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Neonatal percutaneous line tip position on supine radiography isn't always enough to verify position

Richard Iain Hearn, Alan Charles Fenton

Royal Victoria Infirmary, Newcastle Upon Tyne, UK

Corresponding to Richard Iain Hearn, rhearn@nhs.net

DESCRIPTION

Tip position is key in the placement of percutaneous long lines. We would however like to illustrate the pitfalls of relying on the apparent tip position in supine radiography.

Figure 1 shows a wired 28 g premicath, inserted via the saphenous. The tip lies in a central position at S1. Measurement prior to insertion suggested the tip lie in the upper lumbar region.

Total parental nutrition (TPN) ran for 48 h before a TPN blister was noted in the lower left quadrant. The line was felt to have been in an abdominal wall collateral. The lesion quickly resolved with line removal.

On review two points were noted which may have pointed to a mis-sited line.

1. The line was easily inserted to the externally measured distance but the x-ray showed the tip proximal to the expected site.
2. The line curves en route to S1.

We reviewed the previous 38 consecutively inserted saphenous lines. All with their tips within the abdomen took a straight route.

Until recently all lines in our unit were imaged with contrast. It is likely this would have alerted us to the position, as Cartwright¹ described. Many units currently do not use contrast due to iodine content. We therefore suggest in situations in lower limb lines where the tip has not reached the anticipated position on x-ray despite inserting an appropriate length and/or where the line has not followed a straight route, a lateral film will determine whether the line is in the inferior vena cava or a collateral vein.

Competing interests None.

Patient consent Not obtained.

REFERENCES

1. Cartwright DW. Central venous lines in neonates: a study of 2186 catheters. *Arch Dis Child Fetal Neonatal Ed* 2004;**89**:F504–8.

Figure 1 Saphenous lines. Anomalous route on left. Normal route on right.

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