay: Admission and Discharge

References

1. Curtis, E., Fernandez, R., Lee, A. (2017). The effect of vasodilatory medications on radial artery spasm in patients undergoing transradial coronary artery procedures: a systematic review. *JBIR Database of Systematic Reviews and Implantation Reports*. (1952-1967). DOI: 10.11124/JBISRIR-2016-003039
2. Kern, M.J. (2020). *Interventional Cardiac Catheterization Handbook* (7th Ed). Philadelphia: Elsevier

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