Right Paraduodenal Hernia - A Case Report
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Abstract:
Internal hernias are rare congenital malformation. They present with nonspecific complaints and are therefore, often under diagnosed. Right Paraduodenal hernia accounts for 25% of Paraduodenal hernias. Radiological examination plays a very important role in the diagnosis.

Key Words: Paraduodenal Hernia, Internal Hernia.

Introduction:
Internal hernias are important but under diagnosed entities. The clinical symptoms are non specific & usually include nausea and intermittent pain. Therefore, imaging studies play an important role in the diagnosis and timely management.

The most common internal hernias are paraduodenal hernias (53 %) followed by peri caecal hernias (13 %). Paraduodenal hernia is a rare congenital malformation caused by congenital intestinal protrusion and malrotation through normal or abnormal opening in the mesentery of the colon related to embryologic rotation of the mid gut and variation in the peritoneal fixation & folds.

We have recently observed a patient with right Paraduodenal hernia diagnosed preoperatively. It is emphasized that internal hernias should be considered as a diagnosis whenever atypical abdominal symptoms are present.

Case Report:
A-32 year old male patient came with pain and distention of abdomen off and on for which he took symptomatic treatment and was relived from time to time.

On physical examination, his general condition was found to be stable with pulse rate of 82 per minute, Blood pressure 110/80mm of Hg. His systemic examination was within normal limit.

The plain X-ray study of abdomen revealed dilated small bowel loops clustered in right hypochondrium (Fig. I).

Upper GI Barium study revealed spherical encapsulation of Barium filled jejunal loops to the right side of abdomen. Stomach & duodenum appeared normal (Fig. II).

The CECT study demonstrated encapsulated loops of small bowel in the right mid abdomen. The superior mesenteric vein was rotated anteriorly and to the left of it’s normal position and there was looping of arterial and venous jejunal branches behind the superior mesenteric artery into the hernial sac (Fig. III).

On laprotomy right sided internally herniated jejunal bowel loop were seen (Fig. IV).

Discussion:
Abdominal hernias can be subdivided in to two types, internal and external. Internal hernias remain within the abdominal cavity, while external hernias protrude through the defects in abdominal wall. The majority of internal hernias result from a congenital anomalies of intestinal rotation and peritoneal attachment. They are named after the location of the orifices through which they protrude. The most common internal hernias are...
Paraduodenal hernia followed by peri-caecal hernias.

In 1923, however, Andrews declared the term paraduodenal hernia’s, a misnomer. According to him, and generally accepted today, paraduodenal hernia is due to incomplete rotation of the midgut and is congenital in origin.

When the fetus is 6 weeks old the midgut herniates into the umbilical cord. It then rotates 90° while in the umbilical cord, 90°on its way back into the abdomen, and a final 90° within the abdomen to rotate a full 270° counterclockwise around the superior mesenteric artery. If the pre-arterial segment rotates but the post arterial segment fails to rotate the small bowel is entrapped in the right mesocolon, and right Paraduodenal hernia results^2.

Paraduodenal hernias are the most common types. They are basically congenital in origin representing entrapment of the small intestine beneath the mesentery of the colon related to embryological rotation of the mid gut and variation in peritoneal fixation and vascular folds. 75% of Paraduodenal hernias occur on left side and 25% on right side.

The right Paraduodenal fossa of Waldeyer is present in 1% of autopsy cases. It is situated within the first part of mesentery of jejunum, immediately behind the superior mesentery artery and inferior to transverse duodenum. It is bounded posteriorly by abdominal wall (Fig. V)^3-5.

Right Paraduodenal hernias protrude into the ascending mesocolon involving the fossa of Waldeyer.
immediately behind the superior mesenteric artery and inferior to third portion of duodenum. The clinical manifestation may range from intermittent mid digestive complaints to acute intestinal obstruction and strangulation. The history of chronic indigestion or periodic nonspecific complaints of paradial pain is a characteristic symptoms and may be relieved by postural changes.

The preoperative diagnosis of Paraduodenal hernia can be established only by Radiological examination especially when the study is performed during symptomatic period in view of the intermittent nature of herniation. Small right Paraduodenal hernias, present as ovoid grouping of small bowel loops lateral and inferior to the descending duodenum. The encapsulation within the hernial sac prevents separation and displacement of individual loops from the rest of the hernial contents during fluoroscopic manipulation. Both the afferent and efferent loops appear closely apposed and narrow in a right Paraduodenal hernia. Not only the intestinal loops, but both the mesentery and vessels are also incorporated into hernia. In a right Paraduodenal hernia the jejunal arteries that normally arise from the left side, reverse their direction and course behind the parent vessels to supply the herniated jejunal loops within the fossa of Waldeyer.

The major CT findings are looping of jejunal branches of superior mesenteric artery and vein to the right and posterior and clustering of small bowel loops in right mid abdomen.

Conclusion:
Paraduodenal hernia remains an elusive diagnosis. A solid understanding of the Paraduodenal folds & fossa and the embryological development, therefore, is important to make the diagnosis. It is important for both radiologist and surgeons to be well aware of this condition, especially in the patient with chronic recurrent abdominal pain.

The internal hernia should always be held in due consideration at the moment of diagnosis because the consequent mortality due to complications such as intestinal gangrene is high.

References: