



ORIGINAL RESEARCH PAPER

General Surgery

RIGHT PARADUODENAL HERNIA: A RARE CAUSE OF SMALL BOWEL OBSTRUCTION

KEY WORDS: Paraduodenal /mesocolic hernia, small bowel obstruction ,abdominal surgery

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ABSTRACT

Internal abdominal herniation is the protrusion of viscus through normal or abnormal mesenteric or peritoneal aperture. Mesocolic/paraduodenal hernias are unusual congenital hernias in which small intestine herniates behind mesocolon. A 26 year old male presented with the features of acute intestinal obstruction, and was diagnosed to have acute intestinal obstruction possibly due to internal hernia/closed loop obstruction after cect abdomen. Patient underwent laparotomy,intraoperatively bulge was noted in the mesentery of right colon, which was identified to be the small bowel along with malrotation of caecum and ascending colon. Internal hernia is a rare cause of small bowel obstruction with reported incidence of 0.2-0.9%. Thus they are extremely rare and difficult to diagnose and if not treated promptly will result in mortality. Hence it should be considered as one of the cause during diagnostic process.

PRESENTATION OF THE CASE:

A 26yr old male presented with pain around umbilicus since 2days, sudden in onset and colicky type with abdominal distension since 1day. H/O constipation since 1 day. No H/O vomiting, fever. H/O similar complaints in past which reduced with conservative management.

Clinical diagnosis:

Acute intestinal obustraction

Differential diagnosis:

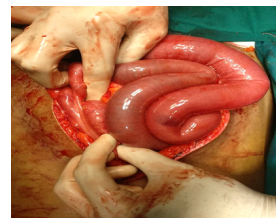
1. Acute intestinal obstruction secondary to adhesions
2. Acute intestinal obstruction secondary to internal hernia.

Radiological discussion:

1. Erect X-Ray Abdomen- Multiple air-fluid level.
2. CECT Abdomen- Fluid filled dilated small bowel loops, involving jejunal and ileal loops in the mid abdomen region. Ileocaecal junction medially pulled with the flow of contrast from ascending colon/caecum.Wall thickening of terminal ileum, measures 8mm in thickness. No significant wall oedema/intraluminal air-?Acute intestinal obstruction secondary to internal hernia/closed loop obstruction.

DISCUSSION OF MANAGEMENT:

Patient underwent emergency laparotomy,midline incision taken,abdomen opened in layers, intraoperatively bulge was noted in the mesentery of right colon ,which was identified to be small bowel along with malrotation of caecum and ascending colon.Hernial sac content reduced, defect repaired. Derotation of ascending colon and caecum was done .Appendicectomy was done to prevent diagnosis dilemma in future.Finally duodenum till IC junction was placed on right side and large bowel on the left.



DISCUSSION:

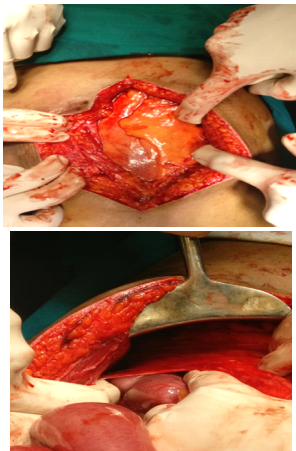
Internal hernias caused by developmental defects. An internal hernia is defined as a hernia formed by the protrusion of a viscus through a peritoneal or mesentric aperture, leading to its encapsulation within the compartment of the abdominal cavity.

There are 3 mechanisms whereby developmental abnormalities result in the formation pf internal hernias:

1. Abnormal retroperitoneal fixation of the mesentry resulting in anomalous positioning of the intestine example: mesocolic or paraduodenal hernia.
2. Abnormally large internal foramina or fossae example: foramen of winslow, supervesical hernia
3. Incomplete mesentric surfaces with the presence of an abnormal opening through which the intestine herniates example: mesentric hernia Paraduodenal hernia are unusual congenital hernias in which the small intestine herniates behind the mesocolon. They result from abnormal rotation of the midgut.Paraduodenal hernias are very rare but they account for about 30-53% of all internal hernias. They are categorised as left and right.They occur 3 times more commonly in the left and is common in men.

Neubauer in 1786, is credited with the first description of paraduodenal hernia in the history of medical science. Over these years , several theories on the development of mesocolic hernia were formulated and discarded . The two theories that have stood the test of time are, MOYNIHAN'S theory- He attributed it to a condition known as 'Physiological adhesions', which arise at the time of return of the bowel back to abdomen and fusion of common dorsal mesentry with the posterior abdominal.

ANDREW'S theory- He ascribed the condition to the developmental fusion defects of peritoneum, which incarcerated the small bowel beneath the developing colon.In cases of right mesocolic/paraduodenal hernia occurs when the prearterial limb of the midgut loop fails to rotate around the superior mesentric artery. This results in most of the small intestine remaining to the right of superior mesentric arteries. Normal counterclockwise rotation of the caecum and proximal colon into the right side of the abdomen and fixation to the posterolateral peritoneum cause the small intestine to become trapped behind the mesentry of the right side of the colon. The ileocolic, right colic and middle colic vessels



lie within the anterior wall of the sac, and the superior mesenteric artery courses along the medial border of the neck of the hernia. Left mesocolic hernias are thought to be caused by in utero herniation of the small intestine between the inferior mesenteric artery vein and posterior parietal attachments of the descending mesocolon to retroperitoneum. The inferior mesenteric artery and vein are integral components of hernial sac.

The majority of presentations occur between the 4th and the 5th decades of life. Internal hernias can be asymptomatic, present as an acute intestinal obstruction or as chronic intermittent abdominal pain.

Pre operative diagnosis is difficult. Plain abdominal radiography may demonstrate a distended, fluid filled stomach or reveal dilated bowel loops of small bowel in an ovoid mass lateral from the midline. Barium radiographs will demonstrate displacement of the small intestine to the left or right side of the abdomen. Ultrasonography may demonstrate an abdominal mass or internal tubular cysts that change shape over time. CT with intravenous administration of contrast material may demonstrate displacement of the mesenteric vessels and evidence of intestinal obstruction, if present.

After diagnosis, treatment should be prompt. Obstruction of the entrapped bowel can lead to ischaemia and perforation with a high mortality. Exploratory laparotomy is mandatory. The steps of operation include adequate incision, reduction of the hernia content and repair the defect. Removal of the sac remains controversial as it is part of the mesocolon and may lead to colonic vascular impairment.

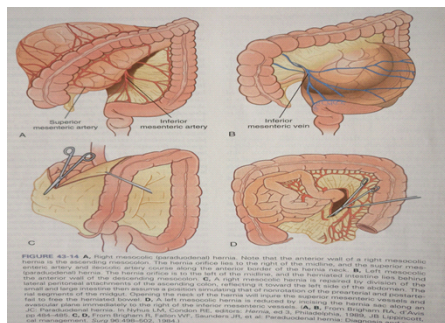


FIGURE 43-14 A, Right paraduodenal hernia. Note that the anterior wall of a right paraduodenal hernia is formed by the anterior wall of the hernia sac. B, Left paraduodenal hernia. Note that the anterior wall of a left paraduodenal hernia is formed by the anterior wall of the hernia sac. C, Right paraduodenal hernia. Note that the anterior wall of a right paraduodenal hernia is formed by the anterior wall of the hernia sac. D, Left paraduodenal hernia. Note that the anterior wall of a left paraduodenal hernia is formed by the anterior wall of the hernia sac.

Final Diagnosis:

Acute intestinal obstruction secondary to right paraduodenal hernia.

CONCLUSION:

Internal hernia is a rare cause of small bowel obstruction with reported incidence of 0.2 – 0.9 % , among which paraduodenal hernia accounts for approximately 50% of cases. Thus they are extremely rare and difficult to diagnose and if not treated promptly on time will result in morbidity and mortality. Hence it should be considered as one of the cause during diagnostic process.

REFERENCE:

1. Kuzinkovas V, Haghghi K, Singhal R, Andrews NJ. Paraduodenal hernia : a rare cause of abdominal pain. Canadian Journal of Surgery.2008; 51 (6) : E127-E128
2. Mehra R, Pujahari AK. Right paraduodenal hernia: report of two cases and review of literature. Gastroenterology Report.2016;4(2):168-171
3. Townsend CM, Beauchamp RD, Evers BM, Mattox KL. Sabiston textbook of surgery: the biological basis of modern surgical practice. Elsevier Health Sciences; 2016 Apr 22.