

Bladder Perforation injury and subsequent uroascites following umbilical catheterization: A Case Report

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Introduction

We present a case of a 29+1 gestation DCDA twin who sustained an iatrogenic bladder perforation injury following umbilical catheterisation.

Case

29+1 gestation DCDA twin was born in a local neonatal unit (LNU). Umbilical venous catheterisation was performed on day 1 of life for administration of TPN.

X-ray imaging revealed that the catheter was directed dorsally, with the tip at S1-2 which suggested that the catheter was in an umbilical artery than vein. (Figure 1)

Unfortunately, this was not recognised initially. The catheter was pulled back to L4-5 and TPN was commenced. (Figure 2)

Later review identified the malposition and the catheter was subsequently removed.

Baby was transferred from the LNU to our NICU on day 2 due to an ongoing ventilator requirement. On admission, the baby's abdomen was mildly distended but soft on palpation. Trophic feeds were commenced. Baby was extubated to CPAP on day 3.

From day 4 there was increasing abdominal distention and baby clinically deteriorated, becoming tachypnoeic and oliguric.

Imaging including abdominal X-ray and ultrasound revealed intra-abdominal ascites. (Figure 3)

Baby was re-intubated, screened and treated for sepsis. However, there was no other clinical, biochemical or radiographic evidence of sepsis or necrotising enterocolitis.

Renal function deteriorated with a peak urea 18.2 and creatinine 172 and baby became anuric on day 8.

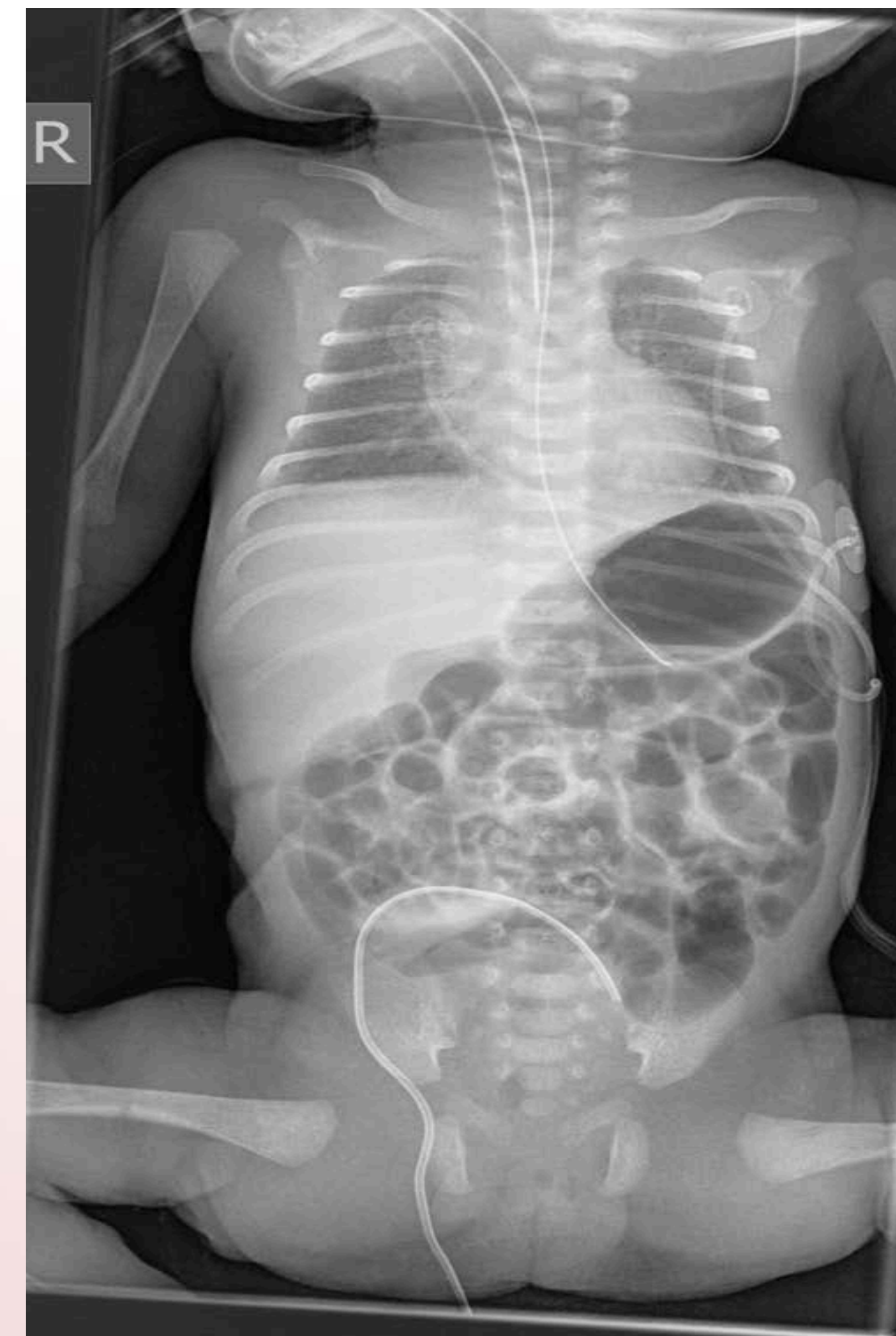


Fig. 1 UVC malposition in umbilical artery.

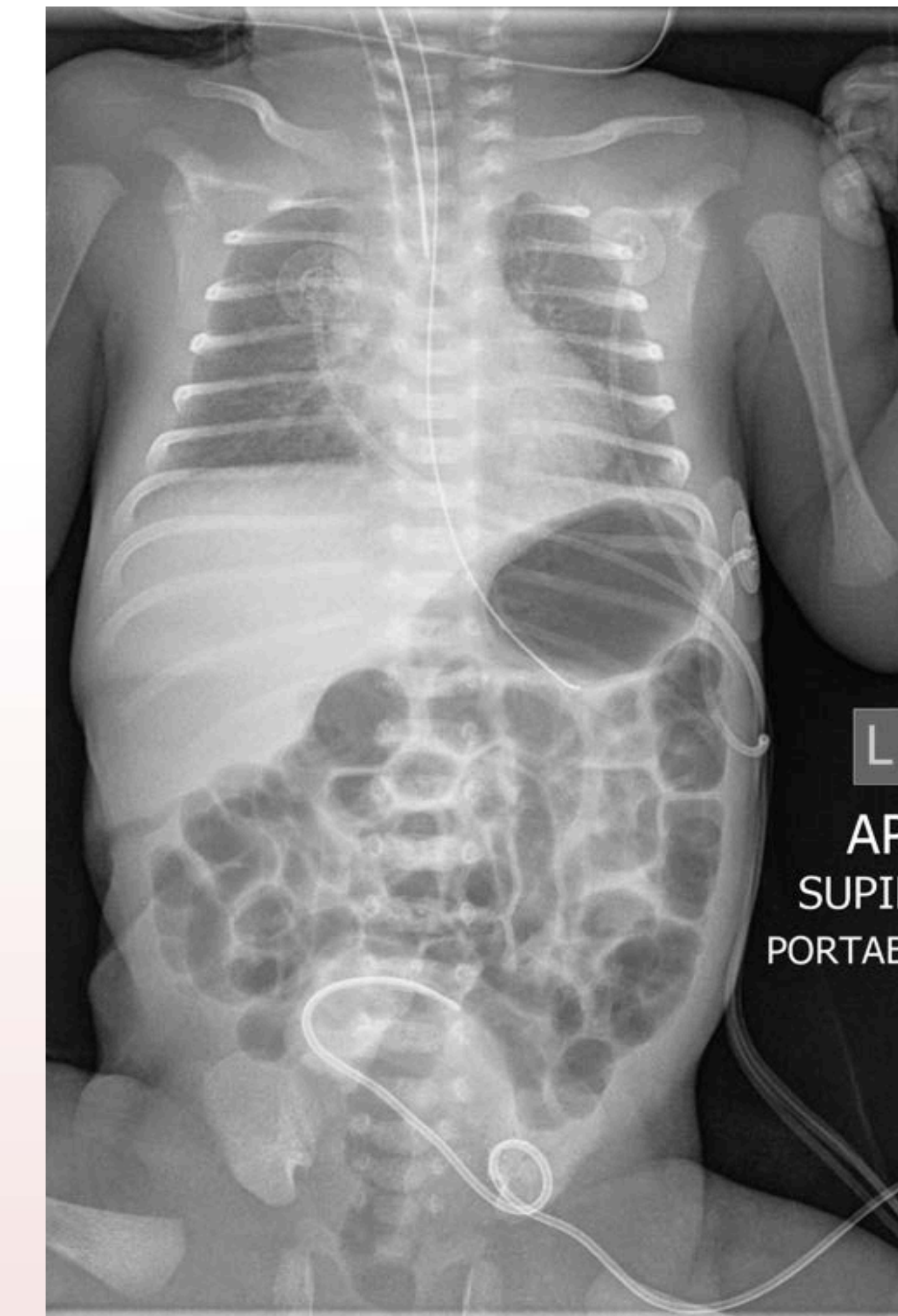


Fig. 2 UVC pulled back however remains in umbilical artery.



Fig. 3 X-ray abdomen on day 4 of life revealing intra-abdominal ascites.

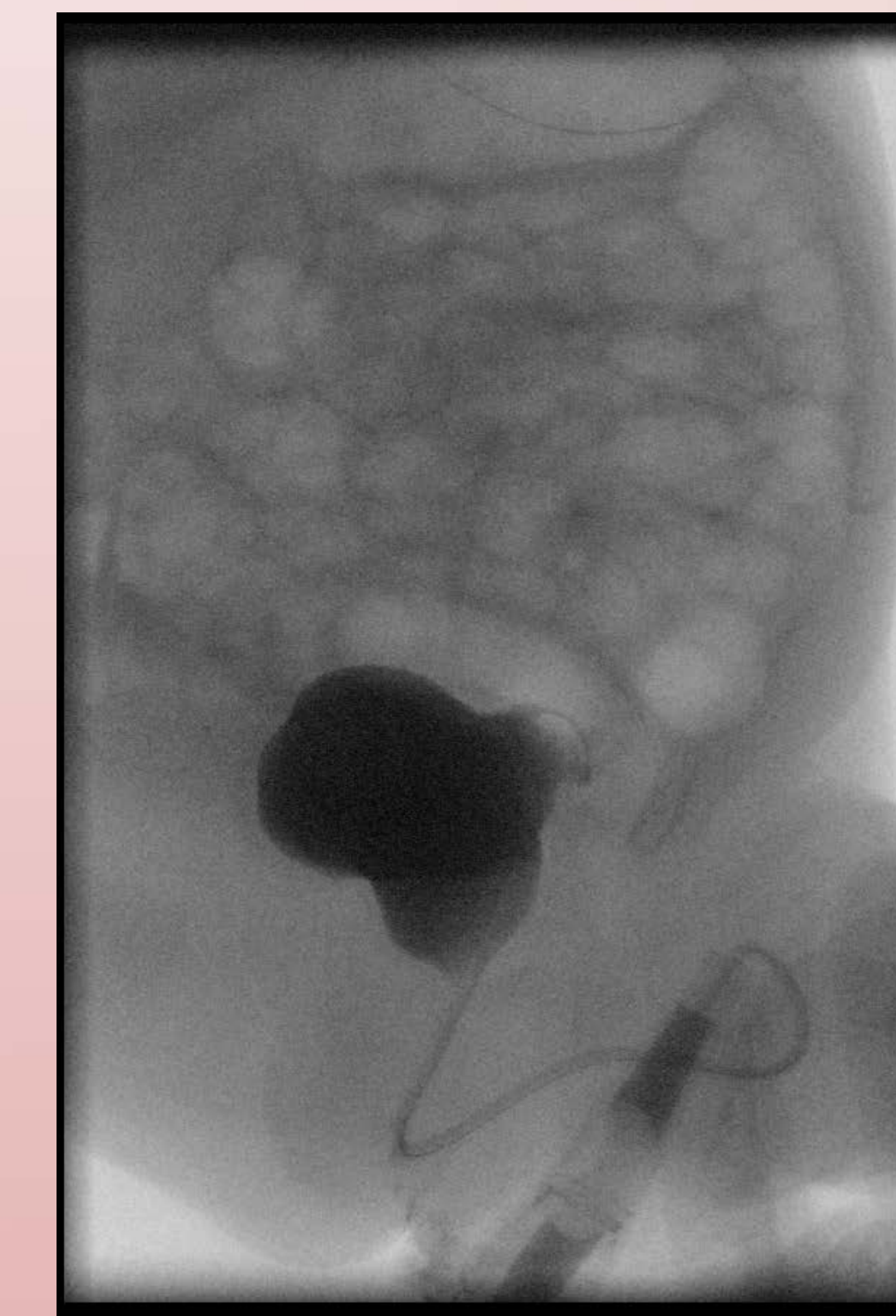


Fig. 4 cystogram revealing bladder injury with extravasation of contrast into peritoneum.

Baby was transferred to a surgical centre on day 9 in view of persistent unexplained ascites and worsening renal function. On day 13, an USS guided ascitic tap aspirated clear yellow fluid and a cystogram revealed a bladder injury with clear extravasation of contrast into the peritoneum. (Figure 4) Baby underwent surgical repair and made a full recovery following this.

Discussion/Results

Attempted umbilical artery catheterisation can occasionally result in a perforation of the bladder or urachal remnant with subsequent extravasation of urine into the peritoneal cavity. It can result in azotaemia, ascites and anuria, as in our case. The case also reinforces the importance of senior review of umbilical line position to commencing TPN.

Conclusion

Although this is a rare complication, it has been previously described in literature.

Neonatologists and paediatric surgeons need to be aware of this differential diagnosis as it requires prompt surgical repair. Early imaging with contrast is recommended for increasing ascites with deteriorating renal function alongside a history of attempted UAC insertion or malpositioned UAC.

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