



MALROTATION, A RARE CAUSE OF ACUTE ABDOMEN: A RETROSPECTIVE ANALYSIS

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AIM

Intestinal malrotation, known as bowel rotation anomaly, is a common cause of intestinal obstruction. Malrotation increases the risk of midgut volvulus, a surgical emergency characterized by twisting of the small bowel around a narrow mesenteric pedicle¹. Approximately 50% of affected cases present symptoms during the neonatal period In this study, we aimed to evaluate the diagnostic methods, treatment results and postoperative follow-up of pediatric patients treated for malrotation.

METHODS

In this study, pediatric patients who underwent surgery for malrotation between January 2018 and January 2025 were retrospectively analyzed. Data on demographic characteristics, symptoms, diagnostic approaches, surgical interventions, and postoperative outcomes were analyzed. Patients with primary pathology accompanied by malrotation, such as duodenal atresia, diaphragmatic hernia, gastroschisis, or omphalocele, were excluded from the study.

RESULTS

A total of 19 patients aged between 2 days and 12 years were operated for malrotation. Fourteen of the patients (73.7%) were operated in the neonatal period. Eleven (57.9%) of the patients were boys and 8 (42.1%) were girls. The most common symptom in the neonatal group was failure to feed and bilious vomiting, which was observed in 8 patients. Non-roation anomaly was present in 4 patients with a prediagnosis of antenatal dudodenal atresia. One of the patients had anal atresia and Hirschsprung's disease. One patient with acholic stool had rotation anomaly accompanying biliary atresia. Accompanying rotation anomaly was observed in 1 patient with colonic atresia. The most common concomitant cardiac pathology in newborn patients was patent foramen ovale (%28.5). The mean age at operation in the neonatal group was 17.35 days. The mean age at operation was 8.35 years in the non-neonatal group. One newborn patient underwent laparotomy due to brid ileus in the 2nd postoperative month.

Radiological imaging methods such as ultrasonography, contrast enema, and computed tomography were used to diagnose patients with malrotation.

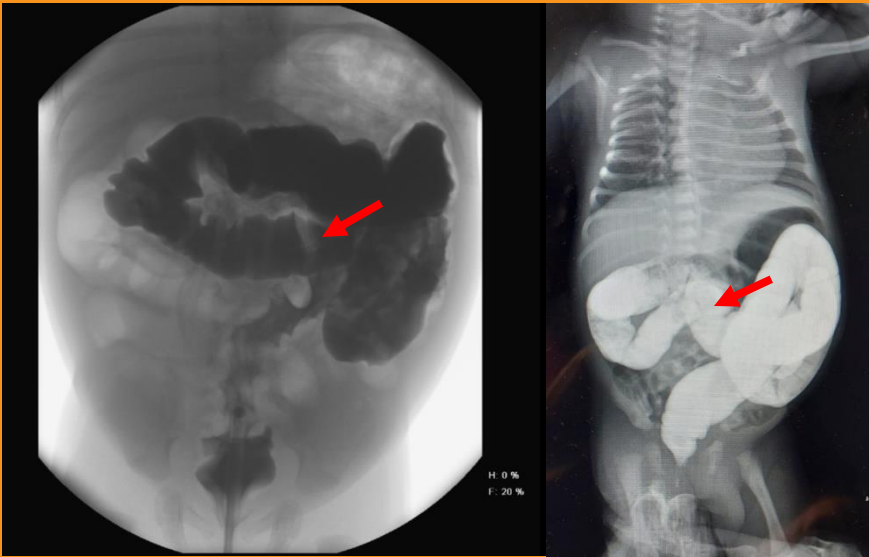


Figure-1: Newborns with cecum located in the right upper quadrant in contrast enema X-ray

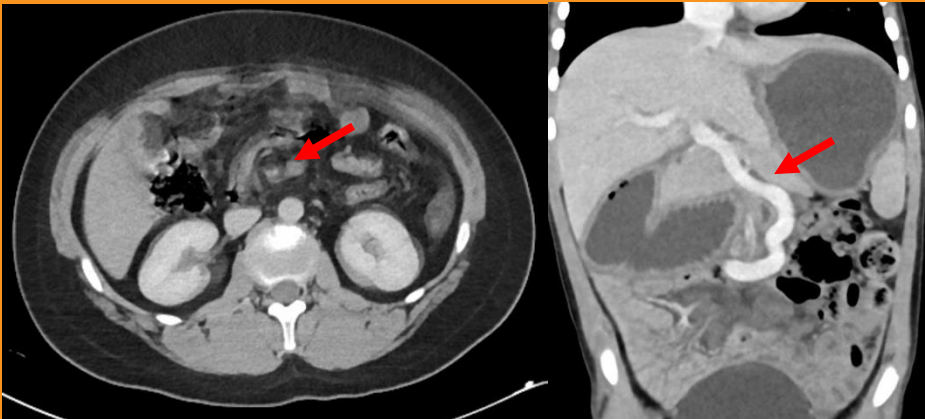


Figure-2: Computed tomography image of two different patient with intestinal volvulus. A whirlpool sign can be seen in the superior mesenteric artery and vein



Figure-3: Image of a patient who underwent surgery due to intestinal volvulus. The narrowing in the mesentery is noteworthy.

CONCLUSION

Malrotation may cause volvulus with a mortal prognosis, but some cases of malrotation without volvulus are asymptomatic and are diagnosed incidentally during late childhood or adulthood following imaging evaluation for other health concerns.² Early diagnosis and treatment is vital in volvulus due to malrotation. Regardless of the presence of symptoms, patients who have malrotation with volvulus require emergency laparotomy, detorsion of the volvulus, and the Ladd procedure.³ The Ladd Procedure has been used for surgical treatment of malrotations for many years. The success of surgery is determined by the timing of surgery, comorbidities and post operative care. The rate of postoperative bowel adhesions is between 6% and 20% in literature⁴. In our series, one patient underwent laparotomy due to postoperative bowel adhesions. No patient in our series died due to maltortion.

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