Case Report

Mesenteric Cyst in a 6-Years Old: A Case Report and Review of Literature

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Abstract

Mesenteric cysts (MCs) are a group of rare benign intra-abdominal lesions that are usually asymptomatic but with chances of recurrence and malignant transformation if incompletely excised. Its asymptomatic or nonspecific symptomatic nature makes preoperative diagnosis difficult. We report a case of huge congenital MC in a 6 years old. He was brought to our center following a history of recurrent abdominal pain since birth. The diagnosis was suggested following computed tomography scan but only confirmed postlaparotomy through histopathologic evaluation. No recurrence on follow-up has been reported.

Keywords: Chylous fluid, intraabdominal, mesenteric cyst

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Introduction

Mesenteric cyst (MC) is a rare intra-abdominal lesion thought to occur exclusively in childhood,[1,2] but is now known to affect any age.[3] It occurs in the adult population with an estimated incidence of 1 in 100,000 and the pediatric population with an estimated incidence of 1 in 20,000.[3-5] Most cases are asymptomatic and discovered incidentally or as a result of its complications.[3] When symptomatic, it presents with abdominal pain, and about 10% of the cases are associated with intestinal obstruction, volvulus, or torsion.[6-9] It is believed to result from failed coalescence of mesothelial lined structures,[10] while another school of thought believes it to represent ectopic lymphatic tissue lacking communication with the lymphatic drainage system, hence chylous cyst.[11,12] MC can occur anywhere along the mesentery of the gastrointestinal tract.[13] A large series review of 162 patients by Kurtz *et al.* revealed that 60% occurred in the small-bowel mesentery, 24% in the large-bowel mesentery, and 14.5% in the retroperitoneum.[14] Due to the rarity of this entity and the lack of specific symptoms, correct preoperative diagnosis is difficult. Knowledge of these lesions is important due to the various complications associated with suboptimal surgical management.[15]

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Case Report

A 6-year-old boy brought by his parents with complaints of centrally located abdominal pain from birth initially characterized by frequent excessive crying and restlessness at infancy and later became evidently colicky with a frequency of once in 2 months. The pains were usually severe, nonradiating and with no known aggravating factors but were usually relieved by bouts of vomiting which were occasionally bilious. Two years before presentation, the frequency of bouts of pain became weekly. There was no abdominal swelling, change in bowel habit, or weight loss. He was said to have continued to make adequate urine without any lower urinary tract symptom. Owing to the above symptoms, he had been taken to several hospitals and had traditional scarifications performed on him before presenting to the referring hospital where abdominal computerized tomographic (CT) scan was done before referral.

Examination revealed multiple scarification marks on the right lower abdominal quadrant. There was no palpable mass

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per abdomen. The full blood count and blood chemistry were within normal limits. The accompanying abdominal CT and ultrasound (US) scans demonstrated a huge mixed density mass more on the right lower abdomen abutting the umbilicus superiorly and the bladder inferiorly, and the possibility of urachal cyst or MCs was entertained. He had exploratory laparotomy with the findings of a huge multi-septated mass measuring 14.0 cm × 12.0 cm, located in the mesentery of the proximal ileum abutting the mesenteric border of the ileum [Figure 1]. There was associated midgut volvulus rotated about 180° in the clockwise direction and surrounded by engorged vessels. The volvulus was relieved; a segmental ileal resection *en bloc* with the mass and an end-to-end ileal anastomosis was done. The patient had no complication, recovered and was discharged home after 8 days on admission. The resected ileum and mass were sent for histology.

Microscopy of the chylous fluid containing multilocular cystic mass showed multilocular cyst lined by mono-layered flattened nonatypical epithelium surrounded by fibrous wall containing clusters of lymphocytes and cholesterol crystals [Figure 2a and b]. The intestinal tissue was essentially normal, while the accompanying lymph node showed reactive sinus hyperplasia

Discussion

MCs are a group of rare intra-abdominal benign growths occurring in the mesentery of the gut, with reported malignant transformation in about 3%.[2,14] They can occur anywhere along the length of the intestine, more commonly involving the small intestine (about 60%) than the large intestine.[3,6] It may also be retroperitoneal.[3] MC was described by Benevieni, an Italian anatomist in 1507 while performing autopsy on an 8-year old boy.[12,15]

Almost any age can be affected, but most of the cases occur in children and adolescents with >50% occurring before the age of two. The reported incidence of MC is 1 in 100,000 in the adult population and 1 in 20,000 in the pediatric population.[3-5] There could be an under-reporting of the cases as most are asymptomatic. The symptoms are nonspecific, and the clinical presentations include common symptoms of the gastrointestinal tract, but can rarely be complicated by rupture, torsion, or intestinal obstruction causing acute and intense symptoms. The index patient presented with features of recurrent intestinal obstruction, and the MC was found to be associated with volvulus.

MCs could be congenital or acquired. The congenital cases are believed to arise from incomplete fusion of the mesothelium-lined peritoneal surfaces[3] or proliferating ectopic lymphatic tissues lacking communication with the lymphatic drainage system.[3,15,16] This may explain the different cyst contents, namely chylous and serous. The acquired cases are believed to be a result of blockage of communication of lymph nodes with the lymphatics and venous system or blockage of draining lymphatics as a result of trauma, neoplasm, or infection.[3] Beahrs *et al*. in 1950, proposed an etiological classification of MCs into four groups: Congenital/developmental, traumatic, neoplastic, and infectious/degenerative.[17] The index case could be classified as congenital since the history was since birth.

The index case had normal hematological parameters, electrolytes, and blood urea and creatinine. The diagnosis of MC was only suggested on abdominal ultrasonogram and CT scan, which was confirmed histologically. The preoperative diagnosis of MCs is usually difficult clinically, and plain radiographs are often normal or nonspecific.[18,19] Literature has shown that US scan, CT scan, especially contrast enhanced, and magnetic resonance imaging are very helpful.[19-21] The diagnosis is proven on laparotomy and has to be histologically confirmed.[15]

Complete excision of the cyst is curative with an excellent prognosis, reducing chances of recurrence and malignant transformation.[15] The extent of surgery is linked to the recently proposed pathologic classification system:[22] Types 1 (Pedunculated) and 2 (Sessile) are limited to the mesentery and can be excised completely with or without resection of the involved gut; types 3 (unicentric) and 4 (multicentric) on

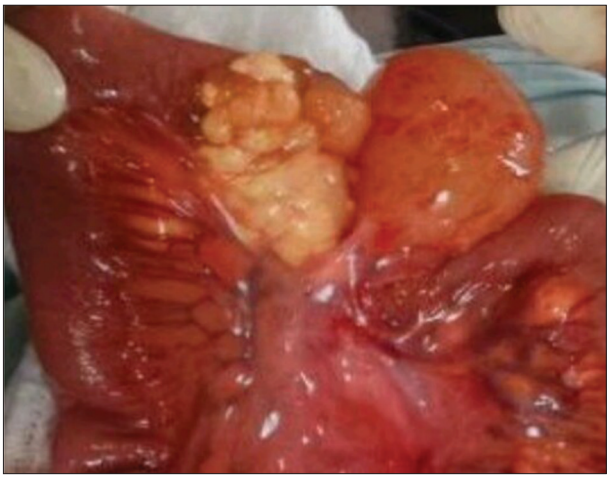

Figure 1: Surgical picture showing the lesion within the mesentery of the small intestine

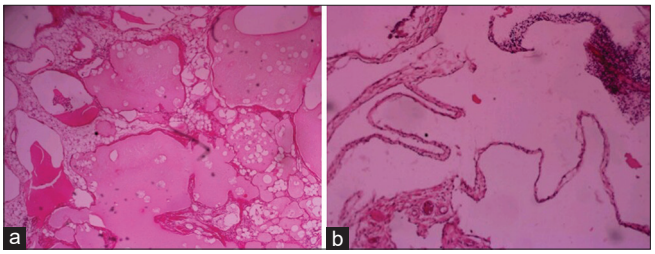

Figure 2: (a) Histologic section showing multilocular cyst containing lymphocytes and cholesterol crystals within the fibrous wall and the cyst lumina (H and E, ×100). (b) Histologic section showing lymphocytes within the wall of the cyst (H and E, ×100)

the other hand, have retroperitoneal extension and may require complex operations with marsupialization or sclerotherapy. The index case was located in the mesentery of the ileum, had no retroperitoneal extension, and the lesion was excised with ileal resection and anastomosis.

Conclusion

MCs are rare benign intra-abdominal cystic lesions often complicated by intestinal obstruction. It is often missed due to its vague symptoms and asymptomatic nature but associated with excellent postexcision prognosis.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

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