INTESTINAL OBSTRUCTION IN INFANCY DUE TO MESENTERIC CYST — A CASE REPORT

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SYNOPSIS

A case of chylolymphatic mesenteric cyst causing intestinal obstruction in early infancy is reported. The cyst together with the adjacent loop of ileum was resected and intestinal continuity was restored by Bishop — Koop — en — y — (end to side) anastamosis. The relevant literature, including the principles of surgical treatment is discussed.

INTRODUCTION

Cysts of mesentery are uncommon surgical lesions and are seldom diagnosed prior to operation (1). Moynihan called them "Surgical rarities" while McKowen described them as "Medical curiosities" (2). So far only 700 cases have been reported in the literature (3). Out of them 25% have been in children less than ten years of age (3) and roughly 5% in infants less than one year of age (1). In the paediatric age group they frequently result in potentially life threatening complications (3).

The following report illustrates one such complication, namely intestinal obstruction, in possibly one of the youngest infants described in the literature and also substantiates many of the typical features of congenital mesenteric cysts.

CASE REPORT

A 52 days old Malay male infant presented with history of vomiting, constipation and abdominal distension of four days duration. Vomiting as well as the abdominal distension were aggravated by attempted oral feeding. The vomitus was initially bile stained but later faeculent.

During the weeks prior to the onset of these symptoms, the child was apparently taking feeds adequately and had bowel movements 2-3 times/day. Meconium was passed normally after delivery. There was no family history of any neonatal problem in the siblings.

On examination, the child was of acceptable nutritional status, weighing 4.8 kg, with a head to crown length of 58 cm, and head circumference of 34 cm. The child was febrile, (38°C) dehydrated, the fontanelles were depressed and the urine output was scanty. There was generalised abdominal distention and there was visible loops of small bowel in a step ladder pattern. No mass was palpable except for the palpable distended loops. The hernial orifices were normal. Bowel sounds were not heard. The Ryle's tube aspirate was faeculent. Supin plain X-ray abdomen showed dilated jejunal and ileal shadows but the colonic shadows were absent. Erect film revealed multiple fluid levels and there was no free gas under the diaphragm. A diagnosis of small bowel obstruction was made but the cause could not be speculated.

The following blood investigations were done: Hb: 16 gm/dl (Normal value: 14 to 17 gm/dL), Serum Sodium 144 m.mol/L (132—152 m.mol/L), Potassium 5.9 m.mol/L (3.6 to 5.4 m.mol/L), Chloride 94 m.mol/L (96—108 m.mol/L), Blood Urea 8.0 m.mol/L (2.3—6.6 m.mol/L) and Random blood sugar 7.3 m.mol/L (3.1 to 4.7 m.mol/L).

The child was rehydrated with intravenous fluids and after 12 hours of such therapy was taken up for laparotomy. The abdomen was opened by a right-paramedian incision. The jejunum and proximal ileum were grossly distended. There was a multiloculated cyst containing milky fluid, in the mesentery of mid ileum adjacent to the bowel wall. The cyst was about 7 cm × 4 cm in size and was related to the bowel wall over a length of about 5 cm of ileum. The loop of ileum had become stretched over the cyst and the bowel lumen was severely narrowed (Fig. 1). The distal bowel was collapsed and was of reduced calibre as if it had never been distended to the normal width before.

The cyst was closely related to the bowel wall with the blood vessels of the mesentery crossing over it, and dissection of the cyst from the blood vessels with difficult. Hence the cyst, with the mesentery containing it and the related ileum were resected. The proximal ileum was widely distended and the distal bowel was very narrow. Due to the young age of the child, congenital nature of the pathology, and advanced stage of the obstruction, end to end anastamosis was considered technically less preferrable, as the author's experience in end to end anastamosis in such situations is limited.

An end to side anastamosis in single layer by Bishop-Koop's method was done and the ileostomy was fashioned in the Right iliae fossa. The abdomen was closed in layers. 50 cc of blood transfusion was given during surgery.

Postoperative course was uneventful. Faeces was passed through th eileostomy from the second day, and per rectum from the fourth postoperative day. Oral feeds were started from third day and gradually stepped up and by 7th day the child was able to take supplementary feeding of milk adequately. The discharge through the ileostomy gradually decreased and by 10th postoperative day was small quantities of mucoid fluids only.

Presently (four months since operation) the child is feeding and thriving well with normal weight gain and bowel movements. The ileostomy is shrinking in size with occasional slight mucoid discharge. Formal closure of the ileostomy was suggested but the mother wishes to have the operation few month later.

Histopathological examination of the cyst confirmed it to be a congenital chylolymphatic cyst.

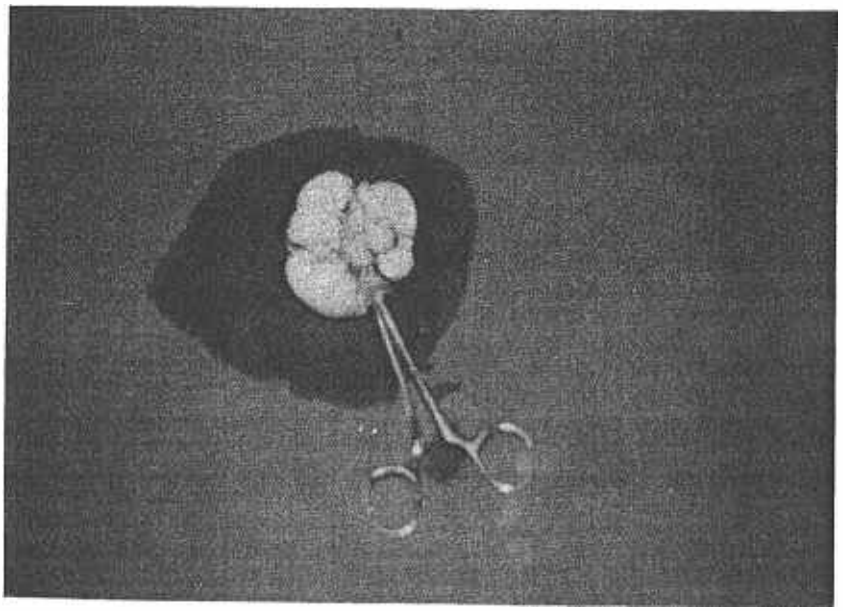

Figure 1: Mesenteric cyst with narrowing of ileum. (Artery forceps indicates proximal lumen).

DISCUSSION

Mesenteric cysts were first described in 1507 by Benevieni (3) and Tillaux is credited for performing the first successful resection in 1880 (3).

Regarding the aetiology, the most widely accepted view is that the cysts represent lymphangiomatous malformations, secondary to proliferating lymphatic tissue without access to drainage (3). This theory is supported by their occurrence in the newborn period as well as the character of the contained fluid, which is often chylous when the cyst is located adjacent to areas of the intestine with a high lymphatic fat content (as in the present case) (3).

Nevertheless, it it also accepted that some of the mesenteric cysts are of the acquire variety (1). These acquired cysts comprise the traumatic cysts, neoplastic cysts, infective and degenerative cysts (1).

Cysts may arise in any part of the small bowel mesentery or mesocolon (3). In 50% of the patients the cysts are located in mesentery of the small intestine, particularly the ileum (3). The cysts may be unilocular or commonly multilocular (3). Cysts of mesentery proper are usually multilocular while unilocular cysts are frequent in the mesocolon (3). Histologically congenital cysts have a fibrous wall lined with a single layer of endothelial cells while acquired cysts have no endothelial lining (3).

On gross examination, mesenteric cysts have to be differentiated from an enteric duplication (3) particularly in infants. Enteric duplications are anatomically located in the same site as mesenteric cysts but in contrast to the latter they share a common serosall wall and blood supply with the adjacent intestine (3), making intestinal resection mandatory for their removal.

Mesenteric cysts do not produce any diagnostically characteristic symptoms (3). Symptoms are related to mechanical forces due to the size of the cysts and its location (3). A good number of cases are detected incidentally at operation for other conditions (1). In symptomatic cases reported by Caropresso, abdominal pain was the commonest symptom noted, followed by nausea and vomiting (2). A mobile palpable mass was the most frequent physical sign but was present in only 58% of patients (2). However, in the paediatric age group most of the documented cases were symptomatic and nearly two thirds of them had presented as acute abdomen (3).

Intestinal obstruction is a frequent complication and is usually produced by compression of the adjacent intestine (3) as in the present case. Out of the eleven cases reported by Mollitt et al in infants and children, six presented as small intestinal obstruction (3).

Radiological investigations like plain X ray abdomen including lateral view, contrast studies of the alimentary tract, intravenous urogram and ultrasonogram are helpful in preoperative diagnosis.

The treatment of chocie is operative resection (3). A plane of dissection between the cyst, the intestine and their respective blood supplies is often present and allows simple enucleation (3) and this is the optimum treatment (2). But when the bowel or its vasculature will be compromised by excision of the cyst alone, segmental resection of the bowel together with the mesentery bearing the cyst is requried (2). Simple aspiration of the cyst is not recommended as it is associated with high mortality and high recurrence rate (2). External marsupalisation of the cyst is not preferred and is only indicated in cases of extremely large cysts adherent to numerous intra-abdominal structures (2). As an alternative to marsupalisation (in cases where resection of the cyst is not possible), a portion of cyst can be excised and the residual cyst obleiterated (2).

Incidentially, the end to side anastamosis of Bishop-Koop adopted in this case deserves mention. Following ileal or jejunal resection, end to end anastamosis, though ideal, is technically difficult in very young infants with advanced intestinal obstruction, due to the great disparity in the diameters of the proximal and distal bowel (4).

Bishop-Koop's anastamosis which was originally described for meconium ileus has also been recommended in difficult cases of ileal atresia for making anastamosis between segments of bowel with great disparity in diameters, particularly in babies weighing less than 4 lbs (5). The advantage of this anastamosis is that it is technically easier in the difficult situation noted above, provides for a safety vent, in case the activity of the narrowed distal bowel remains sluggish (4). Once gastro intestinal function is established the ileostomy will remain as a non-functioning mucous fistula (6). This can be closed by a minor procedure. Occasionally the ileostomy will close spontaneously if it is trimmed down to the skin level and the second operation can be avoided altogether (6). Bishop-Koop's anastamosis is better than the usual side to side anastamosis which may lead to dilation of both blind ends with blind-loop Syndrome (4).

The mortality rates for operated cases of mesenteric cysts, vary from 22 to 50% (3). In children and young infants Gross reported 16.6% mortality (2). Despite the many investigations presentlygavailable, mistakes in diagnosis are common and the cysts are frequently overlooked (2). It is suggested that a high index of suspicion and knowledge of the condition would lead to earlier and correct diagnosis with appropriate operative therapy and excellent long term prognosis (1 & 3).

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