

Spontaneous repositioning of a malpositioned peripherally inserted central catheter

Sir,

A 3-year-old female child diagnosed with acute lymphoid leukaemia was scheduled for peripherally inserted central catheter (PICC) insertion for chemotherapy. After administering general anaesthesia, a 3F PICC, 22 cm long, was introduced through the left cephalic vein. The catheter was introduced with the head towards the side of the line, and no difficulty was faced while introducing

the catheter. Postprocedure, in the recovery room, a chest X-ray taken showed the catheter tip malpositioned in the internal jugular vein [Figure 1a]. Since the child already had a peripheral venous access, it was decided to use that access for the continuation of the chemotherapy. We opted to re-evaluate the position of the catheter after allowing the child to be active and preferentially in an erect posture rather than redirecting the catheter immediately. An X-ray repeated the next day showed the catheter redirected to the desired position in the superior vena cava without any intervention [Figure 1b].

PICCs are reportedly safe as venous access devices for use in patients receiving chemotherapy and/or parenteral nutrition, with a low-incidence of

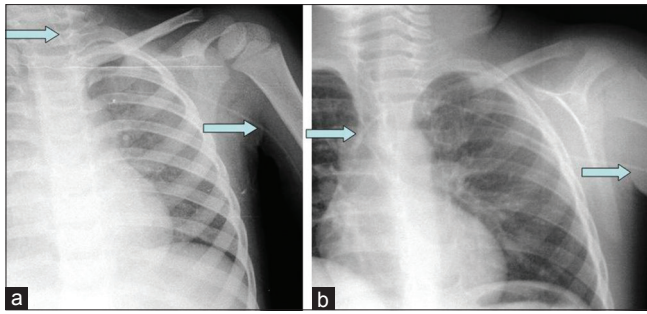


Figure 1: (a) Malpositioned peripherally inserted central catheter (b) Peripherally inserted central catheter after spontaneous repositioning

complications.^[1-3] It is recommended for antibiotic administration lasting longer than 6 weeks^[4] and substituting PICC for central venous catheter may reduce the incidence of catheter-related bloodstream infections in long-stay ICU patients.^[5]

The PICC is composed of a long, soft and flexible tubing which is introduced mainly through large veins in the cubital fossa or arm. They are made of either silicone (conventional PICCs) or polyurethane (power-injectable PICCs). Polyurethane is a much stronger material than silicone and withstands high injection pressures but at the cost of reduced flexibility. PICCs can stay inside a patient indefinitely until complications such as phlebitis or catheter malposition occur.

The regular central catheters are thicker and less flexible compared to PICC. In contrast to the central venous catheter that needs repositioning if malpositioned, PICCs being soft and flexible, can follow the direction of blood flow in the vein and may get spontaneously redirected towards the SVC and right atrium. Hence, we recommend a conservative approach with observation for a period of 24–48 h following the malpositioned placement of a PICC if patient's condition allows. Reassessment of the position after 24–48 h may result in spontaneous redirection and avoidance of another intervention.

However, the patient should have an alternative venous access for the continuation of treatment during this period. The malpositioned catheter should be kept patent even during this period by repeated flushing with normal or heparinised saline. Patients should be encouraged to be active and recumbent and/or erect to aid the change of position of the catheter. It may be justifiable to wait for a reasonable period of 24–48 h as the possibility of the introduction of infection cannot be excluded when the catheter tip is redirected through a guide wire. Most patients scheduled for PICC insertion are immunocompromised, and infection is

of great relevance in this context. We would suggest the practice of observation for 24–48 h to check for spontaneous catheter repositioning in the management of malpositioned PICC lines.

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Conflicts of interest

There are no conflicts of interest.

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