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Case Report

Torquated Giant Appendix Epiploica Mimicking Intraperitoneal Liposarcoma: Report of a Case

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A 49-year-old woman presented with acute abdominal pain in the right iliac fossa in our emergency department. Pain was abrupt in onset and severely colicky in nature. Abnormal laboratory values included a C-reactive protein of 75 mg/L and a CA-125 of 70.3 U/mL. White blood cell count was normal. Abdominal computed tomography (CT) scan revealed an inhomogeneous mass of 9.5 × 3.5 × 5.5 cm in diameter close to the appendix vermiformis and the sigmoid colon. Because of the clinical symptoms of an acute abdomen an explorative laparotomy was performed. Intraoperatively a pedunculated tumor beginning at the serosa of the sigmoid colon was found. The appendix was unremarkable. The macroscopic aspect as well as the backtable incision of the tumor was suspicious of an intraperitoneal liposarcoma. Rapid section and histopathologic examination revealed necrotic fat tissue without any malignancy. The patient was discharged from the hospital 7 days after the operation with normal laboratory parameters and without further complication. When epiploic appendagitis is evident as a big tumor mass in addition to clinical symptoms of an acute abdomen and elevated tumor markers, surgical exploration is mandatory.

Key words: Torquated appendix epiploica – Epiploic appendagitis – Acute abdomen – Abdominal liposarcoma – Appendicitis

A 48-year-old white woman presented with right lower quadrant pain, tenderness, and rebound tenderness on examination at the emergency department. The past medical history included an external endometriosis, clinically evident as a follicle cyst of the right ovary, and a subclinical hypothyrosis. Laboratory tests revealed normal white blood cell count of 8800/mL and an elevated C-reactive protein of 75 mg/L. CA-125 was elevated at 70.3 U/mL (normal value ≤35 U/mL). There was no sign of fever. Liver and pancreas values were within normal range. The body mass index was 20.5 kg/m^2. Abdominal ultrasound showed an inhomogenous tumor in the pelvic inlet with presence of fine echogenic lines within the tumor, being suspicious for a highly differentiated liposarcoma. On the

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Fig. 1 Contrast-enhanced CT scan shows a well-circumscribed fatty mass (arrow) in the pelvic inlet near the colon with enhancing capsule and internal septa.

contrast-enhanced abdominal computed tomography (CT) scan a fat-containing well-circumscribed mass up to 10 cm with internal septal structures was detected in the right lower abdomen medially adjacent to the cecum. Surrounding fatty mesenterial tissue revealed signs of inflammatory stranding and regional enlarged lymph nodes. No effects of small bowel obstruction could be observed (Fig. 1). An exploratory laparotomy was performed because of the clinical symptoms of an acute abdomen. Intraoperatively a kidney-shaped, $10 \times 5 \times 3$ cm mass with a 5-cm torquated peduncle beginning at the serosa of the middle sigmoid colon was found (Fig. 2). The rest of the colon was unremarkable with normal epiploic appendices, a normal appendix vermiformis, and unsuspicious female genital organs. The tumor was resected including a part of the sigmoid wall by monopolar electrocauterization. Backtable incision of the 92-g tumor showed a macroscopically inhomogeneous lobulated cutting surface with central hemorrhages similar to a highly differentiated liposarcoma corresponding to the ultrasound and the CT findings (Fig. 2). Histopathologic examination revealed necrotic fat tissue without any malignancy. The final histopathologic analysis of the resected tissue demonstrated adipose tissue surrounded by fibrotic inflammatory changes with marked infiltration of numerous lymphocytes and histiocytes and a local fibrinous peritonitis, whereas histopathologic analysis of the resected appendix vermiformis was normal, without any signs of inflammation. Thus, the diagnosis of a liposarcoma could be excluded. The patient was discharged from the hospital 7 days after the operation with normal laboratory parameters and without complications.

Discussion

Appendices epiploicae are in the region of 50–100 pedunculated fatty structures protruding from the serosal surface of the caecum to the rectosigmoid junction.[1] Limited blood supply together with excessive mobility are causes for spontaneous torsion and ischemic or hemorrhagic infarction.[2] A twisted and gangrenous appendix epiploica is one of the rare causes of unexplained abdominal pain. Most clinical symptoms are well localized tenderness and pain und the lower quadrant of the abdomen.[3-5] The majority of torquated appendix epiploica occurs in the sigmoid colon of middle aged men suffering from acute abdominal pain of the left lower abdomen. The risk increases with obesity and cardiovascular diseases. Usually epiploic appendagitis without a torsion is a benign and self-limiting condition which is treated conservatively in most cases.[4,6-8] Necrosis of any abdominal fat tissue is the reason for an acute abdomen in 1,1% of the patients undergoing diagnostic laparoscopy.[3] Based on small patient series, appendicitis epiploica is the correct diagnosis in 0,3–7% of presumed

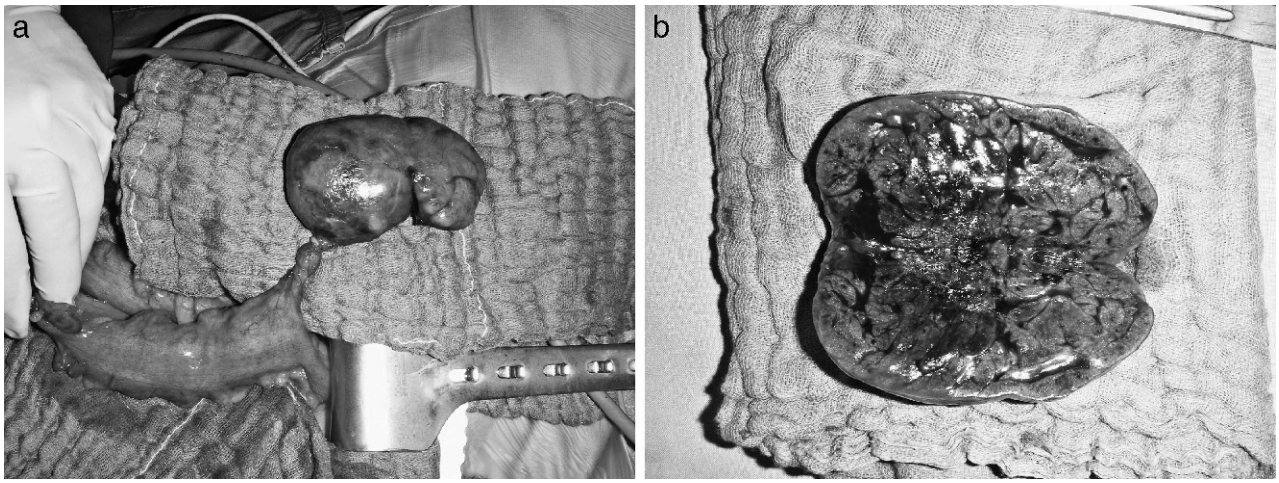

Fig. 2 Intraoperative findings. A 10- × 5-cm tumor with a torquated peduncle of the serosa of the sigmoid colon was seen. The appendix vermiformis was unremarkable with no inflammation. Backtable incision of the tumor resembles a liposarcoma with an inhomogeneous cutting surface, central necrosis, and hemorrhage.

diverticulitis or appendicitis.[3,9,10] Possible clinical and radiological pitfalls are advanced appendicitis or diverticulitis.[2,11,12] In the present case, a very slim female patient with a BMI of 20.5 kg/m^2 presented with clinical symptoms of an acute abdomen, mild infection parameters, elevated tumor marker CA-125 and malignancy criteria in the ultrasound and in the CT scan. One of the differential diagnosis of the tumor would have been a liposarcoma or a gynecological tumor or an appendicitis as well as an epiploic appendagitis. Sigmoid diverticulitis seemed to be highly unlikely in such a slim female with an unsuspicious prior colonoscopy. The CT features of acute epiploic appendagitis usually include an oval lesion of 15–35 mm in diameter.[13] The differentiation between lipoma and liposarcoma in MRT or CT scans is not easy and include as differential diagnosis all entities with predominantly macroscopic fat.[11,14] What is peculiar about our case is that - in contrast to previous published case reports and reviews for far - the epiploic appendagitis herein reported was giant with a dimension of almost 10 cm in the diameter. Altogether, clinical symptoms of the patient in combination with a suspicious mass in the CT scan as well as elevated tumor markers have lead to an abdominal exploration.

Conclusion

In contrast to a simple epiploic appendagitis which is treated almost conservatively, big tumour mass in combination with malignancy criteria in ultrasound or CT-findings or tumour markers as in the present case, justify an exploration to exclude or to confirm malignancy. In line with recent literature,[15] torsion of big intraabdominal fat mass can lead by an advancing necrosis to a secondary peritonitis which can be avoided by an early operative treatment.

References

1. Ghahremani GG, White EM, Hoff FL, Gore RM, Miller JW, Christi ML. Appendices epiploicae of the colon: radiologic and pathologic features. *Radiographics* 1992;**12**(1):59-77
2. Pereira JM, Sirlin CB, Pinto PS, Jeffrey RS, Stella DL, Casola G. Disproportionate fat stranding: a helpful CT sign in patients with acute abdominal pain. *Radiographics* 2004;**24**(3):703-715
3. Aronsky D, Z'Graggen K, Banz M, Klaiber C. Abdominal fat tissue necrosis as a cause of acute abdominal pain. Laparoscopic diagnosis and therapy. *Surg Endosc* 1997;**11**(7):737-740
4. Ozdemir S, Gulpinar K, Leventoglu S, Uslu HY, Turkoz E, Ozcay N *et al*. Torsion of the primary epiploic appendagitis: a case series and review of the literature. *Am J Surg* 2010;**199**(4):453-458
5. Son HJ, Lee SJ, Lee JH, Kim YH, Rhee PL, Kim JJ *et al*. Clinical diagnosis of primary epiploic appendagitis: differentiation from acute diverticulitis. *J Clin Gastroenterol* 2002;**34**(4):435-438
6. Legome EL, Belton AL, Murray RE, Rao PM, Novelline RA. Epiploic appendagitis: the emergency department presentation. *J Emerg Med* 2002;**22**(1):9-13
7. Sangha S, Soto JA, Becker JM, Farraye FA. Primary epiploic appendagitis: an underappreciated diagnosis. A case series and review of the literature. *Dig Dis Sci* 2004;**49**(2):347-350
8. Ammar H, Looney SC, Malani A. Epiploic appendagitis. *Lancet* 2009;**373**:2054
9. Osada H, Ohno H, Watanabe W, Nakada K, Okada T, Yanagita H *et al*. Multidetector computed tomography diagnosis of primary and secondary epiploic appendagitis. *Radiat Med* 2008;**26**(10):582-586
10. Rao PM, Rhea JT, Wittenberg J, Warshaw AL. Misdiagnosis of primary epiploic appendagitis. *Am J Surg* 1998;**176**(1):81-85
11. Almeida AT, Melao L, Viamonte B, Cunha R, Pereira JM. Epiploic appendagitis: an entity frequently unknown to clinicians--diagnostic imaging, pitfalls, and look-alikes. *AJR Am J Roentgenol* 2009;**193**(5):1243-1251
12. Matthyssens LE, Van Hee R, Van Osselaer GE, Lemmens L. Giant diverticulum of the colon: report of two new cases and review of the literature. *Int Surg* 2003;**88**(1):34-40
13. Singh AK, Gervais DA, Hahn PF, Sagar P, Mueller PR, Novelline RA. Acute epiploic appendagitis and its mimics. *Radiographics* 2005;**25**(6):1521-1534
14. Pereira JM, Sirlin CB, Pinto PS, Casola G. CT and MR imaging of extrahepatic fatty masses of the abdomen and pelvis: techniques, diagnosis, differential diagnosis, and pitfalls. *Radiographics* 2005;**25**(1):69-85
15. Young TH, Lee HS, Tang HS. Primary torsion of the greater omentum. *Int Surg* 2004;**89**(2):72-75