

## Abdominal Cocoon: A Rare Cause of Intestinal Obstruction: A Case Report.

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**Abstract:** The abdominal cocoon was described as a rare condition characterised by small bowel encapsulation leading to intestinal obstruction. In it a part or whole of small bowel is encapsulated within a dense fibrous membrane. We report a young male who presented with intestinal obstruction with a mass palpable on abdominal examination. At surgery the entire small bowel was found to be encased within a dense fibrous sac and the diagnosis of abdominal cocoon was made. The sac was excised and the gut interloop adhesions were lysed. Outcome was satisfactory.

### INTRODUCTION

Abdominal cocoon is a rare condition that refers to total or partial encapsulation of the small bowel by a fibrocollagenous membrane or cocoon with local inflammatory infiltrate leading to acute or chronic bowel obstruction<sup>1</sup>. It was first described by Owtschinnikow in 1907 as "peritonitis chronica fibrosa capsulata"<sup>2</sup> and termed "abdominal cocoon" by Foo in 1978.<sup>2</sup> The condition is acquired and the cause is usually unknown. Most cases are diagnosed incidentally at laparotomy<sup>3</sup>. We present a rare case of a young male presenting with abdominal cocoon leading to recurrent intestinal obstruction.

### CASE REPORT

A 45 year old male presented in the Surgery emergency with complaint of abdominal pain and distension for the past 5 days. Patient gave past history of similar condition 6 months back which was managed conservatively. Patient gave history of constipation since 5 days. Patient was afebrile. There was history of 3 vomiting episodes. Patient was non smoker, vegetarian. There was no history any medical disease in the family. On admission pulse was 72/min, BP 140/90mm Hg, body temperature 100°F. Systemic examination revealed no abnormalities. Examination of the abdomen revealed distension, diffuse pain and hyperactive bowel sounds. A mass was palpable in the periumbilical region which was non tender and 12x9 cm in size approximately. Plain X-ray abdomen in the erect posture showed multiple dilated gut loops and no gas under the dome of diaphragm. On abdominal computerized tomography (CT) dilated small bowel loops arranged adjacent to each other forming a mass were seen along with fluid collection in the mesentery. The provisional diagnosis of intestinal obstruction was made. Exploratory laparotomy through a mid line incision was performed. It revealed a cystic mass [Fig 1] adherent to the abdominal wall. On tapping clear fluid came out. Around 500 ml fluid was aspirated. Mass was found to be covered by a dense white fibrous membrane [Fig 2]. On opening the mass small gut coils were found to be encased inside. Adhesiolysis was performed to release the gut loops. There was present obstruction in the mid-ileal region. Approximately 10 cm gut was resected and anastomosed. The intestinal content was drawn off into the colon. The white fibrous membrane pieces were sent for histopathology examination which revealed chronic non specific inflammation. Post operative course was uneventful.

### DISCUSSION

Abdominal cocoon may be classified into primary or idiopathic and secondary forms<sup>4</sup>. Primary abdominal cocoon occurs mainly in young women from tropical and subtropical zones. Although retrograde menstruation with or without viral infection of the fallopian tubes has been suggested as a possible cause<sup>4,5</sup>, it does not account for the occurrence of abdominal cocoon in males. Secondary abdominal cocoon is apparently associated with predisposing factors, such as recurrent peritonitis, intake of intraperitoneal irritants as antibiotics and beta blockers, chronic ambulatory peritoneal dialysis (CAPD), sarcoidosis, familial Mediterranean fever, carcinoid syndrome, exposure to asbestos, and



Fig. 1: Cystic mass of Cocoon adherent to the abdominal wall



Fig.2: Dense fibrous membrane encasing the cocoon

autoimmune disease<sup>4,5</sup>. The clinical presentation of abdominal cocoon includes acute, sub acute, or chronic intestinal obstruction, abdominal distension, nausea, and vomiting<sup>5</sup>. Patients usually complain of recurrent attacks of intestinal obstruction<sup>6</sup>. Some patients are asymptomatic. An accurate diagnosis is difficult to make preoperatively because findings on biochemical investigations are usually normal, and imaging findings are nonspecific<sup>4</sup>, although plain abdominal X-ray film may show air-fluid levels. In the rare reports of the CT appearance of abdominal cocoon, adherent small bowel loops encased within a thick enhancing peritoneal membrane were visualized<sup>4</sup>. In the cases of abdominal cocoon described in the literature to date, the diagnosis was made either during surgery for unrelated reasons (in asymptomatic patients) or at exploratory laparotomy (in patients who presented with bowel obstruction). The typical finding at surgery is a conglomeration of small bowel loops encased in a dense white membrane<sup>4</sup>. Treatment, as in the present case, consists of excision of the peritoneal sac with lysis of the interloop adhesions. Bowel resection is done if a nonviable segment is found<sup>4</sup>.

### CONCLUSION

A high index of suspicion is required in the absence of other possible causes of the symptoms of abdominal obstruction. Treatment consists of excision of the peritoneal sac and lysis of the interloop adhesions. Outcome is generally good.

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