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Retching Without Vomiting With Acute Abdominal Distension

A Clinical Cue

*Zahabiya Nalwalla, MBBS, MD, *Tsering Yangchen Dirkhipa, MBBS, †Rishabh Jain, MBBS, MS, DNB, ‡Ira Shah, MD, DNB, FCPS, DCH, DPID, and †Pradnya Bendre, MBBS, MS, MCH

Abstract: Gastric volvulus leading to acute gastric dilatation is a rare presentation of congenital diaphragmatic hernia. Urgent detorsion with gastropexy and closure of the diaphragmatic defect are essential to prevent further complications and recurrence. We present a rare case of an infant with acute gastric dilatation due to acute gastric volvulus secondary to congenital diaphragmatic hernia.

Key Words: acute gastric dilatation, congenital diaphragmatic hernia, diaphragmatic hernia, gastric dilatation, gastric volvulus

INTRODUCTION

Acute gastric dilatation, a rare condition, is the radiological finding of a massively dilated stomach seen on an X-ray or Computed Tomography (CT) scan of the abdomen (1). It can occur following trauma, infection, electrolyte disturbances, diabetes mellitus, eating disorders, and other conditions that cause gastric outflow tract obstruction or gastroparesis (1,2). Gastric volvulus, an uncommon but deadly surgical emergency, is another cause of acute gastric dilatation. Due to the rarity of this condition, a high index of suspicion is required for the much-needed prompt treatment (2). We present a rare case of an infant with acute gastric dilatation due to acute gastric volvulus secondary to congenital diaphragmatic hernia (CDH).

CASE

A 1-year-old infant presented with abdominal distension for 1 week, and intermittent abdominal pain for 5 days. It was associated with the sensation of retching but the inability to vomit. She was admitted to another hospital for 1 day and treated with intravenous fluids and nonsteroidal anti-inflammatory drugs but had no relief and was referred to us. On admission, she was oliguric, had tachycardia (heart rate of 130/min), with a blood pressure of 98/82 mm Hg, respiratory rate of 24 breaths per minute, and oxygen saturation of 100% in room air. She had abdominal distension with tenderness over the epigastric region. Bowel sounds were present. Other systems were normal. Investigations showed hemoglobin 11.3 g/dL, white cell count 15,610 cells/cmm (80% polymorphs and 12.9% lymphocytes), and platelets 351 × 10^9/L. C- reactive protein was 2 mg/L. Serum sodium was 137 mEq/L, and serum potassium was 3.7 mEq/L. Barium meal follow-through showed gastric dilatation (Fig. 1). A nasogastric tube was inserted and 1 liter of gastric fluid was drained. CT abdomen showed a grossly over-distended stomach, and the left dome of the diaphragm seemed to be elevated by the distended stomach (Fig. 2). A focal defect of 5 cm × 3.5 cm in the posterior aspect of THE diaphragm was noted with malposition of the spleen along the long axis of the pancreatic tail, suggestive of CDH with volvulus (Fig. 3A, B). The patient underwent gastropexy with left CDH repair. The child improved and was discharged after a week of hospital stay.

DISCUSSION

CDH is a maldevelopment during the growth of a fetus that results from an incomplete fusion of the pleuroperitoneal canal (3). CDH is commonly known to present acutely and the other times when it does present late, it often creates a diagnostic dilemma creating confusion with conditions like pneumothorax and pleural effusion (4). The early symptoms of CDH tend to be respiratory, whereas gastrointestinal symptoms appear later (3). However, in our case, the infant presented with only gastrointestinal symptoms secondary to acute gastric volvulus.

Gastric Volvulus is a rare consequence of CDH (3,5,6). Elongation or absence of the ligaments that anchor the stomach in its position and the increased space around it in CDH are probably the predisposing factors that lead to gastric volvulus (3,5). Gastric volvulus in adults is typically characterized by the Borchardt trait, which includes unproductive retching, epigastric distension, and inability to pass a nasogastric tube. However, this triad is not commonly seen in children as seen in our case where we could easily pass the nasogastric tube (3).

Urgent surgical intervention in the form of detorsion of the volvulus followed by gastropexy and closure of the diaphragmatic defect is the standard management of gastric volvulus in CDH (3,5). This was followed by our patient also. There have been reports of successful outcomes with detorsion without gastropexy (5). Despite this, gastropexy is recommended to prevent retorsion and is widely accepted.

CONCLUSION

Acute gastric dilatation associated with acute gastric volvulus as a late presentation of congenital diaphragmatic hernia is a rare presentation, and a high index of suspicion is required. Whenever a child presents with abdominal distension, abdominal pain, and retching with the inability to vomit, this should be considered as one of

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From the Department of *Department of Pediatric Gastroenterology; †Department of Pediatric Surgery, and ‡Department of Pediatric Gastroenterology, Pediatric Infectious Diseases and Pediatric GI, Hepatology, B J Wadia Hospital for Children, Mumbai, India.

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Correspondence: Tsering Yangchen Dirkhipa, Department of Pediatric Gastroenterology, B J Wadia Hospital for Children, Mumbai, tseringyangchen000@gmail.com.

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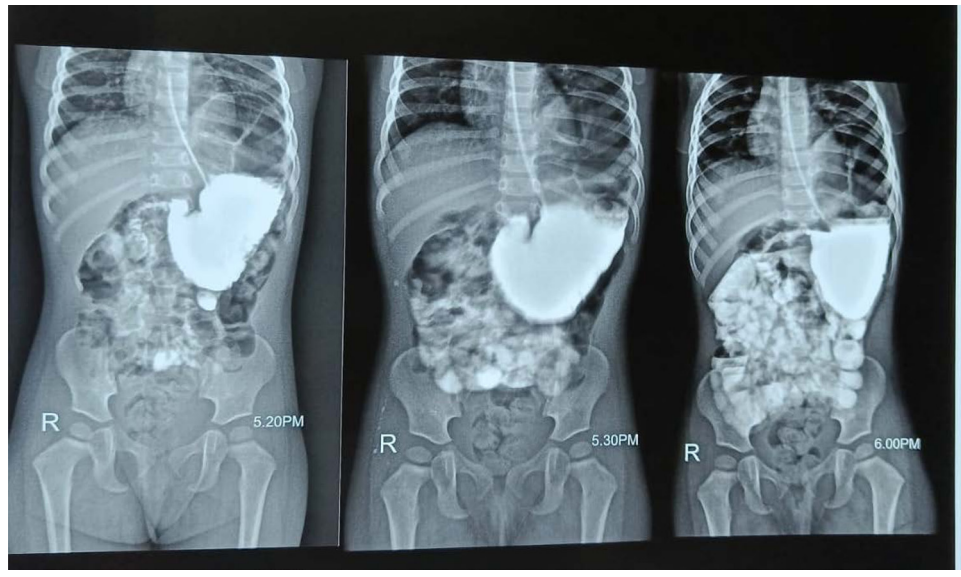

FIGURE 1. Barium meal follow-through showing gastric dilatation.

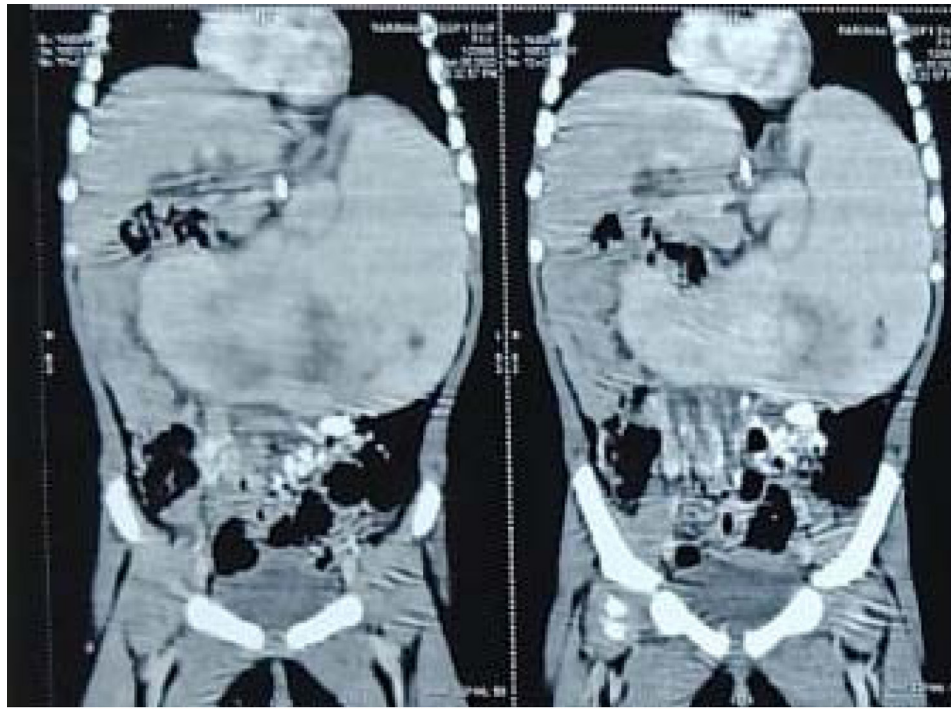

FIGURE 2. CT abdomen showing a grossly over-distended stomach, the left dome of the diaphragm seems to be elevated by the distended stomach. This CT image shows the dome of the left diaphragm is elevated due to the distended stomach as a consequence of the volvulus. The CT image does not show the volvulus per se.

the differential diagnoses and an X-ray or CT scan of the abdomen should be done to confirm the same.

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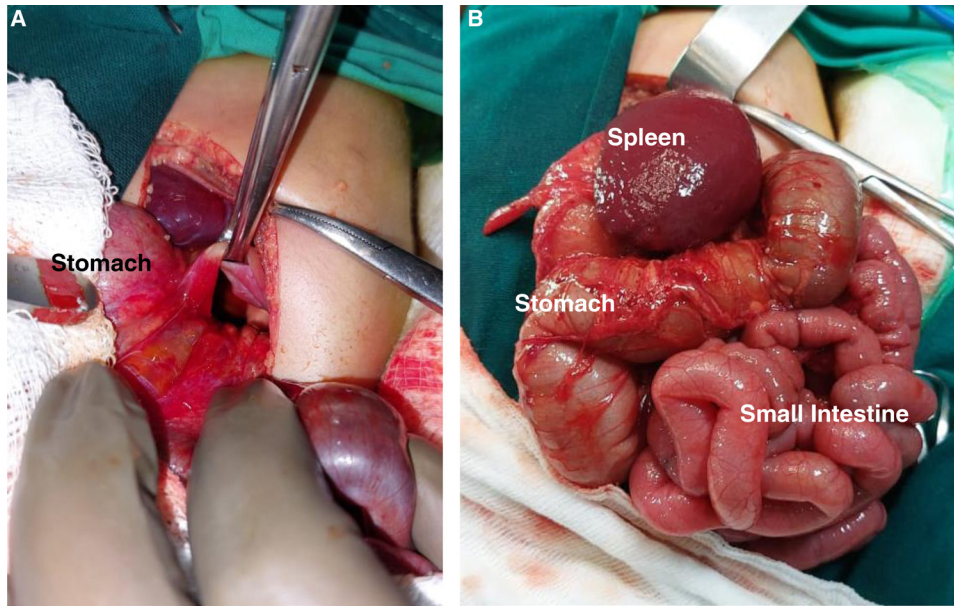

FIGURE 3. A) Intraoperative image of organo-axial gastric volvulus. B) Intraoperative image showing stomach, spleen, and small intestine.

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