

An unusual case of hindgut malrotation in an adult male

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Abstract

A first presentation of isolated hindgut malrotation in adults has rarely been described in literature. This case report describes hindgut malrotation in a forty-five-year-old male who presented with flatulence and gradually progressive diffuse abdominal pain. The position of duodenojejunal flexure and small bowel was normal. The case was managed conservatively; however, in the presence of complications such as volvulus, laparotomy and surgical fixation of bowel loops may be required.

Keywords

Hindgut; malrotation; duodenojejunal; flatulence.

Introduction

The clinical presentation and upper gastrointestinal tract findings of malrotation in older children and adults are less specific than those in the pediatric patients. This can make the diagnosis more difficult and thus a good knowledge of anatomical variants is essential. Unlike the pediatric age group which present with bilious vomiting, adults may present with intermittent, vague pain and malabsorption.

Case Presentation

An adult male presented with flatulence and vague lower abdominal pain occurring over a three months duration. He was afebrile at presentation and there was no local tenderness or guarding on examination. His routine blood investigations were within normal limits.

A plain and contrast abdominal Computed Tomography (CT) was performed. There were no features of intestinal obstruction or abnormal bowel wall thickening, ascites or lymphadenopathy. Duodenojejunal junction appeared normal in position. Caecum was seen in right lower quadrant. Anatomical relation between superior mesenteric artery and vein was maintained. However, the sigmoid colon was present in right lower abdomen. Inferior mesenteric artery was seen to course to the right side and its branches- left colic and superior rectal were seen to supply the descending colon.

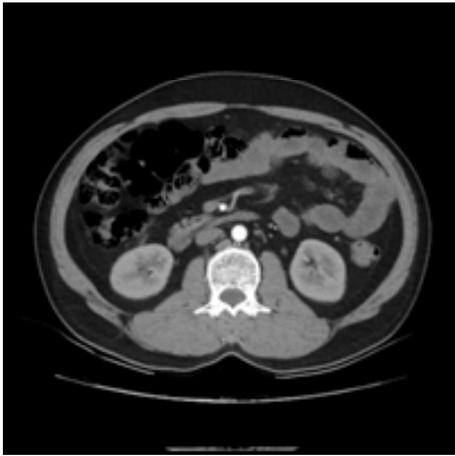


Figure 1: Axial CT abdomen-arterial phase shows a normal duodenojejunal junction with jejunal loops lying in left upper quadrant.

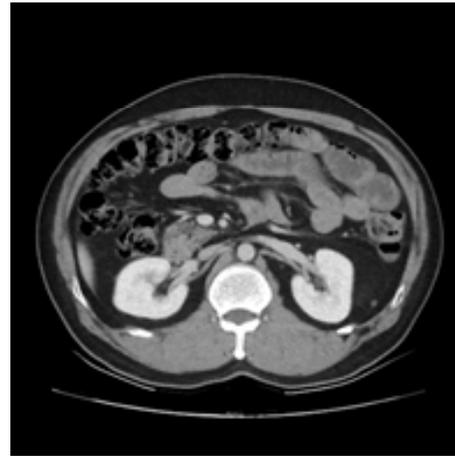


Figure 2: Axial CT abdomen- venous phase shows superior mesenteric vein in normal anatomical position, to right of superior mesenteric artery.

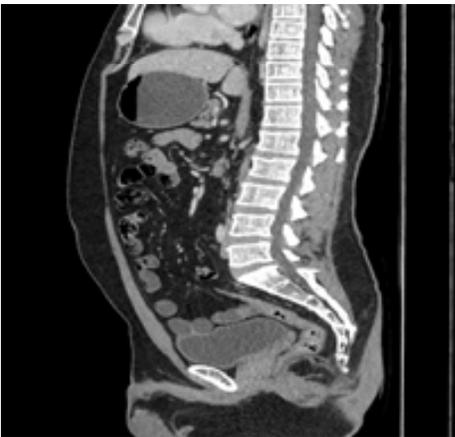


Figure 3: A sagittal CT image shows the sigmoid colon on the right side, part of the right lobe of liver is visible in the same view.

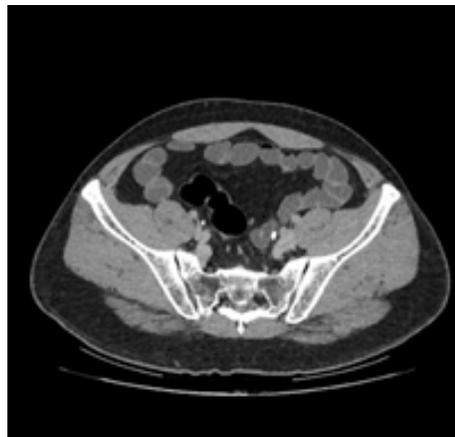


Figure 4: An axial delayed phase CT image shows the sigmoid colon on the right side of abdomen.



Figure 5: A coronal CT image in arterial phase shows the inferior mesenteric artery deviated to right side and its superior rectal and left colic branches.

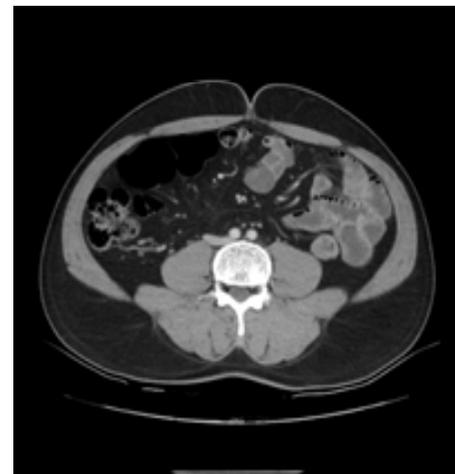


Figure 6: An axial CT section shows the caecum in normal position.

Discussion

The degree of malrotation of the small or large bowel may vary, and the positions of the duodenojejunal junction and colon depend on the developmental stage at which the embryologic rotation arrested. Because the second and third stages of rotation is different for the small bowel compared to the large bowel, the rotation of only one of them may be abnormal [1].

Barium studies, ultrasonography, endoscopy, CT and Magnetic Resonance Imaging (MRI), all play a role in the diagnosis. In a study conducted to assess malrotation on MRI concluded that if four questions could be answered confidently in the affirmative, then the rotation can be considered as normal. These questions include – a) Is the transverse duodenum retroperitoneal, between the aorta and the SMA? b) If the duodenojejunal junction is in the left upper quadrant abdomen? c) Is the SMA located to the left of the superior mesenteric vein (SMV)? and d) Is the caecum seen in the right lower quadrant abdomen? [2].

“Whirlpool” appearance has been described as a diagnostic term of midgut malrotation on CT scan in which the short mesentery allows the small bowel to twist around the narrowed SMA pedicle. Adhesions can be a causative factor in adults [3].

A previously published paper describes an unusual case of hindgut malrotation presenting as large bowel obstruction in an adult. At laparotomy, the sigmoid colon was lying on the right side and the caecum was lying in left upper quadrant of the abdomen. Ladd’s band was seen crossing the descending colon. The small bowel was normal [4].

The ultimate result in performing Ladd’s operation, first described by Ladd, aimed to convert malrotation to an arrangement of broadened nonrotation with the goal of minimizing the chance of a recurrent volvulus [5]. In addition to reduction of a volvulus, the operative treatment consists of the division of abnormal peritoneal bands and the placement of the small bowel to the right in the abdomen and caecum to the left. An appendectomy is also performed routinely.

Conclusion

The clinical presentation and radiological findings of malrotation in older children and adults is less specific than in younger children. A knowledge of normal gastrointestinal anatomy and anatomical variants helps to increase the diagnostic accuracy for such cases.

Final diagnosis: Isolated hindgut malrotation

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