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MASSIVE PARAESOPHAGEAL HIATUS HERNIA CONTAINING COLON AND STOMACH WITH ORGANO–AXIAL VOLVULUS IN A CHILD*

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Paraesophageal hiatus hernia is a very rare entity in children. The majority of cases remain asymptomatic and some are diagnosed incidentally. The clinical course of a massive paraesophageal hiatus hernia containing colon and stomach in a five-year-old boy is presented. *Key words: paraesophageal hiatus hernia, gastric volvulus, hiatus hernia.*

Paraesophageal hiatus hernia (PEHH) is an exceedingly rare disorder. It has been found in 3.5-5.1 percent of adult patients with hiatus hernia[1-3] but the actual incidence is unknown in children. A case of PEHH in a child is presented and the treatment is discussed.

Case Report

A five-year-old boy with a history of intermittent vomiting since he was seven months of age and failure-to-thrive was admitted to the Hacettepe University Children's Hospital.

Physical examination revealed that the child was below the third percentile for weight. The other physical findings were unremarkable, except for mild hypochromic anemia. A routine chest radiograph showed two air-fluid levels, one beneath the left hemidiaphragm, and the other within the right hemithorax (Fig. 1). An upper gastrointestinal series demonstrated a giant PEHH. The cardia and pylorus were below the diaphragm, and concomitant organo-axial gastric volvulus was observed. There was also evidence of partial obstruction of the stomach (Fig. 2 a). A barium enema revealed that a portion of the transverse colon was

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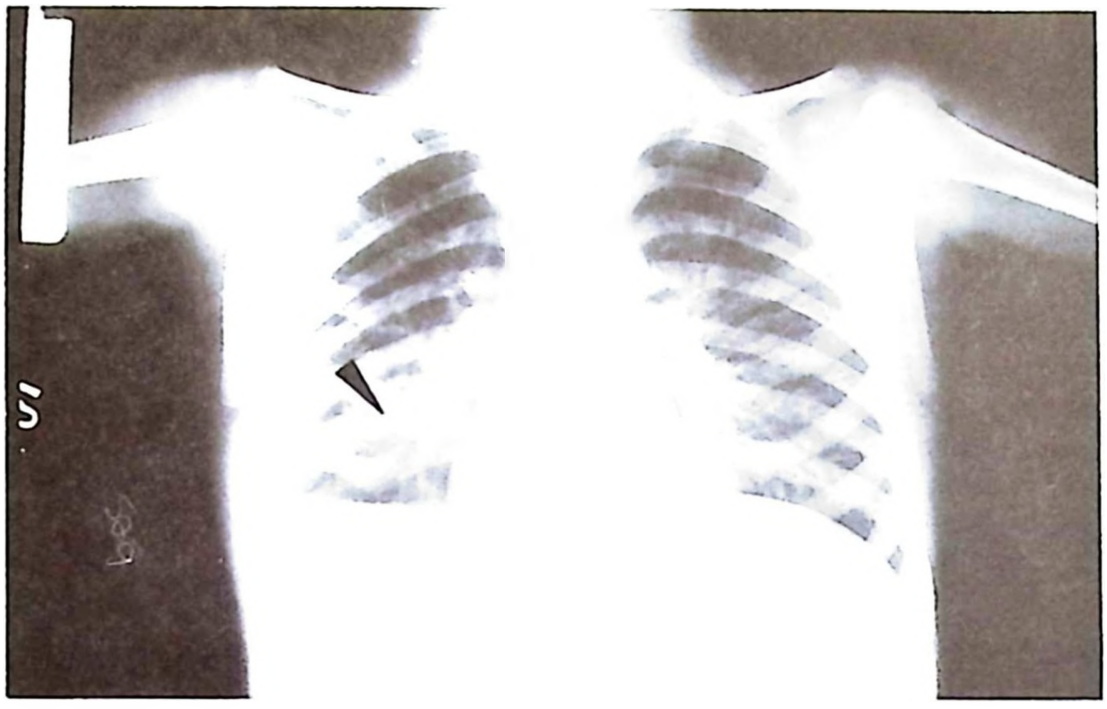

Fig. 1: Pre-operative routine chest x-ray showing the intrathoracic segment of the stomach completely filled with fluid and gas (black arrow).

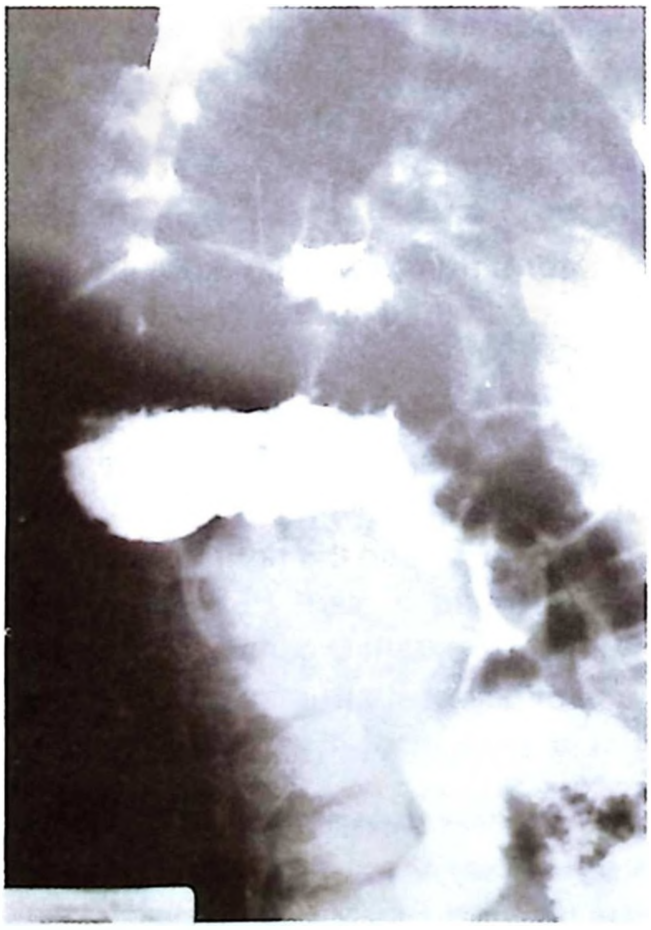

Fig. 2: a) Upper gastrointestinal series and b) barium anema in the same patient. The entire stomach is in the chest and has undergone OA volvulus. A large segment of the transverse colon is also in the thorax.

displaced into the chest (Fig. 2 b). The esophageal mucosa appeared normal at endoscopy.

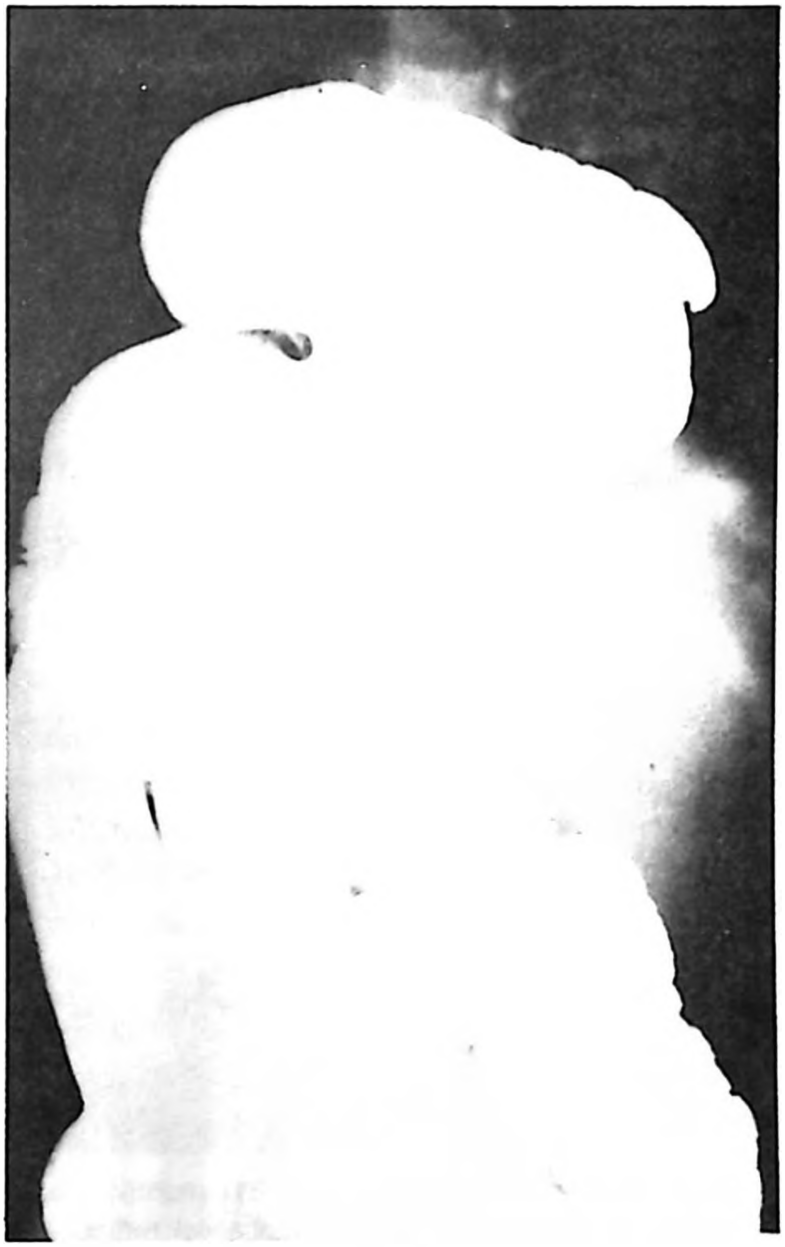

Fig. 2b:

At laparotomy, the stomach was found to be displaced into the thorax but the transverse colon was intraabdominal. The stomach was reduced and the organo-axial (OA) volvulus was corrected. The paraesophageal defect measured approximately 15 cm in diameter. The esophagogastric junction was in its normal position. The defect was closed posterior to the esophagus with minimal dissection. Then an anterior gastropexy was performed.

The patient's post-operative course was uneventful. Six months postoperatively, a barium swallowing showed no evidence of gastroesophageal reflux (GER), and the stomach was in its normal position (Fig. 3).

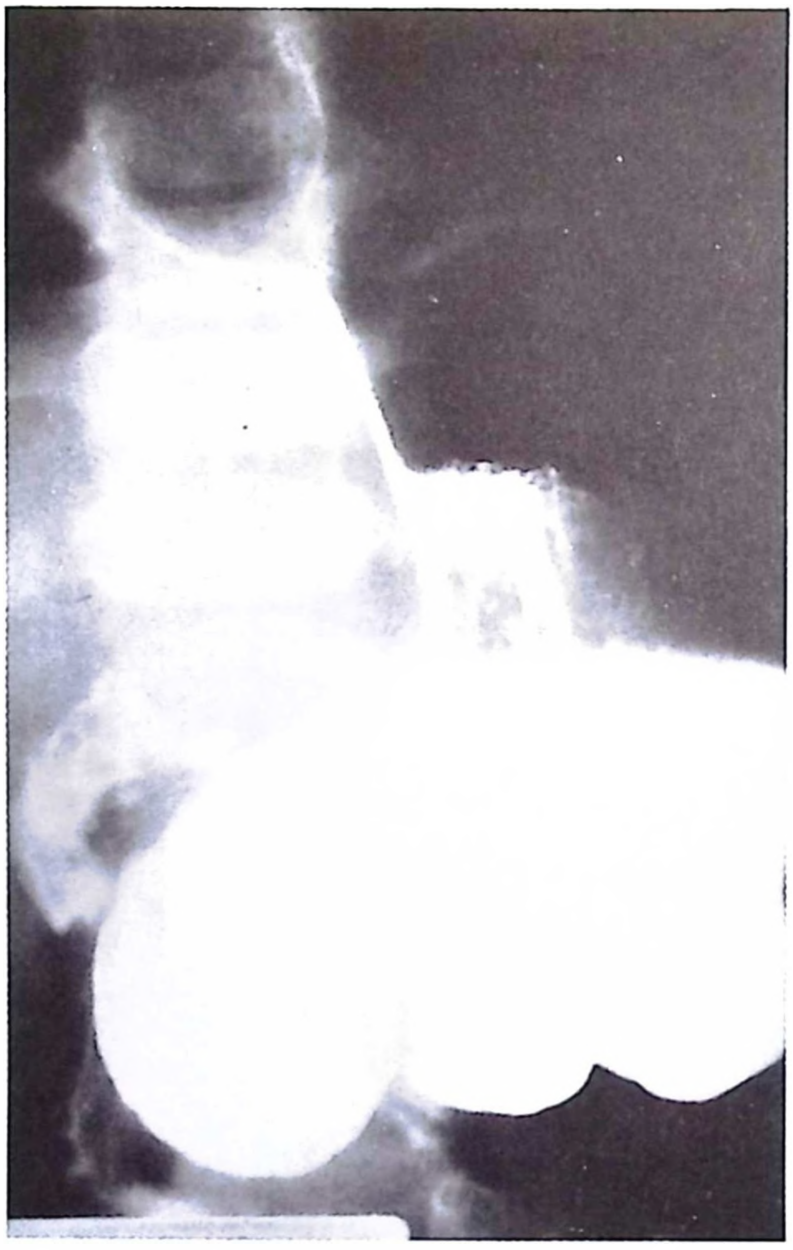

Fig. 3: An upper gastrointestinal series taken six months after surgery shows no evidence of gastro-esophageal reflux.

Discussion

Paraesophageal hiatus hernia is an uncommon disorder which is distinctly different from the much more common sliding hiatus hernia[1,4,5]. The cause of PEHH remains unknown. It may be a congenital condition but symptoms usually develop in adults which suggest that other factors may play a role in its occurrence[1].

In PEHH the gastric fundus rolls up anteriorly and may progress to complete gastric herniation with OA volvulus (upside-down stomach) through the widened esophageal hiatus into the chest. The esophagastric junction is often near its normal position, thus, it remains competent and most patients do not suffer from gastroesophageal reflux[1,5,6].

Intermittent womiting, aspiration pneumonia and malnutrition are the major symptoms of this disorder in children[7]. In many patients, chronic iron deficiency anemia may develop due to occult bleeding[3,6-8].

Radiologic examination provides the basis for proper diagnosis. All cases suspected of having PEHH should be evaluated by routine chest radiograms[5,9]. We believe that a barium swallow is mandatory for a definite diagnosis. Esophagoscopy has relatively little diagnostic value in this entity[10].

This type of hernia may remain completely asymptomatic for many years, and most are usually diagnosed incidentally. Since PEHH has a high risk of serious complications, the defect should be corrected immediately after diagnosis[6,9]. Otherwise, the hernia may become incarcerated, and the patient may require emergency surgery without preparation which has high morbidity and mortality[4,8,11,12].

Reduction of the herniated organs and repair of the defect are the main principles in the surgery[5]. A transthoracic or transabdominal approach has been recommended[1,3,5,13,14] as operative procedures. We believe, however, that the latter is quite satisfactory in children. Extensive dissection of the distal esophagus is unnecessary and should be avoided. The defect can be closed anterior or posterior to the esophagus[14,15]. Surgical intervention should be completed with subsequent simple left anterior gastropexy. If there is a mobile distal esophagus, lax phrenoesophageal ligament or massive herniation, an antireflux operation is necessary after closing the defect[6].

Surgical results are excellent and no mortality has been reported in elective cases[2]. An upper gastrointestinal series should be obtained after the operation to determine the end results and the presence of gastroesophageal reflux.

REFERENCES

1. Hill LD, Tobias JA. Paraesophageal hernia. *Arch Surg (Chicago)* 96:735, 1968.
2. Hill LD. Incarcerated paraesophageal hernia. A surgical emergency. *Am J Surg* 126:286, 1973.
3. Özdemir IA, Burke WA, Ikins PM. Paraesophageal hernia. A life-threatening disease. *Ann Thorac Surg* 16:547, 1973.
4. Baue AE, Belsey RH. The treatment of sliding hiatus hernia and reflux esophagitis by the Mark IV technique. *Surgery* 62:396, 1967.
5. Wichterman K, Geha AS, Cahow CE, Baue AE. Giant paraesophageal hiatus hernia with intrathoracic stomach and colon: the case for early repair. *Surgery* 86:497, 1979.
6. Pearson FG, Cooper JD, Ilves R, et al. Massive hiatal hernia with incarceration: a report of 53 cases. *Ann Thorac Surg* 35:45, 1983.
7. Filler MR, Randolph JG, Gross RE. Esophageal hiatus hernia in infants and children. *J Thorac Cardiovasc Surg* 47:551, 1964.

8. Ellis FH Jr. Paraesophageal hiatus hernia. In Nyhus LM, Condon RE (eds). *Hernia* (2 nd ed). Philadelphia: JB Lippincott, 1978, pp. 591-601.
9. Blatt ES, Schneider HJ, Wiot JW, Felson B.: Roentgen findings in obstructed diaphragmatic hernia. *Radiology* 79:648, 1957.
10. Bruni H, Lilly J, McHardy G. Paraesophageal hiatus hernia: endoscopic findings. Report of a case. *Am J Gastroenterol* 57:563, 1972.
11. Willwerth BM. Gastric complications associated with paraesophageal herniation. *Am Surg* 40:366, 1974.
12. Sellors TH, Papp C. Strangulated diaphragmatic hernia with torsion of the stomach. *Br J Surg* 43:289, 1955.
13. Beardsley JM, Thompson WR. Acutely obstructed hiatal hernia. *Ann Surg* 159:49, 1954.
14. Collins JL. Surgical control of reflux in hiatus hernia. *Am J Surg* 115:465, 1968.
15. Hermann RE. Transabdominal repair of esophageal hiatal hernia anterior to the esophagus. *Surg Gynecol Obstet* 126:844, 1968.