Single Case

Laparoscopic Resection of a Jejunal Mesenteric Pseudocyst

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Keywords

Mesenteric pseudocyst · Laparoscopic resection · Jejunum

Abstract

An unusual case of a jejunal mesenteric pseudocyst treated by laparoscopic resection is reported. A 44-year-old woman was admitted to our hospital with intermittent upper abdominal pain and diarrhea. Physical examination revealed slight periumbilical tenderness, and no masses were palpable. Contrast-enhanced computed tomography showed a 4-cm-sized nonenhancing high-density mass with a heterogeneous pattern on a proximal small bowel loop. Based on these findings, a gastrointestinal stromal tumor accompanied by hemorrhagic and cystic change, a mesenteric hematoma, or a desmoid tumor was diagnosed. Laparoscopy was performed to obtain an accurate diagnosis. Exploration of the abdominal cavity identified a 4-cm mass originating from the mesentery of the jejunum. Segmental resection of the jejunum and its mesentery, including the mass, was performed. Macroscopically, the mass appeared to be a cystic mass of the jejunal mesentery. The mass within the cyst lumen consisted of white clayish material with no specific pathology. The final pathological diagnosis was a mesenteric pseudocyst. The patient had an uneventful postoperative course.

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Introduction

A mesenteric cyst is a rare tumor that does not arise from any abdominal organ. Most often, these cysts are present in the small bowel mesentery (50–80%); the next most common locations are in the large bowel mesentery (15–30%) and in the retroperitoneal space (7–20%) [1]. Ros et al. [2] used the term “pseudocyst” for the first time in the classification of mesenteric cysts in 1987. Mesenteric pseudocysts are devoid of specific endothelial lining and either infectious or traumatic etiology. Preoperative diagnosis of a mesenteric pseudocyst is usually difficult because of the lack of disease-specific signs. To the best of our knowledge, about 20 cases of this disease have been reported in the English literature. A patient with a jejunal mesenteric pseudocyst who underwent laparoscopic resection is presented, and the relevant literature is reviewed.

Case Report

A 44-year-old woman was admitted to our hospital with intermittent upper abdominal pain and diarrhea. She had a history of anxiety neurosis, hyperventilation syndrome, and alcoholic liver injury. Physical examination revealed slight periumbilical tenderness, and no masses were palpable. Laboratory data on admission showed: erythrocyte count $371 \times 10^4/\text{mm}^3$ (normal 380–480), hemoglobin 14.2 g/dL (normal 12–16), leukocyte count $3,570/\text{mm}^3$ (normal 4,000–9,000), platelet count $18.1 \times 10^4/\text{mm}^3$ (normal 10–40), serum total protein 6.7 g/dL (normal 6.7–8.3), total bilirubin 0.73 mg/dL (normal 0.2–1.2), aspartate aminotransferase 36 IU/L (normal 12–28), alanine aminotransferase 15 IU/L (normal 8–34), alkaline phosphatase 199 IU/L (normal 115–274), lactate dehydrogenase 156 IU/L (normal 126–213), γ -glutamyltranspeptidase 102 IU/L (normal 12–48), serum amylase 44 U/L (normal 37–125), blood urea nitrogen 11.3 mg/dL (normal 8–20), creatinine 0.5 mg/dL (normal 0.5–0.9), and C-reactive protein 0.01 mg/dL (normal 0–0.3). The serum level of the tumor marker carcinoembryonic antigen was 1.8 (normal 0–5) ng/mL, and the carbohydrate antigen (CA19-9) level was 7.6 (normal 0–37) U/mL.

Contrast-enhanced computed tomography (CT) showed a 4-cm-sized nonenhancing high-density mass with a heterogeneous pattern on a proximal small bowel loop. The mass was well separated from the neighboring vessels and organs (Fig. 1). Based on these findings, a gastrointestinal stromal tumor accompanied by hemorrhagic and cystic change, a mesenteric hematoma, or a desmoid tumor was diagnosed. Laparoscopy was performed to obtain an accurate diagnosis. Exploration of the abdominal cavity identified a 4-cm mass, which originated from the mesentery of the jejunum (Fig. 2a). Segmental resection of the jejunum and its mesentery, including the mass, was performed. Macroscopically, the mass appeared to be a cystic mass of the jejunal mesentery, and it measured 41×42 mm. The mass within the cyst lumen consisted of white clayish material with no specific pathology (Fig. 2b). Culture of the cyst's contents for bacteria was negative. Histopathological examination of the resected tissues showed that the cystic wall was made up of fibrous tissue with infiltration of inflammatory cells, but neither a specific endothelial lining nor a proliferating lining was found (Fig. 3). The final pathological diagnosis was mesenteric pseudocyst. The patient had an uneventful postoperative course.

Discussion

Mesenteric cysts are rare intra-abdominal lesions arising with an incidence of 1/100,000 admissions in adults and 1/20,000 in children [3]. Ros et al. [2] reviewed 41 cases of mesenteric and omental cysts, and proposed a histological classification correlated with radiological findings. These authors classified the cysts into 5 groups: (a) lymphangiomas, (b) enteric duplication cysts, (c) enteric cysts, (d) mesothelial cysts, and (e) nonpancreatic pseudocysts. The term “pseudocyst” was used in the classification of mesenteric cysts for the first time. Recently, a new classification of intra-abdominal cysts was proposed by de Perrot et al [4]. It is based on the histological identity of the internal epithelium and consists of 6 groups: (a) lymphatic cysts (simple cysts and lymphangiomas), (b) mesothelial cysts (simple cysts, benign mesotheliomas, malignant mesotheliomas), (c) enteric cysts (including enteric duplication), (d) urogenital cysts, (e) mature cystic teratoma (dermoid cysts), (f) pseudocysts (infectious, traumatic, and degenerative). Pseudocysts are histologically similar to pancreatic pseudocysts, which are usually surrounded by a thick fibrous wall without an inner epithelial lining [4]. According to these classifications, our patient’s cyst was categorized as a pseudocyst. Most such lesions are posttraumatic or infectious, but in the present case, the patient did not have a history of abdominal trauma or abdominal inflammatory disease.

As most mesenteric cysts have no symptoms, they are frequently discovered by chance on ultrasonography or CT; it is difficult to detect them on physical examination or by hematological testing [5]. The symptoms of mesenteric cysts are usually nonspecific. Initial clinical presentations include abdominal pain (82%), vomiting (45%), constipation (27%), and palpable abdominal mass (61%) [4]. Complications such as torsion, rupture, hemorrhage, infection, and intestinal obstruction caused by these cysts have been reported [6, 7]. Sonographically, pseudocysts are hypoechoic masses that are frequently filled with echogenic debris. On CT images, they are hypodense, have thin walls, and show no postcontrast enhancement [8, 9]. In the present case, CT showed a nonenhancing high-density mass in with a heterogeneous pattern; therefore, a gastrointestinal stromal tumor accompanied by hemorrhagic and cystic change, a mesenteric hematoma, or a desmoid tumor was diagnosed. The cyst was filled with white clayish material; the CT showed a nonenhancing high-density mass with a heterogeneous pattern. Such contents are unique in pseudocysts, which may be serous, chylous, gelatinous, sanguineous, or mixed [10].

With the exception of malignant cystic mesothelioma, all mesenteric cysts are benign, and their total excision is usually curative [4]. Sometimes, additional resection of neighboring organs is needed [11]. Recently, laparoscopic resection has replaced laparotomy because of its high success rate; in addition, laparoscopy can reduce surgery time and has a low rate of incidence of postoperative complications [10, 12, 13]. Although mesenteric pseudocysts are rare and their preoperative diagnosis is difficult because of the lack of specific signs, the disease must be considered in the differential diagnosis of intra-abdominal masses. We believe that laparoscopic resection is the preferred treatment for mesenteric cysts when the cysts are not huge in size.

Statement of Ethics

The authors have no ethical conflicts to disclose.

Disclosure Statement

The authors have no funding or conflicts of interest to disclose.

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Fig. 1. Contrast-enhanced computed tomography in axial (a) and coronal (b) views showed a 4-cm-sized nonenhancing high-density mass with a heterogeneous pattern on a proximal small bowel loop. The mass was well separated from the neighboring vessels and organs.

Fig. 2. **a** Exploration of the abdominal cavity identified a 4-cm mass originating from the mesentery of the jejunum. **b** Macroscopically, the mass appeared to be a cystic mass of the jejunal mesentery. The mass within the cyst lumen consisted of white clayish material.

Fig. 3. Histopathological examination of the resected tissues showed that the cystic wall was made up of fibrous tissue with infiltration of inflammatory cells, but neither a specific endothelial lining nor a proliferating lining was found. HE. $\times 40$.