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CASE REPORT

Acute Formation of Multiple Mesenteric Cysts: An Unusual Case*

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ABSTRACT

Mesenteric cyst is a rare pathology, which develops over long periods of time and is usually diagnosed incidentally or due to its complications. Here an acutely formed mesenteric cyst, which is dissimilar to the cases reported, is presented. A 10–year-old male patient presented with complaints of abdominal pain and nausea and findings of muscular defense and rebound tenderness in the right lower quadrant. Abdominal ultrasonography did not reveal any specific finding. The patient underwent surgery after a preoperative-diagnosis of acute appendicitis. A few days later, the patient was rehospitalized with a recurrence of his abdominal pain, tenderness and distension. A computed tomography scan revealed the presence of cystic lesions that extended from the liver to the right iliac region. Multiple mesenteric cysts containing serosanguineous fluids were detected in reoperation. Mesenteric cysts' invading the abdominal cavity within few days is unusual. That's because it was suggested to be worth of presenting.

Key words: *Mesenteric cyst, Acute abdomen, Children*

ÖZET

Multiple Mezenter Kistlerinin Akut Oluşumu: Nadir Bir Olgu

Mezenterik kistler, nadir karşılaşılan patolojilerdir. Genelde uzun zamanda gelişim göstermekte ve rastlantı sonucu veya komplikasyonlarına bağlı olarak tanısı konulmaktadır. Bu yazıda yayınlarda rastlanmadık şekilde akut mezenter kisti oluşumu tespit edilen bir olgu sunulmuştur. Akut karın ağrısı ve bulantı şikayeti ile başvuran ve akut appendisit tanısı konan 10 yaşındaki hastanın appendektomi operasyonundan birkaç gün sonra karnında, önceden mevcut olmayan, distansiyon ve kitle imajı ortaya çıktı. Abdominal tomografinin tespit ettiği kistik kitlenin reoperasyonla, içinde serosanginöz mayi biriken multiple mezenterik kistler olduğu anlaşıldı. Birkaç gün içinde ortaya çıkıp batın içini dolduracak kadar büyüyen mezenterik kistler karşılaşılan bir tablo olmadığı için söz konusu olgu sunulmuştur.

Anahtar kelimeler: *Mezenter kisti, Akut abdomen, Çocuk*

INTRODUCTION

Mesenteric cysts (MCs) are rare intraabdominal masses of unknown etiology. The incidence of MC in children is 1/20.000, which is lower than that of adult age[1].

Although the most common location of the MCs is the mesentery of the ileum, they can also be observed in other mesenteric or retroperitoneal regions[2]. Cysts develop over long periods of time and are usually diagnosed incidentally. Patients usually apply to the Emergency Department (ED) due to acute complications of the cysts. On the other hand, the acute formation of a MC within few days is unusual. To our knowledge, no information is available in the literature on MC developing within a few days.

In this study, a case of an acutely developing MC is presented.

CASE REPORT

A 10–year-old male patient presented to the ED with complaints of 4 days of abdominal pain and nausea. Physical examination revealed muscular defense and rebound tenderness in the right lower quadrant while other findings were normal. Laboratory studies revealed a white blood cell (WBC) count of 11.200 K/uL, and a hemoglobin level of 11.5 g/dL. Biochemical parameters were found to be within normal limits. Abdominal ultrasonography (USG) did not reveal any pathologic process with an exception of minimal free fluid in iliac region.

The patient underwent surgery after a preoperative-diagnosis of acute appendicitis. Exploration from McBurney incision revealed a macroscopically edematous, neovascularized appendix. Neither fluid collection nor abscess formation was found in the abdomen. Appendectomy was performed. However, no cystic masses were detected at the time. Later appendicitis was confirmed with pathologic examination. On the third postoperative day, WBC was 9000 K/uL. The patient was discharged from hospital without any complaint.

Six days later, the patient was rehospitalized with a recurrence of his abdominal pain. Physical examination revealed tenderness and muscular defense at the right lower quadrant. His body temperature was normal. WBC was 12.700 K/uL, and hemoglobin was 11.3 g/dL. Biochemical parameters were within normal limits. The abdominal USG performed one day after hospitalization demonstrated a collection with septations (abscess?) in the right lower quadrant reaching the dimensions of 12 x 5,5 cm. WBC count rose to 17.000 K/uL after a few hours.

On the second day, abdominal distension and tenderness became evident. A substantial mass in the lower and upper right quadrants was detected through inspection and palpation. WBC had risen to 25.000 K/uL. A computed tomography (CT) scan revealed the presence of a cystic lesion with intracystic septations that exhibited a contrast enhanced pattern. It extended from the liver to the right iliac region and reached the left quadrants in the periumbilical region (Figure 1).

The patient underwent reoperation via midline incision. MCs containing serosanguineous fluids and the presence of necrotic tissues in patches were detected. These cysts which occupied nearly the whole abdomen were compressing intestinal loops and were located in the mesentery of the right colon,

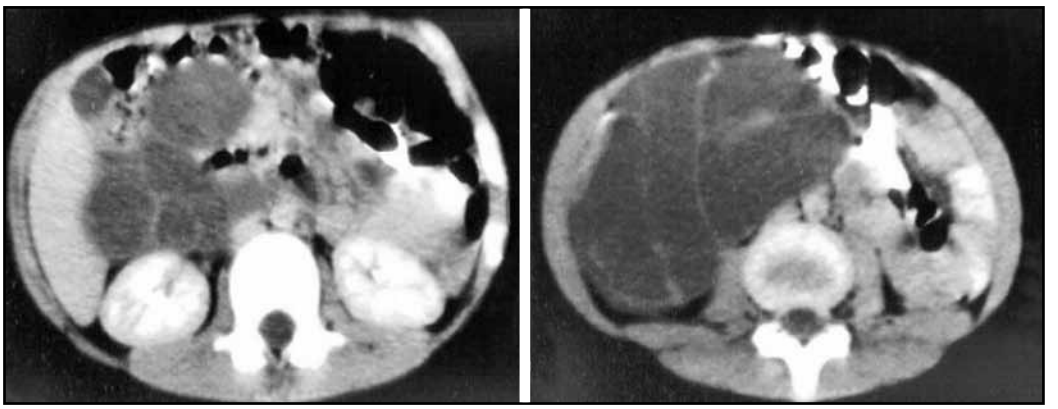

Figure 1. CT revealing a cystic lesion with intracystic septations; it is extending from the liver to the right iliac region.

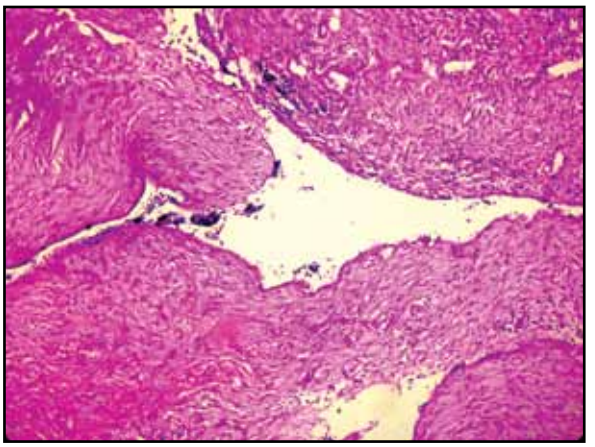

Figure 2. Hematoxilen Eosin staining (x10) of cystic wall; a single layer of epithelial lining surrounded by fibrous structure.

ileum and the distal jejunum. The cystic fluid was aspirated and biopsies were obtained from the walls of the cysts through wide partial excision. A drain was placed, and the operation terminated. On the postoperative fourth day, the patient was discharged with normal physical findings, and a WBC count that had decreased to 7500/mm^3.

Cytological analysis revealed a cystic wall and fluid accompanied by a hemorrhagic inflammatory process in the wall sections as well as leukocyte, lymphocyte and macrophages on proteinaceous ground in the cyst fluid. Histopathology of the cystic wall was reported as a single layer of epithelial lining surrounded by fibrous structure consisting of the connective tissue layer (Figure 2).

In the 12 months follow-up examination the patient expressed no complaints and his physical findings were normal. The control CT was normal and there was no recurrence of MC.

DISCUSSION

MCs are most frequently located within the mesentery of the small intestine, followed by the mesentery of the colon and retroperitoneum[2]. Various hypotheses have been put forward concerning the mechanisms of MCs development. Based on these hypotheses, MCs are classified as embryonic and developmental cysts, traumatic or acquired cysts, neoplastic cysts, and infective or degenerative cysts[3]. De Perrot et al. offered a new classification based essentially on histopathological features which include 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 (infectious and traumatic cysts)[4]. MC can be single or multiple, and unilocular or multilocular. They may contain serous, chylous, hemorrhagic or mixed fluid. As its etiology is not exactly known, it is not possible to draw conclusions regarding its developmental period[3,5]. However, in addition to being incidentally diagnosed, MCs may appear in the form of indolent masses, chronic abdominal pain, cystic rupture or infection and hemorrhage into the cyst leading to acute abdomen[2-6]. Such situations imply that the developmental process is chronic. Considering the first and second findings (no cyst vs. substantially sized cyst) it can be said that cysts of substantial size may develop acutely within a period of a few days. Additionally it seems possible to assume MCs of this case to be pseudocysts with an infectious origin.

MCs with chronic presentations (more frequently in adults) usually manifest themselves with palpable masses or abdominal distension on physical examination. Acute abdominal findings are more frequently present in children. These evidences direct the surgeon to perform emergency surgery with a preoperative misdiagnosis of acute appendicitis[1,7]. Otherwise infrequently other acute complications that cause acute abdomen include traumatic rupture, intracavitary or intraabdominal bleeding, intestinal obstruction with necrosis, intestinal gangrene due to volvulus, and cyst infarction[8]. The definitive diagnosis is made with USG, CT or magnetic resonance imaging[8-10]. The cystic or multicystic formations, often with internal septations can be easily detected in ultrasonographic evaluation. However when the MC is complicated imaging findings differ.

Likewise stated above the case in question first underwent surgery with a preoperative diagnosis of acute appendicitis. Before the second operation, a progressive abdominal distension accompanied by acute abdominal findings was evaluated, and however revealing the presence of a cystic lesion with intracystic septations USG and CT failed to dominate and the cysts were reported as an abscess formation.

Treatment of MCs is surgical for which various approaches exist[11]. The objective is to completely excise the cystic mass. For this purpose, resections

including small intestine total cystectomy or partial cystectomy and drainage procedures are performed[3]. In this case, partial cystic wall excision and drainage were performed. As there were multiple cysts extending to close to the vessels, and wide to the mesentery of intestine and right colon, resection and total cystectomy could not be performed.

Recurrence is reported to be higher after partial wall excision and drainage than after total excision[12]. Fortunately, no recurrence was observed in our patient at 1-year follow-up.

In conclusion although MCs usually manifest themselves as indolent mass, chronic abdominal pain or acute abdominal findings, it is worth noting that unusually they may also acutely develop as in this case.

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