PARADUODENAL HERNIA

(A Case Report)

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ABSTRACT

A case of right paraduodenal hernia is reported. Embryogenesis and treatment of this rare type of internal hernia is discussed.

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Introduction

Paraduodenal hernia is an extremely rare cause of bowel obstruction and generally a surprise at exploratory laparotomy for intestinal obstruction. The overall incidence of paraduodenal hernia is less than 1%. 53 cases were recorded in the literature till 1978 [1]. Invagination of small bowel into any of the named duodenal fossae is considered to be the likely mechanism [2].

CASE REPORT

S.S. 50 years old, serving soldier was admitted to this hospital with the history of moderate, colicky abdominal pain and occasional vomiting of 24 hours duration. Onset of pain was sudden. Pain was moderate, diffuse and later localised to epigastrium, and periumbilical region. It was associated with projectile vomiting. He did not pass stool or flatus since the onset of abdominal pain. He used to have similar episodes of moderate abdominal pain in the past which were self limiting.

Examination of the patient revealed dehydration, anaemia, and fever (100°F). He was normotensive. Abdomen was distended with visible peristalsis during attack of pain. Rectal examination was non contributory. Plain X-ray abdomen in upright position revealed loops of small bowel distended with gas and fluid levels mainly on the right half of the abdomen (Fig 1). A diagnosis of acute intestinal obstruction was made.

Lab investigations of blood, urine and serum electrolytes were within normal limits. Nasogastric suction, fluid therapy, and prophylactic antibiotics were started. Since the patient did not respond to conservative treatment for a period of 24 hours, he was subjected to exploratory laparotomy. At laparotomy, the peritoneal cavity contained about 500 ml of serosanguinous fluid. The entire small bowel with the exception of about 20 cm proximal and 15 cm distal segments, was found entrapped behind the caecum and ascending colon in the

retroperitoneal space. Caecum was pulled up and found to be in the sub-hepatic position. Caecum and ascending colon were mobilised and the small bowel, entrapped in the retroperitoneal space, was released. The entire bowel was purple red, hyperaemic and oedematous. Diffusely infarcted areas and areas of doubtful viability were oversewn and some of them were patched with free omental grafts. A thorough peritoneal toilet was done. It was decided to do second laparotomy for bowel resection, if required.

Postoperatively patient was carefully monitored for haemodynamic state. Blood transfusion, fluids and dextran were administered to correct hypovolemia and anaemia. Patient made an uneventful recovery. Bowel movement started on 5th postoperative day. No 'second look laparotomy' was needed in this case. Barium meal 'follow through' was done after 8 weeks of operation which showed no bowel abnormality.

Discussion

It is a common belief that a loop of small bowel could enter into any of the fossae around the duodenum and stretch the fossa to accommodate more and more length of intestine till the entire small bowel enters into it. However, Andrews [3] and Bartlett [4] challenged this concept and suggested that there is no propulsive force to cause these hernias. Moreover, only the small bowel and not any other viscera or omentum is involved. Therefore, paraduodenal hernia is believed to develop as a result of error of rotation and fixation of gut. Right para duodenal hernia is formed when the proximal loop of midgut fails to rotate completely and occupies posterior compartment of upper right quadrant. With the continuing rotation of the distal

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Fig. 1 Photograph of plain X-ray of the abdomen, upright position, showing agglomeration of distended small bowel loops with fluid levels mainly in the right half of the abdomen.

limb of midgut, the terminal ileum, caecum and right colon overlies the proximal limb. Fixation of right colon to the posterior parietal peritoneum leaves the proximal limb of the midgut trapped in a compartment bounded posteriorly by right posterior or retroperitoneal space and anteriorly by the mesentery of the right colon. The terminal ileum will pass through an opening in the mesenteric sac, to join caecum [7].

Left paraduodenal hernia results with the completed rotation of proximal loop of midgut. Duodenum and jejunum lie to the left and above the superior mesenteric artery. The rest of the proximal end and midgut continues to migrate into the same area and occupy the compartment behind the stomach and unfixed part of mesocolon of descending colon. Therefore, the anterior wall of the com-

partment, is formed by stomach, mesocolon of distal transverse colon and descending colon. Inferior mesenteric artery and vein form the medial margin of hernial sac and line the opening through which terminal ileum emerges to join the caecum [5-7].

Paraduodenal hernias are asymptomatic and are detected incidentally at laparotomy or autopsy. Preoperative diagnosis is rarely made. However, a plain X-ray abdomen may reveal an agglomeration of small bowel loops into one quadrant of abdominal cavity [8].

Surgical management depends upon the clear understanding of the congenital defect [9]. The right paraduodenal hernia is mobilised by freeing the lateral peritoneal margin of the right colon over to the left side. Thereafter, the hernial sac can be opened allowing free access to its contents. The left paraduodenal hernia can usually be reduced and neck of the sac obliterated. 'Second look' laparotomy is recommended when the unaffected small bowel is very short and the affected bowel shows some evidence of viability.

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