Ruptured mesenteric cyst: a rare presentation after trauma

Mezenterik kist rüptürü: Travma sonrası görülen nadir bir olgu

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Mesenteric cysts are rare intraabdominal benign cystic lesions. These lesions are most commonly located in the ileal mesentery, without any sex predilection. Mesenteric cysts may be totally asymptomatic and discovered incidentally during routine radiologic examinations. Chronic abdominal pain or acute abdomen may be accompanying to these lesions. Ultrasonography, computed tomography and magnetic resonance imaging are valuable in the diagnosis. Rarely, these lesions may be presented with rupture after trauma. We present a patient with a ruptured ileal mesenteric cyst due to a blunt abdominal trauma and diagnosed by emergency laparotomy.

Key Words: Abdomen, acute/etiology; mesenteric cyst/complications/diagnosis/pathology/surgery.

Mezenterik kistler nadir karşılaşılan karın içi iyi huylu lezyonlardır. Sıklıkla cinsiyet gözetmeksizin ileum mezenterinde bulunurlar. Mezenterik kistler asemptomatik olabilir ve rutin radyolojik tetkikler sırasında saptanabilirler. Kronik karın ağrısı, akut cerrahi karın bulgularıyla da karşımıza çıkabilirler. Ultrasonografi, bilgisayarlı tomografi, manyetik görüntüleme yöntemleri tanıda yararlıdır. Nadiren travma sonrası rüptürle karşımıza çıkabilirler. Bu yazıda künt batın travması sonrası acil laparotomi sırasında tanı konulmuş ileum mezenteri yerleşimli mezenterik kist rüptürü olgusu sunuldu.

Anahtar Sözcükler: Karın, akut/etyoloji; mezenterik kist/komplikasyon/tanı/patoloji/cerrahi.

Mesenteric cysts are very rare benign intraabdominal tumours. Their origin is not clear. They are defined as cystic masses located in the intestinal mesentery. The most common location is ileum, but they can be found anywhere in the mesentery between duodenum and rectum. The incidence of these lesions has been estimated about 1 per 100.000 among adult acute admissions and 1 per 20.000 among paediatric acute admissions. Approximately, males and females are equally affected.[1-3] The symptoms are variable, ranging from asymptomatic cases with incidental discovery to chronic abdominal discomfort and acute abdomen. Abdominal ultrasonography, computed tomography and magnetic resonance imaging have an important role in the diagnosis.[1] Open or laparoscopic surgery is the treatment of choice and provides exact diagnosis after histopathological examination.[4-6]

We present an 82 year-old woman with an ileal mesenteric cyst who was admitted with an acute abdomen after blunt abdominal trauma. A ruptured mesenteric cyst was finally diagnosed during emergency laparotomy.

CASE REPORT

An 82 year-old female patient was admitted to the emergency room (ER) with progressive abdominal pain during the last two hours. The pain started after falling down on the floor in the bathroom about three hours ago. There was a history of an appendectomy at the age of 32 years and cholecystectomy at the age of 52 years. She experienced a stroke two years ago with resultant right hemiplegia. Diabetes mellitus had been diagnosed ten years ago and she was on insulin treatment.

On inspection of the abdomen, right subcostal and Mc-Burney scars were noted. Initial physical examination revealed abdominal distension, pain in all quadrants, diffuse muscle guarding and rebound tenderness. On auscultation, bowel sounds were

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found to be decreased. There was no palpable abdominal mass. Rectal examination revealed a considerable quantity of stool without any palpable mass. Her body temperature was 38.2°C, the pulse rate 112 and respiration rate 26/min. The blood pressure was 90/60 mm Hg. Her general condition was poor with lack of self care and her hemodynamic condition had a worsening course from the time of admission. Her hematocrit was 31% and the white blood cell count was 15000. A plain abdominal X-ray film was taken and assessed as unremarkable. Abdominal ultrasound performed in the ER showed gaseous distension of the intestinal segments which prevented optimal examination and the presence fluid in the Douglas pouch. There was no parenchymal organ laceration or injury on ultrasonography (US).

Computed tomography (CT) was not performed because of the patient's critical and worsening general condition. Because of the suspicion for intestinal perforation or traumatic mesenteric injury according to physical examination findings and detection of fluid in Douglas pouch, an emergency operation was decided. During the upper median laparotomy, a perforated ovoid cystic lesion, 14 cm in diameter and located in the small bowel mesentery at 100 cm distal to ligament of Treitz, was found (Fig. 1). Approximately 450 mL hemorrhagic fluid was aspirated. Cyst was unroofed and a small mesenteric vessel considered to be the origin of the bleeding was sutured. Since, the general condition of the patient was worsening segmental resection and anastomosis could not be performed.

Histopathological examination revealed that the cyst wall was principally composed of dense, hyalinized fibrous tissue. There was no epithelial lining within the cyst which led to the diagnosis of a mesenteric cyst and provided exclusion of a duplication cyst. On the fourth day during postoperative course in the intensive care unit, the patient's blood gas values began to deteriorate. She died on the seventh day because of acute respiratory distress syndrome.

DISCUSSION

Mesenteric cysts are rare intraabdominal lesions which are cystic in nature. Their cause and origin is not clear. They are more common in the paediatric age group suggesting a developmental origin. Some authors suggest that the embryo's lymphatic space fails to join the venous system,[7] lymphaticovenous shunts exist in perinodal tissue[8] or lymphatic obstruction develops after trauma or resection.[9]

According to the medical reports of Mount Sinai Hospital, the incidence is approximately 1/106400.[2] There is no sex predilection. Mesenteric cysts are frequently misdiagnosed preoperatively or are found

Fig. 1. A perforated ovoid cystic structure.

incidentally during operation for other diseases. There are no pathognomonic signs or symptoms for mesenteric cysts.[3] The sole finding of physical examination that would suggest a mesenteric cyst is its mobility in the transverse plane during palpation. Most of them are asymptomatic. Symptomatic ones may present with non-specific abdominal pain, nausea, vomiting and distension. They may also cause fever, constipation and leukocytosis. These symptoms depend on the lesion size and position.

The most common complications are rupture, haemorrhage and obstruction,[10-12] which would present with acute abdomen. US and CT are important for diagnosis, but definite diagnosis can only be made after surgery by histopathological examination. Differential diagnostic considerations include bowel duplication cyst, urachal cyst, Meckel's diverticulum, lymphoma and rhabdomyosarcoma.[13]

Radiologic examinations are helpful in diagnosis, but definitive diagnosis can only be made by histopathological examination after surgery. US shows the cystic nature of the mass and its location. But, we think that US alone is not sufficient to detect the mesenteric location in most cases. First of all, there should be a high index of suspicion. CT would be an important adjunct in demonstration of the mesenteric location and the lesion's relationship with adjacent organs. In our case, US examination was not optimal due to presence of gaseous distension. We think that CT would be diagnostic of a mesenteric cystic lesion, but due to patient's worsening clinical and hemodynamic status there was no time for CT examination.

Cystic lesions may contain chylous, bloody or purulent fluid.[3,11,12] In the present case, the cystic lesion had purulent and hemorrhagic fluid that occurred after blunt trauma. The purulent nature of the cystic contents explains patient's febrile condition.

The traditional surgical approach for mesenteric cyst includes simple drainage, resection or marsupialization. Marsupialization is not preferred in general since it has the risk of infection and the patient may need a reoperation due to draining sinuses. If simple drainage is performed, the cyst usually recurs.

Complete enucleation or bowel resection is the treatment of choice for both retroperitoneal and mesenteric cysts[4,13-15] since it prevents recurrence. Laparoscopic surgery is preferred due to shorter and easier post-op course and early return to normal activity. Laparoscopic approach was not possible in our patient, owing to the poor hemodynamic condition. For the same reason, complete excision could not be performed and marsupialization was done. This procedure is suboptimal and may require a second procedure for recurrence. Retroperitoneal cysts are technically more difficult to be completely excised because of their proximity to major blood vessels. These cysts are more likely to require marsupialization. Therefore, the recurrence of retroperitoneal cyst is much more common than mesenteric cysts.[2] Shamiyeh et al.,[6] diagnosed recurrence of a mesenteric cyst during follow-up in a patient whose cyst had been unroofened by laparoscopy, 10 months after surgery. The surgical goal should be complete excision whenever possible, as recurrences are rare following successful resection. But, there are rare instances where the general condition of the patient may not allow complete resection, as in our case.

This report reminds an atypical presentation of a mesenteric cyst, with post traumatic rupture and acute abdomen. We believe that the possiblity of a ruptured mesenteric cyst should be kept in mind as well as other parenchymal injuries in a patient presenting with acute abdomen after blunt trauma.

REFERENCES

1. Franciosi C, Romano F, Giardino A, Piacentini MG, Ferrari Bravo A, Motta V, et al. Mesenteric cyst neoformation. A case report. Minerva Chir 2002;57:509-12.
2. Kurtz RJ, Heimann TM, Holt J, Beck AR. Mesenteric and retroperitoneal cysts. Ann Surg 1986;203:109-12.
3. Beahrs OH, Judd ES Jr, Dockerty MB. Chylous cysts of the abdomen. Surg Clin North Am 1950;30:1081-96.
4. Dequanter D, Lefebvre JC, Belva P, Takieddine M, Vaneukem P. Mesenteric cysts. A case treated by laparoscopy and a review of the literature. Surg Endosc 2002;16:1493.
5. Morrison CP, Wemyss-Holden SA, Maddern GJ. A novel technique for the laparoscopic resection of mesenteric cysts. Surg Endosc 2002;16:219.
6. Shamiyeh A, Rieger R, Schrenk P, Wayand W. Role of laparoscopic surgery in treatment of mesenteric cysts. Surg Endosc 1999;13:937-9.
7. Godart S. Embryological significance of lymphangioma. Arch Dis Child 1966;41:204-6.
8. Elliott GB, Kliman MR, Elliott KA. Persistence of lymphatico-venous shunts at the level of the microcircula-

tion: Their realationship to “lymphangioma” of mesentery. Ann Surg 1970;172:131-6.
9. Bill AH Jr, Sumner DS. A unified concept of lymphngioma and cystic hygroma. Surg Gynecol Obstet 1965;120:79-86.
10. Iuchtman M, Soimu U, Amar M. Peritonitis caused by a ruptured infected mesenteric cyst. J Clin Gastroenterol 2001;32:452-3.
11. Pisano G, Erdas E, Parodo G, Martinasco L, Pomata M, Daniele GM. Acute abdomen due to rupture of mesenteric cysts. Observations on a clinical case and review of the literature. [Article in Italian] Minerva Chir 2004;59:405-11. [Abstract]
12. Takeuchi K, Takaya Y, Maeda K, Maruo T. Peritonitis caused by a ruptured, infected mesenteric cyst initially interpreted as an ovarian cyst. A case report. J Reprod Med 2004;49:65-7.
13. Gallagher PG, Kirks D, Wood BP. Radiological case of the month. Mesenteric cyst with hemorrhage. Am J Dis Child 1990;144:793-4.
14. Vanek VW, Phillips AK. Retroperitoneal, mesenteric, and omental cysts. Arch Surg 1984;119:838-42.
15. Caropreso PR. Mesenteric cysts: a review. Arch Surg 1974;108:242-6.