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Case Report

A case of midgut malrotation in an adult male causing volvulus and subacute intestinal obstruction

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ABSTRACT

Small bowel malrotation is a congenital disorder of midgut rotation usually encountered in paediatric age group. Here is a case report of small bowel sub-acute obstruction due to midgut volvulus precipitated by malrotation. The incidence of microtonal presentation in adults is 0.2%, making this case a rarity. This patient presented with chronic vague symptoms like dyspepsia, diffuse low-grade abdominal pain, non-projectile vomiting which were on and off for 4 to 5 years since he presented to us. Furthermore because of the remitting nature of his symptoms, these symptoms usually pointed out to a more benign ailment, so unless we do a more elaborate study like computed tomography, we might miss the diagnosis. This case report emphasis the wide range of presenting age for certain congenital disorders like malrotation of gut.

Keywords: LADDS band, Malrotation, Volvulus

INTRODUCTION

Intestinal rotation starts at 5th week. Rotation takes place around superior mesenteric artery (SMA) axis it involves 270-degree counter clock wise rotation of periarterial and post arterial limb. Ladds bands attach to the cecum irrespective of its position at the end of rotation from right paracolic region.[1] Small bowel malrotation generally seen as obstruction in pediatric age group can have a more insidious onset and can present in a later age group. In such a scenario the diagnosis may be delayed since malrotation can present as chronic vague abdominal pain, nausea, occasional vomiting.[2] Clinical features in adults can be intermittent cramping or persistent aching pain, severe abdominal cramping followed by diarrhea, chronic volvulus, Vomiting-bilious/non bilious, variable in duration and frequency, malabsorption-diarrhea, nutritional deficiencies and rarely as obstructive jaundice, chylous ascites and superior mesenteric vein thrombosis.[3]

CASE REPORT

A 48 years old male was brought to our outpatient department with complaints of vague abdominal pain, on and off vomiting and reduced appetite for 6 months duration. He had no previous surgeries. General examination of the patient revealed epigastric tenderness and was provisionally diagnosed as chronic gastritis. Patient was admitted for further evaluation. On his second day of stay in the hospital he developed abdominal distention and nausea and he complained of not passing stools for 2 days. An x-ray erect abdomen

revealed multiple air fluid levels involving small bowel loops pointing towards possibility of obstruction.

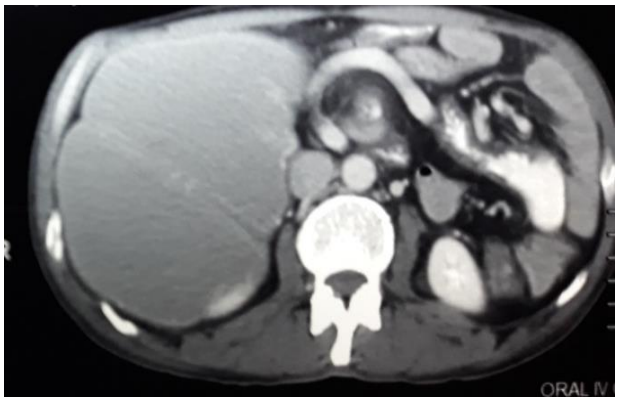

Figure 1: Distented duodenal loop on the right side with twisting of the superior mesentric vessel is visualised.

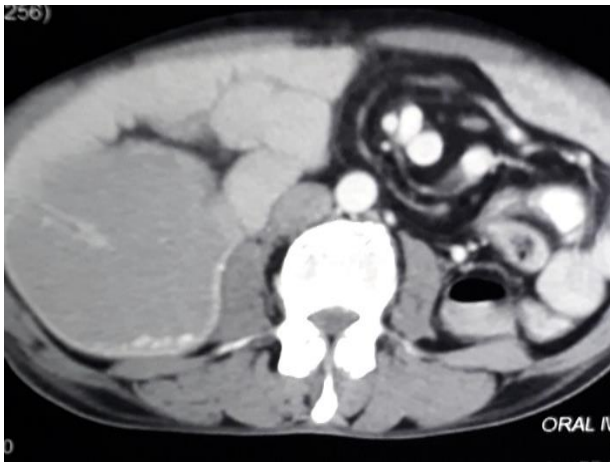

Figure 2: Entire small bowel loops occupying the right half of the abdominal cavity is made out.

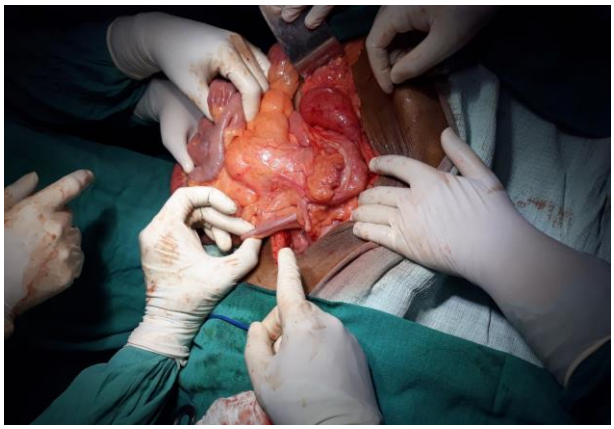

Figure 3: Appendix occupying the left upper quadrant is held by one of the surgeons.

All throughout this patient vitals were stable. Patient was advised to be in NPO, ryles tube insertion and continuous drainage and strict input and output monitoring. The next day patient complained of 4 episodes of loose stools since early morning. On examination abdominal distention got reduced completely. On carefully interrogating the patient, he revealed that he has been having such similar episodes for past 8 years. Then we planned for a computed tomography with contrast study of the abdomen. The study revealed small bowel malrotation and volvulus with reversal of superior mesentic vessel axis (Figure 1 and 2). With this report patient was prepared for an emergency laporotomy.

On opening the abdomen, the entire small bowel was found to be occupying the right half of the abdominal cavity and the large bowel on the left. The appendix was seen occupying the left hypochondrium (Figure 4).

Figure 4: ladds band running over the distended duodenal loop is seen.

Figure 5: Twisted ileal loop segment compressing the 3rd part of duodenum.

There was a band stretching from the cecum to the upper right parietal wall (LADDS Band) (Figure 3). The ligament of trietz with the root of mesentry was found to be narrow.

Because of this the ileal loops were found to be twisted around the narrow base and compressing the third part of duodenum (Figure 5). Due to his chronic compression of the duodenum the proximal duodenal segment was massively dilated.

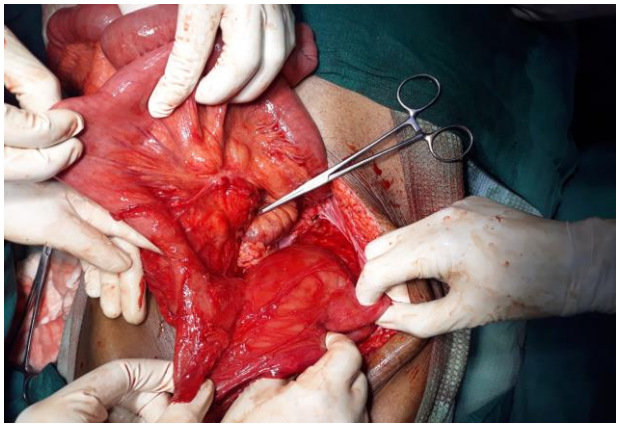

Figure 6: Untwisted ileal segment.

LADDS procedure was performed, which involves counterclockwise derotation of the small bowel (Figure 6), release of the ladds band, appendicectomy, widening of the mesenteric base and finally fixing the small bowel on the right and large bowel on the left. Post-operative period was uneventful.

DISCUSSION

Congenital malrotation of the midgut often presents within the first month of life. The overall incidence of malrotation, however, is unknown because some patients will present years later or remain asymptomatic for life. Because presentation is nonspecific and the index of suspicion for malrotation progressively decreases in the older population 3, the clinical diagnosis is usually not considered in the initial evaluation. Intestinal malrotation can be broadly defined as any deviation from the normal 270° counterclockwise rotation of the midgut during embryologic development.[4] Malrotation results not only in the malposition of the bowel but also in the malfixation of the mesentery. The normally broad mesenteric attachment is shortened to a narrow pedicle that predisposes the patient to the complication of midgut volvulus.[5]

Plain radiograph may show no pathognomonic signs or right-sided jejunal markings, absence colonic shadow in RIF.[6] In ultrasound reversal of the normal anatomic relationship between the SMA and smv can be seen. apart from that certain signs like “whirlpool sign”-indicating midgut volvulus or “bird beak” appearance-pointing to duodenal obstruction may be seen.[7] CT Abdomen will show anatomic location of small bowel on right and colon on left, relationship of the superior mesenteric vessels -“vertically placed or inverted sides” aplasia of the uncinate process, features of volvulus/obstruction/gangrene and other associated anomalies.[8] Surgical management is usually preferred (Ladds procedure).[9] Mortality from midgut volvulus with severe bowel compromise may exceed 30%. Long-term complications are adhesive small bowel obstruction (10%), recurrent volvulus and short gut syndrome.[10]

CONCLUSION

The clinical diagnosis of malrotation after childhood is usually not considered; this oversight underscores the importance of recognizing this unsuspected condition on imaging. Regardless of patient age, surgical treatment of quiescent malrotation should be considered because surgery remains the only real safeguard against complications. In older patients who present with acute symptoms related to unsuspected malrotation, rapid imaging diagnosis and surgery may be life-saving.

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