

A Rare Case of Malrotation in Adult Patient with Ladd's Procedure Done

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Abstract: *Intestinal Malrotation is commonly seen in children. It's rare presentation in adults due to non specific symptoms and late diagnosis. Impaired rotation could be non-rotation or partial rotation and/or both. In patients who are children immediately taken for emergency surgery. But in adult, after confirming with contrast CT scan, Ladd's procedure can be done which is dividing Ladd's band, separating Duodenum, jejunum to right side of abdomen and colon to left side of abdomen. Prophylactic appendectomy done to avoid false diagnosis in future.*

Keywords: Midgut Malrotation, Volvulus, Whirlpool sign, Contrast CT scan, Ladd's band, Ladd's procedure, Appendectomy

1. Introduction

During normal fetal development, Midgut rotation occurs around SMA axis in clockwise manner and fixes to peritoneal cavity. Any abnormality in this leads to Intestinal Malrotation. Symptomatic cases occur in 1 in 6000 newborns, 0.2% of the adult population. Here, one intestinal obstruction patient who is having Malrotation on CT abdomen managed with Laparoscopic Ladd's Procedure.

2. Case

A 50 year old male presented to emergency room with recurrent abdominal pain since two days. In past he visited multiple local hospital doctors. Vitals-Pulse: 90/min, Bp: 110/70mmHg. Per abdomen examination findings was tenderness at epigastric region. X-ray and ultrasound of abdomen-sub acute intestinal obstruction. Urgent CECT A+P done which s/o Swirling of mesentery & small bowel loops, Twisting of SMV around SMA with reversing of its relation. DJ flexure seen on left side, Jejunal loops on right side, moderate dilatation of Duodenum (D1, D2 segments)-Midgut volvulus with Malrotation of small intestine with Duodenal obstruction. Patient was admitted and observed for two days, later taken for Laparoscopic Ladd's procedure in elective OT. After inserting ports and entire abdomen was visualised. Small ascitic fluid noted in abdomen and Caecum was on right up along with Appendix behind it, attachment of Ladd's band, mesentery to small bowel with peritoneal folds laterally, small bowel loops seen on left side. Ladd's bands dissected and released from bowel loops. Placement small bowel towards right side of body. Appendectomy done. Procedure uneventful. Patient was allowed to take orally on post operative day 2 and discharged on post operative day 4. On follow up visits patient was doing well.

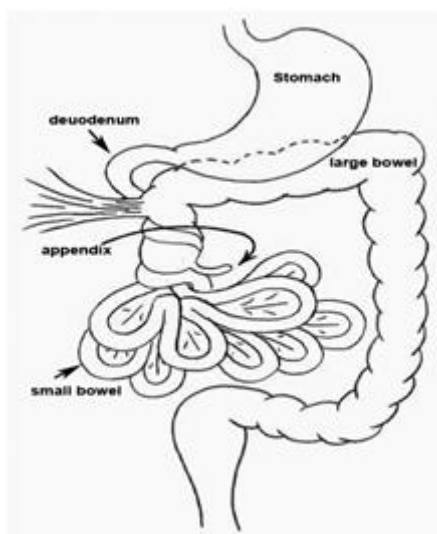


Figure 2: Axial Contrast CT image in arterial phase shows twisting of mesentery with whirlpool sign

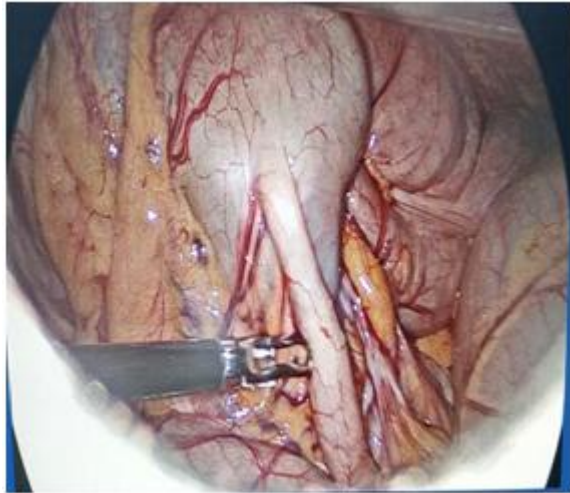


Figure 3: Laparoscopic image demonstrating Cecum demonstrate Appendix adjustment to liver.

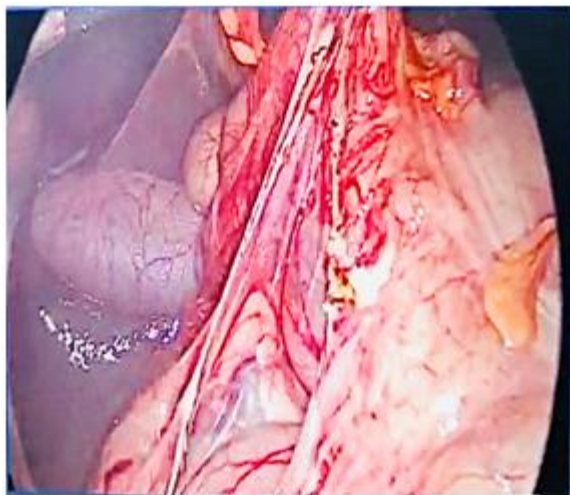


Figure 4: Laparoscopic image showing Ladd's band, divided by Harmonic scalpel.

3. Discussion

During normal fetal development midgut rotates in three stages. Any deviation of normal patterns results in Malrotation. Adults with Malrotation presents with nonspecific symptoms, recurrent abdominal pain. Diagnosis can be made by Upper GI series or CT abdomen with IV and oral contrast. On CT scan findings are whirl pool sign, Barber pole, SMV rotation sign. We found whirl pool sign in this patient. Management of intestinal Malrotation described by Dr William Ladd's in 1936. This involves lysis of Ladd's bands, placement of small bowel on right, caecum on right upper with appendectomy.

4. Conclusion

The diagnosis of Malrotation in adults is rare because of vague symptoms and less chance to give full attention. Diagnosis can be made until patients present with acute abdomen like volvulus or bowel ischemia. Gold standard is Diagnostic Laparoscopy with Ladd's procedure.