

A Complete Common Mesentery Presenting With Appendicular Peritonitis : Case report

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Abstract

Intestinal malrotation is an uncommon anomaly resulting from an interruption in the rotation and fixation of the embryonic gut. It can remain asymptomatic if the rotation halts at 90 degrees, leading to atypical presentations such as appendicitis, as observed in our case, or pose serious risks when accompanied by incomplete common mesentery and compounded by small intestine volvulus. A 58-year-old male presented with abdominal pain four days prior to admission, accompanied by fever. Clinical examination revealed abdominal tenderness, and laboratory tests indicated an inflammatory response. A CT scan confirmed acute appendicitis associated with complete common mesentery, prompting the patient to undergo open laparotomy appendectomy. Despite acute appendicitis typically presenting in a conventional manner, diagnosing its atypical forms in the context of intestinal malrotation poses considerable challenges. Abdominopelvic CT scan plays a crucial role in diagnosis, and laparoscopic appendectomy is the preferred treatment approach.

Key Words: Complete common mesentery, Perforated appendicitis, Ladd Procedure.

INTRODUCTION

The presence of a complete common mesentery in acute appendicitis presentation is uncommon and can potentially delay treatment. Imaging plays a vital role in providing accurate anatomical and lesion diagnosis, guiding the appropriate surgical approach.

AIM OF THE ARTICLE:

The aim of the article is to highlight the diagnostic

challenges and management strategies associated with the atypical presentation of acute appendicitis, particularly in cases involving congenital variations of the digestive tract, such as intestinal malrotation.

PRESENTATION OF CASE

Here we present a 58-year-old male patient, with no significant medical history, who has been experiencing generalized abdominal pain accompanied by nausea and vomiting for the past 4 days, without

any disturbances in bowel movements or externalized digestive bleeding, all evolving in a context of preserved general condition.

On examination, the patient is conscious and stable, febrile at 38.5°C, with generalized abdominal tenderness, and a rectal examination revealing no anomalies.

Laboratory tests revealed a white blood cell count of 18,000/mm³ and a CRP level of 80 mg/l.

An abdomino-pelvic CT scan showed a complete common mesentery with a cecum in the left iliac fossa, a swollen appendix likely perforated, measuring 12 mm in diameter, with a small amount of fluid in the pouch of Douglas. (Figure1)

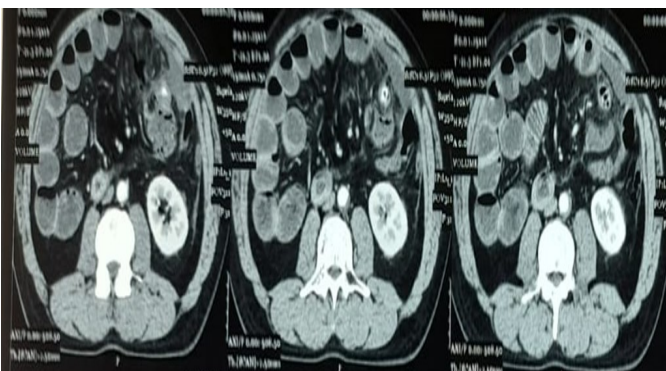


Figure 1: Pelvic CT scan slides showing the cecum and appendix in the left iliac fossa.

The patient underwent surgery, benefiting from open surgery, where a small amount of fluid was drained and removed with false membranes throughout the peritoneal cavity. A complete common mesentery was observed with the cecum on the left side, the small bowel on the right side, a swollen and perforated appendix at its tip, leading to an appendectomy and repositioning of the small bowel to the right and the colon to the left according to the Ladd procedure. A pelvic drain was placed in the pouch of Douglas.(figure 2)



Figure 2: Intraoperative image showing the colon, cecum, and appendix (grasped by forceps) on the left and the small intestine on the right.

The postoperative course was uneventful, and the patient was discharged on postoperative day 3.

The pathological examination of the appendix revealed abscessed appendicitis with no signs of malignancy.

DISCUSSION:

During embryonic development, the intestine undergoes various reintegration, rotation, and docking processes. Incomplete or absent phenomena during these stages can result in malpositioning of the digestive tract, leading to digestive complications. These malformations affect approximately one in 500 births.[1]

There are three rotations, each occurring 90° counterclockwise around the superior mesenteric artery. The first rotation happens before the 10th week of gestation, positioning the pre-vitelline portion (small intestine) on the right and the post-vitelline portion (colon) on the left. A halt at this stage results in a complete common mesentery, where the colon is situated on the left side of the abdomen,

the small intestine on the right, the angle of Treitz is absent, and the mesenteric vein is located to the left of the artery. The second rotation places the pre-vitelline portion posterior to the mesenteric axis (positioning of D3), while the third rotation positions it to the left of the post-vitelline portion. If rotation stops at 180°, it defines an incomplete common mesentery. Only 15% of incomplete common mesenteries remain asymptomatic due to the significant risk of volvulus.[2]

The complete common mesentery is often discovered incidentally or in the context of tumoral or inflammatory gastrointestinal tract pathology, including ectopic appendicitis, where clinical diagnosis has often been erroneous or not considered. [3]

In our case, the patient presented with left-sided appendicitis, a rare occurrence in the literature. Left appendicitis is more commonly associated with situs inversus. For instance, in a study by Akbulut et al. in 2010, out of 95 cases of left appendicitis, only 31% were related to intestinal malrotation [4]. This uncommon localization can lead to a delayed diagnosis and serious complications.

With modern imaging techniques, particularly echo Doppler and computed tomography, which assess the transposition of mesenteric vessels and the positioning of the small bowel relative to the colon, diagnosis is increasingly made earlier.[5]

Surgical treatment is necessary, with the approach determined by the surgeon's expertise and the patient's history of abdominal surgery.

CONCLUSION:

The atypical presentation of acute appendicitis poses a diagnostic challenge in emergency medicine. It

necessitates suitable imaging, primarily a CT scan, to confirm the diagnosis and identify any congenital variations in the digestive tract, thereby guiding emergency surgical intervention.

PROVENANCE AND PEER REVIEW:

Not commissioned, externally peer reviewed.

CONSENT

As per international standard or university standard, patient(s) written consent has been collected and preserved by the author(s).

ETHICAL APPROVAL

As per international standard or university standard written ethical approval has been collected and preserved by the author(s).

CONFLICTS INTERESTS

Authors have declared that no competing interests exist.

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