

**CHRONIC GASTRIC
VOLVULUS-AN UNUSUAL
COMPLICATION OF
POLIOMYELITIS**

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Volvulus of the stomach refers to an abnormal rotation of stomach. It is an unusual cause of upper gastrointestinal obstruction and is particularly uncommon in children(1,2). We report a case of chronic gastric volvulus which developed as a result of poliomyelitis.

Case Report

A four-year-old boy was admitted to hospital for typhoid fever from which he recovered after ciprofloxacin therapy. He had suffered from bulbospinal poliomyelitis at the age of 2 years. At that time chest X-ray had revealed nor-

mal hemidiaphragms. Since 2.5 years of age he complained of intermittent nonbilious vomiting and epigastric fullness. These complaints used to last 1-2 days and recurred every 2-3 months. On examination he had postpolio residual paresis of both lower limbs and left upper limb. Examination of the abdomen revealed no abnormality.

An upright radiograph of the chest showed elevation of left hemi-diaphragm (*Fig. 1*). Fluoroscopy demonstrated paradoxical movements of left dome of diaphragm while movements were normal on right side. An upper gastrointestinal series revealed gastric volvulus with upside down position of the stomach (*Fig. 2*). Parents did not agree for surgical intervention probably due to the fact that the child was physically handicapped.

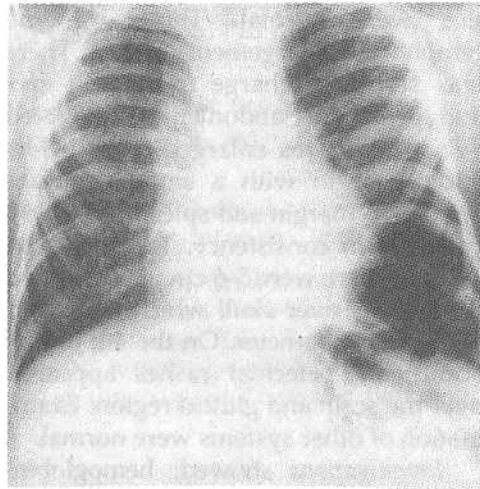


Fig. 1. Chest X-ray showing elevation of left hemidiaphragm.

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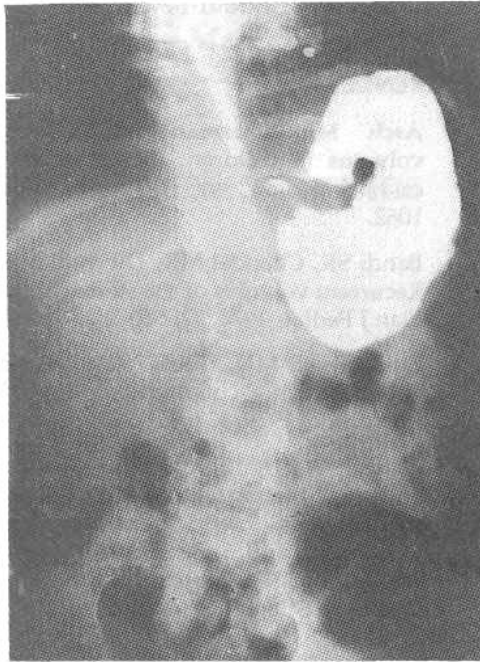


Fig. 2. Upper gastrointestinal series showing upside down position of the stomach.

Discussion

The onset of symptoms of gastric volvulus in this child following poliomyelitis suggested the post-polio origin of this condition. The presence of normally situated diaphragms as revealed by chest X-ray obtained during initial hospitalization for acute poliomyelitis excluded congenital eventration of the diaphragm. The stomach is an organ that expands and contracts several times a day. It is maintained in its normal position by four suspensory ligaments. The lesser curvature is attached to the liver by the gastrohepatic ligament, the greater curvature is tethered to the spleen and transverse colon by the gastrosplenic and gastrocolic liga-

ments, respectively, and the cardia is held in position by the gastrophrenic ligament(3). Gastric volvulus occurs most frequently in the elderly, with only 5-10% of cases occurring in children(4). There is no sex or ethnic predilection. The etiology of gastric volvulus is related to two anatomic factors: failure of fixation of the stomach due to laxity, tearing, or absence of some portion of ligamentous support system, and abnormalities of adjacent organs that permit displacement of the stomach(1,4).

Two types of volvulus may occur: organoaxial, in which the stomach rotates around its long axis; and mesenteroaxial, in which the rotation occurs around an axis joining the centres of lesser and greater curves of the stomach with pylorus twisting cephalad until it is juxtaposed to the cardia(3). While the rotating part can pass either anterior or posterior to the body of stomach, anterior rotation is much more common. The case reported here had mesenteroaxial volvulus of the stomach as revealed by upside down position of the stomach on upper gastrointestinal series. The cause of gastric volvulus was left hemidiaphragmatic paralysis which occurred as a result of poliomyelitis. In this form of volvulus, the stomach rotates from right to left in such a manner that the pylorus twists anteriorly and superiorly, producing the so called upside down stomach(5). When there is a raised diaphragm, the increased subphrenic space predisposes to gastric volvulus. This is further potentiated by negative intrathoracic pressure and paradoxical movements of the diaphragm(6).

Chronic gastric volvulus is more

common than the acute form(7). It may be asymptomatic or may present with mild, intermittent upper abdominal pain, vomiting and epigastric fullness, particularly after meals(1). Acute gastric volvulus presents with severe epigastric pain, vomiting followed by retching, and failure to pass nasogastric tube into the stomach. This is known as Borchardt's triad and represents a surgical emergency(4). Plain radiographs and upper gastrointestinal series are helpful in making the diagnosis. Because of inherently intermittent nature of chronic volvulus, results of radiological investigations may be normal during the asymptomatic period. When performed during an acute exacerbation of symptoms, a plain abdominal radiograph may demonstrate a dilated stomach with one or two air fluid levels. There may be a characteristic beak-like projection on the medial aspect of the gastric air bubble(3). If barium gets past the esophagogastric junction, upper gastrointestinal series confirms the upside down position of the stomach.

Recommendations for surgical repair include simple gastrotomy, anterior gastropexy with or without colonic displacement, and partial gastrectomy(1). Conditions predisposing to

gastric volvulus should be corrected simultaneously.

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