

Left Sided Burst Appendix in a Patient with Intestinal Malrotation without Situs Inversus: A Rare Entity

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DOI: <https://doi.org/10.3329/jafmc.v20i2.80411>

Abstract

Appendicitis is a common surgical emergency, typically presenting with right lower quadrant abdominal pain. However, atypical presentations, such as left-sided appendicitis, pose significant diagnostic challenges, especially in patients with underlying conditions like intestinal malrotation. A 40-year-old female was diagnosed with a left-sided burst appendix, initially diagnosed as peptic ulcer disease. After experiencing severe abdominal pain and distension, the patient underwent a CT scan which revealed free gas under the diaphragm and finally was intraoperatively diagnosed as left-sided burst appendix, complicated by intestinal malrotation. The patient underwent a successful appendectomy and postoperative complications were managed. The case emphasizes the need for differential diagnosis of abdominal pain, particularly left-sided appendicitis, especially in coexisting conditions like intestinal malrotation and calls for comprehensive diagnostic approaches and adaptable surgical management in atypical presentations.

Key-words: Appendix, Left-Sided Appendicitis, Intestinal Malrotation, Situs Inversus.

Introduction

Appendicitis, characterized by the inflammation of the vermiform appendix, stands as one of the most common surgical emergency across the globe, with an estimated lifetime risk of approximately 7-8%.¹ This condition starts with a vague pain around the umbilicus, shifted to the right lower quadrant, often accompanied by symptoms like anorexia, nausea, vomiting and fever.^{2,3} The clinical significance of appendicitis primarily stems from its potential to rapidly progress towards complications like perforation, leading to peritonitis and sepsis if not timely and appropriately managed.⁴ Standard appendicitis diagnosis involves clinical evaluation, laboratory investigations and imaging techniques. Clinicians use patient history, physical examination and laboratory findings, with ultrasound and CT scans crucial for confirmation.⁵ Appendicitis treatment involves surgical intervention, specifically appendectomy with antibiotic therapy being crucial. The choice depends on the surgeon's

expertise and patient's condition. Prompt diagnosis and treatment lead to favorable outcomes with low complications.⁶ Left-sided appendicitis, a rare variant presents significant diagnostic challenges due to the rare occurrence of situs inversus or an excessively long appendix on the left side of the abdomen.⁷ The incidence of left-sided appendicitis is not well-defined in the literature, but it is significantly lower compared to the typical right-sided presentation, making it a diagnostic conundrum in clinical practice. Complicating the diagnostic process further is the presence of coexisting conditions such as intestinal malrotation.^{8,9} The current case report highlights a rare left-sided appendicitis case in a patient with intestinal malrotation, emphasizing the importance of considering atypical presentations in abdominal pain and high suspicion in patients with underlying gastrointestinal anomalies or nutritional deficiencies.

Case Presentation

On the morning of January 25, 2022, a 40-year-old female doctor presented to our emergency department with a history of epigastric pain that had started the previous afternoon. The pain was described as moderate, burning, non-radiating and aggravated by movement. Accompanying the pain, there were three episodes of vomiting which were spontaneous, non-projectile and contained partially digested, whitish, sour-tasting food. She reported a 10-months history of occasional mild epigastric pain, typically relieved by oral antacids. The patient had no history of cough, fever, or burning micturition. Her past surgical history included lower uterine cesarean sections in 2007 and 2013, and she had no comorbid medical illnesses. Her family history was unremarkable, and she was up-to-date with immunizations and had no known allergies. Her menstrual cycle was regular with normal vaginal flow. Upon examination, the patient was conscious, cooperative and appeared well-nourished but mildly anemic. Her vital signs showed a pulse rate of 84 beats per minute and blood pressure of 130/80 mmHg. Abdominal examination revealed a scaphoid abdomen, soft and non-distended with deep diffuse tenderness on the left side

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but no muscle guard, rigidity, organomegaly, or ascites. Hernial orifices were intact and the percussion note was tympanic with audible bowel sounds. Other systemic examinations were within normal limits. Laboratory investigations showed hemoglobin at 10.3 gm/dl, total leukocyte count at 10.7×10^9 per liter with 80% neutrophils, serum amylase at 81mg/dl and other parameters within normal ranges. Ultrasonography and X-ray of the abdomen as well as ECG, showed normal findings.

Based on these findings, her probable diagnosis was acute exacerbation of peptic ulcer disease. Treatment commenced with nothing per-orally, intravenous fluids, injectable anti-ulcer medication, and broad-spectrum antibiotics. Pain management was achieved with an injection of pethidine. After two nights of hospitalization and observation, her condition improved, and she was discharged on 27 January 2022. She was readmitted on the same day with severe abdominal pain and loose watery stools. Examination revealed an increased pulse rate of 110 beats per minute,

blood pressure of 120/80mmHg, abdominal distension, tenderness, and rigidity, but no bowel sounds. A CT scan of the abdomen showed a small amount of free gas under the right dome of the diaphragm without peritoneal collection.

Initially suspected of having a leaking perforation from a duodenal ulcer, she was observed for a day. However, her condition did not improve and symptoms of peritonitis persisted. An exploratory laparotomy was performed, revealing a moderate peritoneal collection but no duodenal perforations. Further examination identified a left-sided burst appendix, obstructed by a large fecolith, with the pelvic cavity filled with peritoneal fluid and pus. An appendectomy was performed with thorough peritoneal toileting, drainage tubes were placed in the pelvic cavity and hepatorenal pouch. Post-operatively inj Meropenem, inj Metronidazole and inj Amikacin were administered for five days along with anti ulcerant and analgesic according to severity of pain.

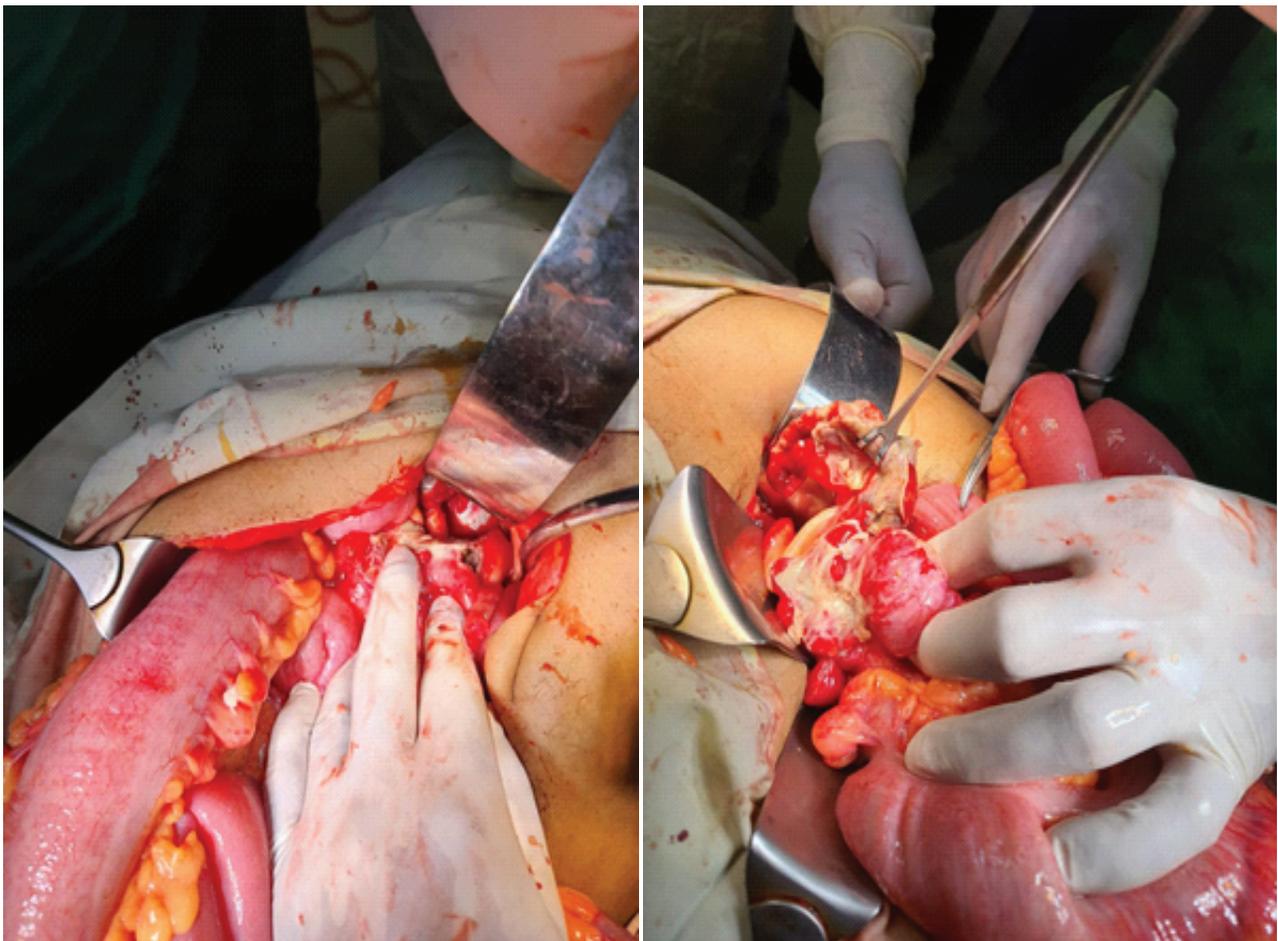


Figure-1: Per-operative finding of burst appendix

Postoperatively, the patient developed a moderate pleural effusion, which was aspirated and treated accordingly. All stitches were removed on the 12th postoperative day and she was subsequently discharged. Histopathology confirmed gangrenous appendicitis.



Figure-2: Postoperative wound condition after burst appendix removal

Discussion

The presented case of a 40-year-old female with left-sided burst appendix, initially diagnosed as peptic ulcer disease, underscores the diagnostic challenges and clinical implications of atypical presentations of appendicitis. Appendicitis, typically characterized by right lower quadrant abdominal pain, can present atypically, as in this case, complicating the diagnostic process.^{10,11} The rarity of left-sided appendicitis, often associated with situs inversus or an excessively long appendix, contributes to its diagnostic challenge.^{12,13} In this case, the absence of situs inversus and the presence of a left-sided burst appendix due to a fecolith obstruction is a noteworthy finding, adding to the limited reports of such occurrences in medical literature. The initial presentation of epigastric pain and vomiting led to a provisional diagnosis of peptic ulcer disease which also the differentiating points of burst appendix and duodenal perforation. However, the subsequent severe abdominal pain and distention necessitated further procedure like laparotomy, which revealed the true pathology. This development emphasizes the significance of including appendicitis in the differential diagnosis of abdominal pain, regardless of its location.⁴ The use of imaging modalities, such as CT scans, proved crucial in this case, aligning with current guidelines that emphasize the role of imaging in diagnosing atypical cases of appendicitis.⁵ The management of this patient, involving exploratory laparotomy and appendectomy, followed by the treatment of postoperative complications, illustrates the need

for a high degree of clinical suspicion and flexibility in treatment approaches. The occurrence of postoperative complications, such as pleural effusion, although not uncommon, required prompt and effective management, as seen in this case.¹⁴ Furthermore, the presence of intestinal malrotation in this patient could have contributed to the atypical presentation and severity of the condition. This association, although not extensively documented in the context of appendicitis, warrants further investigation, given its potential impact on diagnosis and treatment outcomes. In conclusion, this case report adds to the existing literature by documenting a rare instance of left-sided burst appendix in a patient without situs inversus, complicated by intestinal malrotation. It highlights the need for a comprehensive and dynamic approach to diagnosis and management in cases of abdominal pain, especially when presenting atypically.

Conclusion

This left sided burst appendix without situs inversus is a very rare case which was an intraoperatively diagnosed at the study place. Initially it was diagnosed as peptic ulcer disease, highlights the challenges in diagnosing atypical appendicitis presentations. It emphasizes the importance of clinicians maintaining a high index of suspicion for appendicitis in patients with abdominal pain, regardless of its location or cause. The rarity of left-sided appendicitis and its presentation in the context of intestinal malrotation complicates clinical diagnosis and decision-making. The report emphasizes the role of comprehensive diagnostic imaging and adaptability in surgical management.

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