- 27 **Halliday HL**, Ehrenkranz RA, Doyle LW. Early postnatal (<96 hours) corticosteroids for preventing chronic lung disease in preterm infants. *Cochrane Database Syst Rev* 2003;1:CD001146.
- 28 **Halliday HL**, Ehrenkranz RA, Doyle LW. Moderately early (7–14 days) postnatal corticosteroids for preventing chronic lung disease in preterm infants. *Cochrane Database Syst Rev* 2003;1:CD001144.
- 29 **Halliday HL**, Ehrenkranz RA, Doyle LW. Delayed (>3 weeks) postnatal corticosteroids for chronic lung disease in preterm infants. *Cochrane Database Syst Rev* 2003;1:CD001145.
- 30 **Shah V**, Ohlsson A, Halliday HL, et al. Early administration of inhaled corticosteroids for preventing chronic lung disease in ventilated very low birth weight preterm neonates. *Cochrane Database Syst Rev* 2000;2:CD001969.
- 31 **Lister P**, Iles R, Shaw B, et al. Inhaled steroids for neonatal chronic lung disease. *Cochrane Database Syst Rev* 2000;3:CD002311.
- 32 **Shah SS**, Ohlsson A, Halliday HL, et al. Inhaled versus systemic corticosteroids for preventing chronic lung disease in ventilated very low birth weight preterm neonates. *Cochrane Database Syst Rev* 2003;1:CD002058.
- 33 **Shah SS**, Ohlsson A, Halliday HL, et al. Inhaled versus systemic corticosteroids for the treatment of chronic lung disease in ventilated very low birth weight preterm infants. *Cochrane Database Syst Rev* 2003;2:CD002057.
- 34 **The STOP-ROP Multicenter Study Group**. Supplemental therapeutic oxygen for prethreshold retinopathy of prematurity (STOP-ROP). A randomised controlled trial. I: Primary outcomes. *Pediatrics* 2000;105:295–310.
- 35 **Askie LM**, Henderson-Smart DJ, Irwig L, et al. Oxygen saturation targets and outcomes in extremely preterm infants. *N Engl J Med* 2003;349:959–67.
- 36 **Oyen N**, Markestad T, Skaerven R, et al. Combined effects of sleeping position and prenatal risk factors in sudden infant death syndrome: the Nordic Epidemiological SIDS Study. *Pediatrics* 1977;100:613–21.
- 37 **Adams MM**, Kugener B, Mirmiran M, et al. Survey of sleeping position after hospital discharge in health preterm infants. *J Perinatal* 1998;18:168–72.
- 38 **Colson ER**, Bergman DM, Shapiro E, et al. Position for newborn sleep: associations with parents' perceptions of their nursery experience. *Birth* 2001;28:249–53.
- 39 **Vernacchio L**, Corwin MJ, Lesko SM, et al. Sleep position of very low birthweight infants. *Pediatrics* 2003;111:633–40.
- 40 **Bhat RY**, Leipala JA, Rafferty GF, et al. Survey of sleeping position recommendations for prematurely born infants on neonatal intensive care unit discharge. *Eur J Pediatr* 2003;162:426–7.
- 41 **Bhat RY**, Hannam S, Pressler R, et al. Effect of prone and supine position on sleep, apneas and arousal in preterm infants. *Pediatrics* 2006;118:101–7.
- 42 **Bhat RY**, Leipala JA, Singh NR, et al. Effect of posture on oxygenation, lung volume, and respiratory mechanics in premature infants studied before discharge. *Pediatrics* 2003;112:29–32.
- 43 **Kassim Z**, Donaldson N, Khatriwal B, et al. Sleeping position, oxygen saturation and lung volume in convalescent, prematurely born infants. *Arch Dis Child Fetal Neonatal Ed* 26 September 2006 [Epub ahead of print].

IMAGES IN NEONATAL MEDICINE.....

doi: 10.1136/adc.2006.112367

Neonatal gastric perforation following inadvertent connection of oxygen to the nasogastric feeding tube

An 3-day-old baby, who was being treated for probable sepsis, developed acute abdominal distension. On examination he was pale, and had tachycardia and tachypnoea and cold, dusky extremities. He responded only to pain. The abdomen was distended, tense and tender with absent bowel sounds. The scrotum was distended, translucent and non-erythematous. He had been on nasogastric tube feeds (NGT), with concomitant oxygen administration via a feeding tube inserted at 5 cm into the left nostril. It transpired that a few minutes earlier, the oxygen tube had got disconnected and has been inadvertently connected to the NGT. This error was detected because of the dramatic, translucent scrotal swelling. A laparotomy after initial stabilisation revealed a 1.5×0.5 cm perforation in the greater curvature, which was successfully sealed.

Spontaneous gastric perforation in a newborn is rare, but has been reported.¹ It is different from the ileal perforations seen in necrotising enterocolitis. Gastric perforation has been reported previously in association with nasogastric feeding.² Oxygen is commonly administered through a nasal catheter in resource-poor settings, because it is effective, inexpensive and achievable at low oxygen flow.³ However, it is a potential source of error because these infants are also often receiving nasogastric feeds, and the tubes are indistinguishable. Such errors can perhaps be minimised by labelling the tubes and ensuring that oxygen flow is kept below 2 l/min if low-range flow meters are not available. In our case, the perforation of the stomach wall caused marked distension of the scrotum in just a few minutes, via the patent processus vaginalis. An acute scrotal swelling in a neonate, as described here, should prompt suspicion of gastric perforation.

Figure 1 Erect film of abdomen showing saddle-bag appearance of pneumoperitoneum.

Correspondence to: Dr Kala Ebenezer, Department of Child Health, Christian Medical College, Vellore, India; kinbaraj@cmcvellore.ac.in

Competing interests: None.

References

- 1 **Im SA**, Lim GY, Hahn ST. Spontaneous gastric perforation in a neonate presenting with massive hydroperitoneum. *Pediatr Radiol* 2005;35:1212–4.
- 2 **Karunakara BP**, Ananda Babu MN, Maiya PP, et al. Nasogastric feeding tube perforation in a neonate. *Indian J Pediatr* 2004;71:661–2.
- 3 **Frey B**, Shann F. Oxygen administration in infants. *Arch Dis Child Fetal Neonatal Ed* 2003;88:F84–8.

Kala Ebenezer

Department of Child Health, Christian Medical College, Vellore, India

Anuradha Bose

Department of Community Health, Christian Medical College, Vellore, India

Sampath Carl

Department of Paediatric Surgery, Christian Medical College, Vellore, India