Contrast study in umbilical venous line extravasation

A preterm infant born at 25 weeks' gestation, birth weight 730 g, had an umbilical venous catheter (UVC) inserted on day 1. The line bled and flushed freely at 5 cm and would not sample beyond this position. Supine abdominal X-ray (AXR) showed vertical position of the line with the tip at T11–T12. This was recognised as a suboptimal position but attempts to secure intravenous access with a percutaneous long line was unsuccessful. The UVC remained in situ and was used to administer total parenteral nutrition. Baby gradually became unstable on day 3 with abdominal distension, metabolic acidosis, rising urea and hyperglycaemia. An AXR on day 4 showed low-lying UVC (L1 position) and featureless bowel gas pattern. UVC extravasation was suspected, and this was confirmed with contrast injection. The UVC was removed and an improvement in bloods, oxygen requirement and blood glucose was seen within 24 hours. Baby recovered without further complications.

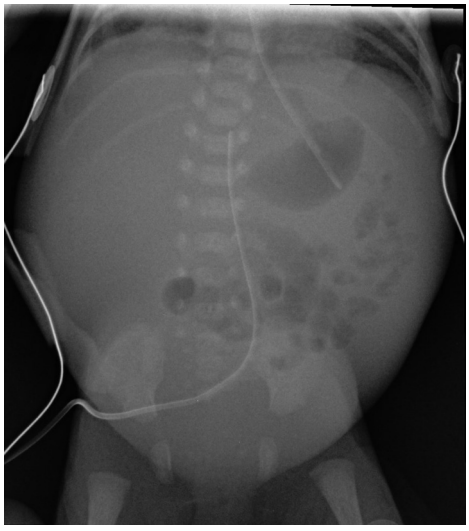

Figure 1 Low-lying umbilical venous catheter.

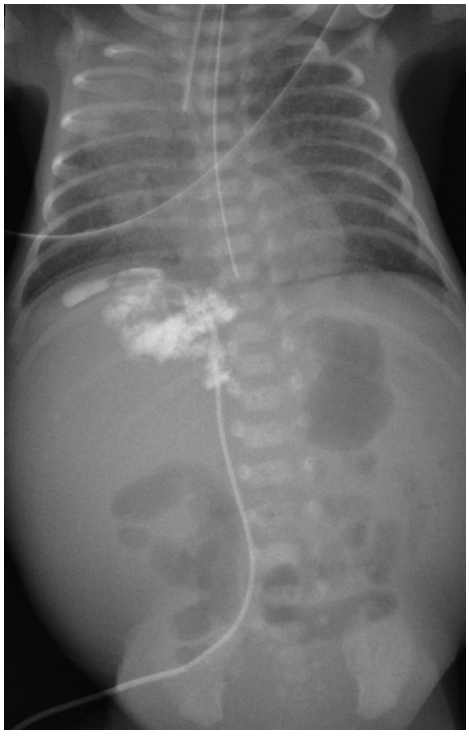

Figure 2 Contrast study showing extravasation.

Extravasation is a known complication of umbilical venous catheter (UVC) placement.[1] It has been reported to present in a manner mimicking necrotising enterocolitis and can lead to significant morbidity or mortality (figure 1).[2] In this case, contrast administration combined with a degree of clinical suspicion demonstrated hepatic extravasation as the cause of the patient's deterioration. There is evidence routine contrast use in checking tip positions improves long line positioning[3] and British Association of Perinatal Medicine (BAPM) has included this in it's central access guidance.[4] Here we demonstrate it can be used to check the position of umbilical central access and to demonstrate extravasation (figure 2).

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