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Neonatal gastric perforation enclosed by the lesser sac

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A female preterm infant was born by cesarean delivery at a gestational age of $24^{4/7}$ weeks with a birth weight of 523 g. On Day 8, mild abdominal distention and bilious gastric residuals were noted. Pneumoperitoneum was not evident in the plain abdominal radiographs. On Day 9, a round, 4-cm translucent structure was observed in the left upper quadrant (Fig. 1). Pneumoperitoneum was not evident in the lateral decubitus view. On Day 10, the translucent structure was still present; however, an upper gastrointestinal series did not delineate the structure (Fig. 2). On Day 12, pneumoperitoneum became apparent, and an emergency laparotomy was performed. During surgery, a 5-mm perforation was noted on the posterior wall of the stomach body and was enclosed by the lesser sac. The patient died at 40 days of age due to circulatory disturbance.

Gastric perforation accounts for 7% of neonatal gastrointestinal perforations. The prognosis is generally poor with a high mortality rate of 46%—63%. Preterm neonates show 4.21 times higher risk of mortality.[1,2] Early diagnosis based on the presence of pneumoperitoneum on plain abdominal radiography and surgical intervention is key to successful management.[2] However, prompt surgical intervention was not possible in our case because of the delayed appearance of pneumoperitoneum. Free gas was observed instead as a round, radiolucent structure due to entrapment by the

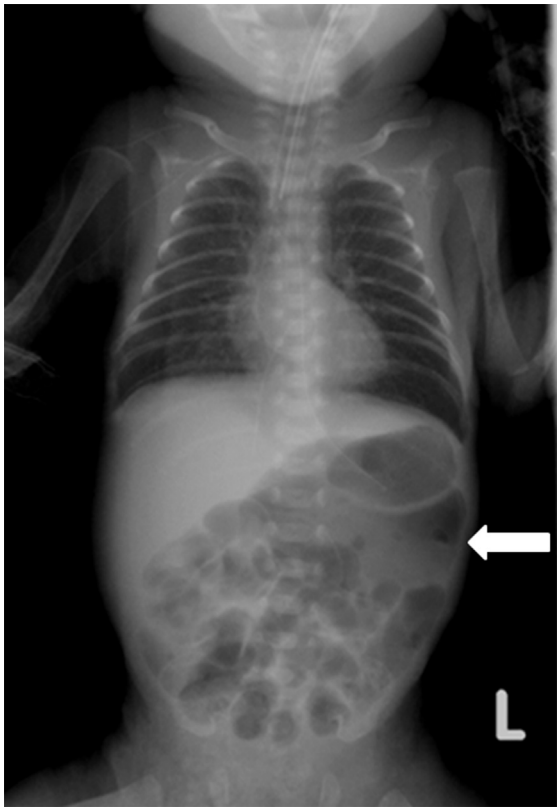

Figure 1 A round, translucent 4-cm mass that was distinguishable from the stomach bubble can be seen in the left upper quadrant (arrow).

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Figure 2 The translucent structure was still present, but an upper gastrointestinal series did not delineate the structure. The small pneumoperitoneum is observed within the median subphrenic space (cupola sign).

lesser sac, the small part of the peritoneal cavity behind the lesser omentum and stomach. Unlike the typical pneumoperitoneum, the lesser sac gas was reported to manifest by an ill-defined radiolucency.[3] The upper gastrointestinal series also failed to show any connection between the stomach and the structure. Scanty contrast medium extravasation into the space may be responsible for the small perforated hole and the supine position of the infant leading to the pooling of the contrast in the gastric fundus.

Conflict of interest

The authors have no potential conflicts of interest to disclose.

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