



ORIGINAL RESEARCH PAPER

General Surgery

UNRAVELLING THE COCOON – A CASE REPORT ON TUBERCULOUS ABDOMEN

KEY WORDS: abdominal cocoon, sclerosing encapsulating peritonitis ,tuberculosis.

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ABSTRACT

The abdominal cocoon syndrome is described as a rare entity in which part or whole of the small bowel is enclosed in a fibrous membrane. This case report includes a 40 yr old perimenopausal female with abdominal distension ,provisionally diagnosed as ovarian cyst or peritoneal inclusion cyst in whom a diagnostic laparoscopy converted to laparotomy revealed an abdominal cocoon secondary to peritoneal tuberculosis. Patient was initiated on anti tubercular drugs.

INTRODUCTION:

Abdominal tuberculosis is one of the commonest forms of extrapulmonary tuberculosis, encountered in clinical practice. Among the various manifestations of abdominal tuberculosis, abdominal cocoon also referred to as sclerosing peritonitis or sclerosing encapsulating peritonitis is one of the most challenging and bizarre manifestation. Abdominal cocoon is not only one of the rare manifestation of abdominal tuberculosis but also a rare cause of intestinal obstruction . This condition is characterised by abnormal thickening and fibrosis of peritoneum with subsequent wrapping of the variable length of small bowel and sometimes, large bowel in a stack or concertina pattern .This condition is difficult to diagnose clinically but can be easily recognised by imaging. Early recognition allows early management and may prevent the need for operative intervention or bowel resection.

Case report:

40 year old thin built perimenopausal female with no known comorbidities presented with complaints of diffuse constant dull aching abdominal pain over 8 months with significant loss of weight, loss of appetite. There were no significant bowel, bladder or menstrual complaints. No history of contact with TB. No previous history of any abdominal surgeries in the past. The patient was clinically stable with mild pallor. On abdominal examination there was diffuse abdominal distension with no organomegaly. Per rectal and Per vaginal examination were normal. Routine laboratory investigations were within normal limits. Radiological investigations showed a 17x16 cm hypoechoic lesion in the pelvis extending into epigastric region probably an ovarian cyst/peritoneal inclusion. CECT abdomen and pevis showed a large thick walled non enhancing hypodense lesion of size 17x17 cm in the abdomen displacing bowel loops, no enhancing septations or solid components. Both ovaries normal, possibly peritoneal inclusion cyst (fig. 1)

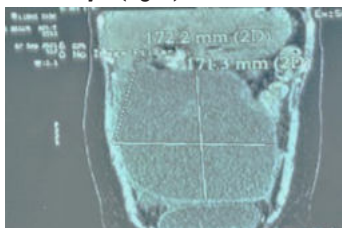


Fig. 1

Patient was planned for diagnostic laparoscopy and proceed with a provisional diagnosis of ovarian cyst./peritoneal inclusion cyst. However laparoscopy was abandoned since pneumoperitoneum could not be established as there was dense adhesions hence was converted to Laparotomy. Dense adhesions were noted with a solitary cyst of size 15x15 cm in the right paracolic gutter which ruptured during adhesiolysis and about 500ml of straw coloured fluid drained. A fibrous membrane encasing the bowel was noted and perioperative diagnosis of abdominal cocoon was made. (fig.2)



Figure 2. fibrous membrane encasing the bowel – abdominal cocoon

The cyst wall was sent for frozen section biopsy which revealed caseating granuloma. Histo pathological Examination showed fibrocollagenous cyst wall in which are seen numerous caseating granuloma interspersed with multinucleate and langhan type of giant cells .The intervening stroma shows fibrosis and lymphocytic infiltrates, ovarian parenchyma not made out. (FIG .3). On CBNAAT examination of cyst wall Mycobacterium tuberculosis was detected. Hence patient was started on category I antitubercular treatment.

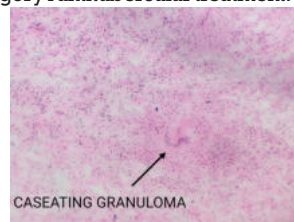


Figure 3, Post-op HPE of cyst wall showing caseating granuloma

DISCUSSION :

Encapsulating peritoneal sclerosis or Sclerosing Encapsulating

peritonitis most commonly known as abdominal cocoon was coined by Foo et al in 1978. Various etiology have been implicated such as previous laporotomy, the use of chronic ambulatory peritoneal dialysis, prolonged use drugs like of the β -blockers practolol/propranolol, ventriculoperitoneal shunts, peritonitis due to various causes, granulomatous diseases like sarcoidosis and tuberculosis, autoimmune diseases like systemic lupus erythematosus, viral infections, etc. Geographically, the condition is predominantly seen in the tropical regions and mainly in young females.

Abdominal cocoon involves predominant encasement of a part or entire small bowel by a thick, opaque, dense and fibrous membrane. Patient may present clinically with abdominal pain or variable degrees of intestinal obstruction with vomiting and abdominal distension and often a soft, nontender lump in mid-abdomen.

Types of abdominal cocoon

1. Primary (idiopathic)
2. Secondary - CAPD, TB, post liver or renal transplant, drugs, malignancy

The pathogenesis is not clearly stated except in patients with abdominal cocooning secondary to CAPD (continuous ambulatory peritoneal dialysis) which involves the following stages.

Stage I- Pre EPS – ascites due to increased peritoneal permeability.

Stage II- Chemical or bacterial peritonitis manifested as fever, loss of weight, loss of appetite, fatigue.

Stage III- Progressive encapsulation manifesting as sub acute or acute intestinal obstruction.

Stage IV- cocooning presenting as abdominal mass.

X-ray abdomen in erect or supine usually reveals mildly dilated small bowel loops with features of subacute to acute intestinal obstruction. Signs of tuberculosis on X-ray chest may be adjunctive in establishing the etiology.

Classic barium meal follow through include serpentine/ concertina pattern of dilated small bowel loops in a fixed U-shaped cluster or a "cauliflower sign" associated with delayed transit of contrast in small-intestine. Fluoroscopy may reveal failure of bowel loops to separate on application of intra-abdominal pressure.

Ultrasonographic findings include clustering of small bowel loops in anterior and middle part of abdominal cavity with narrow posterior base representing cauliflower pattern associated with mural thickening of bowel loops, altered bowel peristalsis, adherence to anterior abdominal wall and to each other, interloop fluid with echogenic strands, mesenteric/omental adenopathy and thin or thick membrane formation during the late stage of the disease. Bowel loop separation may not be achieved on applying pressure with ultrasound probe. Repeated scans may fail to reveal any change in the bowel loop appearance representing adhesion/ agglutination of bowel loops.

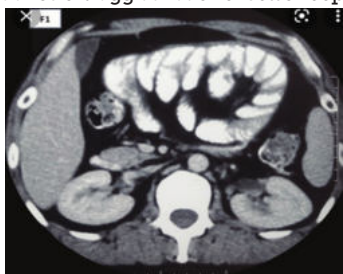


fig .4 CT abdomen shows cauliflower pattern seen in abdominal cocoon.

Asymptomatic or patients with mild symptoms are treated conservatively, while moderate to severe cases need both medical (corticosteroid and Tamoxifen) and surgical management. Surgical management involving laparoscopic or open adhesiolysis has both diagnostic and therapeutic implications as multitude of patients are diagnosed only intraoperatively. Intestinal resection is not contemplated unless nonviable bowel is encountered. In advanced stages the prognosis is detrimental with high mortality.

Abdominal cocoon secondary to abdominal tuberculosis is rare and generally responds well to antituberculous therapy and patients are to be monitored for progress of the disease. Our patient had a dramatic response after initiation of cat I antituberculous treatment and was closely followed up for complications and fortunately did not develop any.

CONCLUSION:

Abdominal cocoon syndrome is an enigmatic rare clinical entity. Due to its nonspecific presentation during initial stages a high index of suspicion is needed for the diagnosis of this rare condition. Clinical features are more pronounced only in late stages with fully established cocooning wherein the treatment options are meagre. Hence early diagnosis results in appropriate management and prevents the need for extensive surgery which leads to increased morbidity and mortality.

Abbreviations :

- TB – tuberculosis
- CAPD – continuous ambulatory peritoneal dialysis
- CBNAAT – cartridge based nucleic acid amplification test
- CECT – contrast enhanced computed tomography
- HPE – histopathological examination.

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