

Mesenteric Cyst: A Rare and Overlooked Disease

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Abstract

Mesenteric cysts are rare and usually benign. They can be found anywhere in the mesentery but more commonly within the small bowel mesentery. A 44 years-old male resorted to the General Surgery consultation with episodic abdominal pain. A large abdominal mass was noted in the left upper quadrant, mobile and without tenderness. A cystic mass with 8 x 7,5 cm was found in the abdominal CT scan suggesting the diagnosis of small bowel mesenteric cyst. Surgical excision was performed, and pathology identified a mesenteric lymphangioma. Recovery was uneventful and at follow-up patient was asymptomatic. Although mesenteric cysts are often asymptomatic and discovered incidentally, they can present with non-specific symptoms such as abdominal pain, nausea, vomiting or abdominal distension. Severe complications can occur, including bowel obstruction, hernia, volvulus or peritonitis. Imaging is highly suggestive, but pathology is fundamental for diagnosis. Surgery is the treatment of choice. Prognosis after excision is excellent.

Keywords: Mesenteric Cyst; Mesentery; Abdominal Mass; Abdominal Pain; Abdominal Surgery

Abbreviations

cm: Centimeters; US: Ultrasonography; CT: Computed Tomography; MRI: Magnetic Resonance Imaging

Introduction

Mesenteric cysts are defined as any cystic neof ormation between the mesenteric sheets [1,2]. They are a rare and frequently overlooked disorder, barely mentioned in the textbooks and often forgotten in the differential diagnosis of abdominal masses. Nevertheless, learning how to recognize and treat them is important for every doctor. Twice more frequent in women and more common in the second decade of life, mesenteric cysts represent 1/100.000 of hospital admissions [2-6]. Frequently benign and of mesenchymal origin, they arise from any of the structures present within the mesenteric sheets (neuromuscular, vascular, lymphatic or fatty tissue) [4]. Their size can be variable, with reports of some cysts reaching up to 30 cm in diameter [6]. They can be found anywhere in the mesentery from the duodenum to the rectum, occasionally extending from the base of the mesentery into the retroperitoneum [3,6-8]. Nevertheless, they are more common within the small bowel mesentery (60 - 66%), particularly in the ileal mesentery, and within the mesocolon (24 - 33%) [2,3,6-8]. Although mesenteric cysts are usually asymptomatic and incidentally found, they can cause non-specific symptoms [2,9]. The authors present a case of a mesenteric cyst causing episodic abdominal pain in a young male patient, a rare condition with a treatment not yet completely clarified.

Case Presentation

A 44 years-old male resorted to a General Surgery consultation presenting with episodic abdominal pain in the left upper quadrant, without nausea or vomiting and with normal bowel movements. No gastrointestinal bleeding nor weight loss were present. On physical examination an 8 cm mass was palpable in the left upper quadrant adjacent to the left costal margin, mobile and without tenderness.

Laboratory findings were within normal range. An abdominal ultrasound and later a CT were performed, revealing a cystic mass with 8 x 7.5 cm in the left upper quadrant. Mesenteric cyst was the suspected diagnosis. Because an incidental hepatic node was found on the CT, an MRI was performed. The mesenteric cyst was confirmed (Figure 1) and a hepatic hemangioma was diagnosed in segment VI.

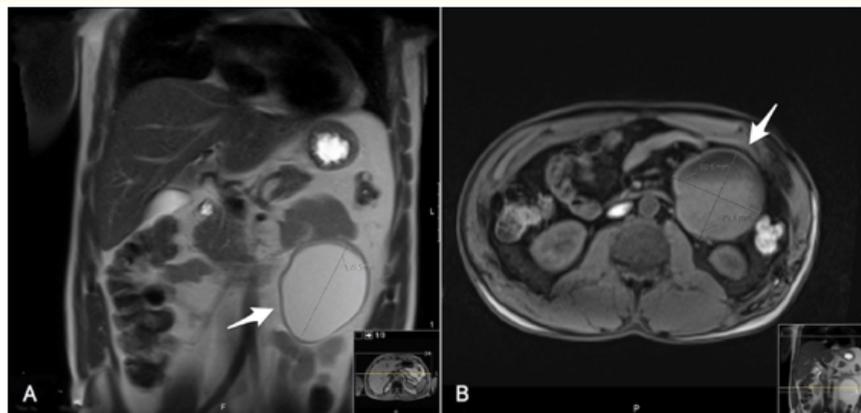


Figure 1: MRI revealing an 8 x 7,5 cm mesenteric cyst (white arrow). (A) coronal plane, T2-weighted; (B) axial plane, T1-weighted.

Although mesenteric cysts are rare, they must always be considered in the differential diagnosis of intra-abdominal masses, as well as omental or ovarian cysts, pancreatic pseudocysts or uterine pedunculated leiomyomas. In the case presented, imaging was highly suggestive of the diagnosis. Surgical resection was proposed. Median laparotomy was performed through a 12 cm incision. The mass was identified in the jejunal mesentery, 2 cm away from the Treitz, in close proximity to the first intestinal loop. There were adhesions to the greater omentum and to the colon. Complete enucleation of the cyst was achieved without rupture (Figure 2). The mesentery was sutured with 2/0 absorbable suture.

Recovery was uneventful and the patient was discharged home in the 5th post-operative day. Pathology identified a nodular formation of 8,5 x 7,5 x 7 cm, with fibrous wall and areas of lymphoid hyperplasia. There were no epithelial, mesenchymal or endothelial cells. The final diagnosis was of mesenteric lymphangioma. At 3 months of follow-up the patient was asymptomatic and at 1-year follow-up the patients clinical status remained unchanged and an ultrasound was performed. There was no recurrence.

Discussion

The first description of a mesenteric cyst was in 1507 by the Italian anatomist Antonio Benivieni during an autopsy of an 8 years-old boy [1,7]. Later, in 1842 Rokitansky described the first chylous cyst and in 1852 Gardner the first omental cyst. In 1880, Tillaux performed the first successful excision of a mesenteric cyst [7].

The etiology of mesenteric cyst is still unclear, but most believe they result from a benign proliferation of ectopic mesenteric lymphatic tissue, failing to communicate with the core lymphatic system [1,6,10]. As previously stated, mesenteric cyst can arise from any structure

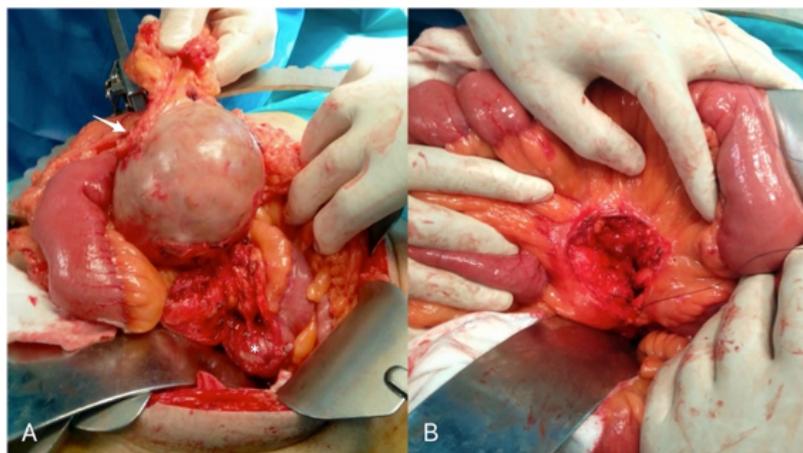


Figure 2: (A) Intraoperative situs, mesenteric cyst enucleation (white arrow), in close proximity to the first intestinal loop (*); (B) mesenteric closure with 2/0 absorbable suture.

within the mesentery. In that setting, de Perrot, *et al.* presented in 2000 a new classification system based on histopathological findings. They defined six groups of mesenteric cysts: cysts of lymphatic origin (simple lymphatic cyst and lymphangioma); cysts of mesothelial origin (simple mesothelial cyst, benign cystic mesothelioma, and malignant cystic mesothelioma); cysts of enteric origin (enteric cyst and enteric duplication cyst); cysts of urogenital origin; mature cystic teratoma (dermoid cysts); and pseudocysts (those of infectious or traumatic origin) [11].

Mesenteric cysts are often asymptomatic and discovered incidentally in about 40% of the reported cases [1,12]. Nevertheless, they can be present with non-specific symptoms. There are no known pathognomonic symptoms of mesenteric cyst [9]. According to the literature, abdominal pain is the most frequent symptom, followed by nausea and vomiting, constipation, diarrhea, and abdominal distension [1,6,10,11,13]. An abdominal mass may be palpable in up to 61% of the patients [11]. Finding a mobile mass during abdominal examination represents the Tillaux sign, which might suggest the diagnosis [2]. In the case presented, patient's only complaint was episodic abdominal pain referred to the left upper quadrant without other gastrointestinal symptoms. An abdominal mobile mass was palpable, representing the Tillaux sign. The signs and symptoms of our patient were already suggestive and should raise the possibility of a mesenteric cyst.

Increase in abdominal volume is a late finding and can be misdiagnosed with ascites in 18 to 20% of cases, particularly with huge lymphangiomas [2,8]. Vallejo-Sotoa et Orozco-Simental presented a case of a 65 years-old patient being treated for progressive ascites, diagnosed with massive mesenteric cyst after radiological findings [14]. Despite being rare, severe complications can occur, such as bowel obstruction, obstructive uropathy, irreducible hernia, volvulus or peritonitis, usually from a hemorrhagic or an infective cyst [5,6,15]. Acute abdomen as presentation of mesenteric cysts is estimated to be 10% [8].

Since symptoms and signs are nonspecific and mesenteric cysts vary in size and location, diagnosis can be challenging [16]. In that setting, radiological findings pose as extremely important. Ultrasonography (US), computed tomography (CT) and magnetic resonance imaging (MRI) can all be used for the diagnosis [9,10,13]. Plain abdominal films do not contribute to diagnosis, except in the rare cases of intestinal obstruction because of bowel compression from the cyst or because of a volvulus [17]. US is the most reliable diagnosis tool,

revealing a hypoechoic cystic mass and showing septa or debris [3,10]. CT should be performed additionally since it can discriminate cyst size, its point of origin and its relations to surrounding organs [3,11]. Ayyappan., *et al.* concluded that chemical shift MRI can identify lipid content within the cyst, differentiating from dermoid cyst, cystic lymphangioma, lymphocele or mesenteric enteric duplication cyst [18]. Although imaging is highly suggestive of mesenteric cysts and anatomic relations, it is not diagnostic and, in most cases, an excisional biopsy is required [9,17,18].

In this case patient's initial complaints motivated the investigating imaging, first with US and, for better characterization of the mass and its relations, with a CT. However, once a nodular hepatic mass was found, MRI was also performed, not only identifying the hepatic mass as a hemangioma but also supporting the diagnosis of a mesenteric cyst.

Because of the limited literature evaluating mesenteric cysts' treatment the best management is not entirely clear yet. Up to this day, surgery is the treatment of choice with complete enucleation being the preferred treatment modality [3,6,7]. If enucleation is not possible, excision with or without bowel resection is the second-best strategy. Marsupialization of the cyst is the least suitable option [1,7]. The surgical approach for mesenteric cyst is variable. In acute setting laparotomy is classically the method of choice, but recently there seems to be a shift towards laparoscopic approach [9,13]. In the case reported laparotomy was the chosen approach because the cystic mass was of considerable size (8 x 7.5 cm) and in close relation to the Treitz and first intestinal loop. Surgery was performed through the 12 cm incision needed to remove the undisrupted cyst. If laparoscopy had been chosen, a mini laparotomy with approximately the same size would have been necessary for extraction.

Despite surgery being the traditional treatment, there are reports of minimally invasive treatment and of a conservative approach. A few cases of cyst drainage and sclerosis with ethyl alcohol have been described [3,5]. Leung., *et al.* managed conservatively a symptomatic mesenteric cyst with intravenous fluids, analgesia, antiemetics and broad-spectrum antibiotics. They concluded that emergency surgery yields higher risks for complications than elective procedures, stating that it might be safe to use an initial conservative management followed by planned elective surgery of a symptomatic mesenteric cyst found in the acute setting [6].

Nevertheless, since withholding surgery increases the risk for severe complications (peritonitis, bowel obstruction, torsion, hemorrhage or infection) it is the authors' belief that the patient must be confronted with the treatment options and its inherent risks, and the decision must be individualized. The only definitive treatment is excision of the mesenteric cyst, being simultaneously diagnostic and curative [1,6,14,15]. The prognosis after mesenteric cyst excision is excellent, with minimum recurrence rate. Recurrence seems to be higher (10 - 100%) if only partial excision is achieved or with simple cyst drainage [1,18]. There are no guidelines for follow-up of mesenteric cysts. It is the authors belief that a yearly clinical evaluation with complete physical exploration should be performed, on a surgery consultation or in the general doctor. No imaging follow-up strategy is defined, but the ultrasound seems to be appropriate, avoiding radiations and being sensitive enough to diagnose a possible recurrence.

Malignancy is rare (3%), occurring only in adults [1,7,12]. There seems to be no difference in symptoms, presentation, size or location between benign cysts and malignant ones. It is still unknown if malignant cysts arise *de novo* or originate from benign mesenteric cysts [7]. In the authors' opinion, surgical treatment should be offer to all cases of mesenteric cysts despite size and symptoms, in order to avoid possible life-threatening complications and an eventual malignant transformation.

Conclusion

Mesenteric cysts are rare, and their diagnosis is difficult because they are often asymptomatic or presenting with unspecific symptoms. Mesenteric cysts must be considered in the differential diagnosis of abdominal masses and increased abdominal diameter. They harbour the potential for serious complications, as torsion, rupture or infection. The only definitive treatment is surgical excision.

Conflict of Interest

The authors declare no financial interest and no conflict of interest.

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