

Misdiagnosis of appendiceal abscess with intestinal malrotation: A case report

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ABSTRACT

Here, we report the case of a 75-year-old male with abdominal pain who was admitted to our Emergency Department. Computed tomography (CT) scan revealed torsion of the mesenteric root with fluid surrounding the area. Emergency laparotomy, performed under general anesthesia, revealed appendiceal abscess with intestinal malrotation. Appendectomy was performed after the torsional mesentery restoration. Antibiotics and other symptomatic treatments were administered postoperatively. The patient recovered well and was discharged one week after surgery. Intestinal malrotation is more common in neonates than in adults. The diagnosis of appendicitis could be further obscured by intestinal malrotation. Therefore, the rare situation of intestinal malrotation and ectopic appendicitis in the abdomen should be considered in cases with an absence of right lower abdominal pain, where preoperative abdominal CT shows mesenteric volvulus and the surrounding intestinal wall is thickened and demonstrating exudation.

Keywords: Appendiceal abscess; intestinal malrotation; misdiagnosis.

INTRODUCTION

Appendicitis is one of the most common abdominal conditions, often presenting with varied clinical manifestations. The diagnosis could be further obscured by underlying undiagnosed anatomical anomalies, such as intestinal malrotation. Clinical intestinal malrotation is more common in neonates than in adults.^[1] Here, we report the case of a 75-year-old male with abdominal pain who was admitted to our Emergency Department. CT scan revealed torsion of the mesenteric root with fluid surrounding the area, and he underwent an emergency laparotomy.

CASE REPORT

The patient, a 75-year-old male, experiencing “abdominal pain, with vomiting for four days” and presenting with intermittent dull pain was initially seen in the emergency room and subsequently admitted to our hospital. The pain was located around the umbilical region and left upper abdomen.

No symptoms of fever or inability to pass stools or gas were present. Radical gastrectomy (Billroth I) for gastric cancer was performed seven years prior. Results of physical examination at admission included 36.5 °C body temperature, soft abdomen, periumbilical and left abdominal tenderness, with rebound pain, absence of muscle tension or any mass within the abdomen and bowel sounds at one-minute intervals. Abdominal CT revealed dilatation and pneumatosis of the colon and portions of the small intestine, torsion of the mesenteric root and a thickening of the intestinal wall within the left upper abdomen with fluid surrounding the area (Fig. 1). Blood assay results showed leukocytes at $9.99 \times 10^9/L$ and neutrophils at 85.3%. Diagnostic considerations for admission included mesenteric volvulus and possible intestinal necrosis. Emergency laparotomy, performed under general anesthesia, revealed the presence of yellow-white pus in the left upper abdomen with fecal odor. The ileocecal region was displaced to the left upper abdomen and was adherent to a portion of the small intestine. The wall of the small intestine

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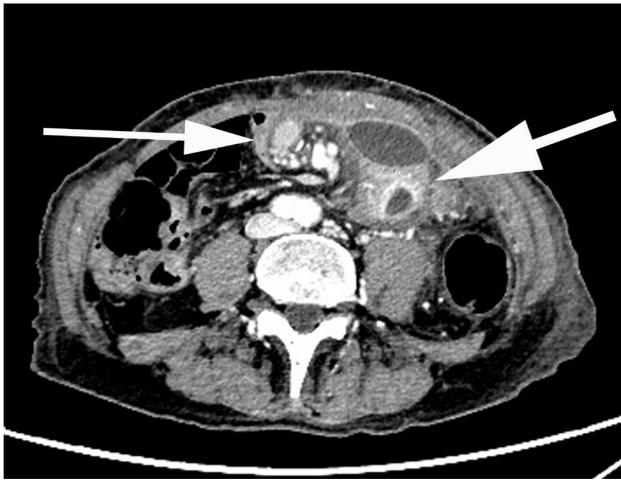


Figure 1. Preoperative abdominal CT demonstrating a rotation of the mesentery (thin arrow) and thickening of the intestinal wall with the presence of fluid around the intestine within the left upper abdominal (thick arrow).

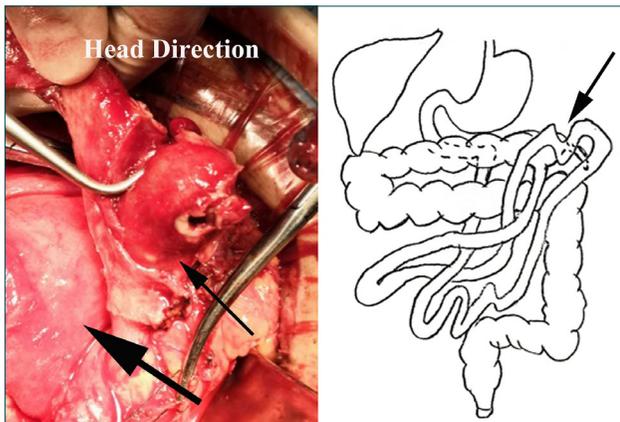


Figure 2. Observations during surgery showing the appendix (thin arrow) and ileocecal region (thick arrow) as seen after blunt dissection of adhesions around the ileocecal region. B. Pictorial representation of surgical findings showing intestinal adhesions within the ileocecal region (arrow).

adhering to this ileocecal region was edematous and thickened. Appendiceal gangrene perforations, a thickening and hardening of the appendix with the presence of edema were observed after blunt dissection of adhesions around the ileocecal region. The colon extended in a parallel direction from the left to the right upper abdomen and was connected to the transverse colon inferior to the liver. The distal colon was normal. Mesentery dysplasia, with a long, narrow and unrestricted mesentery and a 180 degree clockwise rotation, was present. No ischemia was observed within the small intestine (Fig. 2). Appendectomy was performed after the torsional mesentery restoration. Antibiotics and other symptomatic treatments were administered postoperatively. Postoperative pathological findings included acute gangrenous appendicitis with perforations and periappendicitis. The patient recovered well and was discharged one week after surgery.

DISCUSSION

The difficulty, in this case, lies in its preoperative diagnosis. When combined with the patient's preoperative medical history, his symptoms and abdominal CT findings, an initial consideration would likely be mesenteric volvulus and possible intestinal necrosis. However, the presence of intestinal malrotation made preoperative diagnosis more challenging. Intestinal malrotation typically results from failure of rotation and fixation of the bowel segment during embryonic development. Such a condition results in abnormal intestinal location and attachment, abnormal band formation or mesenteric dissociation, with clinical manifestations being intestinal volvulus or intestinal obstruction. Currently, abdominal CT represents the best method for the diagnosis of intestinal malrotation. Typical manifestations include a mesenteric swirl sign and a mesenteric vascular displacement sign.^[2] Mesenteric volvulus may produce blood flow occlusion of the mesenteric vasculature, leading to intestinal wall ischemia and intestinal wall congestion of the corresponding intestinal canal. Moreover, intestinal wall edema and thickening along with periintestinal exudation may be present.

Although ectopic appendix may be challenging to diagnose, with the application of abdominal and pelvic CT, the accuracy of preoperative diagnosis of this condition has been significantly improved. Preoperative abdominal CT findings of this case were consistent with changes in the intestinal wall resulting from mesenteric vascular volvulus. Mesenteric volvulus was confirmed during surgery; however, no blood flow occlusion was present within the intestinal wall. The intestinal wall thickening, as revealed by abdominal CT, was actually edema of the intestinal wall and thickening due to inflammation of the small intestinal canal enclosing the ileocecal region. The effusion around the intestinal area was actually an abscess around the appendix. As the patient had indicated that he had been ill for four days, by the time the abdominal CT was performed, the abscess had already formed around the appendix, precluding a definitive observation of the appendix on CT. Therefore, in cases with an absence of right lower abdominal pain, where preoperative abdominal CT shows mesenteric volvulus and the surrounding intestinal wall is thickened and demonstrating exudation, the rare situation of intestinal malrotation and ectopic appendicitis in the abdomen should be considered. Saxena et al.^[3] indicated that in surgical cases where a serendipitous observation of intestinal malrotation is present, the appendix should be prophylactically removed to avoid potential appendicitis attacks, which would be challenging to diagnose in the future. The intestinal malrotation in this patient was found during his radical gastrectomy surgery that had been performed seven years prior. At that time, no appendectomy was performed. If the appendectomy had been performed after full disclosure of this potential complication with the patient and his family, the financial burden and physical and psychological trauma involved with this current hospitalization would have been avoided.

Conclusion

The rare situation of intestinal malrotation and ectopic appendicitis in the abdomen should be considered in cases with an absence of right lower abdominal pain, where preoperative abdominal CT shows mesenteric volvulus and the surrounding intestinal wall is thickened and demonstrating exudation.

Informed Consent: Written informed consent was obtained from the patient for the publication of the case report and the accompanying images.

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Conflict of Interest: None declared.

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OLGU SUNUMU - ÖZ

İntestinal malrotasyonun eşlik ettiği apendiks apsesi: Yanlış tanı alan bir olgu sunumu

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Bu yazıda, karın ağrısı şikayeti ile acil servise başvuran 75 yaşında bir erkek olgu sunuldu. Bilgisayarlı tomografide (BT), mezenter kökü torsiyonu ile bu bölgeyi çevreleyen sıvı ortaya kondu. Genel anestezi altında yapılan acil laparotomide, intestinal malrotasyonlu apendiks apsesi görüldü. Torsiyone mezenter restorasyonundan sonra apandisektomi yapıldı. Ameliyat sonrası antibiyotikler ve diğer semptomatik tedaviler uygulandı. Bu nedenle, preoperatif abdominal BT'nin mezenterik volvulus, çevre bağırsak duvarının kalınlaştığı ve eksüdasyon gösterdiği, sağ alt karın ağrısının olmadığı durumlarda, nadir görülen intestinal malrotasyon ve batında ektopik apandisit durumu göz önünde bulundurulmalıdır.

Anahtar sözcükler: Apendiks apsesi; intestinal malrotasyon; yanlış tanı.

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