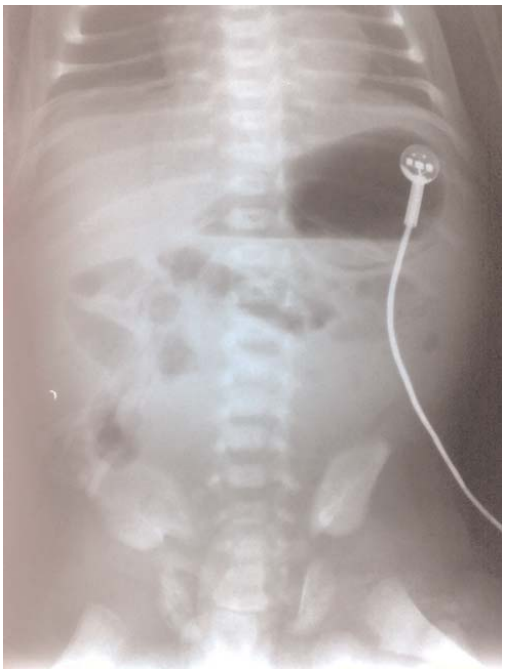
What is your diagnosis?

FATMA NUR SARI*
UGUR DILMEN*

A male preterm infant, first-born of twins delivered by cesarean section at 31 weeks' gestation. Birth weight was 1720 g and APGAR scores were 5 and 8 at 1 and 5 min, respectively. The initial clinical course of the infant was unremarkable except mild respiratory distress which required supplemental oxygen. Enteral feeding with breast milk was started at 16 hours of age and increased with amounts of 20 ml/kg/day over the next days. On day 5 of life, clinical deterioration occurred with fecaloid vomiting, abdominal distention and bloody stools. Serum C-reactive protein and interleukin-6 levels were 37,8 mg/L and 482,1 pg/mL, respectively. Thrombocytopenia ($118x10^6L$) was detected. White blood cell count and immature-to-total ratio of the blood count remained normal. What is your diagnosis of the infant whose abdominal graph is shown below?

Figure 1: The abdominal x-ray of the newborn patient.



*From Neonatal Intensive Care Unit, Zekai Tahir Burak Maternity Teaching Hospital, Ankara, Turkiye.

Answer

Abdominal radiograph of the infant revealed dilatation of intestinal loops, pneumatosis intestinalis (PI) and extensive gastric pneumatosis (GP) (Figure 1). Abdominal ultrasonography also demonstrated GP and portal venous gas. He was diagnosed as necrotizing enterocolitis (NEC) stage IIB. Enteral feeding was discontinued, nasogastric tube was placed and total parenteral nutrition was started. Antibiotic treatment including cefotaxime, amikacin and metronidazole was applied after collection of blood culture.

On follow-up, abdominal distention subsided, bowel sounds activated and bloody stools disappeared. GP vanished on the 3rd day of treatment. Feeding with breast milk was re-started on 8th day of the treatment and well tolerated. No microorganism was grown in the blood cultures. At 22 days of age the infant weighed 1750 g was discharged from the hospital in stable condition on full feeds.

Gastric Pneumatosis

PI that can be seen throughout the entire gastrointestinal tract, from the esophagus to the rectum is usually found in premature infants in association with NEC (1). GP, defined as gas in the wall of the stomach, is an extremely rare sign of NEC which can be easily detected by direct radiography. GP was divided into two groups: gastric emphysema and emphysematous gastritis. Gastric emphysema develops secondary to intramural entrance of gas through a mucosal breach facilitated by increased intragastric pressure due to pyloric stenosis, gastric malrotation, duodenal atresia, duodenal web and annular pancreas (2). Emphysematous gastritis which is a rare entity comprises of gastric wall inflammation, evidence of intramural gas and systemic toxicity such as NEC (2). Recently it has been suggested to classify PI according to its location in the intestine. Depending on the authors' findings, distal colonic involvement was associated with less severe inflammatory changes of the bowel (3). GP is regarded as a poor prognostic factor and a sign indicative of severe and wide spread gastrointestinal tract involvement (2,4). Previously, infants with GP (4) were candidates for emergent surgery; however, with improving neonatal care, conservative therapy has emerged as an alternative option in hemodynamically stable patients.

REFERENCES

1. Bell MJ, Ternberb JL, Feigin RD, Keating JP, Marshall R, Barton L et al: Neonatal necrotising enterocolitis. Theraupeutic decision based upon clinical staging. Ann Surg, 187:1-7, 1978.

2. Travadi JN, Patole SK, Simmer K: Gastric pneumatosis in neonates: revisited. J Paediatr Child Health, 39:560-562, 2003.

3. Hoehn T, Stover B, Buhrer C: Colonic pneumatosis intestinalis in preterm infants: different to necrotising enterocolitis with a more benign course? Eur J Pediatr, 160:369-371, 2001.

4. Duran R, Vatansever U, Aksu B, Acunas B: Gastric pneumatosis intestinalis: an indicator of intestinal perforation in preterm infants with necrotizing enterocolitis? J Pediatr Gastroenterol Nutr, 43:539-541, 2006.

Correspondence:
Fatma Nur SARI,
Zekai Tahir Burak Maternity Teaching Hospital
Talatpasa Bulvari, Altindag, Ankara, TURKIYE.
e-mail: fatmanurselek@yahoo.com