

IV Update

A Review of Vascular Access & IV Infusion Topics

May 2021

PICC Dislodgement



(There are a whole lot of problems going on here)

PICC line dislodgement, or the retraction or advancement of a PICC line from its original placement, is an avoidable cause of PICC tip malposition. Dislodgement can be caused or contributed to by “patient arm movement, body habitus, patient manipulation, inadequate catheter securement and/or incorrect dressing, and securement device removal.”

“Never advance any external portion of the CVAD that has been in contact with skin into the insertion site. No antiseptic agent or technique applied to skin or the external catheter will render skin or the catheter to be sterile, and no studies have established an acceptable length of time after insertion for such catheter manipulation.”

To identify PICC dislodgement it is important that any nurse caring for a PICC patient is aware of the measurement of external PICC catheter visible on the patient’s skin compared to the amount noted at insertion when the PICC tip was verified in the proper position. If the number of centimeters exposed varies from the number originally identified, the PICC line has been dislodged.

Dislodgement leading to tip malposition of only a few centimeters may mean that the tip of the PICC line is no longer in the SVC, and thus no longer central. Continued use of a malpositioned PICC line may lead to thrombus formation, phlebitis or irritation of the vein, infiltration, pain and other complications, and should be avoided.

If it is noted that a PICC line has been dislodged, stop using the PICC immediately until tip location can be appropriately assessed.

Infusion Therapy Standards of Practice, *Journal of Infusion Nursing*, Vol.44, Num. 1S, Jan/Feb 2021.

Addressing PICC Tip Malposition

PICC tip malposition and migration, or the placement (malposition) or movement (migration) of the PICC tip to a position outside of the Superior Vena Cava (SVC) can occur at the time of PICC insertion or at any point during the course of its dwell-time. A “sudden change in pressure can change the location of the catheter tip in a split-second, placing the tip outside of the SVC”, frequently either up the Internal Jugular (IJ) vein of the neck, Contralateral (across the chest to the other arm), into the Azygos vein (a vein that branches posteriorly off the SVC), into the Mammory vein, or looped back into the same vein that the PICC was inserted through with the tip in the axilla.

Factors that increase intrathoracic pressure including mechanical ventilation, frequent or violent coughing, vomiting or improper line flushing can contribute to PICC malposition. In addition to this, any PICC line that was originally inserted with final tip termination above the location of the distal 1/3 of the SVC is more likely to migrate.

How to assess for PICC malposition: PICC lines should be assessed at least once per shift for patency, site infection & irritation, dressing integrity, arm swelling (DVT), PICC dislodgement (PICC pulled out or pushed in from original placement), AND malposition.

Signs of malposition may include:

1. Pain or tenderness in unusual locations such as neck, chest, or upper abdomen
2. Resistance when flushing
3. Alteration in gravity infusion
4. Absence of blood return
5. Heart dysrhythmias
6. Complaints of hearing gurgling or flow stream sound on the same side (more often) or opposite side that the PICC is placed.

Confirmation of PICC malposition is often verified with chest x-ray. With EKG-guidance technology, AIMS PICC nurses are often able to identify PICC malposition without obtaining chest x-ray, avoiding radiation exposure and the cost of imaging.

The repositioning of a malpositioned PICC without removal and replacement is sometimes possible with patient positioning and power-flushing of the line. This does require thoughtful and careful technique and experience. Please contact AIMS if you suspect PICC malposition, and we will be happy to help determine how to remedy the situation.

Mesa, J., Mejia, A., Tiu, G. “Use of an Evidence-Based Protocol for Repositioning Peripherally Inserted Central Catheters (PICCs) in Children and Adults” *JAVA*, Vol.26, Num 1, Spring 2021. P. 6-14.



Thank you for your partnership in providing quality care in IV therapy to your patients. Please call for questions and support 541-505-7386 Nursing support available 24/7

Photo by Jen Clason, AIMS RN