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**Case Report**

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# Abdominal cocoon

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## ABSTRACT

Cocoon abdomen is relatively a rare entity that is encountered less often during our surgical practice and is usually seen in young females. We present two cases of abdominal cocoon in middle age and elderly males both having different clinical presentations and management. Firstly, we had a 34 years male was admitted with complaints of diffuse abdominal pain and obstipation for 3 days. Abdomen was grossly distended with sluggish bowel sounds and computed tomography (CT) was suggestive of dilated small bowel loops. Laparotomy revealed a thin peritoneal covering encapsulating the small bowel loops and a band arising from the right parietal wall to the ileum. Band release and adhesiolysis was performed. He had an uneventful post-operative recovery and is on follow up now. Our second patient was a 60 years male, who presented with diffuse abdominal pain and distension for 2 weeks and vomiting for 4 days. There was abdominal distension, visible intestinal persistalsis, fullness of the flanks, exaggerated bowel sounds and a irreducible right inguinal hernia. CT revealed obstructed right inguinal hernia with large bowel as content. The right inguinal region was explored and a thick shiny membrane was found covering the contents of the sac. After adhesiolysis and herniorraphy, patient initially recovered well, but later succumbed due to medical causes unrelated to surgery. It is clear that both these cases represent two distinct clinical spectrum of a similar pathological process which has to be considered as one of the differential diagnoses in patients with equivocal clinical findings.

**Keywords:** Abdominal cocoon, Male, Peritoneal covering, Adhesiolysis

## INTRODUCTION

Cocoon abdomen is the encapsulation of the abdominal organs, usually the bowel by a thin peritoneal covering and is an unusual cause of intestinal obstruction in adults. It can be primary idiopathic often seen in young females and or secondary (most common) due to other causes, frequently due to abdominal tuberculosis.

We present two cases of primary abdominal cocoon, in middle age and elderly males, which are less often encountered in our surgical practice.[1]

## CASE REPORT

### *Case 1*

A 34 years male was admitted to our emergency department with diffuse colicky abdominal pain and inability to pass stools and flatusfor 3 days. On examination there was tachycardia, gross abdominal distention and bowel sounds were sluggish. CT scan demonstrated dilated small bowel loops suggestive of small bowel obstruction and hence emergency laparotomy was done, which revealed a thin peritoneal covering encapsulating the small bowel loops (Figure 1) and a band arising from the right parietal wall to the ileum (Figure 2) causing intestinal obstruction. We then proceeded with

bandrelease, adhesiolysis (Figure 3) and decompression of the bowel. Post-operative period was uneventful and patient was discharged after a week. He is on regular follow up now for the recurrence of his symptoms.

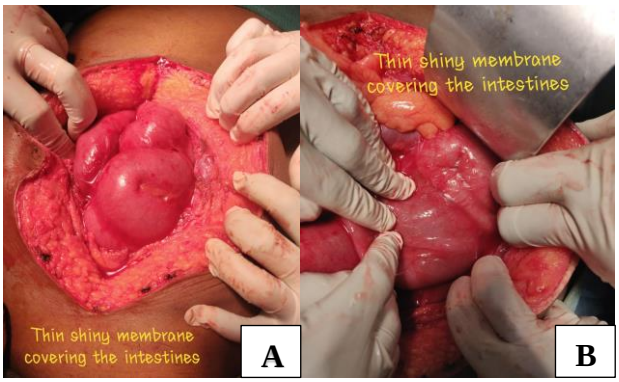


**Figure 1: Thin shiny membrane covering the intestines.**

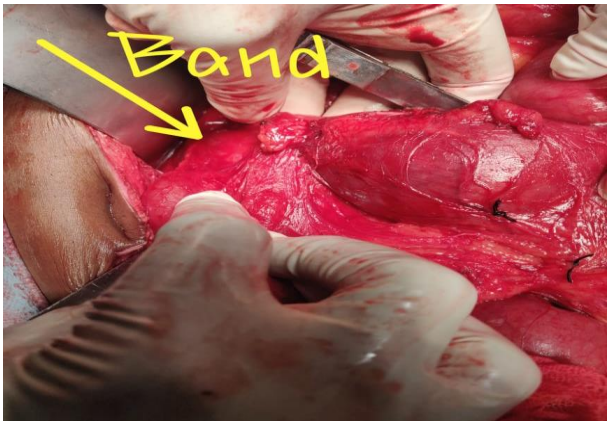


**Figure 2: A band arising from the right.**

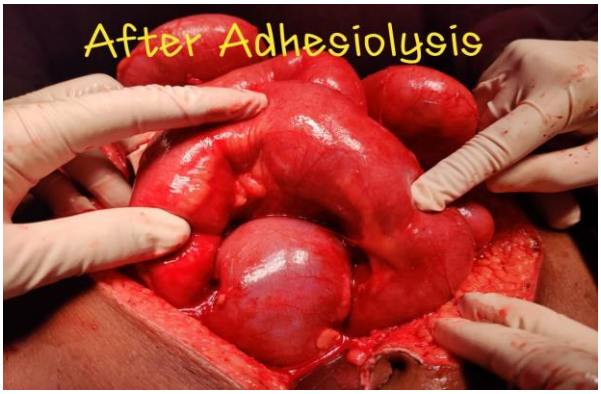


**Figure 3: After adhesiolysisparietal wall to the ileum.**

***Case 2***

A 60 years male presented to our outpatient department with complaints of diffuse abdominal pain and abdominal distension for 2 weeks and vomiting for 4 days. He gave a history right inguinal swelling for the past 1 year which has now become irreducible for the past 2 weeks. On examination there was diffuse abdominal distension, fullness of the flanks, visible intestinal peristalsis,exaggerated bowel sounds and an irreducible right inguinal hernia extending to the scrotum.CT scan revealed obstructed right inguinal hernia with large bowel as content. The right inguinal regionwas explored using a 'J' shaped incision and thecremasteric box was opened. On opening the sac, a thick shiny membrane was found covering a part of the terminal ileum, ascending colon, whole of caecum and appendix (Figure 4). After careful dissection, adhesions were released, contentswere reduced, excess was sac excised and herniorraphy was done. Postoperatively patient initially recovered well without any undue circumstances but later succumbed due tobilateralparaseptal emphysema with pleural effusion, hypoalbuminemia and thrombocytopenia due to medical causes unrelated to surgery.

Post-operatively both our patients were evaluated for tuberculous abdomen which turned out to be negative, implying the diagnosis to be primary cocoon abdomen.

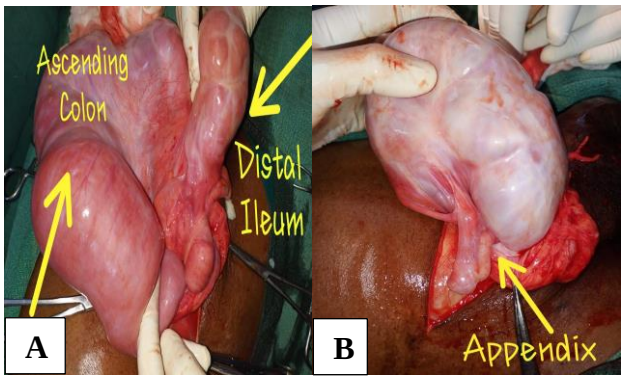


**Figure 4: Thick shiny membrane covering the contents of the sac, ascending colon, distal ileum, and appendix.**

## DISCUSSION

Abdominal cocoon refers to complete or partial encapsulation by a dense fibrocollagenousmembrane of the small bowel ± other visceras causing acute or chronic intestinal obstruction and is also known as peritonitis chronic fibrosaincapsulata orsclerosing encapsulating peritonitis.[2]

It can be primary idiopathic, hypothesized to be due to subclinical primary viral peritonitis or retrograde menstruation in young adolescent girls or secondary due to tuberculous peritonitis (most common), peritoneal dialysis, liver cirrhosis, practolol therapy, use of ventriculo-peritoneal shunt, familial mediterranean fever,protein S deficiency, foreign body etc.

Due to any of the above-mentioned causes, a chronic peritoneal inflammation and a intraperitoneal fibrin like material is released by fibrogenic cytokines from the inflammatory cells forming thick shiny membrane

encasing the whole or part of the bowel giving it a characteristic appearance from which it has derived its name.[2]

Four-types of abdominal cocoon have been described based on the extent of involvement: (a) type I- only a part of small intestine is involved; (b) type II- entire small bowel is involved; (c) type III- small bowel + any other visceral organs are involved; and (d) type IV- in neuroendocrine tumours where the entire peritoneal lining is involved

CT scanthe primary imaging modality of choice and shows clumping of the entire small bowel enclosed by a soft tissue density mantle located at the midpoint of abdominal cavity. Serpentine or concertina like configuration of the dilated small bowel loops in a fixed 'U' shaped cluster or cauliflower sign is seen in barium study, whereas ultrasonogram shows, a echogenic mass with a dilated small bowel loop encircled by a thick rim of hypoechoic fibrous membrane.[3]

Its differential diagnoses include congenital peritoneal encapsulation, peritonitis carcinomatosa, pseudomyxoma peritonei and peritoneal mesothelioma.[3]

Histopathological examination of the membrane would reveal a thickened fibrocollagenous tissue with or without lymphocytic and plasma cell infiltrates.[4]

Asymptomatic or patients with mild symptoms are usually treated conservatively withintestinal rest, nasogastric intubation, and enteral or parenteral nutritional support while moderate to severe cases need both medical (corticosteroid and tamoxifen therapy) and surgical treatment.[5] Ideally surgical excision of the entire membrane with laparoscopic approach is a better choice if the bowel is viable and resection if the bowel is devitalised.[6]

## CONCLUSION

Diagnostic laparoscopy must always be done in patients suspected to have intestinal obstruction due to adhesions and if the diagnosis is confirmed, laparoscopic adhesiolysis should be the treatment modality of choice in order to reduce the incidence of recurrence after surgery. In areas of higher prevalence abdominal tuberculosis should be ruled out in any case of cocoon abdomen, especially in developing countries, also keeping in mind the other rare causes.

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