I. Purpose:

To establish guidelines for identification and contrast administration of power injectable implanted ports

II. Policy:

The following individuals are authorized to identify power injectable implanted ports and confirm tip location before use:

A. Radiology faculty;
B. Radiology fellow or house staff;
C. Radiology midlevel provider;
D. PICC service RN;
E. Radiologic technologist.

All ports placed in femoral vein require confirmation of tip location by Radiology Attending Physician or Fellow.

Note: No members of the medical staff, outside of Radiology, are authorized to approve of tip location.
III. Definitions:

A. Implanted port: Long term venous access device used for intermittent central venous access. The port is placed under the skin surface and access is obtained with a non-coring needle sterile puncture through the skin into the diaphragm of the port. Some ports are approved for the delivery of contrast via power injection for CT scanning.

B. Power injectable vascular access device: Device capable of withstanding high-pressure injections up to 300 psi.

C. The central venous system: Consists of the innominate (brachiocephalic) vein, SVC, Right Atrium, and IVC.

IV. Additional Competencies Required:

Radiological technologists and PICC Service Registered Nurses:

A. Complete in-service training.

B. Annual policy review.

V. Specific Information:

A. Follow manufacturer's instructions for access, maintenance, and use of implanted ports.

B. Use only non-coring safety needles to access the power injectable port.

C. Ensure the power injectable implanted port is accessed with appropriate Huber needle rated for power injection prior to power injection.

VI. Procedures:

A. Verify that the patient has a power injectable implanted port device by at least two means, including:

1. Presence of identification card, bracelet/wrist band, or key chain provided by manufacturer identification card.

2. Review of procedure report or OR implant record documenting type of port.

3. Bard ports only: Palpate top of port to identify three palpation points (bumps) on the septum, arranged in a triangular pattern.

4. Identification of CT marker on radiographic image or CT scout film.
B. Obtain PA chest radiograph or CT frontal scout film (scanogram) over chest area to confirm correct tip location. Scout film must include area seen on normal PA chest radiograph. Tip placement should be located in one of the central veins: innominate vein, superior vena cava (SVC), or right atrium. Refer to Figure 1.

C. If the technologist is confident the port tip is in the proper location, proceed with the scan as usual. If the technologist is not comfortable with the location, cannot identify the location, or has a question, contact one of the following individuals:

1. Radiology faculty;
2. Radiology fellow or house staff;
3. Radiology midlevel provider;
4. PICC Service RN.

After hours, contact the Emergency Department Reading Room at 3-7185.

D. Explain procedure to patient.

E. Perform hand hygiene and don non-sterile exam gloves.

F. Scrub to disinfect access port with an alcohol or CHG prep pad using a twisting motion five times around the threads and scrubbing five times across the septum (5x5). Allow to dry before accessing.

G. Attach a 10 mL or larger syringe filled with sterile normal saline.

H. Aspirate for blood return and flush catheter with 10 mL normal saline. If unable to aspirate blood return, reposition patient. If blood return cannot be obtained, notify the Radiologist. WARNING: Failure to ensure patency of the catheter prior to power injection may result in catheter failure.

I. Detach syringe.

J. Attach the power injector device to the Huber needle infusion set. Verify connection is secure. Check indicated flow rate of Huber needle and confirm CT settings. Maximum 300 psi.

K. Inject contrast within flow rate limits.

L. Disconnect the power injection device.
M. Flush the implanted port with 20 mL of sterile preservative-free 0.9% sodium chloride.

N. Lock the implanted port device with 5 mL of heparinized saline 100 units per mL after use.

O. Discard gloves and perform hand hygiene.

VII. Clinical Implications:

A. Verify that the patient has a power injectable implanted port device by at least two means.

B. If port cannot be verified as power-injectable, staff must assume it is not. In consultation with the radiologist, the decision is made to proceed with hand injection or start peripheral IV, based on type of study.

VIII. Documentation:

Complete the appropriate section in electronic documentation form: Department of Radiology, Inpatient/Outpatient Radiology Documentation Record.

References:


Radiology Area Specific Policy Manual:

AS 201490-07.18 Power Injection of Peripherally-Inserted Central Catheters (PICC Lines)

Clinical Policy Manual:

CL 30-07.02 Central Venous Catheters (CVCs)- Adult: Care and Maintenance for Non-tunneled, Tunneled, and Midline or Peripherally-Inserted

CL 30-07.08 Implanted Venous Ports, Care and Maintenance

IX. **Endorsement:**

Radiology Policy Committee June 2011  
Radiology Management Committee August 2011

X. **Approval:**

8/15/2011

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Figure 1

Central line tip must be pointed downward in the “Y” zone within the Innominate, SVC, or Right Atrium