Abdominal Cocoon

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Introduction

The abdominal cocoon is a rare entity, characterised by a total or partial encasement of the small bowel by thick fibrotic membrane. 35 cases have been reported since it was first described by Foo et al [1]. It occurs primarily in females. Preoperative diagnosis is a matter of challenge and usually made at laparotomy. We report a patient with acute intestinal obstruction and abdominal cocoon which was diagnosed perioperatively.

Case report

13 year old daughter of a soldier was admitted on 25 Sep 2003 with pain left lower abdomen and vomiting of 6 hours duration. She had a similar episode of pain twice when she was treated conservatively.

She had not attained menarche and family history was non-contributory. On examination she was averagely built and nourished. Her vitals were normal and she had no pallor or lymphadenopathy. Abdomen was mildly distended, and tenderness was present to the left of umbilicus. A sausage shaped lump was felt in left umbilical region, size 8x4cm, with concavity towards midline. Margins of the lump were ill defined, soft in consistency, non-pulsatile, mobile and the lump was intra-abdominal. Bowel sounds were present and there was no shifting dullness. Hernial sites were normal. Per rectal examination was normal. Routine investigations were normal. Plain radiograph abdomen showed multiple fluid and gas levels in the erect position. Ultrasound abdomen showed gas filled loops of small bowel with increased peristalsis, suggestive of small bowel loop obstruction. A diagnosis of acute intestinal obstruction was made. Exploratory laparotomy was performed under general anaesthesia through midline incision. The whole small bowel was adhered together like a cocoon from the duodeno-jejunal flexure to the ileo-caecal region, encapsulated within a peritoneal membrane with adhesions extending from jejunum to left parietal peritoneum and in right iliac fossa (Figs. 1,2). Mesenteric lymphadenopathy was present. She underwent adhesiolysis, mesenteric lymph node biopsy, peritoneal toilet and mass

closure leaving an intraperitoneal drain. Post operative period was uneventful. She was discharged on 05 Oct 2003. Histopathology of mesenteric lymphnode revealed granulomatous lymphadenitis suggestive of tubercular origin. Histopathology of adhesive band revealed acute inflammation. She was put on anti-tubercular therapy viz. 2 EHRZ+4HR wef 14 Oct 2003. She made an uneventful recovery.

Discussion

Abdominal cocoon is a rare disease, characterised by a thick fibrotic membrane that wraps the small bowel in a concertina-like fashion. Terms such as sclerosing peritonitis [2], encapsulating peritonitis [3] and sclerosing encapsulating peritonitis [4] have also been used to describe this condition. A total of 35 cases have been reported, of which 25 were females and 10 males. Four of the female patients were children. Five cases have been reported from India. Last case reported in India is by Kumar et al [5]. Foo et al [1] reported 10 abdominal cocoons within two years of menarche and retrograde menstruation has been incriminated as the cause of primary peritonitis. Some drugs especially beta adrenergic blockers like practolol have been suggested as a possible cause. Eltringherm et al [2] reported nine cases undergoing practolol therapy who developed peritonitis causing sclerosing peritonitis. Holland [4] reported sclerosing peritonitis in patients on chronic ambulatory peritoneal dialysis. Dialysate solutions and bacterial peritonitis have been reported as aetiological factors but neither of these hypothesis are proven.

Preoperative diagnosis of abdominal cocoon is difficult. Diagnosis is usually made at laparotomy and the suspicious clinical features are vomiting, pain abdomen, abdominal distention, the presence of a soft non-tender mass on palpation, and typical appearance on oral contrast studies, which shows delayed transit with a degree of intestinal obstruction. The small bowel

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Fig. 1 : Abdominal cocoon

Fig. 2 : Abdominal cocoon

passage radiography may show sacculated small bowel [6]. Computed tomography scan abdomen can be of help in outlining the fibrotic membrane (Fig 3). The typical contrast enhanced computed tomography findings of an abdominal cocoon are an encapsulated clump of bowel, tethering of small bowel loops and loculated fluid collection with peritoneal thickening and calcification.

This condition should not be confused with peritoneal encapsulation, which is characterised by an accessory peritoneal sac enveloping the entire small bowel without being adherent to the intestine [7]. Peritoneal encapsulation is generally found accidentally and there are no symptoms. Surgical treatment consists of lyses of the membrane and adhesions. Bowel resection is not necessary and clinical outcome is perfect.

Conservative management of abdominal cocoon often fails. Surgery includes freeing the bowel from the thick encasing membrane and the release of the obstruction. Finger dissection is done with minimal blood loss. The bowel serosa is not injured at any stage. Extensive

Fig. 3 : CT scan abdomen showing fibrotic membrane

surgery and unnecessary bowel resection are associated with a high incidence of anastomotic failure and should be avoided.

The case we present had underlying tuberculosis of mesenteric lymph nodes. Laloo et al [8] have reported abdominal cocoon with tubercular pelvic inflammatory disease.

The occurrence of abdominal cocoon with tuberculosis of mesenteric lymph nodes is an unusual association of two unrelated pathologies. Diminished resistance due to abdominal tuberculosis may have provoked an idiopathic acute inflammatory response.

Conflicts of Interest

None identified

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