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An unusual opacity on an abdominal x-ray in a newborn

Indranil Misra, Gokul Erumbala

Department of Paediatrics, Milton Keynes Hospital NHS Foundation Trust, Milton Keynes, UK

Correspondence to Dr Indranil Misra, indranilmisra@doctors.org.uk

DESCRIPTION

A baby boy born at 31⁺¹ weeks gestational age, had mild respiratory distress following birth that required continuous positive airway pressure. Antenatal scan at 20⁺² weeks did not report any fetal anomalies and demonstrated normal liquor volume; no further antenatal ultrasound scans were carried out until delivery. Postnatal physical examination demonstrated some fullness on palpation of the lower abdomen. An abdominal x-ray, performed at 3 h of age to check the position of the umbilical catheters, showed an unusual opacity in the lower abdomen (figure 1). An urgent cot-side abdominal ultrasound confirmed distended bladder with thick and trabeculated wall, which was emptied via catheterisation. A diagnosis of posterior urethral valve (PUV) was confirmed by micturating

cysto-urethrogram, which also showed grade-5 intrarenal reflux on the right side. He underwent suprapubic vesicostomy and endoscopic valve resection at 2 weeks of postnatal age. Suprapubic vesicostomy was reversed 2 months later when the baby was near term. He had normal renal function throughout. He was started on prophylactic trimethoprim and was discharged with plan for paediatric urology follow-up. A follow-up ultrasound scan performed at 1 month of age showed resolved calyceal dilation with both kidneys of normal size and echo texture.

Dilation of the fetal urinary tract usually results from obstruction, but in some cases it may be seen without evidence of obstruction.¹ The differential diagnosis in cases of fetal urinary tract distention includes obstructive uropathy such as PUVs and other types of urethral obstruction, primary vesicoureteral reflux, prune belly syndrome, megacystis-microcolon-hypoperistalsis syndrome (a rare congenital autosomal recessive condition characterised by non-obstructive bladder distention, hydronephrosis, hydroureter, intestinal hypoperistalsis and microcolon²) and neurogenic bladder.³ Detection of an enlarged urinary bladder in a neonate warrants careful evaluation of the ureter, kidneys, genitalia and spine. Congenital bladder perforation, with neonatal urinary ascites, can be a rare complication associated with bladder outlet obstruction such as PUVs.⁴

The incidence of PUV is about 1 : 2500–4000 of live male infants.⁵ It is usually diagnosed on antenatal ultrasound scan at second trimester based on a persistently dilated bladder, upper tract dilatation with or without oligohydramnios.⁵ However, there are reports of PUV diagnosed at birth with normal antenatal scan as late as 31⁺⁶ weeks of gestational age.⁶ It is believed that development of significant obstruction at later part of pregnancy rather than earlier, carries a better prognosis.⁷ A high index of suspicion leading to prompt postnatal diagnosis and early decompression is advisable for a better outcome in late-presenters.

Figure 1 Abdominal x-ray demonstrating distended bladder, secondary to the posterior urethral valve.

Learning points

- ▶ Posterior urethral valve is described in neonates who had normal third trimester antenatal scans.
- ▶ While obstructive uropathy is a common cause of dilated urinary tract, other aetiological factors should also be considered.
- ▶ Once identified, prompt bladder emptying should be carried out. Bladder rupture and urinary ascites can be a complication of undetected obstructive uropathy.

Competing interests None.

Patient consent Obtained.

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