Congenital diaphragmatic hernia with gastric perforation in a newborn female

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ABSTRACT
Most neonates with congenital diaphragmatic hernia (CDH) present with CDH symptoms within the first 24 h of life. However, the presentation may be delayed in 10-20% of the cases. The presenting symptoms are nonspecific and are usually gastrointestinal in nature. We report a case of a 9 day-old neonate presenting with abdominal distention. The investigation was suggestive of CDH with the possibility of perforation which was confirmed by emergency laparotomy. A review of literature revealed one similar case report. This case highlights the risk of bowel incarceration in delayed cases presenting with gastrointestinal symptoms.

KEY WORDS: Congenital diaphragmatic hernia, gastric perforation, neonate

INTRODUCTION
Congenital diaphragmatic hernia (CDH) usually presents within hours of delivery due to respiratory insufficiency. Presentation of CDH beyond 48 h of life has only been noted in 10-20% of the cases with this anomaly. Pulmonary symptoms, if present, are rarely life-threatening. Presentation beyond 48 h of age is generally associated with uniform survival, yet occasionally, the course is complicated.[1] Patients may present with gastrointestinal symptoms due to incarceration of the bowel which has already undergone volvulus within the sac.

CASE REPORT
A 9 day-old, full-term female was admitted for progressive distention of the abdomen, constipation and nonbilious vomiting. The child had passed meconium on day 1 of life. On examination, the child showed evidence of tachycardia and mild respiratory distress but no cyanosis. Auscultation showed decreased air entry in the left hemithorax. The abdomen was distended with tenderness in the left hypochondrium. X-rays of the chest and abdomen showed a gastric bubble in the left hemithorax [Figure 1]. Ultrasound confirmed the presence of bowel loops in the left thorax. Peritoneal soiling with curdled milk was encountered upon exploration. A left posterolateral diaphragmatic hernia with sac containing bowel loops was found. Gastric volvulus was noted. After reduction of the contents, a perforation of size 1 x 1.5 cm within an area of necrosis on the posterior surface of the gastric fundus was noted [Figure 2]. The fundic part containing the perforation was excised and the defect was closed in two layers. The postoperative course was uneventful and the patient was discharged on day 20 of life.

DISCUSSION
CDH not associated with immediate respiratory distress, is proposed to occur when the herniation of abdominal contents occurs in the late gestational age.[1] There is little or no associated pulmonary hypoplasia and
virtually no risk of developing pulmonary hypertension. Patients may present with gastrointestinal symptoms due to incarceration of the bowel within the sac. While this occurs in adults, it may lead to obstruction at the mid-stomach level. The fundus and the antrum may be enormously distended and if not relieved, may perforate.

The CDH should be considered in the differential diagnosis of every child presenting with unusual respiratory or gastrointestinal symptoms and an abnormal X-ray picture of thorax. Acute strangulation of CDH after the newborn period is a life-threatening disease where the gastrointestinal obstruction is combined with respiratory and circulation failure. This case highlights the risk of incarceration of bowel leading to perforation in cases with CDH.

REFERENCES


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