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A curious case of abdominal wall cellulitis in a preterm neonate due to PICC line displacement

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Abstract

Peripherally inserted central catheters (PICC) have become a routine in intensive care units. Although very effective, they can have life threatening complications like migration, breakage, thrombosis and colonisation. The tip position of PICC lines must always be confirmed. Fluoroscopic placement is ideal, but cannot be done at the bedside and is costly. Single antero-posterior radiograph is the most commonly used and convenient method. Malposition can lead to grave consequences like extravasations and sepsis. Central line migration and extravasation leading to superficial abscess is rare. We report a neonate who developed abdominal wall cellulitis due to migration and extravasation of the PICC line.

Keywords: PICC, abdominal wall cellulitis, neonate, NICU

Introduction

In neonatal intensive care units, peripherally inserted central catheters (PICC) are now commonplace.

Despite being exceedingly efficient, they may be associated with potentially fatal complications that include migration, breakage, thrombosis, and infective colonization^[1].

Tip positions must always be verified, through radiography.

Serious complications including extravasations and sepsis might result from improper positioning.

It is uncommon for the central line to migrate and extra vasate, resulting in a superficial abscess^[2].

Extravasation is likely caused by the catheter tip being in a small vein, aiming at the wall of a big vessel, or being placed in the cardiac chambers.

We describe a preterm neonate who as a result of extravasation through the PICC line, developed a superficial abdominal collection.

Case report

A 29 week + 5 days preterm female baby was born to a multigravida mother with birth weight of 1360 g was put on CPAP for the first 4 days.

Trophic feeds were started on day 3 and was noticed to have signs of feeding intolerance within the first 24 hours of initiating feeding, necessitating a PICC for TPN.

PICC was inserted in the left saphenous on day 3, confirmed to be in good position with X-ray. The following day saw worsening abdominal distension, considered to be part of ongoing feed intolerance. But abdominal distension worsened with erythema and induration in next 24 hours.

USG abdomen was done revealed sluggish peristalsis, and a dilemma of NEC was strengthened. Baby was given gut rest and started on IV antibiotic and continued on full TPN via the PICC line.

It was further noticed that the abdominal wall cellulitis was more prominent on the right side with induration and later associated with discharge. Initially it was attributed to abdominal wall cellulitis, pus culture grew *Klebsiella*. However, discharge was noticed to be milky in nature, closely mimicking the appearance of lipid-enriched TPN.

With this suspicion, IV fluid was changed to plain dextrose and the discharge became clearer. Considering malpositioning and extravasation from the PICC, X-ray done confirmed the same.

Immediately PICC line was removed, antibiotics were upgraded and incision and drainage were done.

The drainage site completely healed by day 24. She was discharged on day 34 of life when she gained weight adequately

She was discharged on day 34 of life when she gained weight adequately on breast feeding and top up feeds.

Complete healing of the abdominal wall with only minimal scarring was noted at discharge.

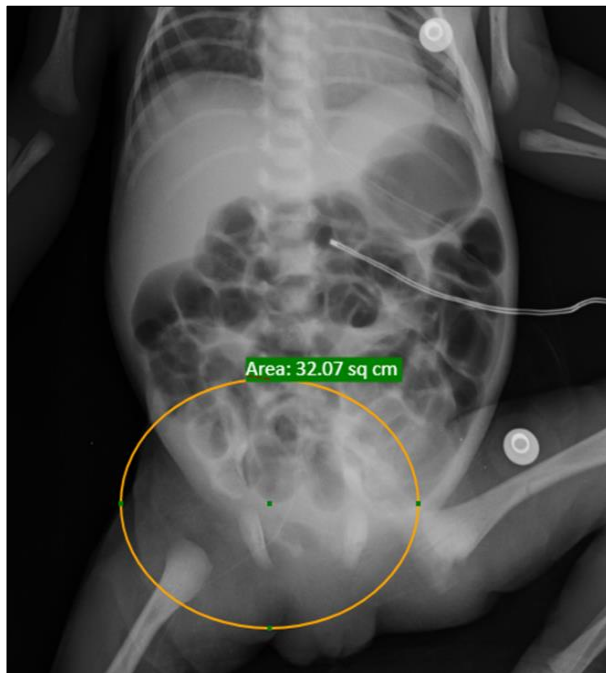


Fig 1: Correctly placed PICC line

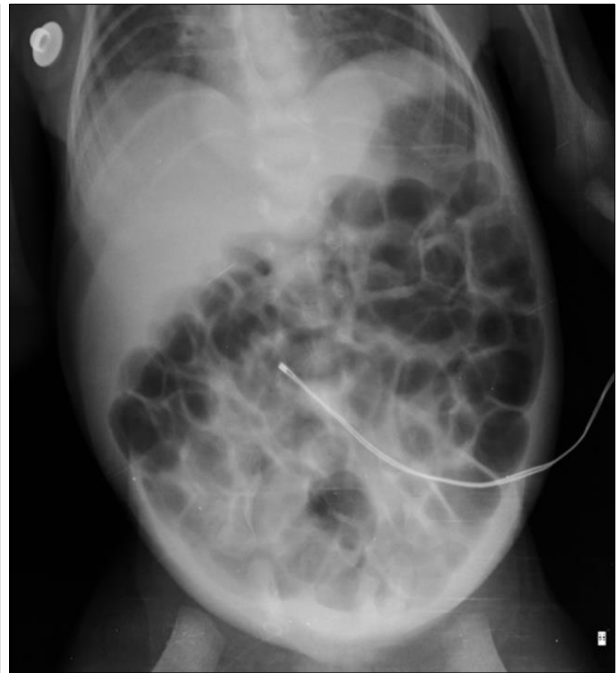


Fig 2: Abdominal distension at day 5



Fig 3: Healed abdomen showing healed scars

Discussion

Sudden unexplained clinical deterioration in a previously well positioned PICC line, without an etiological basis of presumptive NEC, intrigued a consideration of displaced PICC. Prompt evaluation and a multidisciplinary team enabled early diagnosis and timely intervention.

At the time of insertion, we confirmed the position only with antero- posterior X-ray. Retrospectively, a concomitant lateral X-ray, with contrast might have helped in detecting whether the tip was headed towards a superficial vein of the abdomen.

An attempt was made to locate the tip by bedside ultrasound but it was unsuccessful.

The length of the catheter left outside could have been monitored daily and documented in the nursing chart. ^[3]

Conclusions

In our case, the initial position of the PICC was thought to be in the internal iliac vein, and was confirmed so radiographically but over time the tip had found its way to one of the superficial veins of the abdomen.

This highlights the fact that even when all efforts to confirm the tip position are diligently made before using the PICC line, the long line may migrate thereafter.

Declarations

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Conflict of interest: None declared

Ethical approval: Not required

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