

A Rare Reason of Intestinal Obstruction: Abdominal Cocoon Due to Tuberculosis

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Authors' contributions

This work was carried out in collaboration between all authors. Author MAA designed the study, and wrote the first draft of the manuscript. Authors HA and MFA managed the analyses of the study and managed the literature searches. All authors read and approved the final manuscript.

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Case Report

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ABSTRACT

The abdominal cocoon is a rare cause of intestinal obstruction. There are many causes in the etiology, tuberculosis is one of them. The abdominal cocoon is treated conservatively or surgically according to the degree of intestinal obstruction and etiology. For this reason, it is important to diagnose before treatment. Herein, We present a rare case of abdominal cocoon due to abdominal tuberculosis.

Keywords: Intestinal obstruction; abdominal cocoon; tuberculosis; sclerosing encapsulating peritonitis.

1. INTRODUCTION

Intestinal obstruction is a common condition in the clinic, and there are many reasons for etiology.

One of the rare causes of intestinal obstructions is sclerosing encapsulated peritonitis (SEP), which is the chronic inflammatory state of the peritoneum. Sclerosing encapsulating peritonitis is also referred to as abdominal cocoon. There

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are two forms, primer SEP and secondary SEP. Although the etiology of primary SEP is not completely known, chronic irritation of the peritoneum in the case of the secondary type is mentioned.

Abdominal cocoon is characterized by thickening of the peritoneum, and a thick, fibrotic, cocoon-like membrane is encasing some or all of the small intestine. The result of this condition is either partial or complete small bowel obstruction [1]. It can be either idiopathic or secondary. In the early stages, patients can be managed conservatively; however, surgical intervention is necessary for those with advanced stage intestinal obstruction. We present a rare case of abdominal cocoon due to abdominal tuberculosis. Tuberculous is one of the causes of secondary sclerosing encapsulating peritonitis. It should come to mind in the differential diagnosis.

2. CASE PRESENTATION

A 71-year-old male patient presented with complaints of loss of appetite, nausea, vomiting and 13 kg weight loss has occurred in the last three months. Thirty years ago, the patient had a small bowel Resection due to small bowel perforation. At that time, the diagnosis of small

bowel tuberculosis Was made in the pathological examination, but the patient refused to take treatment. On the physical examination, there was no evidence except mild distension and tenderness in the abdomen. Biochemical tests were normal except Ca 19.9 elevation. There was no malignant involvement in PET-CT. The t-spot test was positive; Abdominal computed tomography showed an enlarged intestine which with positive oral contrast surrounded by a thickened peritoneum [Fig. 1A-B], In addition, fluid was detected from the anterolateral side of the stomach to the encapsulation Extending from the pelvis [Fig. 1B]. The catheter was placed in this fluid, and the sample was sent From the fluid. Tuberculosis was confirmed. Adenosine deaminase level was elevated in the fluid And there was no atypical cell in the pathological examination. The patient who rejected the surgical option started anti-tuberculosis treatment.

3. DISCUSSION

Abdominal cocoon is a condition characterized by a thick and fibrotic cocoon-like membrane surrounding the small intestines. This fibroconnective tissue surrounding the small intestines may cause small intestinal obstruction [1].

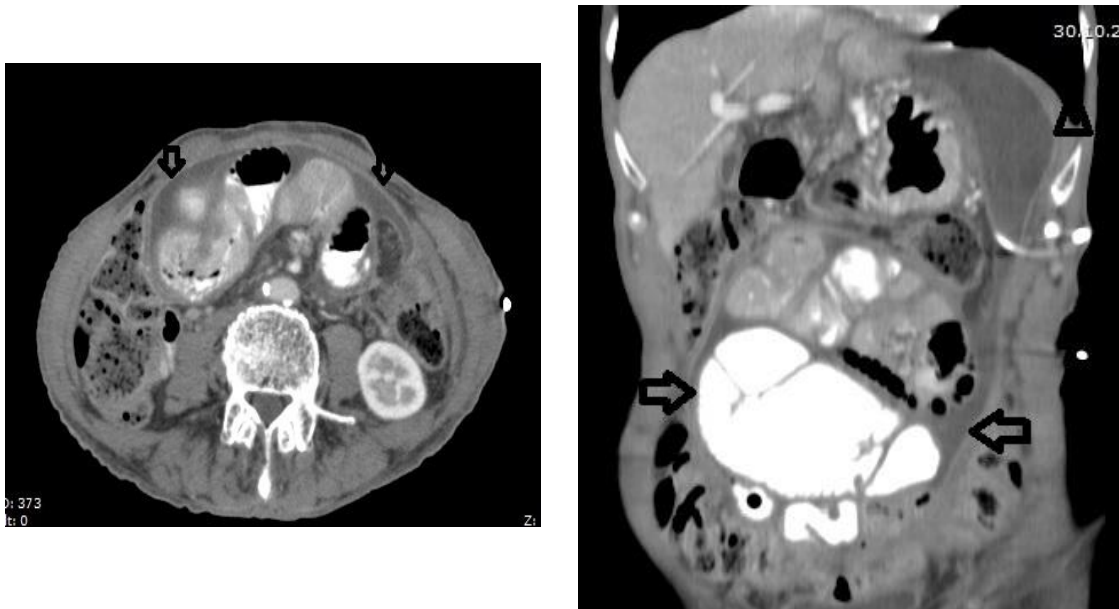


Fig. 1. A) Axial oral and IV contrast-enhanced CT shows dilated bowel loops encased thick peritoneal membrane (arrow). B) Coronal oral and IV contrast-enhanced CT shows dilated bowel loops encased thick peritoneal membrane (arrow). Fluid collection with Thick capsule is noted in the left upper quadrant (arrowheads)

For other conditions that small intestines are surrounded by a membrane; the terms primary or secondary sclerosing encapsulating peritonitis (SEP) or peritoneal encapsulation (PE) are also used apart from abdominal cocoon [2].

PE is a peritoneal developmental anomaly occurring in the early fetal period. Thus, inflammation is not mentioned. Generally, the condition is asymptomatic. SEP, on the other hand, is an inflammatory process which is triggered by a peritoneal inflammation. In SEP membrane can surround the whole or a part of small intestines while it may surround intraperitoneal organs; for example, stomach, colon, and liver [3,4].

SEP is classified as primary or secondary according to etiopathology. Primary SEP is tried to be explained with retrograde menstruation or retrograde peritonitis via fallopian tubes theories. However, those theories cannot explain why most of Primary SEP patients are male, premenstrual women or children [3,5].

Secondary SEP is a more common type, and many causes can be counted for etiology. Peritoneal dialysis, recurrent infective peritonitis, treatment with beta-adrenergic blockers, ventriculoperitoneal shunt, history of abdominal surgery, like our case, abdominal tuberculosis, sarcoidosis, familial Mediterranean fever, systemic lupus erythematosus, orthopedic liver transplantation, protein S deficiency, gastrointestinal malignancy, fibrogenic foreign material and luteinized ovarian thecomas [3,4].

We presented a case of an abdominal cocoon formed by tuberculosis. In the literature the majority of tuberculosis-linked abdominal cocoon cases have been reported from less developed countries, Especially from India. In a small number of case that reported from western countries, it is seen that Patients are migrating from Asia or Africa [6]. Our patient is born and grew in Turkey.

Low socioeconomic status, personal hygiene, insufficient nutrition, HIV infection, cirrhosis, and Diabetes may have effect on abdominal tuberculosis. There are three types of abdominal tuberculosis; a wet type which is characterized by ascites, a dry type characterized with adhesions and fibrotic type characterized by omental involvement and loculated ascites [7].

Although SEP is mostly asymptomatic, it may be faced with gastrointestinal obstruction findings.

Our case presented with incomplete gastrointestinal obstruction.

The best diagnostic modality is abdominal CT. Other causes of intestinal obstruction can be ruled out with CT. Peritoneal thickening, loculated fluid collections, intestinal loops located in the center of abdomen and calcifications may be seen with CT. Value of MRI for diagnosis is limited [1,8].

On barium images; the appearance of cauliflower formed by dilated intestinal loops accumulated in the central zone of the abdomen can be seen [2,8,9].

For therapy; if abdominal symptoms are not severe, resting the intestines, application of nasogastric tube decompression and conservative methods with parenteral or enteral feeding support are Preferred. Anti-tuberculosis treatment should be applied especially in case of abdominal cocoon due to tuberculosis.

Sharma V. et all. was proved that in case of abdominal cocoon due to tuberculosis, antituberculosis Therapy may make good effect on clinical recovery and take back of symptoms. In these patients, 4-drug therapy may be administered for six months or nine months according to the disease phase [7]. In cases that are occurring except abdominal tuberculosis; medications like tamoxifen, steroids, colchicine, azathioprine and mycophenolic acid can be used. Tamoxifen inhibits the fibroblastic Production of transforming growth factor beta, steroids inhibit collagen synthesis. On the other hand colchicine inhibits the Messenger RNA expression of transforming factor beta [3,4,5,10,11].

Another therapy option is releasing the adhesions, total excision of the membrane with partial small intestinal resection or without performing the resection. Small intestinal resection increases morbidity and mortality.

Sharma V. et all. Because of high morbidity and mortality, they have argued that the surgical option should be used only for patients who do not respond to treatment.

Kaushik R. et all. has made a report for six series of patients who went under surgery that the rate of the Post-Operative fistula was 80% and that the length of hospitalization was long. In case of diagnosing abdominal tuberculosis after surgery

standard antituberculosis should be added to therapy [12].

In patients with antituberculous therapy, intestinal obstruction may occur during follow-up process. If these patients do not respond to conservative treatment, surgery may be needed.

4. CONCLUSION

Abdominal cocoon is a rare entity which can relate with abdominal tuberculosis. The previous history of tuberculosis, associated lymph nodes, calcification, and ascites favor the diagnosis of tuberculosis. CT is the best imaging method to depict the whole picture of pathology.

CONSENT

An informed consent was obtained from the patient to confirm permission for publication of patient information. Protection of privacy was ensured during the entire writing process.

ETHICAL APPROVAL

It is not applicable.

COMPETING INTERESTS

Authors have declared that no competing interests exist.

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