

## A case report on cocoon abdomen

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### Abstract

Abdominal Cocoon is one of the rare causes of intestinal obstruction. A complete or partial small bowel encapsulation caused by thick fibro collagenous membrane. Cocoon Abdomen is otherwise called Sclerosing Encapsulating Peritonitis (SEP). This SEP is divided into two: abdominal cocoon (AC) also known as idiopathic or primary sclerosing encapsulating peritonitis, which is extremely a rare and secondary sclerosing encapsulating peritonitis, which is a common one. Symptoms are nonspecific and preoperative diagnosis was extremely difficult. Surgery is very essential to take membrane samples that confirm diagnosis and for treatment.

**Keywords:** Abdomen; Abdominal cocoon; Intestinal obstruction; Computed tomography; Fibro collagenous membrane

### 1. Introduction

Encapsulating peritoneal sclerosing is a medical condition that causes the encapsulation of feces within a thickened fibro collagenous peritoneal membrane, which leads to recurrent episodes of bowel obstruction. The etiology and pathogenesis were not yet elucidated<sup>(4)</sup>. It is believed that a chronic intra-abdominal fibro inflammatory process that results in formation of fibrous tissues sheets that cover, fix and ultimately constrict the gut compromising its motility. Its leads to marbles, thickened and leathery fibro- connective tissue sheath like structure that envelops small intestine in the form of cocoon. Common causes of abdominal cocoon were peritoneal dialysis, tuberculosis, malignancy, pre-operative procedures etc and rare causes were cirrhosis, endometriosis, systemic lupus erythematosus, whipple's disease etc.<sup>(5)</sup>.

The diagnosis of cocoon abdomen has to be suspected in an appropriate clinical setting taking into account medical and surgical history along with radiology findings. Abdominal X-rays, Ultrasonography (USG), Small Bowel Barium Studies, Contrast Enhanced Computed Tomography (CECT), and contrast enhanced Magnetic Resonance Imaging (MRI)etc. these may help in establishing a convincing preoperative diagnosis<sup>(5)</sup>.

Complications can be quite rare, but they have potential to leads serious issues that can cause harm and even death. It's important to be cautions and take steps to prevent them<sup>(4)</sup>.

### 2. Case report

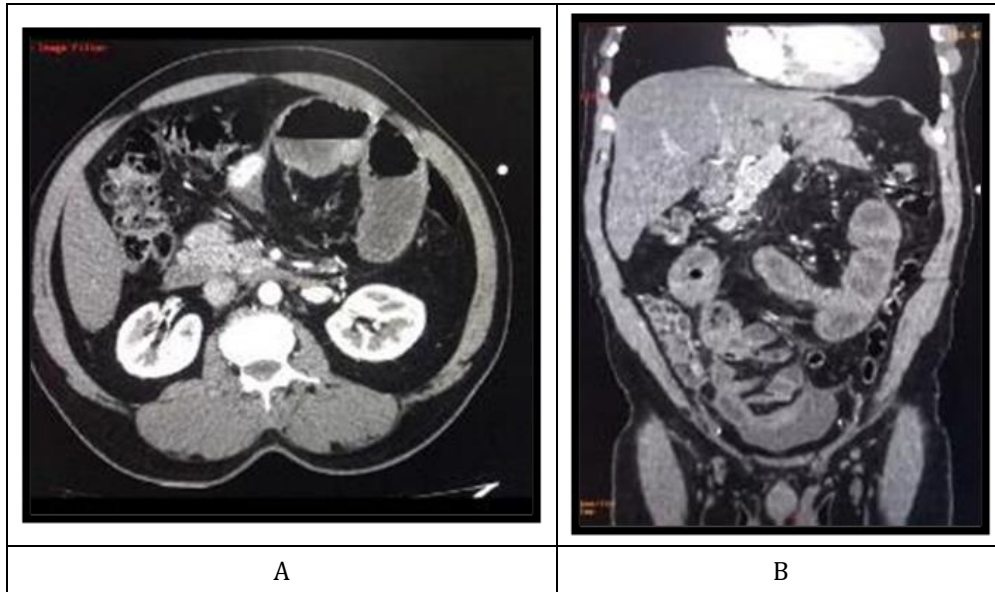
A 59-year-old male patient admitted in general surgery department with complaints of abdominal pain and vomiting. Patient had a medical history of hypertension and on treatment with T. VALSARTAN (80mg P/O 1-0-1).

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On investigation, CECT abdomen and pelvis report shows an abnormally located cluster of small bowel loops located in an apparent hernia sac within the peritoneal cavity associated converging, twisting and prominent mesenteric vessels. (Fig 1)

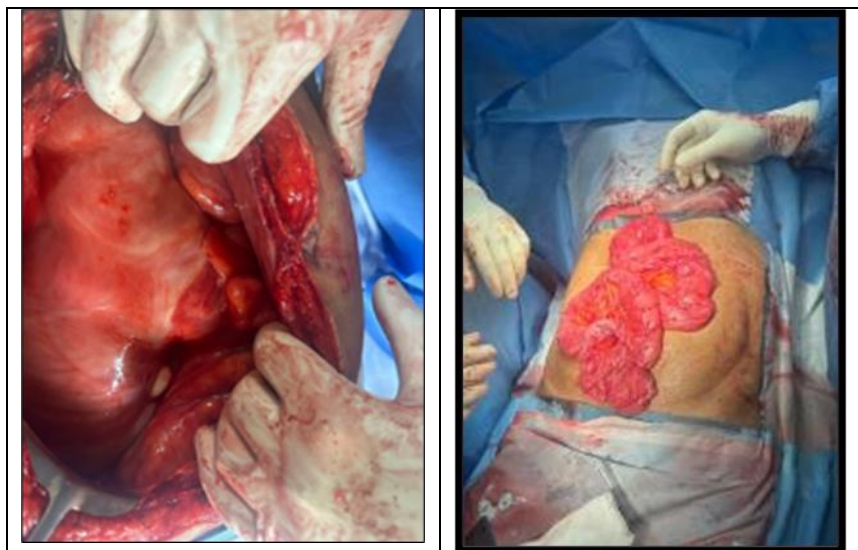
Features are consistent with hernia involving small bowel loops- possibly mesenteric / greater omentum related.

Bowel wall edema, luminal dilatation predominantly the jejuna loops- s/o bowel obstruction.



**Figure 1** Abdominal CT scan showed small bowel loops cluster at the mid abdomen and are surrounded by a thick enhancing membrane forming sac

Patient was admitted for 10 days and on 3<sup>rd</sup> day of admission surgical procedure was done. He was administered with Inj. TETANUS TOXOID (0.5 ml, IM), Inj. XYLOCAINE (0.1ml, ID), T. AMLODIPINE (5mg, P/O) & exploratory laprotomy + adhesiolysis was done. (Fig 2) Procedure findings was small bowel enclosed with thick peritoneum with severe adhesions – Abdominal Cocoon.



**Figure 2** Intraoperative aspect of Abdominal cocoon

Then patient was treated with Inj. BARYZONE (CEFEPERAZONE+SULBACTUM, 1.5g, IV, BD), Inj. PANTOPRAZOLE (40mg, IV, OD), Inj. PARACETAMOL (1g, IV, Q8H), T.NEXOVAS (CILNIDIPINE, 10mg, P/O, 1-0-1), T. VALSARTAN (80mg, P/O, BD), SYP. ASCORIL (AMBROXOL+LEVOSALBUTAMOL+GUAIFENESIN, 15ml, P/O, TDS).

After 10 days of treatment, patient was clinically better and hence discharged with the following medications. T. SOMPRAZ L (LEVOSULPRIDE+ESOMEPRAZOLE, 1-0-0 ×10 days), T. SIMETHICONE (1-0-1 × 5 days), LACTIFIBER POWDER 1 SCOOP IN ONE GLASS OF WATER (HS), ENZOHEAL OINTMENT (BROMELIN+TRYPSIN+RUTOSIDE, L/A), T. NEXOVAS (CILNIDIPINE, 10mg, P/O, 1-0-1), T. VALSARTAN (80mg, P/O, 1-0-1), T. ZERAPOD (CEFPODOXIME PROXETIL, 200mg, P/O, 1-0-1 for 5 days).

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### 3. Discussion

Cocoon abdomen is one of the rare medical conditions in which the bowel and internal organs are covered with thick fibrocollagenous membrane. The fibrocollagenous membrane can extend to involve other organs like large intestine, liver and stomach. Clinical presentation is nonspecific and sometimes they may cause recurrent episodes of acute, subacute or chronic small bowel obstruction, weight loss, nausea, palpable abdominal mass and some patients were asymptomatic. Peritoneal Encapsulation was first described by Cleland in 1868. PE is commonly associated with intestinal malrotation, cryptorchidism and hernia. Symptoms were nonspecific and preoperative diagnosis is very difficult. In most cases, this condition was diagnosed at the time of laprotomy. Sometimes Contrast Enhanced Computed Tomography (CECT) may be helpful in preoperative diagnosis. Surgical procedure is the main treatment option for this condition<sup>(6)</sup>.

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### 4. Conclusion

Abdominal cocoon syndrome is a rare cause of intestinal obstruction. A complete or partial small bowel encapsulation caused by thick fibrocollagenous membrane. Cocoon Abdomen is otherwise called Sclerosing Encapsulating Peritonitis (SEP). The etiology and pathogenesis were not yet understood. Unlike secondary SEP, where there is a definitive etiology causes of disease such as peritoneal dialysis, pelvic inflammatory disease, autoimmune disease, peritoneal shunts, and beta blockers have been reported as a cause of secondary SEP. SEP is categorized into three types depending on the extent of the membrane encasement. Type 1 is the small bowel that is partially encased by the membrane, type 2 is the whole small bowel is encased by the membrane and type 3 is the whole bowel and intraperitoneal organs are encased by the membrane.

Detailed history and physical examination are very helpful, mainly in the case of secondary SEP. Radiological signs of SEP can verify the diagnosis preoperatively, hence giving the patient appropriate treatment for the condition. In operative finding of a thick membrane covering the bowel is the standard for diagnosis. Most primary SEPs are managed with surgical exploration and excision of the sac. i.e; Simple removal of the membrane gives a good outcome.

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### Compliance with ethical standards

#### *Disclosure of conflict of interest*

No conflict of interest to be disclosed.

#### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

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