Distal SVC and Caval Atrial Junction for Optimal PICC Tip Placement as viewed on the Chest Radiograph

QMC Medical PICC Protocol states “PICC tip to be located in the SVC”. Optimal PICC tip location is defined in guidelines distributed by the FDA, INS, ONS, AVA, and SIRS.

For a PICC tip location within the distal SVC the following shall be acceptable:

(1) Tips located in the SVC and up to 2.5 cm caudal to the visual point formed by the angle of the vertical shadow of the distal SVC and the right atrial appendage (the area where the shadow of the right atrium makes a slight convex bulge in relation to the relatively straight distal SVC shadow),

(2) The caval atrial junction is located at the terminal aspect of this region

Adjustments can be made based on these common points of reference.

Note: Normally the SVC extends behind the atrial appendage for several cm.

Following anatomical locations are not recommended for adult PICC tip via an adult arm insertion due to risks for complications or injury associated with catheter or infusions:

Right Atrium
Right or Left Ventricle
Pulmonary Artery
Inferior Vena Cava
Left SVC (if present)
Azygous Vein
Thoracic Veins
Coronary Sinus
Internal Mammary Veins
Thymic Vein
Pericardiophrenic Vein
All Intra-Arterial cannulations
Ipsilateral or Contralateral Subclavian, Brachiocephalic or Innominate Vein

NOTE: Due to the small gauge size of most PICCs placed at the bedside, the catheter stylet may be allowed to remain in place until after the chest radiograph is taken. This will facilitate visualization of the catheter route and tip. However, the stylet may have been pulled back from the tip 1-4 cm or more to facilitate insertion.

When the radiologist or the RN PICC inserter views the radiograph via digital PACS, an arrow may be placed temporarily alongside the PICC tip for communication and educational purposes.