- 23 **Andersson Grönlund M**, Andersson S, Aring E, et al. Ophthalmological findings in a sample of Swedish children aged 4–15 years. *Acta Ophthalmol Scand* 2006;**84**:169–76.
- 24 **Dutton G**, Ballantyne J, Boyd G, et al. Cortical visual dysfunction in children: a clinical study. *Eye* 1996;**10**:302–9.
- 25 **Wechsler D**. *WISC-III. Swedish version* [manual]. Stockholm: Psykologiförlaget, 1999.
- 26 **Sommerfelt K**, Ellertsen B, Markestad T. Low birthweight and neuromotor development: a population based, controlled study. *Acta Paediatr* 1996;**85**:604–10.
- 27 **Hintz S**, Kendrick D, Vohr B, et al. Gender differences in neurodevelopmental outcomes among extremely preterm, extremely-low-birthweight infants. *Acta Paediatr* 2006;**95**:1239–48.
- 28 **Ohlsson J**, Villarreal G. Normal visual acuity in 17–18 year olds. *Acta Ophthalmol Scand* 2005;**83**:487–91.
- 29 **Powls A**, Botting N, Cooke RWI, et al. Visual impairment in very low birth weight children. *Arch Dis Child* 1997;**76**:82–7.
- 30 **Abernethy LJ**, Palaniappan M, Cooke RWI. Quantitative magnetic resonance imaging of the brain in survivors of very low birth weight. *Arch Dis Child* 2002;**87**:279–83.

IMAGES IN NEONATAL MEDICINE.....

doi: 10.1136/adc.2006.106666

Renal artery thrombosis and ischaemia presenting as severe neonatal hypertension

A baby boy (1460 g) was delivered at 30 weeks' gestation by caesarean section for preterm labour and fetal distress. Umbilical arterial and venous catheters were inserted

Figure 1 Enhanced axial CT image shows multiple foci of filling defects compatible with thrombi within the main and posterior division of the left renal artery (small arrows). Note the lack of cortical enhancement at the posterior pole of the left kidney (arrowheads) compared with normal enhancement of the right kidney (curved arrow). RK, right kidney; LK, left kidney.

Figure 2 Enhanced thick slab (6.5 mm) coronal image showing patchy enhancement of the left renal artery and its posterior division. Multiple segments of narrowing suggestive of intraluminal thrombi are indicated by the small arrows. There is reduced enhancement of the upper pole of the left kidney (arrowheads) suggestive of lobar ischaemia.

between T8 and T9 briefly during the immediate postnatal period. On day 23, the baby was hypertensive (highest blood pressure 113/77 mm Hg; mean 88 mm Hg), but echocardiography revealed a structurally normal heart. Power Doppler ultrasound of the renal tract and vessels was normal. Multidetector computed tomographic (MDCT) angiography of the abdomen showed multiple narrowing defects within the main and posterior division of the left renal artery (fig 1) and in the aorta at the origin of inferior mesenteric artery. Reduced perfusion in the upper pole of the left kidney was indicative of lobar ischaemia (fig 2). Possible causes of the defects included thrombosis, arterial spasm and dysplastic vessels. Blood pressure normalised after labetalol infusion and the baby was weaned off antihypertensive treatment after seven days. MDCT angiography showed resolution of left kidney hypoperfusion and partial resolution of the narrowing defects. Clinical progress was compatible with multiple intra-arterial thrombi, with subsequent resolution.

Renal artery thrombosis as a complication of umbilical arterial catheterisation is a common cause of neonatal hypertension.¹ MDCT angiography is highly useful in the investigation of neonatal hypertension when power Doppler ultrasound is inconclusive. With MDCT, we made the diagnosis within hours of presentation even though ultrasound findings were normal. Magnetic resonance angiography would have been impractical because of the long scanning time and the need for heavy sedation. Symptomatic management of blood pressure while awaiting resolution of the renal condition is usually successful,² and may circumvent the technical difficulties of invasive interventions and avoid serious complications of treatment.³

H S Lam

Departments of Paediatrics, Prince of Wales Hospital, The Chinese University of Hong Kong, Sha Tin, New Territories, Hong Kong

W C W Chu

Departments of Diagnostic Radiology and Organ Imaging, Prince of Wales Hospital, The Chinese University of Hong Kong, Sha Tin, New Territories, Hong Kong

C H Lee, W Wong, P C Ng

Departments of Paediatrics, Prince of Wales Hospital, The Chinese University of Hong Kong, Sha Tin, New Territories, Hong Kong

Correspondence to: Professor Pak C Ng, Department of Paediatrics, 6/F, Clinical Sciences Building, Prince of Wales Hospital, Sha Tin, New Territories, Hong Kong; pakcheungng@cuhk.edu.hk

Competing interests: None declared.

References

- 1 **Merten DF**, Vogel JM, Adelman RD, et al. Renovascular hypertension as a complication of umbilical arterial catheterization. *Radiology* 1978;**126**:751–7.
- 2 **Adelman RD**, Merten D, Vogel J, et al. Nonsurgical management of renovascular hypertension in the neonate. *Pediatrics* 1978;**62**:71–6.
- 3 **Greenberg R**, Waldman D, Brooks C, et al. Endovascular treatment of renal artery thrombosis caused by umbilical artery catheterization. *J Vasc Surg* 1998;**28**:949–53.