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Original Research Paper

General Surgery

A RARE CASE OF MIDGUT MALROTATION WITH VOLVULUS PRESENTING AS ACUTE BOWEL OBSTRUCTION IN ADOLESCENCE

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ABSTRACT

INTRODUCTION

Midgut malrotation is a congenital anomaly in the embryological development of the foetal intestinal rotation. It has been estimated that it affects approximately 1 in 500 live births . However, the true incidence is difficult to determine as a substantial number of cases will go undetected throughout life. The vast majority of the complications associated with midgut malrotation present in the first month of life and 60-85% of cases are diagnosed in this age group . It is reported that more than 90% of patients will present by the time of their first birthday . Adult midgut malrotation is very rare and its incidence has been reported to be between 0.0001% and 0.19% . Most adult diagnoses of midgut malrotation are made in asymptomatic patients; either on imaging investigations for unrelated conditions or at operations for other pathology. This scenario of incidental diagnosis is becoming increasingly common, particularly with improvements, and increased use, of diagnostic imaging techniques in modern practice. However, there are a small proportion of affected adults who may present with acute or chronic symptoms of intestinal obstruction or intermittent and recurrent abdominal pain. The true diagnosis in this age group is fraught with immense difficulty, especially because the typical presentation is with non-specific symptoms and the fact that in adults, Surgeons usually have low index of suspicion and may not consider the diagnosis a possibility in the initial evaluation of adult patients with abdominal pain.

KEYWORDS :

CASE REPORT

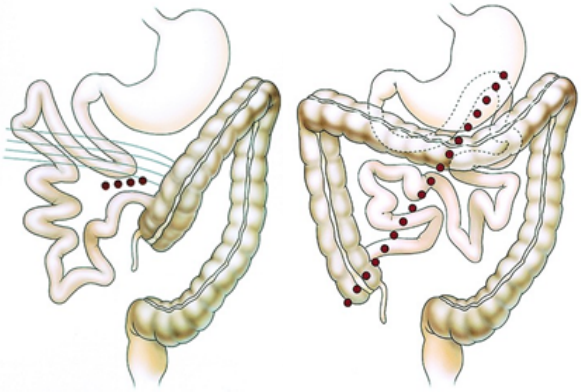
A 14-year-old male presented to the hospital with a 2 days history of sudden onset, sharp right upper quadrant (RUQ) pain that began postprandially. His pain was associated with nausea, vomiting and obstipation. He also reported significant abdominal distension. At the time of presentation, he endorsed generalized abdominal discomfort.

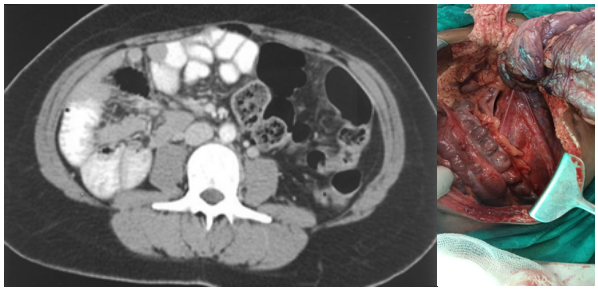
He is otherwise healthy with a no significant medical history and no prior abdominal surgeries . He denies any recent trauma, weight loss, travel history, changes in appetite or bowel habits. This is his first presentation for such severe abdominal pain.

On physical exam, he was afebrile and hemodynamically stable. His abdominal exam revealed a distended abdomen but no guarding or rigidity. His abdomen was diffusely tender with the point of maximal tenderness in the right and left upper quadrants. His hematological investigations revealed an elevated white blood cell count of 13.5 × 109/L . His liver enzymes were unremarkable. A chest radiograph did not reveal air under the diaphragm. Abdominal radiograph showed non-dilated gas filled loops of bowel in the central and upper abdominal regions . Computerized tomography scan of the abdomen demonstrated evidence of small bowel malrotation with volvulus (whirlpool sign) causing closed-loop obstruction. The radiologist reported on mucosal hypo-enhancement concerning for small bowel ischemia. There was no evidence of pneumatosis intestinalis, or free air in the abdomen. His initial management consisted of intravenous (IV) fluids, IV antibiotics and a nasogastric tube. He was consented for an exploratory laparotomy. The findings at operation included ischemic small bowel in the upper abdomen which rotated along its mesentery, partial necrosis of the greater omentum, the caecum was on the left side of the abdomen tethered by omentum, and loops of small bowel occupying the right paracolic gutter and the right iliac fossa. There were fibrous bands over the distal part of the duodenum, extending from caecum to the right lateral wall of the abdomen, confirming midgut malrotation. We performed a counter-clockwise detorsion of the small bowel and take down of Ladd's band in the RUQ. Following adhesiolysis and detorsion, the cecum and appendix were seen in the left side of abdomen, and an appendectomy was also performed along with widening of small bowel mesentery base. The affected small bowel segment was re-examined and deemed viable, avoiding a resection. Postoperative course was uneventful.

CONCLUSION

We report a rare case of a 14 year old male presenting acutely with a midgut volvulus secondary to intestinal malrotation. This case emphasizes the importance of maintaining a high index of suspicion for this insidious condition in addition to closely monitoring such patients. This allows prompt recognition and management of this rare cause of the deteriorating surgical patient optimizing patient outcomes.





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