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Laparoscopic Management of Idiopathic Abdominal Cocoon in a 32-Year-Old Male: A Rare Case Report

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Supplemental material: Surgical video available upon request.

Abstract:

Background: Abdominal cocoon is a rare cause of intestinal obstruction with fewer than 200 cases reported worldwide [11]. We present a case managed successfully through laparoscopy.

Case Presentation: A 32-year-old male presented with acute abdominal pain, nausea, and distension. CT abdomen revealed dilated small bowel loops and clustered appearance suggestive of small bowel obstruction. Laparoscopy confirmed idiopathic abdominal cocoon, and complete excision of the fibrous sac was performed.

Conclusion: Laparoscopy is effective for both the diagnosis and treatment of abdominal cocoon, offering significant advantages over open surgery.

Keywords: Abdominal cocoon; Sclerosing encapsulating peritonitis; Laparoscopy; Intestinal obstruction

Introduction:

Abdominal cocoon, or idiopathic sclerosing encapsulating peritonitis, was first described by Foo et al. in 1978 [1]. It remains a rare cause of intestinal obstruction with an estimated incidence of 0.1–0.3% [2]. Though typically idiopathic, secondary forms related to infections, medications, or autoimmune diseases have been described [3]. Preoperative diagnosis remains difficult, and many cases are diagnosed intraoperatively [4].

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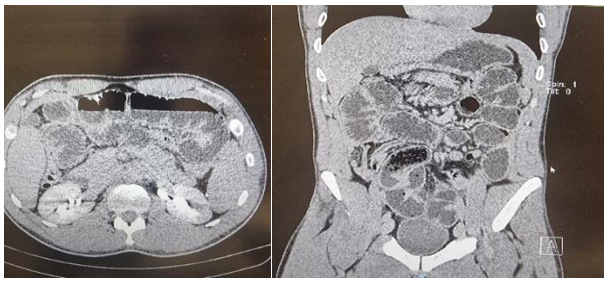
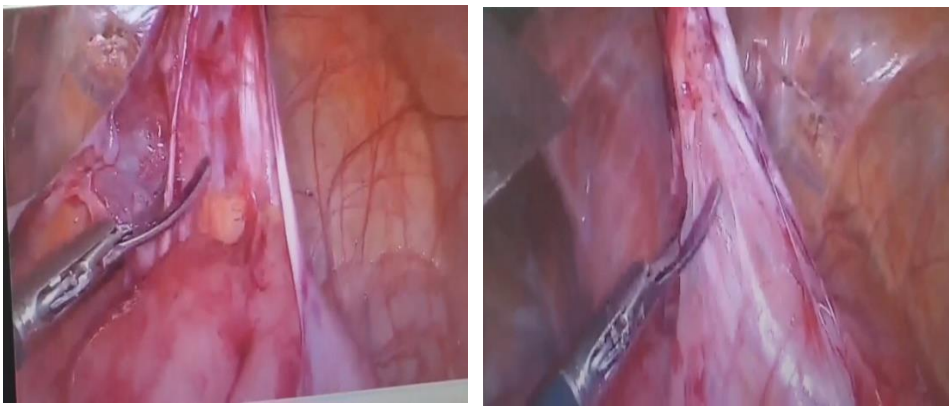
Case Presentation

A 32-year-old previously healthy male presented to the emergency department with a 3-day history of abdominal pain, nausea, vomiting, and distension. He denied any history of abdominal surgery, tuberculosis, or chronic illness. Clinical examination showed abdominal tenderness with mild guarding. Laboratory tests: Amylase 48 U/L, RBC: 5.4 x10^6/µL, Hb: 17 g/dL, WBC: 14.1 x10^3/µL, PLT: 250 x10^3/µL, Neutrophils: 88.2%, Lactate: 1.52 mmol/L. HbA1c was 5.2%, and thyroid function tests (TSH 1.2 mIU/L, free T4 normal) were within normal limits. Morning cortisol was 18 µg/dL, excluding adrenal insufficiency.

CT abdomen showed signs of small bowel obstruction with dilated small bowel loops, but no specific cause was identified (Figure 1A). Laparoscopy confirmed the diagnosis of abdominal Cocoon by revealing a dense, fibrous, translucent membrane encapsulating the small intestines (Figure 1B). The membrane was dissected and excised without bowel resection. Histopathology result showed peritoneal tissue with area of fibrosis, myxoid areas, congested vasculature with foci of hemorrhage and mild chronic inflammatory infiltrate. The patient recovered uneventfully and was discharged on postoperative day three.



(Figure 1A).



(Figure 1B).

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Discussion:

This case highlights the diagnostic challenge of abdominal cocoon, especially in the absence of previous abdominal pathology. CT imaging may demonstrate the 'cauliflower sign' or clustered bowel loops, but lacks specificity [4]. Our approach included a comprehensive differential diagnosis, including 1. Primary Gastrointestinal Causes: Tuberculous peritonitis (excluded by negative PCR, no ascites), Crohn's disease (excluded by normal CRP, no wall thickening), Peritoneal carcinomatosis. 2.Endocrine and metabolic disorders: Diabetic autonomic neuropathy, hyperthyroidism, adrenal insufficiency, and paraneoplastic syndromes were considered and ruled out through targeted laboratory evaluations. Endocrine disorders account for less than 5% of obstruction-like symptoms [8].

Laparoscopy allowed for both diagnosis and treatment with minimal morbidity [5,6]. Compared to the traditional open approach, laparoscopy reduces recovery time and postoperative complications.

To our knowledge, only two previously reported cases involved endocrine workup in patients with abdominal cocoon [9,10], making our case unique.

Conclusion:

Abdominal cocoon should be considered in young patients with unexplained small bowel obstruction. Laparoscopy is a valuable tool for both diagnosis and definitive treatment, even in rare presentations.

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