Case report – Abdominal Cocoon

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Summary

Abdominal cocoon is a rare cause of acute intestinal obstruction seen almost exclusively in young adolecent females. Almost all cases are diagnosed at surgery and cured by excising the fibrous cocoon. This case although diagnosed accidentally too was treated conservatively successfully.

Keywords: ***Abdominal cocoon, Rare cause of intestinal obstruction.***

Résumé

Cocon abdominal est rarement la cause d'une obstruction intestinale aiguê qui arrive presque exclusivement chez les jeunes femelles adolescentes. Presque tout les cas ont été diagnostiqué durant la chirurgie et guéris à travers l'excision du cocon fibreux. Bien que ce cas soit diagnostiqué par hasard tout de même, le traitement a connu un succès préservatif.

Introduction

Abdominal cocoon is a rare cause of intestinal obstruction. Most of the reported cases have been in females between four and eighteen years[1,2] with a few cases reported in male patients of diverse ages.[2,3]

Almost all reported cases were diagnosed accidentally, during operation for acute and subacute intestinal obstruction[1–8], however one case was diagnosed preoperatively[4].

All the authors agree that excision of the fibrous cocoon with adhesiolysis gives excellent results[1–8].

This report presents a patient in which the cocoon was also found accidentally at operation wherein it was deemed too risky to excise and the patient was subsequently managed conservatively with intravenous fluid administration and nasogastic tube decompression which proved beneficial to the patient. An exhaustive search of the English literature through MEDLINE and HELIN unearthed 25 cases of abdominal cocoon[1,8].

This case is probably the 26th reported case worldwide, the 2nd reported Nigerian case and the 1st case managed successfully without excising the cocoon.

Case report

A 16 year-old girl presented with features of acute intestinal obstruction. She had a one-day history of colicky abdominal pain and vomiting. She had experienced three episodes of abdominal pain and vomiting in the past for which the physicians were managing her with antacids for suspected gastritis. She was referred to the surgical unit this time because of the presence of a mass in her abdomen.

On examination she was small-statured, her height was 1.39 meters, her weight was 36kg, she had normal female secondary sexual characteristics. She was not in distress, afebrile, not pale and hydration was satisfactory.

The main findings were on abdominal examination, which revealed a non-distended abdomen with a firm, tender, ill-defined, non-mobile right paraumbilical mass on deep palpation. Bowel sounds were hyperactive. The diagnosis entertained was acute intestinal obstruction from ileocecal intussusception with a differential diagnosis of a right ovarian cyst.

She was scheduled for emergency exploratory laparotomy. At surgery, the entire small bowel, from the ligament of Trietz to the ileocecal junction was encased in a dense, white fibrous sac. There were two openings, proximally at the ligament of Trietz and distally at the ileocecal

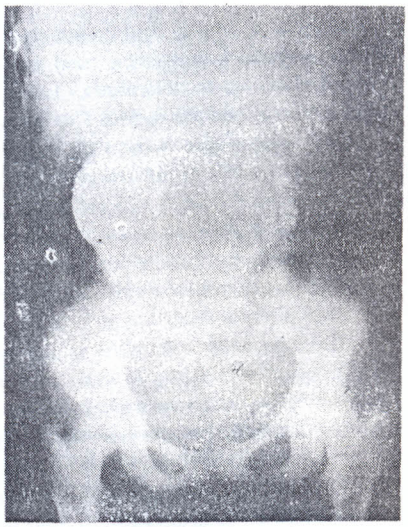

Fig 1. ***Abdominal cocoon – Barium meal and follow-through.***

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junction for the entrance and exit of the jejunum and ileum respectively. Through these openings the dense adhesions between the cocoon and the bowel were visible and palpable. With this observation it was deemed risky to try to free the gut from the cocoon, thus the laparotomy was closed in two layers. Subsequent management was with nasogastric tube decompression, intravenous fluids and analgesia for postoperative pain. The preoperative antibiotics started (intravenous ampiclox and metronidazole) were discontinued. She made quick recovery and had passed flatus by the 2nd postoperative day, the right paraumblical mass was no longer palpable, thus graded oral fluids were commenced. She maintained progress until she was deemed fit for discharge on the 8th postoperative day.

She had a Barium meal and follow through 2 months after discharge to document the presence of this cocoon and also to show that she had remained unobstructed after discharge. The study showed the characteristic serpentine configuration of the gut within the cocoon with spillage of contrast into the caecum. The patient has remained well up till now.

Discussion

The abdominal cocoon and first described in 1978 by Foo *et al*[1] in which the patients were young girls within the age range of 13 to 18 years. There was no previous history of an abdominal operation, peritonitis or prolonged drug intake. These patients were found to have had small bowel obstruction due to encasement of the small intestine in a fibrous sac or cocoon.

The classical abdominal cocoon takes its description from above. The abdominal cocoon is still a rare anomaly; an exhaustive search in the English literature through MEDLINE, HELIN unearthed 25 reported cases of classical abdominal cocoon[1–8], to which this case, when added, would be the 26th reported case worldwide and the 2nd reported Nigerian case[8].

Most authors share the opinion that a preoperative diagnosis would remain unlikely as almost all the reported cases were found accidentally[1–8] at operation however one case was diagnosed preoperatively through a Barium meal and follow-through study[4]. In a few cases a detailed retrospective history may disclose long-standing non-specific abdominal discomfort which might or might not have been related to the encapsulation[5]. Such patients may have been receiving medical treatment for such complaints just as this patient being reported was receiving antacid treatment for her "suspected gastritis".

A high index of suspicion is required to make a firm preoperative diagnosis. Some clinical features which may help increase awareness are: (a) relatively young girl without obvious cause of intestinal obstruction (b) Past history of similar episodes which resolved spontaneously (c) abdominal pain and vomiting and (d) presence of a nontender soft mass on abdominal palpation[6]. Pain abdominal x-rays, ultrasound scan and CT scan have not been helpful.[2,3,4,6,7,8]

Barium meal and follow-through in patients not acutely obstructed can clinch the diagnosis. The characteristic feature is described as a concertina-like or serpentine arrangement of small bowel loops in a constant position[4,6]. This feature was obvious in the Barium meal and follow-through picture of the patient in this report.

The true aetiology of this condition remains obscure but some theories are considered; a yet unidentified environmental factor may be high on the list as all the reported cases were from tropical or subtropical regions[6,7]. A transfallopian spread of microorganisms through the genital tract leading to a subclinical peritonitis is also suggested[4,6,7]. Retrograde menstruation causing a primary peritonitis was suggested based on the observation that most cases occurred in young females[1,4,6,8]. However, the occurrence in premenstrual patients and males seems to weaken this[2,3]. Sclerosing peritonitis from prolonged use of B-blockers especially practolol[1,2,3,4,6,8] has not been proved to be true of the patients with classical abdominal cocoon.

Abdominal tuberculosis which is a chronic inflammatory disease has not been substantiated either on culture or histopathological examination of the excised cocoon.[1,2,8]. The presence of lymphocytes and plasma cells in some exudates within the cocoon may suggest a viral infection. ECHO viruses, coxsackie B virus or adenovirus have been suggested because these viruses in some children have been demonstrated to cause appendicitis, acute idiopathic intussusception and non-specific mesenteric adenitis[1,2,8]. Some authors believe that there is a congenital variety of abdominal cocoon explained by maltrotation of the gut or anomalies during re-entry of the gut during the 12th week of gestation[2,5,6,7]. The ideal treatment of abdominal cocoon as endorsed by all the authors is excision of the cocoon and adhesiolysis, the prognosis is reported to be excellent with no recurrences to date[1–8]. However one death was reported due to consequences of long term management of multiple small bowel fistulae[1]. Conservative management was opted for in this patient to avoid such complications. With the condition of abdominal cocoon almost unseen after the age of twenty years one may theorise that an abdominal cocoon left intact for long may become asymptomatic with spontaneous lysis of all the adhesions and the fibrous sac.

A close follow-up of the patient reported in this

paper could give useful information about the natural history of this condition.

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