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CASE IMAGE

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# Tuberculous abdominal cocoon: A rare variant of peritonitis

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**Abstract**

Cocoon abdomen is an uncommon condition characterized by bowel entrapment in a cocoon-like membrane. Its clinical presentation is usually non-specific. Rarely, it may present with perforation peritonitis. The therapeutic approach depends on the stage of the disease. Surgery is essentially reserved for those with acute surgical complications.

**KEYWORDS**

cocoon abdomen, perforation peritonitis, sclerosing encapsulating peritonitis, tuberculosis

## 1 | CLINICAL IMAGE

A 52-year-old man presented to the emergency with severe abdominal pain and non-bilious emesis. One month prior to admission, he suffered from colicky abdominal pain and weight loss.

The patient was not previously vaccinated with BCG and did not report close contact to infectious patients with tuberculosis.[1,2] On admission, the patient was febrile: 40°C. Physical examination revealed abdominal distension, muscular rigidity, rebound tenderness, and abundant ascites. CT scan of the abdomen showed small bowel loops clumped together in the central abdomen encased in a sac-like structure with surrounding ascites and enhanced and thickened peritoneum (Figure 1A,B). The patient underwent ileocecal and membrane resection. Grossly, the ileocecal resection specimen showed a thick membranous layer engulfing the small intestine with perforation of the intestinal wall (Figure 1C,D). The excised encapsulating membrane was firm and whitish (Figure 2A). Histopathological examination revealed caseous granulomatous inflammation in the excised membranes and in the subserosa of the small intestine (Figure 2B–D). Currently, the patient is being treated with daily administration of Isoniazid, Rifampicin, Ethambutol, and Pyrazinamide for 2 months, followed by 4 months of daily dual therapy combining Isoniazid and Rifampicin. After antituberculosis treatment, the patient will be systematically monitored on an outpatient basis.

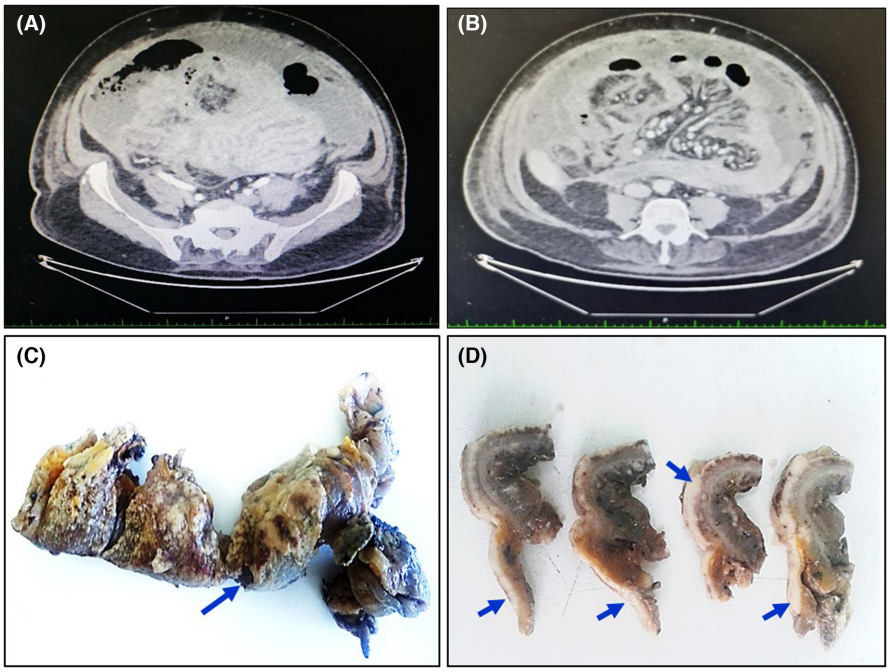


**FIGURE 1** (A and B) Computed tomography scan showed congregated small gut loops trapped in the massive ascites. It also demonstrated thickening of the bowel loops with a thick membranous layer engulfing the bowel. There was also a pneumoperitoneum secondary to the intestinal perforation and lymph node enlargement. (C) Macroscopic appearance of the ileocecal resection specimen showing a thick membranous layer engulfing the small intestine. Note the perforation of the intestinal wall (arrow). (D) Cut section of the small intestine revealing a thick whitish membranous layer engulfing the subserosa.

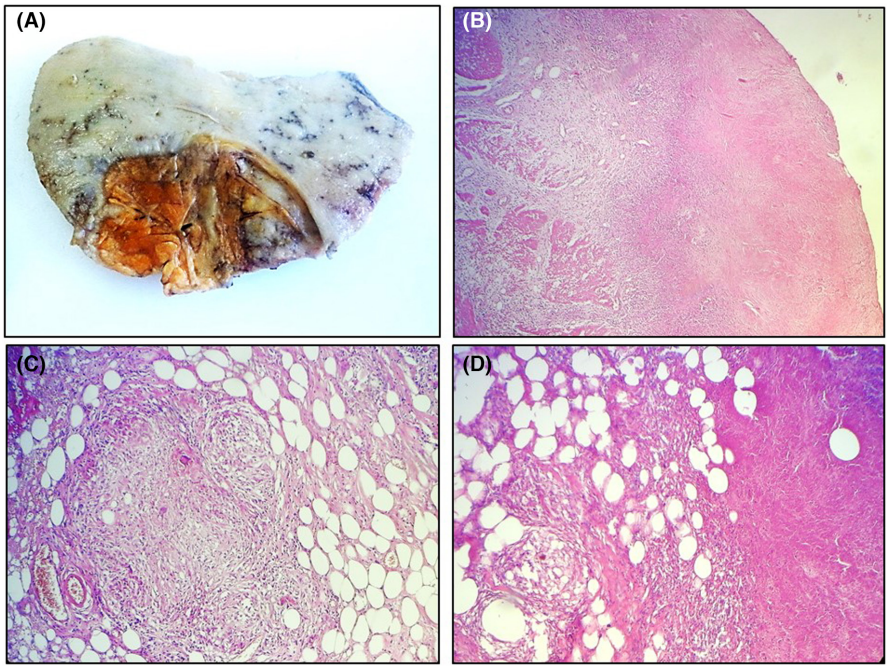


**FIGURE 2** (A) Macroscopic appearance of the excised encapsulating membrane. It was thick, firm in consistency and whitish. (B) Histopathological examination of the intestinal wall showing a granulomatous inflammation with large areas of caseous necrosis in the subserosa (Hematoxylin and eosin stain, magnification ×40). (C) Histopathological examination of the excised membranes showing a granulomatous inflammation, composed of epithelioid histiocytes accompanied by a variable number of multinucleated giant cells and lymphocytes (Hematoxylin and eosin stain, magnification ×200). (D) Necrotizing granulomatous inflammation, composed of epithelioid histiocytes surrounding a necrotic zone (caseous necrosis). (Hematoxylin and eosin, magnification × 200).

## AUTHOR CONTRIBUTIONS

Faten Limaiem and Sahir Omrani prepared, organized, wrote, and edited all aspects of the manuscript. Faten Limaiem prepared all of the histology figures in the manuscript. Fatma Medhioub, Mohamed Hajri, and Rached Bayar participated in the conception and design of the study, the acquisition of data, analysis and interpretation of the data. All authors contributed equally to

preparing the manuscript and participated in the final approval of the manuscript before its submission.

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## CONFLICT OF INTEREST
None declared.

## DATA AVAILABILITY STATEMENT
In accordance with the DFG Guidelines on the Handling of Research Data, we will make all data available upon request.

## ETHICAL STATEMENT
All procedures performed were in accordance with the ethical standards. The examination was made in accordance with the approved principles.

## CONSENT
Published with written consent of the patient.

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