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Abdominal Cocooning as a Cause of Acute Intestinal Obstruction: A Case Report and Literature Review

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Authors' contributions

This work was carried out in collaboration among all authors. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

Abdominal cocooning syndrome-related acute intestinal blockage without any underlying co-morbidities is reported in this instance. One month of abdominal pain was the main complaint of a forty-year-old man who came to the emergency room. Since two days ago, he has also complained of spells of vomiting. Surgery was scheduled after a CT scan of the abdomen and pelvis. Plans called for an exploratory laparotomy. Histopathology examined the excised sac and found fibrocollagen exudates with lymphocyte infiltration and plasma cell infiltration. The sac had a fibrous band that primarily covered the distal ileum and a little portion of the colon. Adhesions were removed and the bowel's patency was assessed. No problems arose following the procedure.

Keywords: Abdominal cocooning syndrome; acute intestinal obstruction; computerized tomography; emergency laparotomy; fibrocollagenous tissue.

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ABBREVIATIONS

ACS : Abdominal Cocooning Syndrome
USG : Ultra Sonogram
CT : Computerized Tomography
NG Tube : Nasogastric Tube
WBC : White Blood Cells

1. INTRODUCTION

A dense fibrocollagen membrane-induced small intestinal encapsulation, known as an abdominal cocoon, can result in either acute or chronic small bowel obstruction. Owtschinnikow first described it as peritonitis chronic fibrosain capsulata in 1907, and Foo followed suit in 1978 with the name abdominal cocoon [1]. Though a small number of cases involving males have also been documented in the literature, it is more frequently observed in teenage girls in tropical and subtropical regions [2.]

2. CASE REPORT

A forty-year-old man arrived at the emergency room complaining of chief complaints of abdominal discomfort. It was a lovely, acute presentation that had been going on for a month, with slow advancement that had been building over the previous three days and relief on a supine position. connected to a history of three episodes of vomiting that included food particles stained two days before the patient arrived at the emergency room; there was no history of fever, constipation, or loose stools. His prior episode occurred fifteen days ago, for which he was taken to a nearby hospital and treated conservatively with IV fluids and painkillers. No prior history of surgery or co-morbidities without a history of addiction during examination, the patient had tachycardia, hypotension, and signs of dehydration. An examination of the abdomen demonstrated.

Right iliac fossa tenderness without guarding and stiffness during the rectal examination, bloating was observed without any development or bleeding. As seen in Figs. 1 and 2, the patient had an initial fluid resuscitation with a nasogastric tube inserted, zero oral medication, and antibiotics. The patient also had an abdomen and pelvic CT scan.

3. TREATMENT PLAN

Primary resuscitation of the patient involved intravenous fluids, the insertion of a nasogastric tube, the insertion of a flatus tube, and a conservative management plan because the patient was symptomatic and did not show improvement. An emergency laparotomy was then planned, and the results, as shown in the Fig. 3, indicated that the patient's encapsulated cocooning was excised, interbowel loop adhesions were removed, and the patency of the bowel was checked from duodenal jejunal flexure to the ileocecal junction.

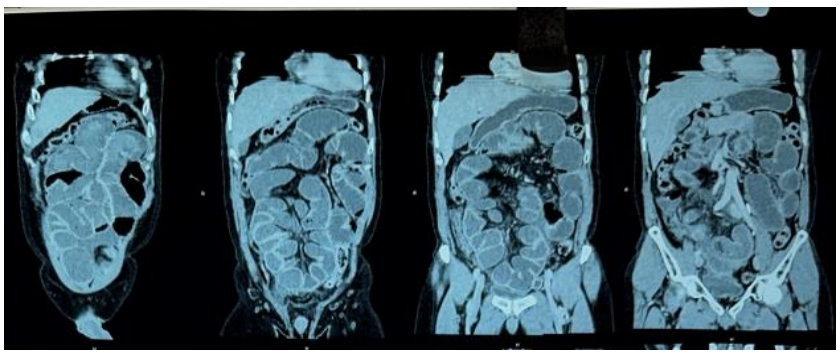

Fig. 1. A coronal slice of the CT scan of the belly and pelvis demonstrating the intestinal loops' matting and clumping in the abdomen's center. Loops are embedded in a thin-walled sac that has localized fluid collection; the sac usually contains the proximal portion of the jejunum and the duodenojejunal flexure

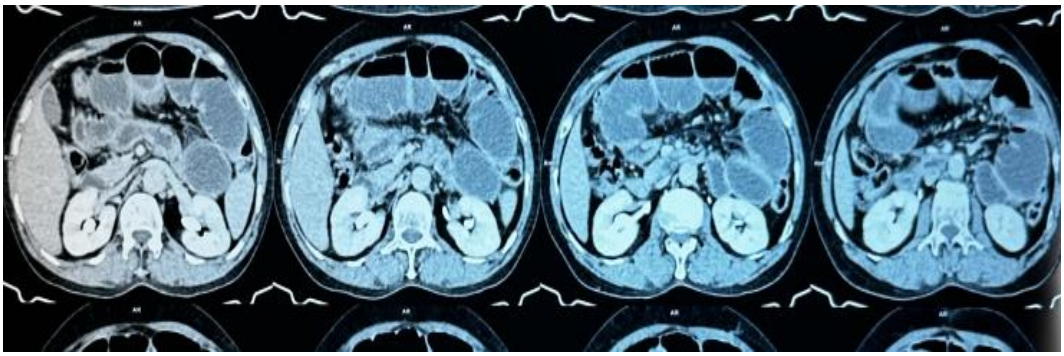

Fig. 2. The similar findings in axial section of CT abdomen and pelvis

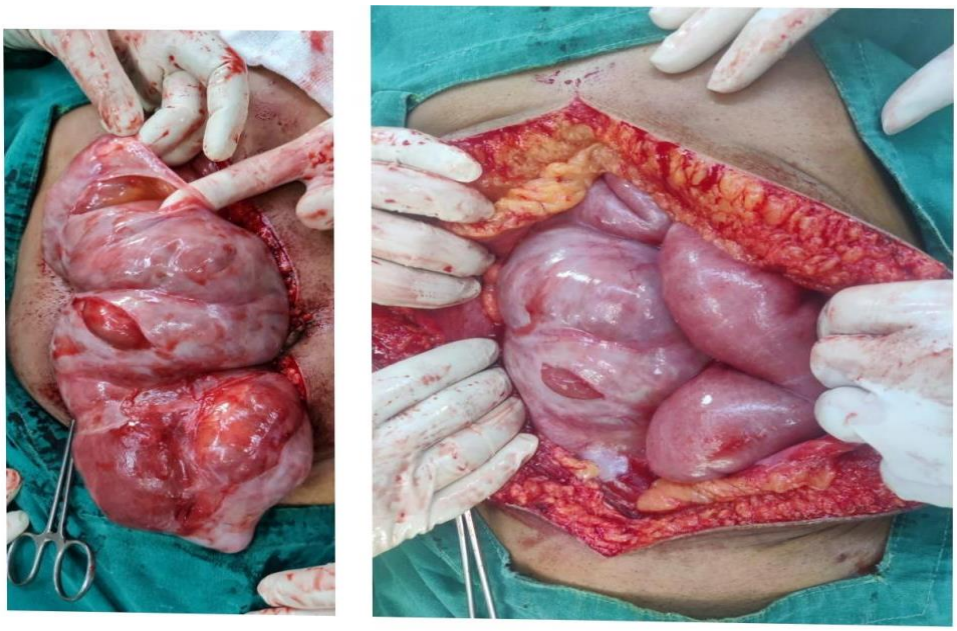

Fig. 3. Showing intraoperative findings

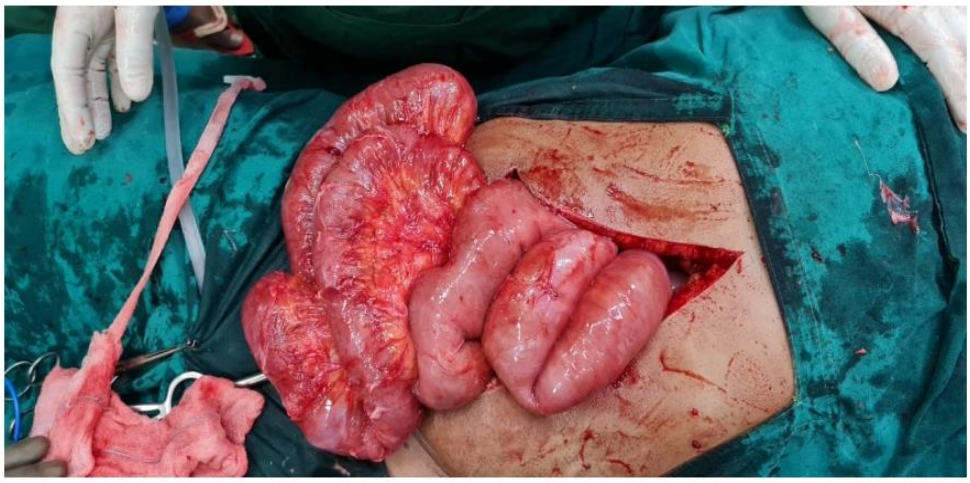

Fig. 4. Deuodenojejunal flexure to ileocecal junction post sac excision image

Intraoperative findings: Cocconing was observed surrounding the bowel loops with intrabowel loop adhesions and a fluid collection sac that was primarily made up of the distal duodenal segments and the proximal jejunum. Fig. 4 shows the post-sac excision images after cocooning was removed, adhesions were freed, and a bowel run-over was performed from the deuodenojejunal flexure to the ileocecal junction. Studies on the excised sac sent to histopathology revealed No significant evidence of malignancy was found despite thickened fibrocollagenous deposits with lymphocytic infiltration and plasma cell infiltration.

Post operative care: Recovery following surgery was outstanding. On pod 2, the nasogastric tube was removed. On pod 4, oral sips were used for feedings following bowel movements. On pod 7, the patient was released after all sutures had been removed. The patient had no complaints following surgery.

4. DISCUSSION

With underlying chronic etiology. Encapsulating peritonitis (SEP) is an acquired condition. Prior abdominal surgery or peritonitis, chronic ambulatory peritoneal dialysis and prolonged use of practolol are the main causative factors [3]. Cocooning syndrome previously referred as encapsulating peritonitis is a rare clinical presentation of acute intestinal obstruction. It usually occurs in young female [4] other conditions such as history of ventriculoperitoneal and peritoneovenous shunts, sarcoidosis, cirrhosis, systemic lupus erythematosus, propranolol therapy for constrictive pericarditis, fibroid uterus, endometrium or tumor of ovary, and recurrent peritonitis have also been implicated [5]. It may be mistaken with abdominal tuberculosis, clinical manifestations are non-specific and vary from individuals, and hence the diagnosis is rarely made preoperatively, it is often diagnosed at the time of laparotomy or autopsy accidently. The condition is usually asymptomatic, a small percent of patients' symptoms are non-specific, such as abdominal pain, nausea, abdominal fullness, vomiting, an abdominal mass and bowel obstruction, but also shows primary infertility in female, which is usually misdiagnosed as chronic appendicitis, incomplete intestinal obstruction, ovarian cyst torsion and so on. [6].During surgery, excision of the thick membrane and lysis of adhesions were carefully performed to release the small intestine. Postsurgical recovery in most cases was smooth, and there was no recurrence during a follow-up period of 3 months to 9 years [7]. Anecdotal reports of a preoperative diagnosis of peritoneal encapsulation being established, in the majority of cases this is fortuitous particularly in the absence of discerning clinical signs. However, a better awareness of this condition with appropriate use of imaging techniques may facilitate preoperative diagnosis [8,9].

The male to female ratio was approximately 1.2:1. The mean age at diagnosis was 33 years [10]. The main clinical manifestations included recurrent acute or chronic intestinal obstruction in 147 cases (72.4%), abdominal mass in 53 cases (26.1%) [11]. Of the 203 cases, abdominal plain X-ray were performed in 163, B-ultrasound in 85, CT in 68 and barium meal in 32 cases, however, only 6 cases (3.0%) were diagnosed as abdominal cocoon preoperatively. All the cases received operations included partial or total excision of the membrane and enterolysis in 172 cases (84.7%), together with bowel resection in 34 cases (16.7%) and appendectomy in 51 cases (25.1%). Postoperative complications included recurrent obstruction in 55, and death in 11 cases (5.4%) [12,13].

5. CONCLUSION

As a result, cocooning syndrome is a rare condition that is typically diagnosed during surgery. Early management is recommended to prevent strangling, and caution must be used when dissecting the sac to prevent intestinal damage.

Recurrence is generally infrequent. This instance involves an elderly male whose etiology is unknown; similarly, it typically affects young females who have an underlying ailment or cause.

CONSENT

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

ETHICAL APPROVAL

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

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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