Case report

Huge retroperitoneal nonpancreatic pseudocyst

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A B S T R A C T
Retroperitoneal cysts (RCs) are rare. They are composed of both epithelial and mesothelial tissues, and those without an epithelial lining in the wall are called pseudocysts. Most retroperitoneal pseudocysts are pancreatic in origin, and nonpancreatic pseudocysts are very rarely reported. In this article, we present a case with a huge retroperitoneal nonpancreatic pseudocyst and discuss the diagnosis, treatment, and outcomes of this rare condition.

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1. Introduction

Retroperitoneal cystic (RC) masses are relatively rare in clinical settings. They are generally considered to be benign tumors, and their precise pathogenesis remains unknown. There are no specific clinical signs for RCs, although vague abdominal pain and distention are present in 50% of cases with an RC. Most importantly, they usually attain a large mass before causing any symptoms; therefore, they are often accidentally discovered. RCs without an epithelial lining in the wall are called pseudocysts, and most retroperitoneal pseudocysts are pancreatic in origin. In this report, we present a rare case with a huge retroperitoneal nonpancreatic pseudocyst and discuss the clinical and pathologic findings as well as the treatment procedures and surgical outcomes.

2. Case report

A man 43 years of age presented with progressive lower abdominal pain for 1 week. The pain was dull and nonradiating, and there was no apparent factor that either aggravated or relieved it. In addition, the patient complained of abdominal distension and frequent urination. His bowel habits were normal, and he had no urgency, hesitancy, weak stream, or burning sensation when urinating. There was no fever, body weight loss, or recent history of trauma or surgery. An abdominal physical examination revealed a large mass in the lower abdomen, which was soft, fixed, and nontender. A contrast-enhanced computed tomography (CT) scan of the abdomen was performed that revealed a well-defined large cystic mass with a thickened wall in the left pelvic cavity. The scan also indicated that the cyst had compressed the bladder (Fig. 1); however, there was no connection between them (Fig. 2). Relevant hematologic and biochemical investigations were normal. The patient was subsequently diagnosed as having an RC and a laparotomy was planned.

Under general anesthesia, the patient was placed in the supine position, and a urethral catheter was put in place. After the bladder was emptied, the mass over the lower abdomen was still present, so a diverticulum of the bladder was less likely. Then, a vertical midline incision was made that curved around the umbilicus. The peritoneum was mobilized off the posterior aspect of the lower abdominal wall, which exposed the perivesical and supravesical spaces. The urachal remnant was identified near the umbilicus and was then separated. A large thick-walled retroperitoneal cyst that was compressing the bladder was found. There were no connections or adhesions to the surrounding organs. The precise origin of the cyst was unclear. Broad dissection was performed, and the mass was smoothly removed. The wound was closed after hemostasis was achieved, and a urethral catheter was placed in situ. We incised the mass that contained clear serous fluid. The histopathology of the cyst wall revealed dense fibrous tissue with no epithelial lining (Fig. 3). The cystologic findings showed acellular cystic fluid with no malignant or epithelial cells. A histologic diagnosis of a pseudocyst was made. Postoperatively, the patient’s
bladder function returned to normal, and there was no lower-extremity edema. He was subsequently discharged 6 days after the operation. The patient was followed-up for 6 months, and there have been no signs of recurrence.

3. Discussion

RCs were defined by Handfield-Jones as cysts existing in the retroperitoneal fatty tissues that have no connection with any adult anatomic structure except areolar tissue. Their precise pathogenesis remains unknown, but many possible pathologic processes have been proposed that can roughly be divided into urogenital, mesocolic, teratomatous, parasitic, traumatic, and lymphatic types. A pseudocyst differs from a cyst in the absence of any epithelial lining. According to literature reports, pseudocysts commonly originate from the pancreas and develop from acute pancreatitis. Unlike pancreatic pseudocysts, nonpancreatic pseudocysts are not associated with high levels of amylase or lipase in the cystic fluid. They usually have a thick, fibrous wall and contain blood, pus, or serous fluid. Because there are no clinically characteristic symptoms or signs for RCs, clinicians should consider the possibility of an RC when they confront a patient who presents with vague abdominal pain and distension and when a palpable abdominal mass is demonstrated. In some circumstances, the patient with an RC may occasionally present with acute abdominal pain when the RC mass has become hemorrhagic or infected.

CT is ideal for assessing RCs because it provides discrete sectional images of the organs and retroperitoneal compartments. Characteristics of nonpancreatic pseudocysts are clearly manifested on CT scans as unilocular or multilocular fluid-filled masses with thick walls. Histologic features of RCs are important for making a final diagnosis. On the microscopic analysis, the walls of pseudocysts consist of dense fibrous tissues (the mesothelium) with no epithelial lining. They are similar to the histologic features of lymphoceles. The differential diagnosis between them is based on the history, image, and fluid contents. Lymphoceles are fluid-filled cysts with no

Fig. 1. Cross-section of contrast-enhanced CT showing a giant cystic mass with a thickened wall in the left pelvic cavity (thick arrow). Compression of the bladder can be noted beside the cyst (thin arrow). CT = computed tomography.

Fig. 2. Sagittal section CT revealing a giant cystic mass (thick arrow) and compression of the bladder (thin arrow). There was no connection between them. CT = computed tomography.

Fig. 3. (A) Histopathology of the cyst wall showing dense fibrous tissue with no epithelial lining (H&E, original magnification, ×40); (B) no epithelial lining can be noted. A pseudocyst was diagnosed (H&E, original magnification, ×400). H&E = hematoxylin & eosin.
epithelial lining that occur after a pelvic/retroperitoneal lymphadenectomy or renal transplant surgery. Retroperitoneal lymphoceles may cause venous obstruction with subsequent edema and thromboembolic complications. As to the biochemical analysis, lymphoceles have the same levels of protein, urea nitrogen, creatinine, electrolytes, and, occasionally, as lipids as found in the serum, so differentiation from an urinoma, hematoma, seroma, and abscess is possible. On the images, there may be small amounts of fat components inside the cystoceles causing the CT numbers to reach −30 HU. As mentioned above, our patient had no surgical/traumatic history, and the mass contained clear, serous fluids, instead of cloudy/chylous fluids. Thus, a lymphocele was not likely.

The treatments of choice for RCs include complete excision and simple drainage; however, excision of cysts has become the best policy because of their potential recurrence. Surgical methods are a laparotomy, an extraperitoneal approach, or a transperitoneal flank approach and laparoscopic excision. In the case of huge pseudocysts, most authors preferred an open laparotomy because the laparoscopic approach cannot control such large masses with active internal bleeding. However, several reports demonstrated that laparoscopic excision of large pseudocysts is surgically feasible.

Recurrence following excision of a retroperitoneal cyst can occur if the excision is incomplete. In an analysis of the 23 patients who had an RC, Kurtz and colleagues mentioned that the recurrent rate was about 22% (five recurrences occurred in 23 patients). In our case, excision was complete, and there was no evidence of recurrence after 6 months of follow-up.

4. Conclusion

Retroperitoneal nonpancreatic pseudocysts are very rare lesions. We present a case of progressive lower abdominal pain that was ultimately diagnosed as a retroperitoneal nonpancreatic pseudocyst. Interestingly, our patient also complained of frequent urination for a long time even before the abdominal symptoms appeared. Therefore, physicians should consider performing bedside ultrasonography to exclude retroperitoneal lesions when a patient complains of urinary frequency.

Conflicts of interest statement

The authors declare that they have no financial or non-financial conflicts of interest related to the subject matter or materials discussed in the manuscript.

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