PostScript

LETTERS

Neonatal long lines: localisation with conventional radiography using a horizontal beam technique

Neonatal long lines have improved our ability to care for extremely low birthweight infants. Unfortunately, the use of these catheters is not without risk. Apart from catheter associated infections, potentially serious—for example, pleural effusion, arrhythmia—and even life threatening—for example, cardiac tamponade—complications can occur when these lines are malpositioned.¹ In a recent issue of this journal, De and Imam² presented the case of a preterm infant in whom a long line had inadvertently been placed into the left ascending lumbar vein. When such catheters enter the spinal canal, paraplegia and even death can result.³ The authors emphasise the importance of verifying neonatal long line position using contrast, as the exact localisation of the catheter tip can be difficult on plain radiographs. As an alternative, Groves *et al*⁴ have described the use of colour Doppler to aid ultrasonographic line tip visualisation.

We would like to complement these observations with the description of a simple method to verify catheter tip position in the inferior vena cava using neonatal long lines (fig 1A) with a fine guide wire (27G CV single lumen catheter: Medex Medical Ltd, Rossendale, Lancashire, UK) and plain radiography. As the ascending lumbar vein can project over the inferior vena cava on a standard anterior-posterior plain abdominal film, we obtain instead a lateral view with the infant in an elevated supine position using a horizontal x ray beam. A long line with its tip projecting close to the vertebral bodies of the lower lumbar or upper sacral spine may already have entered the paravertebral venous system (fig 1B,C). When such a malpositioned catheter is further advanced, it will project over the vertebral bodies of the upper lumbar spine. In contrast, long lines that are correctly positioned in the inferior vena cava lie anterior to the upper lumbar spine (fig 1D).

In summary, the fine guide wire of the described neonatal long line (fig 1A) facilitates catheter insertion and, when combined with a horizontal beam technique, allows reliable catheter tip localisation in the inferior vena cava without contrast medium in preterm infants.

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Unexpected course of left leg percutaneous silastic catheters

Three cases of unrecognised, malpositioned saphenous vein percutaneous silastic catheters (PSCs) were identified among 21 saphenous

Figure 1 (A) A fine guide wire facilitates catheter insertion and allows its visualisation on plain radiography without contrast medium. Catheters that project close to or over the vertebral bodies (B) may have inadvertently entered the ascending lumbar vein, draining into the paravertebral venous plexus (C); in contrast, when correctly positioned in the inferior vena cava, the neonatal long line with the guide wire in place can easily be identified anterior to the vertebral bodies (D). IV, Intravenous; NGT, nasogastric tube; NLL, neonatal long line; UAC, umbilical artery catheter.