

Insertion and Maintenance of PICC for a Pediatric Patient with Epidermolysis Bullosa

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Purpose

- Discuss challenges of insertion and maintenance of peripherally inserted central catheter (PICC) for a pediatric patient with Epidermolysis Bullosa (EB)
- Describe a novel PICC insertion site and maintenance technique

Background

- EB: inherited disorder affecting the epithelial-lined tissue and causes the skin or mucous membrane to be extremely fragile
- EB skin is prone to blistering, tears, and ulceration from minor traction
- As a result:
 - There are limited intact skin sites for PICC placement
 - Adhesives are avoided on EB skin directly, making securing indwelling venous catheters challenging
 - PICCs in EB patients are prone to migration or dislodgement

The Case

- The patient:
 - 10-year-old with recessive dystrophic EB
 - 79% total body surface area contained skin blistering and wounding
 - Admitted to hospital for severe malnutrition, anemia, esophageal stricture, and generalized anxiety disorder
 - Needed a PICC for frequent labs and total parenteral nutrition (TPN)
 - Flexion contractures of the elbow and shoulder joints and lack of intact skin for usual upper arm PICC insertion sites bilaterally



PICC Insertion, Maintenance and Removal

- PICC Insertion:
 - 3Fr. PICC inserted into proximal left cephalic vein at the level of the axilla in the OR and secured with 2 sutures
 - PICC dressings: foam dressing and stretch bandage roll; no adhesives
- PICC Maintenance:
 - Post-PICC insertion day 3, 1 suture broke, PICC wing flipped upside down, and PICC migrated out by 1 cm
 - Applied medical-grade tissue adhesive to the insertion site and under the PICC wing to secure PICC from further migration on days 3, 4, 11, and 18 post-PICC insertion
 - Administered Cefazolin IV Q8H x3 doses for prophylactic
 - Applied Curosurf Disinfecting Caps to PICC needleless connector
- PICC Removal:
 - Removed tissue adhesive carefully using adhesive remover wipes
 - Cut the suture between skin and tissue adhesive using #11 scalpel
 - Applied petroleum dressing, foam dressing, and stretch bandage roll

Main Findings

- After tissue adhesive was applied:
 - PICC remained intact for a total of 24 days and was removed on day of discharge
 - No skin-related issues after tissue adhesive application
 - No skin-related issues during and after tissue adhesive removal
 - No signs or symptoms of infection, phlebitis, thrombosis, or other complications related to the catheter

Conclusions

- Unconventional PICC insertion site into the proximal left cephalic vein at the level of the axilla was effective in this case report
- Use of tissue adhesive successfully minimized PICC catheter migration
- Future investigation is warranted to test efficacy of this method of insertion and maintenance of a PICC for minimizing migration and dislodgement in patients with EB

References

