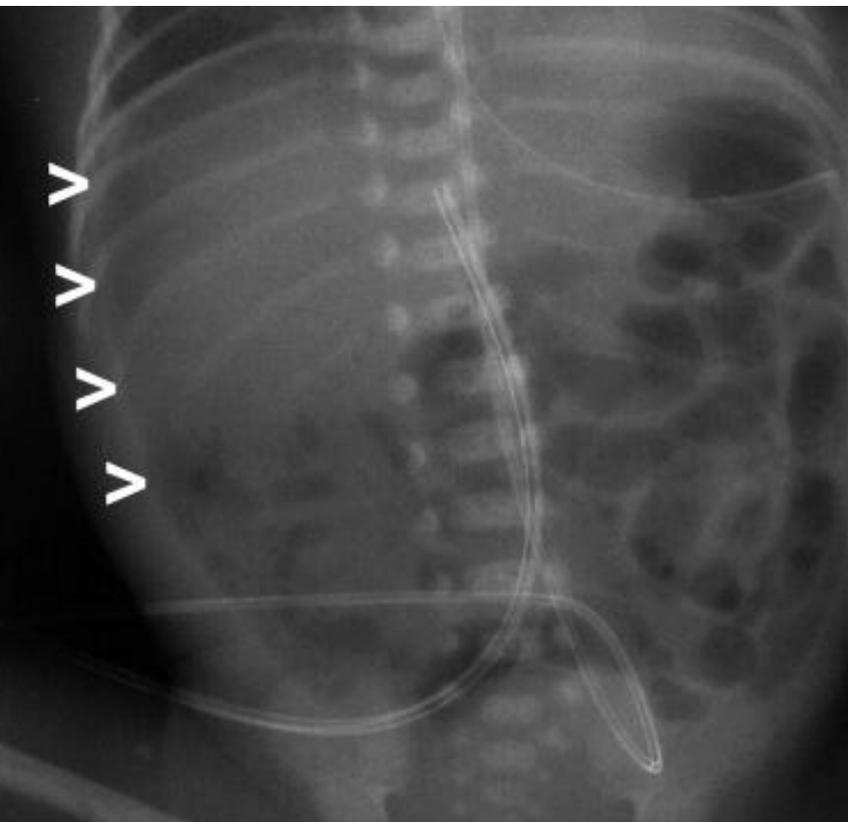


SWISS SOCIETY OF NEONATOLOGY

Winner of the
Case of the Year
Award 2002

Spontaneous, isolated intestinal perforation in preterm infants

March 2002



This 680 g boy was delivered by Cesarean section at 26 weeks of gestation. Apgar scores were 5 and 7 at 1 and 5 minutes, respectively. He was intubated in the delivery room and surfactant was administered. Umbilical arterial and venous catheters were placed. Severe, refractory arterial hypotension was treated with dopamine, norepinephrine and stress doses of hydrocortisone (30 mg/m²/day in three divided doses). Indomethacin (0.1 mg/kg/dose every 24 hours) was given as IVH (intraventricular hemorrhage) prophylaxis within the first 12 hours of life.

Gut priming was started on the first day of life. On the 5th day of life, the abdomen was distended with bluish discoloration of the left upper quadrant. In addition, there was thrombocytopenia and leukopenia but no metabolic acidosis. Abdominal X-ray showed free intraperitoneal air without evidence of pneumatosis or portal venous gas (Fig. 1). Triple antibiotics were started. A peritoneal drain was placed in the NICU on the same day, and the infant's condition improved. During the following days, air and fluid continued to drain from the incision (>7 ml/24h).

Because of increasing intestinal fluid loss laparotomy was performed on the 11th day of life in the NICU. During surgery, an isolated ileal perforation was found (Fig. 2). Partial resection of the ileum (2 cm) and an end-to-end anastomosis were done. Enteral feedings were restarted 2 days after the operation and were subsequently well tolerated.

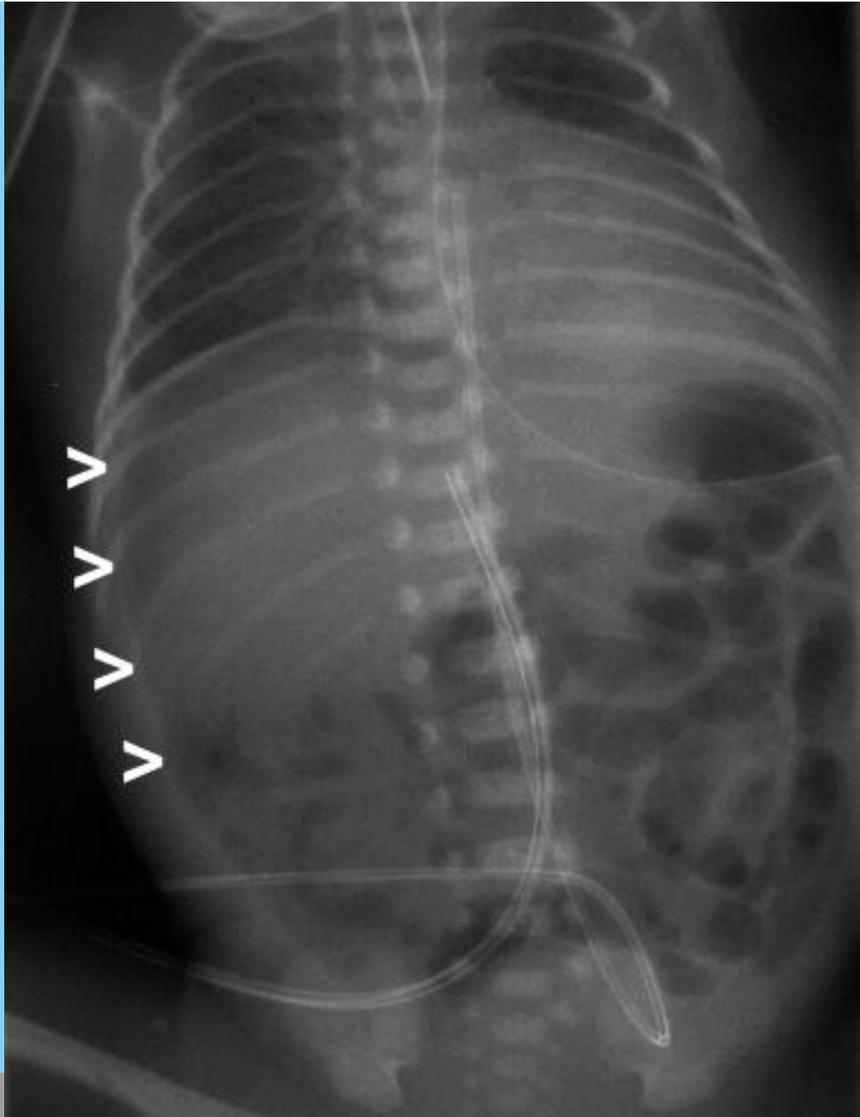


Fig. 1

Pneumoperitoneum

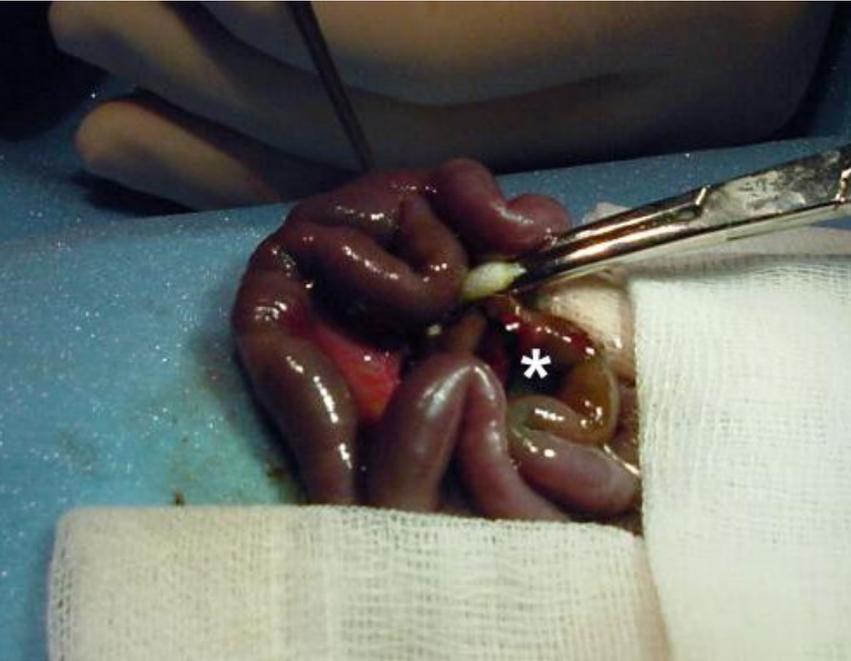


Fig. 2

Isolated ileal perforation (asterisk)

DISCUSSION

Neonatal gastrointestinal perforation has been associated with high mortality rates (40% to 70%). It can occur in association with NEC (carrying a very high mortality rate) and meconium ileus (1). Isolated intestinal perforation tends to occur in the smallest, most immature infants and has a better prognosis. It presents within the first two weeks of life, often before substantial feedings have been started. Many of the affected infants have been treated with inotropes, indomethacin and/or corticosteroids (Table) (2).

Infants with isolated intestinal perforation often present with a distended and discolored abdomen but have few signs of systemic compromise. The presence or absence of pneumatosis intestinalis can help to distinguish intestinal perforation secondary to NEC from isolated intestinal perforation. Peritoneal drainage is the primary therapy for intestinal perforation and in some case series frequently the definitive therapy (2,3).

	Perforated NEC (n=11)	Isolated Perforation (n=10)
Birth weight, g (range)	949 g (550-1465)	708 g (320-910)
Gestational age, weeks (range)	27.5 (24-30)	25.5 (24-28)
Age at perforation, days	28.0 (16-55)	10.6 (6-15)
Fed before perforation	91% (10/11)	30% (3/10)
History of indomethacin use	100% (11/11)	100% (10/10)
History of steroids	30% (3/11)	50% (5/10)

Table

Comparison between perforated NEC an isolated intestinal perforation (adapted from Cass DL et al.)
(2)

REFERENCES

1. St-Vil D, LeBouthillier G, Lukas FI, Bensoussan AL, Blanchard H, Youssef S. Neonatal gastrointestinal perforations. *J Pediatr Surg* 1992;27:1340-1342 (*Abstract*)
2. Cass DL, Brandt ML, Patel DL, Nuchtern JG, Minifee PK, Wesson DE. Peritoneal drainage as definitive treatment for neonates with isolated intestinal perforation. *J Pediatr Surg* 2000;35:1531-1536 (*Abstract*)
3. Meyer CL, Payne NR, Roback SA. Spontaneous, isolated intestinal perforations in neonates with birth weight less than 1000 g not associated with necrotizing enterocolitis. *J Pediatr Surg* 1991;26:714-718 (*Abstract*)

SUPPORTED BY



CONTACT

Swiss Society of Neonatology

www.neonet.ch

webmaster@neonet.ch