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Case Report

Think beyond ascites

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ABSTRACT

In children with gross, persistent ascites wherein clinical scenario is not agreeable to common conditions, one needs to revise the diagnosis and rule out the surgical cause for abdominal distension mimicking ascites. We are reporting here, a case of two year old female child who presented with abdominal distension, clinically suggestive of ascites and subsequently diagnosed to have a large chylous mesenteric cyst which was determined on biochemical investigations, imaging and confirmed on surgical intervention. She was managed surgically with successful outcome.

Keywords: Abdominal distension, Child, Chylous ascites, Gross persistent ascites, Mesenteric cyst, Surgery

INTRODUCTION

The incidence of mesenteric and omental cyst is 1 in 20,000 among children, and even lower among infants. Of these two types, only 2.2% are omental cysts.[1] Mesenteric cyst was first described in 1507 as an autopsy finding, and less than 1000 have been described in the literature amongst which pediatric are still fewer.[2] First report of omental cyst was published by Gairdner in 1852. Tillaux performed first successful surgery for cystic mass in the mesentery in 1880.[3]

These cysts may present with abdominal distension, abdominal pain, and painless mass or even ascites. Typically, children present within first 5 years of life.[4] There is female preponderance and seen more often in white European lineage.[5] Complete surgical excision of these cysts is the treatment of choice with very good prognosis.

CASE REPORT

A 2 years old female child born of 3rd degree consanguineous marriage presented to us with a complaint of abdominal distention of one and half year duration. She was born full term with normal growth and development. Her past medical/surgical history was unremarkable. Her parents noticed gradual distention of abdomen for 6 months of age. It was progressive, generalized and non-tender. The distension was large so that child had difficulty in day to day activity like walking. Based upon the clinical history and symptomatology, the aetiology was indeterminate and a possibility of hepatic, renal, cardiac, enteric or pancreatic pathology looked unlikely. She had no symptoms suggestive of infective etiology, still she had received a course of antitubercular therapy for 6 months in view of TB peritonitis from a medical institution 6 months back which did not improve her condition.

On admission she appeared healthy. She was afebrile and her heart rate was 124/minute and respiratory rate was 30/minute. Her weight and height were in the 50th centile. She had no icterus, pallor, palpable lymphadenopathy, edema or clubbing. The abdomen was grossly distended however it was not tense; it was non-tender, with no obvious mass palpable on deep palpation. Fluid thrill was felt. There was no hepatosplenomegaly. Neurological and other systemic examinations were normal (Figure 1). Subsequent laboratory tests were

ordered, these included WBC with differentials values, liver function tests, Sr. albumin and total protein, Prothrombin time with INR, urine analysis and blood culture. These were normal. There seemed to be no evidence of liver disease or renal involvement.

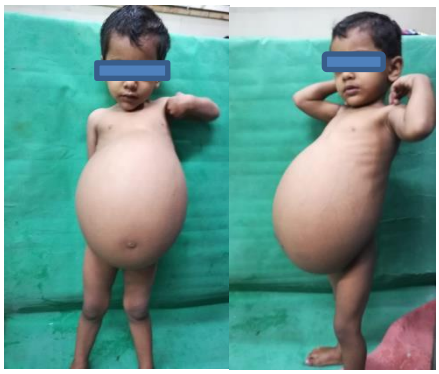

Figure 1: Presence of gross abdominal distension in the patient.

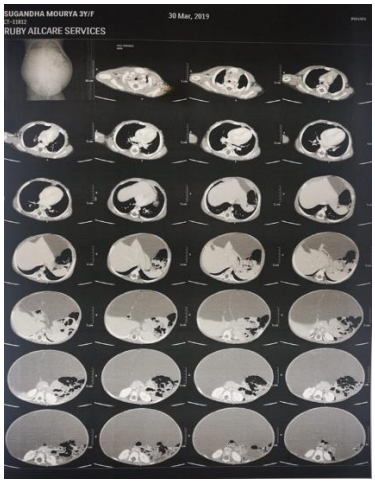

Figure 2: Large cyst with fluid attenuation and septations within. no mural nodule / wall thickening. no lymphadenopathy.

Ultrasonography of abdomen showed gross ascites with moving internal echoes and septations. The liver doppler study was normal and there were no signs of parenchymal liver disease or portal hypertension. A paracentesis was performed. Fluid was turbid and whitish. The bacterial culture was negative. Fluid cytology revealed 550 cells, 96% lymphocytes, 2% neutrophils. SAAG (serum ascites albumin gradient) was one. Ascitic fluid Adenosine deaminase (ADA) was 34.5U/L, ascitic fluid triglycerides -455 mg/dl. Serum glucose: 95 mg/dl, total serum protein: 7.3 gm %, Sr. albumin: 3 gm % and Total Serum cholesterol 176 mg/dl and triglycerides 113mg/dl. CBNAAT for tuberculosis was negative. These parameters were suggestive of ascites of Chylous origin. Computerised Tomography(CT) of abdomen to delineate the etiology to rule out mass or malignancy was planned. We performed CT abdomen with contrast, which showed gross loculated ascites / large cystic lesion with thin septae in the abdomen and pelvis 17*23*25 cm in anteroposterior, transverse and craniocaudal extent suggestive of large mesenteric / omental cyst with normal CT venography (Figure 2). However, there was no significant lymphadenopathy or a focal soft tissue or visceral pathology detected on the CT scan. The provisional diagnosis was a large mesenteric / omental cyst.

Patient was referred to the department of Paediatric Surgery for opinion and definitive management. Intraoperative findings were a large mesenteric cyst within the transverse mesocolon. The fluid was drained and sent for cytology and the cyst was excised laparoscopically. Sample for histopathology was sent which revealed that the wall of the cyst was lined by cuboidal epithelium. Cyst wall showed presence of fibro collagenous tissue admixed with muscle and adipose tissue. Some areas of haemorrhage, lymphoid cell aggregates were observed. No malignant or dysplastic cells were identified. This confirmed the diagnosis of a mesenteric cyst. Post - operative recovery was uneventful and on follow up the patient was asymptomatic.

DISCUSSION

Mesenteric and omental cysts are the benign proliferations of ectopic lymphatic which lack communication with the normal lymphatic.[6] A mesenteric cyst can be located anywhere in the mesentery, it may or may not extend into the retroperitoneum and has a recognizable lining of endothelium or mesothelial cell. They are present in the lesser or greater omentum and are lined by endothelium mainly cuboidal epithelium.

Mesenteric and omental cysts are classified into four main groups, embryological, traumatic, neoplastic, and infective or degenerative. Lymphangioma is the most common cause of these cysts, which are generally restricted to the lesser or greater omentum. Morphologically, they can be unilocular or multilocular.[7]

Mesenteric cysts are rare but commonly asymptomatic, and hence found incidentally. However, they can also present with abdominal pain that can be due to complications such as rupture, torsion, acute internal hemorrhage, or compression of nearby structures. Patients can present with nonspecific symptoms, such as anorexia, nausea, vomiting, fatigue, and weight loss. Omental cyst occurs in all age groups, but most often presents in children and young adults.[8] Most of these cysts are lined by mesothelium as well as endothelial cells and contain serous fluid which mislead to a diagnosis of ascites.[3,9]

Diagnosis of a cyst is one of exclusion, should be considered even if the findings are non-specific and the patient exhibits symptoms over a long period of time without having any affection on other systemic functions.[10]

Often children may present with silent distension of abdomen with free fluid. On ascitic fluid evaluation, the SAAG (serum ascites albumin gradient) <1.1 is suggestive of transudative ascites, which may be associated with tuberculous, pancreatic, peritoneal malignancy or serositis, in presence of Serum albumin >2.5 mg/dl. While serum albumin <2.5mg/dl in association with SAAG <1.1, is seen in nephrotic syndrome and myxedema. Further presence of triglycerides >200 mg/dl in the ascitic fluid is diagnostic of chylous ascites.[11] Along with this, milky appearance, total cell count of more than 500 (lymphocytic predominance) is seen. Further etiology can be assessed by ADA levels, cytology, bacterial culture and serum aymlase levels. These investigations may point towards presence of Chylous ascites.

An accurate diagnosis of chylous mysentric cyst, preoperatively is difficult to make. Ultrasonography has been reported as the initial diagnostic tool in all cases. Sonographic findings frequently feature multiloculated, fluid-filled, and predominantly cystic lesions MRI and CT may provide additional information for determining the detailed definition, exact extension, and characterization of the lesions.[1,3,7,8,12]

The complete excision is the treatment of choice for mesenteric and omental cyst, an intestinal resection is never indicated. Overall outcome after complete enucleation of the cyst is favorable. The recurrence rate ranges from 0-13.6%.[13,14,8] Nowadays, mesenteric and omental cysts are successfully being excised laparoscopically. The advantages of the laparoscopic approach as compared with open surgery are almost the same as for other laparoscopic procedures; e.g. less postoperative pain, earlier recovery, shorter hospital stay, and better cosmetic. However, minimally invasive techniques should not compromise the basic surgical principles of complete excision.[14-16]

Atypical clinical history should prompt alternative diagnosis. Awareness about chylous mesenteric cyst as one of the condition associated with abdominal distension can help us reach the diagnosis early. In such cases, abdominal distension with fluid without any determinate cause should make us think beyond ascites.

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