Left Paraduodenal Hernia: Acute Presentation in Childhood

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ABSTRACT

A 9-year-old patient was recently hospitalised for acute intestinal obstruction. Laparotomy showed a left-sided paraduodenal hernia. Post-operative course was uneventful. Paraduodenal hernia is rare in children and rarely diagnosed pre-operatively. Important points pertinent to its diagnosis and management are discussed.

Paraduodenal hernia, a variant of internal hernia, also referred to as internal mesocolic hernia, is a rare cause of both acute and chronic abdominal pain. Most commonly it is seen in adults[1,2] but rare presentation in children have been reported.[3,4] It is rarely diagnosed pre-operatively and found mostly at laparotomy when complications require surgical treatment.

THE CASE

A 9-year-old boy was admitted to our hospital with vomiting, colickly abdominal pain, constipation and abdominal distension of three days duration. He gave a history of admission to another hospital with similar complaints two days prior to his presentation to our hospital. There was also a history of on-and-off upper abdominal pain and discomfort for a few months.

On examination, the patient was sick looking, not pale, febrile or jaundiced. Abdominal examination revealed distension mainly in the upper abdomen, visible peristalsis, diffused tenderness and increased bowel sounds. Plain X-rays of the abdomen supine (Fig 1) and erect (Fig 2) showed dilated small bowel with air fluid levels and the dilated loops of bowel to be confined to the left upper quadrant of the abdomen.

At laparotomy, a large portion of the small intestine was found contained within a left paraduodenal hernia. The cecum was in the right lower quadrant but was not fixed to the lateral abdominal wall. The small bowel were reduced and the hernia defect obliterated with non-absorbable sutures. The patient had an uneventful postoperative course and was discharged home on the seventh postoperative day.

DISCUSSION

Paraduodenal hernia was first described by Neubauer in 1786. The exact incidence of paraduodenal hernia is unknown, but they comprise about 53% of all internal hernias.[5] It is seen mostly in adults between the fourth and sixth decade of life, but rarely in children. Being congenital in origin, the reason for its rare presentation in children is not known.[6] Males are affected more than females and left paraduodenal hernia is three to six times more common than the right.[1,6,7]

The exact pathogenesis of this hernia is not known and two theories were proposed to explain its aetiology. In 1899, Moynihan[8] proposed that paraduodenal hernias are acquired through gradual enlargement of the already existing paraduodenal fossae, but the most accepted explanation was that put forward by Andrews in 1923.[9] He proposed that paraduodenal hernias form as a result of congenital malformation in the development of the peritoneum with imprisonment of the small intestine beneath the developing colon.

Paraduodenal hernias are rarely diagnosed pre-operatively. This is attributed to the non-specific clinical manifestations in the form of recurrent ill-defined attacks of abdominal pain. They are most commonly diagnosed intra-operatively when complications require surgical treatment.[4] This is commonly due to acute intestinal obstruction which can progress to strangulation of the

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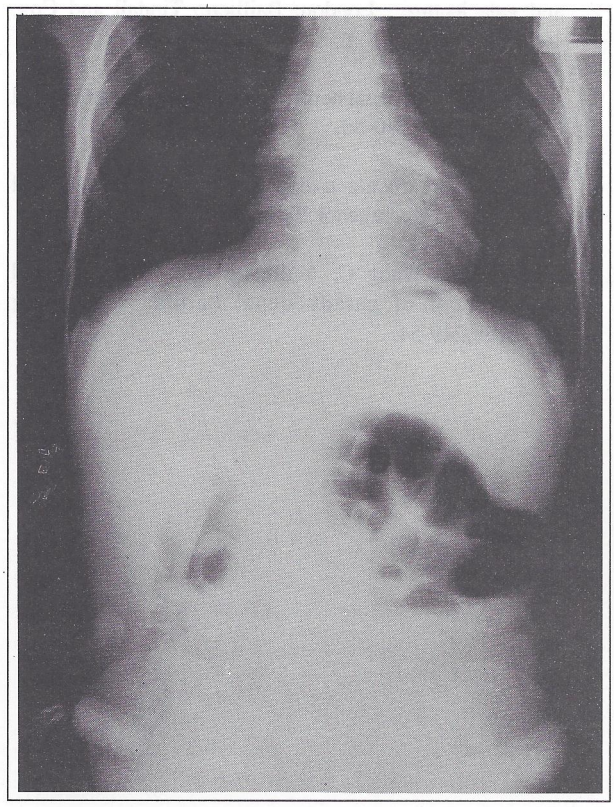

Figure 1 *Plain supine X-ray of the abdomen showing dilated loops of small intestine confined to the left side of the abdomen.*

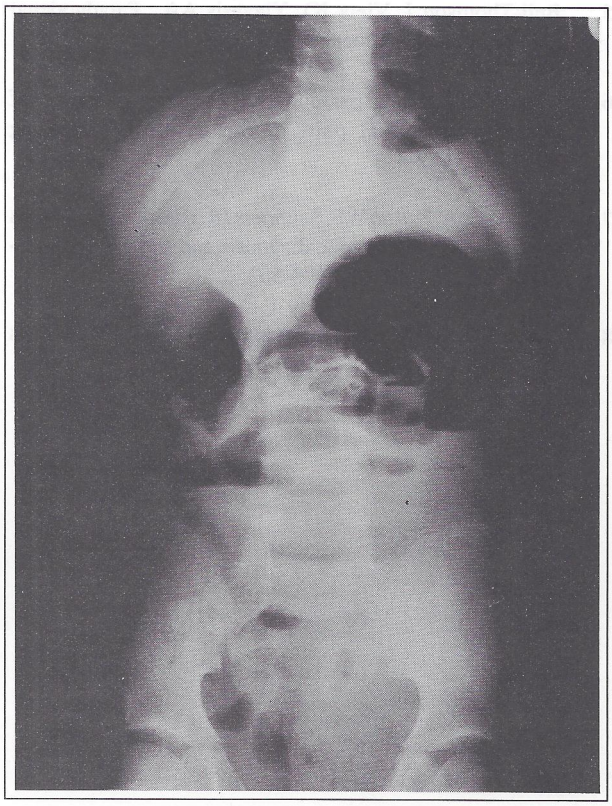

Figure 2 *Plain erect X-ray of the abdomen showing dilated loops of small intestine with multiple air fluid levels. The dilated loops of bowel are confined more to the left upper quadrant of the abdomen.*

bowel if not treated early. Our patient complained of on-and-off upper abdominal pain and discomfort for few months without prior diagnosis till he presented to our hospital with acute intestinal obstruction. The diagnosis of paraduodenal hernia may be suspected in patients with long-standing chronic abdominal pain, as in the present case. It can also be radiologically diagnosed with upper gastrointestinal series with small bowel follow through.[10] Emergency surgery for the repair of paraduodenal hernia has an mortality in excess of 20%.[7,11] With a left paraduodenal, the herniated small bowel lies clumped and appears to be enclosed in a sac on the left side of the abdomen. In the acute presentation with intestinal obstruction, the dilated small intestine with air-fluid levels are confined to the left side of the abdomen and more in the upper part (Fig 1 & 2).

The basic principle in the surgical management of these hernias is the reduction of the hernia and elimination of the defect either by closure or widening of the hernia orifice. Our patient was treated by manual reduction of small bowel from the hernia sac into the peritoneal cavity and closure of the defect. Because of the intimate relationship of the hernia orifice to the inferior mesenteric vessels, great care must be taken so as not to injure these vessels. Sometimes the neck of the sac is small making manual reduction difficult. In such a case incision of the sac is necessary in order to reduce the contents. This should be done into an avascular area of the mesentery.

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