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Case Report

Acute appendicitis in Amyand's hernia in a case of incarcerated right inguinal hernia: an unusual presentation

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ABSTRACT

Amyand's hernia, defined as the presence of the vermiform appendix within an inguinal hernia sac, is a rare clinical entity, representing approximately 1% of all inguinal hernias. The occurrence of acute appendicitis within an Amyand's hernia is exceptionally uncommon, seen in only about 0.1% of cases. Awareness of this condition is important, as delayed recognition can lead to serious complications including perforation and sepsis. We report two cases of Amyand's hernia presenting as incarcerated right inguinal hernia with acute appendicitis. The first patient, a 61-year-old male, presented with a painful, irreducible right inguinal swelling, nausea, vomiting, and fever. The second patient, a 48-year-old male, had similar symptoms with a history of long-standing reducible inguinal swelling. In both cases, ultrasonography revealed features of incarcerated indirect inguinal hernia with early strangulation. Intraoperatively, both hernia sacs contained an inflamed appendix adherent to the sac wall. Open appendectomy and modified Bassini's herniorrhaphy were performed without mesh placement due to the risk of infection. Postoperative recovery was uneventful, and histopathological examination confirmed acute appendicitis in both cases. Amyand's hernia with acute appendicitis is a rare surgical finding that can mimic an incarcerated or strangulated hernia. Preoperative diagnosis is challenging, and most cases are identified intraoperatively. Timely surgical management with appendectomy and non-mesh hernia repair is essential to prevent septic complications and ensure favorable outcomes.

Keywords: Amyand's hernia, Open appendectomy, Incarcerated inguinal hernia, Acute abdomen, Appendicitis

INTRODUCTION

Inguinal hernias are common, with various organs and tissues occasionally found within the hernia sacs.[1] Amyand's hernia is a rare subtype of inguinal hernia where the appendix is contained within the hernia sac, accounting for approximately 1% of all inguinal hernia cases.[2] An even rarer complication is the occurrence of appendicitis within the hernia sac, which is seen in only about 0.1% of Amyand's hernia cases.[3] This report highlights two cases of appendicitis in Amyand's hernia presenting as incarcerated right inguinal hernia, emphasizing the importance of prompt surgical intervention to prevent severe complications, adding complexity to the clinical presentation and management.

CASE REPORT

A 61-year-old male presented to the emergency department with a severely painful, irreducible swelling in the right inguinal region, accompanied by obstipation, nausea, vomiting for one day, and a single episode of fever. He also had a history of a reducible right inguinal swelling for the past 8 months. His medical history was significant for chronic smoking, chronic constipation, hypertension, chronic obstructive pulmonary disease,

coronary artery disease, and a prior treatment for pulmonary tuberculosis. On examination, he showed signs of dehydration, tachycardia, and clinical findings suggestive of a right-sided irreducible strangulated indirect inguinal hernia. An ultrasound of the inguinoscrotal region confirmed the diagnosis, revealing features consistent with an incarcerated indirect inguinal hernia with early signs of strangulation. Intraoperative findings (Figure 1 A) included an edematous indirect hernia sac with dense adhesions and constriction around the deep ring, which, upon opening, revealed multiple pockets, an edematous ileal loop, omentum, and an inflamed, edematous appendix. The patient underwent open appendicectomy (Figure 1 B) and modified Bassini's herniorrhaphy with a thorough abdominal and pelvic washout to reduce the risk of septic complications. The postoperative course was uneventful, and follow-up showed no complications. Histopathological examination of the appendix revealed acute on chronic appendicitis.

A 48-year-old male presented to the emergency department with a 36-hour history of progressively worsening right inguinal pain, associated with nausea, vomiting, and obstipation. He also had a low-grade fever for the past 12 hours. The patient reported a long-standing history of a reducible right inguinal swelling, which had become irreducible and painful over the past day. His medical history was notable for obesity, hyperlipidemia. On examination, the patient appeared mildly dehydrated, with tachycardia and a tender, irreducible right inguinal mass. The abdomen was distended, and bowel sounds were absent over the hernia. An ultrasound confirmed the presence of an incarcerated right inguinal hernia, with features consistent with early strangulation. Intraoperatively, the hernia sac was found to be edematous, with dense adhesions (Figure 1 C). Upon opening, the sac contained an inflamed, edematous appendix (Figure 1 D). The patient underwent open appendicectomy and direct herniorrhaphy using the modified Bassini technique. A thorough abdominal washout was performed to minimize the risk of septic complications. The postoperative course was uneventful, and the patient had a smooth recovery. Histopathological examination of the appendix confirmed acute appendicitis.

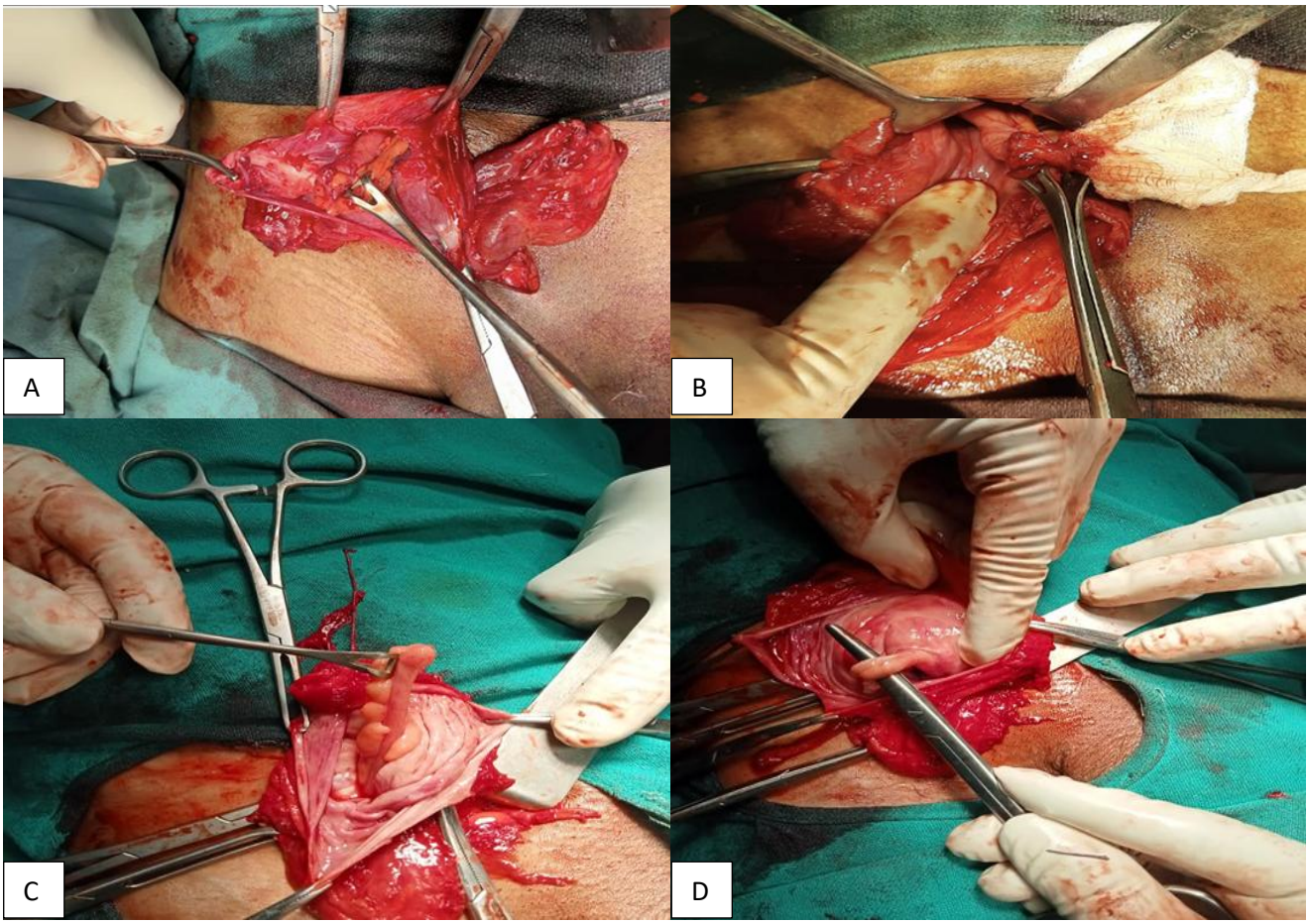

Figure 1 (A-D): Intraoperative findings of Amyand's hernia: (A) Inflamed appendix held in Babcock's forceps inside the hernial sac, (B) appendix reduced below the deep ring with posterior wall of the inguinal canal opened for appendectomy, (C) hernial sac containing inflamed appendix and (D) dense adhesions between inflamed appendix and hernia sac.

DISCUSSION

Inguinal hernias can contain various organs and tissues, including fat, bowel, omentum, ovary, bladder, Meckel's diverticulum, and the appendix. First described in 1735, Amyand's hernia specifically refers to a condition where the appendix is found within the inguinal hernia sac.[1] This rare condition accounts for about 1% of all inguinal hernia, and the presence of appendicitis in the hernia sac is even rarer, occurring in only 0.1% of cases.[2,3] In these cases, the patient presented with an incarcerated right inguinal hernia, complicated by appendicitis. The pathophysiology of acute appendicitis in Amyand hernia is still controversial. It is usually caused by extraluminal obstruction due to pressure at the hernia neck rather than intraluminal obstruction of the appendix, muscle contraction or any other sudden increase in intra-abdominal pressure may cause compression of the appendix, resulting in further inflammation.[4] This unique presentation underscores the complexity of managing Amyand's hernia, where prompt surgical intervention is essential to avoid severe complications such as appendiceal perforation, abdominal wall sepsis, or peritonitis. These complications carry a mortality risk of 14% to 30%.[5]

Management of Amyand's hernia is individualized based on the stage of appendiceal inflammation, the presence of abdominal sepsis, and patient comorbidities. Rikki's modified Losanoff and Basson's classification provides a useful grading system for treatment decisions.[6] According to this system, our patient's case is classified as type II, where acute appendicitis is localized within the hernial sac. In such cases, performing an appendectomy through the hernia, without mesh hernia repair, is recommended. Due to the increased risk of infection, prosthetic mesh is generally avoided in the closure of contaminated abdominal wall defects. It is particularly contraindicated in patients with an inflamed or perforated appendix because of the heightened risk of wound and mesh infection.[7] In such cases, the preferred treatment involves performing an appendectomy with Bassini's herniorrhaphy and thorough abdominal and pelvic washouts to minimize septic complications.

In our cases, we opted for open appendectomy with modified Bassini's herniorrhaphy, avoiding the use of prosthetic mesh due to the risk of infection. This approach allowed for the successful management of both the hernia and appendicitis, with a thorough abdominal and pelvic washout to reduce the risk of septic complications. The postoperative course was uneventful, and the patient had a smooth recovery.

CONCLUSION

This report highlights the importance of recognizing the unique challenges posed by Amyand's hernia and underscores the need for prompt, individualized surgical intervention.

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