Specifics in Reporting

Portable Chest X-Rays for Catheter Placement

JENNIFER CRANNY, M.D., THOMAS POPE, M.D., JAMES BOVA, D.O.

CENTRAL VENOUS CATHETERS & PICC LINE POSITION ON PORTABLE CHEST X-RAY

One of the more common clinical examinations we deal with on a daily basis is the portable chest X-ray performed for catheter placement. The most commonly used catheters are central venous catheters and PICC (Peripherally Inserted Central Catheter) lines.

There are standard recommendations regarding the appropriate location of the centrally placed catheter tips.

The Infusion Nursing Society (INS) Standard 42.4 states that: “Central venous access devices shall have the distal tip dwelling in the lower third of the SVC to the junction of the SVC and right atrium.”

The Association of Vascular Access (AVA) guideline is: “The most appropriate location has the tip of a PICC in the lower one-third of the SVC close to the junction of the SVC and the right atrium.”

The Society of Interventional Radiology regards successful catheter insertion as: “Placement of catheter tip in the desired location with the catheter functioning for its intended use.”

Every radiographic report of an examination with a central catheter should include a statement in the body of the report stating the exact location of where the tip is projected. Obviously, we are only seeing the catheter in one plane so we do not know that the catheter is within the lumen of a vessel. If the tip is projected over the expected location of the SVC to the cavo-atrial junction it should be safely functional.

If the catheter tip is located proximal to the SVC, in general, no TPN, chemotherapy or certain antibiotics can be infused. The catheter can still be used for IV fluids and blood draws.

If the catheter tip is projected into the right atrium the line must be pulled back into the SVC to avoid causing atrial flutter.

A catheter tip projected into the expected location of the internal jugular vein should not be used.

Our radiographic reports on any chest X-ray with a catheter should include the following information, preferably in the first paragraph of the FINDINGS:

1. The route of catheter placement, eg. PICC, subclavian, internal jugular
2. The tip location, eg. upper, mid, lower SVC, proximal to the SVC, within the right atrium or within the internal jugular vein.
COMPLICATIONS REQUIRING CRITICAL FINDINGS

1) Catheter tip proximal to SVC.
2) Catheter tip projected into the internal jugular vein.
3) Catheter tip in the right atrium.

Hemodialysis vascular access devices (CVAD) can be in the SVC or right atrium, depending on the type of catheter and expected length of use. Right atrial thrombosis is a serious complication with hemodialysis CVAD placement.

REFERENCES


Infusion Nursing Standards of Practice. 2011. Infusion Nursing Society. [online]