

Intestinal malrotation in adolescent: A case report

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We present a case of adolescent girl 11 year old with recurrent vomiting. Ultrasound abdomen was suggestive of dilated duodenum 5 cm with to and fro movement. CECT abdomen reveal intestinal malrotation with midgut volvulus. We managed patient surgically by Ladd's procedure.

KEY WORDS: Malrotation, Volvulus, Ladd's procedure

INTRODUCTION

Congenital malrotation of midgut often presents within the 1st month of life. Malrotation of gut refers to abnormal positioning of the intestine within the peritoneal cavity. Midgut malrotation usually results when the counterclockwise rotation of gut does not take place and duodenojejunal junction is displaced to the right of midline.^[1,2] This may be with malrotation or non-rotation of superior mesenteric artery (SMA). Incidence is 1/6000 birth^[3] and 85% of cases present in the first 2 weeks of life. In minority of the cases, it becomes symptomatic in adolescence and adulthood. They may present with recurrent abdominal pain, nausea, vomiting, failure to thrive, or malabsorption. Contrast-enhanced computed tomography (CECT) is a diagnostic tool.

CASE REPORT

An 11-year-old female admitted to pediatric outpatient department with complaints of pain abdomen for 10 days decrease of appetite, loss of weight, and vomiting on and off for 10 days and passing stools normally. There was no positive history of abdominal tuberculosis. On general examination, weight 15 kg malnourished. On abdominal examination, no sign was present for lump or intestinal obstruction clinically. Ultrasound whole abdomen was done. Finding suggestive of dilated visualized portion of duodenum measuring approximately 5 cm in maximum thickness showing to and fro motion of its contents. CECT abdomen was advised for ruling out cause of duodenal dilatation. Patient's reference sent for surgical opinion. CECT abdomen was mainstay for diagnosis of as no clinical sign was present for cause of underlying pathology. CECT abdomen shows inversion relationship of SMA and vein with the presence of multiple concentric turns of these vessels over each other. Midgut volvulus with 2–3 complete turns of SMA, superior mesenteric vessel (SMV), and jejunal loops with associated mild upstream prominence of stomach and duodenum as third part of duodenum not crossing spine to reach left side as normally. Other parameters are within normal limits. Exploratory laparotomy was planned. On exploration, midgut (small bowel) interloop adhesions, band of Ladd was evident extended from midline malrotated cecum to right-sided placed small bowel loops with SMV encasement. Counterclockwise

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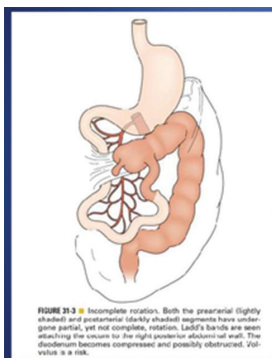
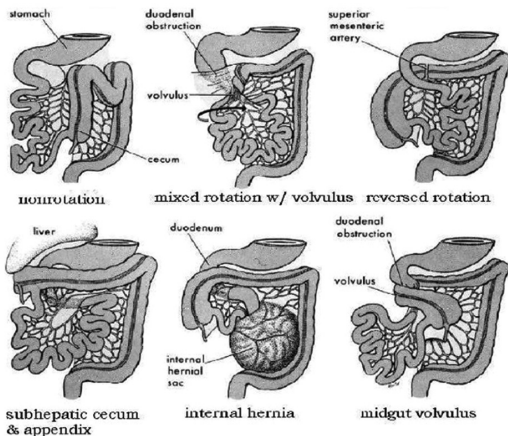
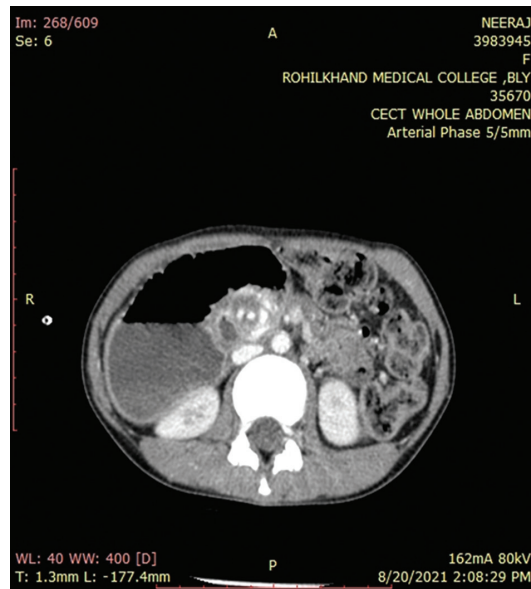
derotation was done with excision of band of Ladd with adhesiolysis. Mobile cecum with appendix found in midline, ileocecal junction normal. Duodenum-jejunal junction ends at right side of spine with proximal dilatation of duodenum and stomach reaching up to right hypochondrium. Ladd's procedure done including bandlysis, prophylactic appendectomy, and cecopexy in the right iliac fossa with addition of incomplete rotation 0 degrees.

DISCUSSION

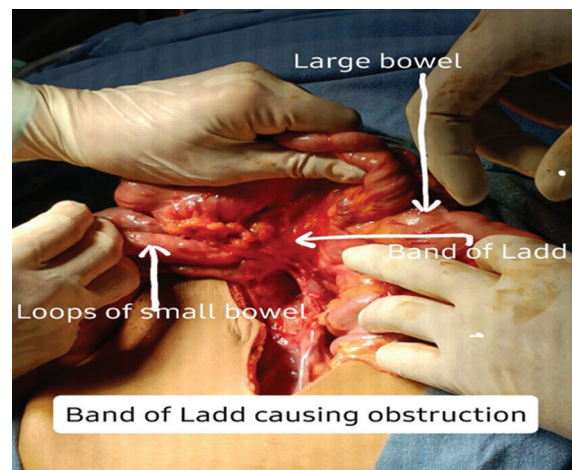
Adult presentation is extremely more with incidence 2%(4). Adult may present with intermittent billiary vomiting(30%), Abdominal pain (20%), malabsorption. Patient become symptomatic in 6 month before diagnosis made.^[4,5] In malrotation, the duodenal loops lack 90 degrees of the normal 270 degrees and cecocolic loop lacks 180 degrees of its normal rotation. As a result, the cecum remains on left side due lack of Treitz ligament, howsoever, it remains attached to right abdominal wall by fibrous bands known as Ladd's bands. [2] These cause external compression on duodenum producing intestinal obstruction. Ladd's procedure a pioneer work was performed by William Ladd in 1936 for complicated malrotation. Malrotation results not only in the malrotation of bowel but also in malfixation of the mesentery. The normally broad mesenteric attachment is shortened to narrow pedicle that predisposes to the midgut volvulus and causing mobile cecum also.

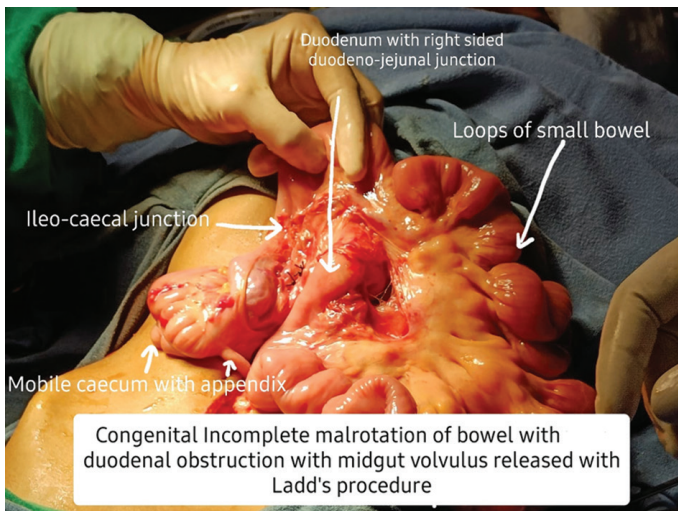
Follow-up

Post-operative period was uneventful. There was no episode of vomiting. In follow-up in out patient department the patient has normal appetite with gaining weight from pre-operative 15 kg to 16.7 kg in 10 days.



- Counter clock wise rotation of only 180°
- Caecum in the epigastrium overlying 3rd part of duodenum.
- Most common form of surgically treated malrotation.





CONCLUSION

Intestinal malrotation is an entity that is often missed for years due to its low incidence in adolescent and adult population with non specific symptoms like billious vomiting, recurrent

abdominal pain and malabsorption while this is considered disease for infants and paediatric population. Clinical suspicion and good imaging facility enables early accurate diagnosis followed by surgical management.

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