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Mesenteric Cysts: Case Report, Differential Diagnosis and Literature Review

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Abstract

Mesenteric cysts or masses are uncommon. Usually they are benign abdominal tumors, but differential diagnosis is very complex. Patients undergo surgery only when they become symptomatic, typically due to compression of the adjacent organs. Patient's history and preoperative imaging, mostly with CT-Scan and magnetic resonance imaging (MRI), are important to evaluate the risk of malignancy and to decide the surgical strategy. This case report describes the case of a young woman with a large mass of the mesentery, with particular regard to differential diagnosis and therapeutical strategy.

Keywords

mesenteric cysts; mesenteric mass; teratoma

Introduction

Mesenteric cysts are rare benign intra-abdominal tumours with an incidence of 1 case per 250,000 hospital admission [1]. Moynihan [2] in 1897 stated that cysts of the mesentery are surgical rarities. Lack of characteristical clinical features and radiological signs presents difficulties for diagnosis. The main presenting features, in order of frequency, are abdominal pain, distension, abdominal mass, nausea, vomiting, constipation, diarrhea, and weight loss but in most of the cases mesenteric cysts remain asymptomatic [3]. Because of variable and non-specific clinical symptoms and signs, mesenteric cysts are discovered accidentally during an abdominal radiological examination or during laparotomy performed for other reasons [4]. Knowledge of these lesions is necessary for a correct surgical management.

Case Presentation

A young woman of 20 years old consulted our institute in March 2015 for the presence of mild abdominal pain since three months. The pain was continuous and increased in certain positions, e.g. when the patients stood up, the pain got worse but it decreased when she leaned over. In the beginning, the pain was localized in the left flank. Later, it moved to the right flank. The pain was progressive in the last three months and was not related to any specific food intake. The previous medical history is unremarkable, with no previous surgery and no medications. There was no history of trauma. The stool and urine were normal. There was no vomiting and no recent weight loss. The menstruation was normal and regular. This patient had been smoking for 6 years, approximately 7 cigarettes per day and she rarely drunk alcohol. At clinical examination there was no distention or swelling of the abdomen and a mobile

solid mass could be felt in the right flank. . There was no rebound tenderness or referred tenderness. Blood tests were normal with no signs of anemia or inflammation. Tumor markers such as carcinoembryonic antigen (CEA), gastrointestinal cancer antigen (GICA or CA-19.9) and CA-15.3 were measured in serum, and they were normal. Abdominal and transvaginal ultrasound showed an intra-peritoneal round shaped formation, inhomogeneous, without vascularization, not in contact with the genital apparatus, that measured 58 x 48 x 51 mm. An abdominal MRI without and with contrast showed a swelling in the left hypochondrium, close to the deep muscles and inseparable from adjacent bowel loops. The walls of the mass were regular and there was a persistent contrast-enhancement. The content was characterized by a lipomatous component and the characteristics were described as typical for teratoma. No intra or retro-peritoneal adenopathies were found. The patient initially refused surgery but came back in our institute month later for worsening of pain. An abdominal CT-scan without and with contrast performed one month after MRI showed that the abdominal formation with partial lipomatous content that was previously documented in the left hypochondrium was localized at a more medial position on the right, anterior to the inferior vena cava. The characteristics suggested a teratoma from mesenchymal origin. The mass was movable Figure 1-2: Surgical specimen with a potential risk of mesenteric torsion.

Because of the possible malignant nature of the lesion, the symptomatology and for the risk of a possible intestinal torsion, laparoscopic exploration of the abdomen took place. This showed no free fluid and a mesenteric mass of 5 cm adherent to the omentum and intestinal loops. After careful attempt to remove it for the strong omental and intestinal adhesion, a long vascular pedicle from the mesentery to the cyst was found that may explain the mobility of the lesion. No signs of intestinal torsion were observed. The mass adhered tenaciously to the ileum, therefore the decision was made to proceed with median laparotomy. The mesenteric mass, of parenchymous content, was identified. Cautious lysis of the adhesions between the mass and the mesentery was performed and the tumor was removed. The histological examination showed a benign cyst, with signs of granulomatosis, with no malignant cells. The postoperative course was uneventful and the patient was discharged after five days. The histological examination showed a benign cyst, with sign of granulomatosis lesion, with no malignant cells (Figure 1-2-3). Under histological examination mesenteric cyst contains inflammatory and fibrin-hemorrhagic material. Most cysts are lined with a single layer of columnar or cuboidal epithelial cells with microvilli and desmosomes. This layer is sometimes destroyed as a result of pressure exerted by the cyst fluid. The wall is thick and occupied by an inflammatory process (rich in macrophages haemosiderin, thin-walled vessels and infiltrate of lymphocytes type) tendency to sclerosing.

Discussion

Mesenteric cysts are rare. The Italian anatomist Benevenni first described this entity performing an autopsy in an 8-year-old boy in 1507 [5]. Mesenteric cysts can range in size from a few millimeters to many centimeters in diameter and may occur in patients of any age. Approximately one-third of the cases occur in children younger than 15 years old [5]. Mesenteric cysts should be evaluated with complete history, clinical examination, blood investigations and radiological investigations (X-ray abdomen erect, ultrasound abdomen (US), computed tomography (CT-scan) and Magnetic resonance imaging (MRI) in selected cases) to reach a provisional diagnosis. The diagnosis is proven on laparotomy and has to be histologically confirmed.

In the presence of a mass attributable to the mesentery all possible differential diagnoses must be considered. In particular in our case we have considered the following differential diagnoses:

Cystic lymphangioma: This pathology is usually found in the head and neck regions during the first few years of life. This mass is only rarely found on the small-bowel mesentery [6-7]. Most lymphangiomas are benign lesions that result only in a soft, slow-growing mass. Since they have no chance of becoming malignant, lymphangiomas are usually treated for cosmetic reasons only.

Lymphoma (Hodgkin/non-Hodgkin) or metastatic lymphadenopathy: These diseases are usually associated with systemic symptoms such as fever, night sweats or weight loss (absent in our patient). Usually lymphomas are associated with multiple peritoneal or retro-peritoneal adenophaties [8]. A single, huge, mesenteric metastasis from intestinal or extraintestinal tumor is very unusual.

Simple mesenteric cyst: Simple mesenteric cysts are frequent in young patients, and are often diagnosed in childhood or adolescence. Most common location is the small bowel mesentery [9]. Simple mesenteric cysts are usually asymptomatic but can be symptomatic due to compression to adjacent organs.

Benign cystic mesothelioma: It is mostly found in young women and is often associated with previous abdominal surgery or inflammatory diseases, which was absent in this case [6].

Malignant peritoneal mesothelioma: It is a very rare malignant tumor usually found in older, male patients. It is related to exposure to asbestos, which is not the case in our patient [7-8].

Desmoid tumor: This tumor usually appears after local trauma, e.g. surgery (which is not the case in this patient). It is often related to familial adenomatous polyposis (FAP) and Gardner's syndrome. This disease usually occurs in the elderly and is rare in the young [10].

Lipoma and liposarcoma: Lipoma is often associated with predisposing factors such as obesity, hypercholesterolemia, diabetes and family history of lipomas. Intra-adominal lipomas are rarely found. [11]. Liposarcoma only rarely involves the mesentery of the bowel and is more common in men [12].

Dermoid cyst or mature cystic teratoma: It is a type of germ cell tumor and may contain tissues of ectodermal, mesodermal and endodermal origin. It is a rare disease that usually occurs in young men and women and it is very rarely found in the mesentery [13-14]. In our case CT-scan and MRI suggested a teratoma from mesenchymal origin. Since malignant transformation of the teratoma can occur (only in approximately 2% of the cases), complete resection is the standard treatment [15-16]. The goal should be to achieve an en bloc R0 resection. Once the teratoma is removed the prognosis is very good; cystic teratomas do not recur after radical surgical resection [16].

Conclusion

In conclusion mesenteric cysts are a group of rare and different diseases. Knowledge of this pathologies, knowledge of the patient's history and a proper differential diagnosis is necessary to establish the most appropriate therapy.

Figures

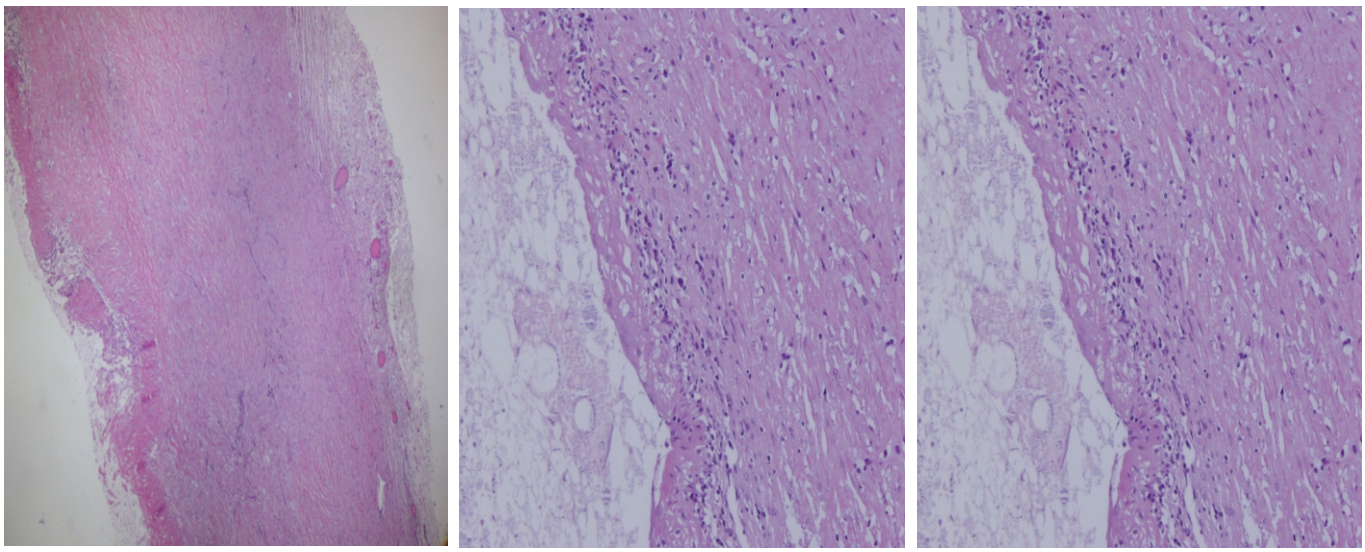

Figure 1,2,3: Histological examination

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