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Abdominal Cocoon

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Abstract:
Abdominal cocoon is relatively a rare entity that is encountered less often during our surgical practice and is usually seen in young females.
We present a case of abdominal cocoon who is a 43 years male was admitted with complaints of diffuse abdominal pain and obstipation of last two weeks. Abdomen was mildly distended with normal bowel sounds and computed tomography was suggestive of small bowel obstruction due to encapsulating peritoneal sclerosis. Laparotomy revealed ascites and a thick peritoneal covering encapsulating the small bowel loops . Adhesiolysis and mobilisation of small bowels were performed.

Keywords: *abdominal cocoon, adhesiolysis, diagnostic laparoscopy.*

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I. Introduction

Cocoon abdomen is the encapsulation of the abdominal organs, usually the bowel by a thick peritoneal covering and is 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.The condition was first described in 1907 as peritonitis chronica fibrosa incapsulata. In 1978 it was further described by Foo at all who coined the term abdominal cocoon. The term encapsulating peritoneal sclerosis probably best describes the morphological and histological changes in this disorder.

The condition is one of the 6% of rare causes of bowel obstruction. In most cases it is diagnosed either by exclusion as an intraoperative finding. The aetiology of this condition is unclear but histopathological examination shows features of chronic inflammation. It's may be either primary (idiopathic) or secondary in association with another conditions, particularly peritoneal dialysis or infectious diseases.

II. Case Report

A 42 years old male patient presented to the OPD with 14 days history of abdominal pain which had been dull in character which is progressively worsened over last 7days.This was associated with nausea, vomiting and constipation. It was associated with anorexia and anaemia. It was not associated with fever,chills or rigor.

The patient was a heavy drinker and a smoker, since 18 years, consuming 5-10 bidis per day.

The patient had similar history of pain abdomen since 7 months for which he was got admitted in Jorhat Medical College. CECT showed focal pancreatic necrosis with pseudo aneurysm and gross ascites with hemmorhagic content in it, his LFT, serum lipase amylase were within normal limit, and ascitic fluid analysis was normal. tuberculosis was ruled out by analysis of ascitic fluid and Mantoux test, after treatment of 7 days he got relieved of symptoms and was discharged.

3 months back he was again admitted in JMCH with similar history and ultrasonography showed bowels are clumped , thickened and on tapping showed blood stained ascitic fluid. His blood parameters were normal except PT (20.4)INR (1.72)and he was treated conservatively.Then referred to the surgical Gastroenterology dept of GMCH. In GMCH they diagnosed acute on chronic pancreatitis, he was treated conservatively and discharged.

On examination, there was a soft cystic lump palpable, around the umbilical region extending to the left lumbar region and left Hypochondrium of size 10×7×2 cm3, surface bosselated, irregular shape.The swelling were non tender, was fixed and does not move with respiration, percussion note was tympanic. On auscultation gurgling sounds were heard around the swelling.

Laboratory tests showed only decreased haemoglobin 8.8gm/dl.The rest of the blood tests and arterial gases were unremarkable. An abdominal X-ray showed small Intestinal dilatation which was mostly central.

Contrast CT showed small bowel obstruction involving most of the bowel with a thick membrane encasing the bowels with ascites. Diagnosed as type 1 abdominal cocoon.

The decision was made to do a diagnostic laparoscopy and proceed. On diagnostic lap, intestinal loops were clumped and covered by thick membrane, so the decision of laparotomy was taken. On exploration, small intestine is clumped and covered by a tough whitish membrane encasing the loops of the small bowel. It was difficult to separate the membrane from the intestine. Carefully the thick membrane is separated from the clumped intestine and adhesiolysis was done. And two enterotomy tubes placed on the ileum for decompression.

Post operatively he was hemodynamically unstable, all resuscitative measures were given in ICU, but unfortunately the patient succumbed due to shock and respiratory failure on post operative day 4.

III. Discussion

Abdominal cocoon refers to complete or partial encapsulation by a dense fibrocollagenous membrane of the small bowel and /or other visceras causing acute or chronic intestinal obstruction and is also known as peritonitis chronic fibrosa incapsulata or sclerosing encapsulating peritonitis. It can be primary idiopathic, hypothesised to be due to subclinical primary viral peritonitis or retrograde menstruation in young adolescents girl. Secondary may be 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 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 a part of bowel giving it a characteristic appearance from which it has derived it's name.

Four types of abdominal cocoon have been described based on the extent of involvement :

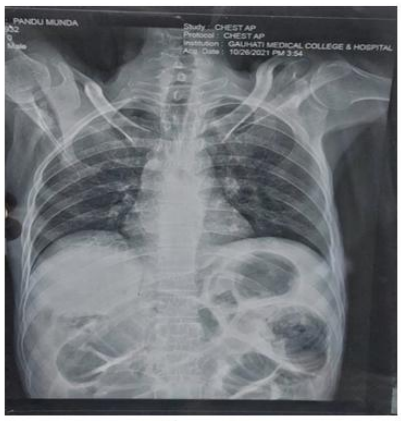
- a) type 1 only a part of small intestine is involved
- b) type2-entire small bowel is involved
- c) type 3-small bowel and any other visceral organs are involved and
- d) type 4:in neuroendocrine tumours where the entire peritoneal lining

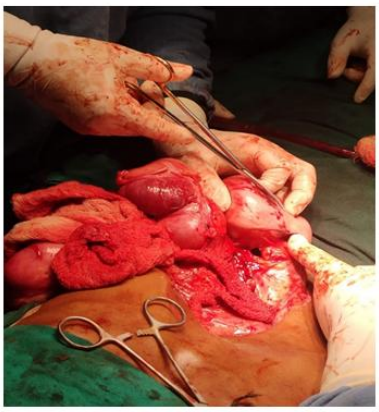
CT scan is the primary imaging modality of choice and shows clumping of the entire small bowel enclosed by a soft tissue density mantle located at the midpoint of abdominal cavity. Serpentine or concertina like configuration of the dilated small bowel loops in a fixed " U" shaped cluster or cauliflower sign is seen in barium study, whereas ultrasound shows, an echogenic mass with a dilated small bowel loops encircled by a thick rim of hypoechoic fibrous membrane. In differential diagnoses include congenital peritoneal encapsulation, peritonitis Carcinomatosa, pseudomyxoma peritonei and peritoneal mesothelioma, abdominal tuberculosis. Histopathological examination of the membrane would reveal a thickened fibrocollagenous tissue with or without lymphocytic and plasma cell infiltrates.

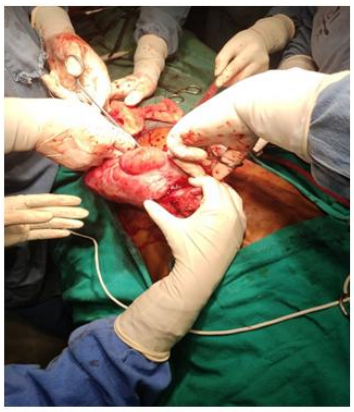
Asymptomatic or patient with mild symptoms are usually treated conservatively with intestinal rest, nasogastric intubation, and enteral or parenteral nutrition support while moderate to severe cases need both medical (corticosteroid and tamoxifen therapy) and surgical treatment. Ideally surgical excision of the entire membrane with Laparoscopic approach is a better choice if the bowel is viable and resection to be undertaken if the bowel is devitalised membranes involved.

IV. Conclusion

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







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