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Case Report

Laparoscopic excision of simple giant retroperitoneal pseudocyst: case report

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Abstract: Primary retroperitoneal pseudocysts are rare entities. Though laparoscopic approach has been described in their treatment, open surgical excision is still the mainstay of treatment for these lesions. We present a case of giant retroperitoneal pseudocyst and its successful laparoscopic excision. The patient was a 27-year old female. Contrast enhanced CT scan of the abdomen and ultrasonography confirmed a large retroperitoneal cyst. Laparoscopic resection was accomplished after puncturing and decompressing the cyst. There were no complications or conversion. The operation time was 123 minutes. The patient was discharged 3 days after surgery. Histopathology revealed a pseudocyst. Retroperitoneal pseudocysts can be resected laparoscopically with careful and meticulous laparoscopic dissection, utilizing the advantages of laparoscopy.

Keywords: Retroperitoneal pseudocysts, laparoscopic excision, surgery

Introduction

Retroperitoneal cysts are believed to be benign tumors of the retroperitoneum. Primary retroperitoneal cysts, defined as retroperitoneal cystic structures not deriving from any retroperitoneal organs, are rare. Retroperitoneal cysts that have no epithelial lining in the wall are called pseudocysts. They are known to attain large proportions before causing any symptom, and are often discovered accidentally [1]. The tumor locations are deep in body, the anatomic relationship between the tumor and its surrounding tissues is complex, the tumors are often adjacent to the large blood vessels, it is difficult to remove completely, especially, treatment by laparoscopic surgery. Though laparoscopic approach has been described, open surgical excision is still the mainstay of treatment for these lesions. There are few reports of laparoscopic excision of retroperitoneal cysts in the literature [2]. The purpose of this paper is to share our laparoscopic surgery experience.

Case report

The patient was a 27-year old female. Presented with discovery a cyst in the left upper quadrant of six years duration and abdominal distention of ten days. The patient did not have any history of trauma, oral contraceptive. There was no history of fever nausea, vomiting or melena. She had no urinary symptoms. On visual inspection of the abdomen, there was a mass effect protruding out of the left upper abdomen. Abdominal physical examination revealed a large mass was non-mobile and non-tender. The mass was in the retroperitoneal plane. Its margins were well defined and soft/cystic in consistency. Ultrasonography of the abdomen showed a large retroperitoneal, cystic mass measuring 11 cm × 14 cm with a thick wall. Contrast enhanced CT and MRI scan of the abdomen (**Figures 1**, **2**) confirmed the ultrasound findings. The mass was bounded by the diaphragm, the spleen and stomach inferiorly, the right lateral large vessels, the left lateral abdominal wall, The left kidney was displaced tumor rear. Haematological investigations were normal. Both amylase and tumor markers were within normal limits.

Under general anesthesia, the patient was placed in a Trendelenburg position with a 35° right lateral tilt. Pneumoperitoneum was achieved via a Veress needle and intra-abdominal

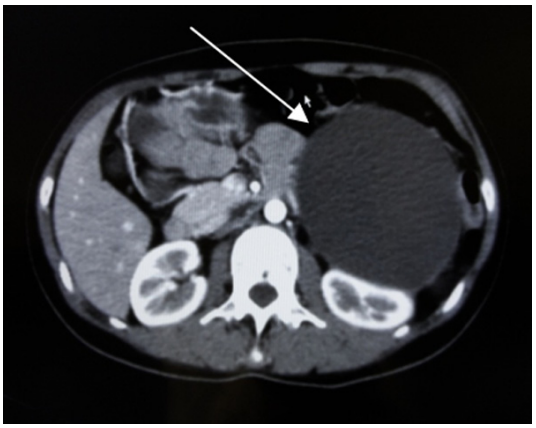

Figure 1. CT indicated tumor lactated at the front of the left kidney.

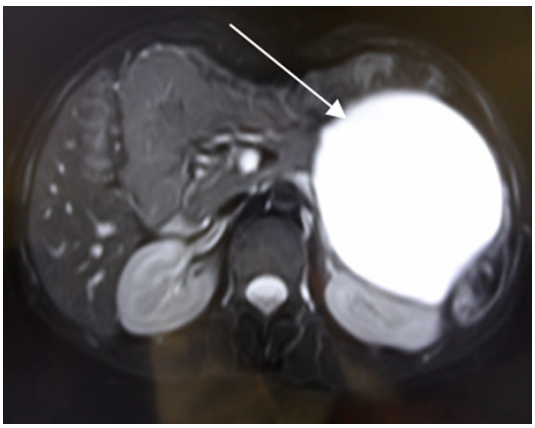

Figure 2. MRI indicated the giant retroperitoneal cyst.

pressure maintained at 12 mmHg. The monitor was placed to the left of the patient's head. The operating surgeon stood to the right of the patient, the first assistant stood at the left of the patient, and the camera assistant stood at the right hand side of the operating surgeon. A total of four ports (**Figure 3A-D**) were placed in the abdomen.

On laparoscopy, the cyst was clearly seen, with peritoneum being well preserved. Firstly, dissection was commenced on peritoneum that covered the superior wall of the cyst using ultrasonic shears. The purpose is to expose the superior wall of cyst. Secondly, the splenic flexure of the colon, the lateral abdominal wall and abdominal aorta and vein were mobilized to expose the lateral border of the cyst. Thirdly, we punctured the cyst wall and absorded the fluid (**Figure 4**) to depress the pressure of the cyst, in order to expose the whole cyst easily.

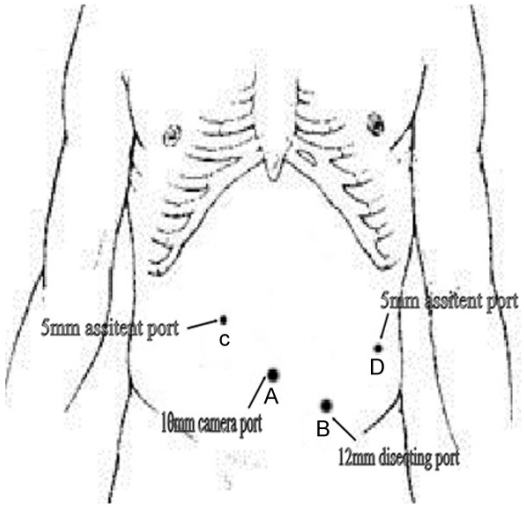

Figure 3. Four ports (A-D) were placed in the abdomen.

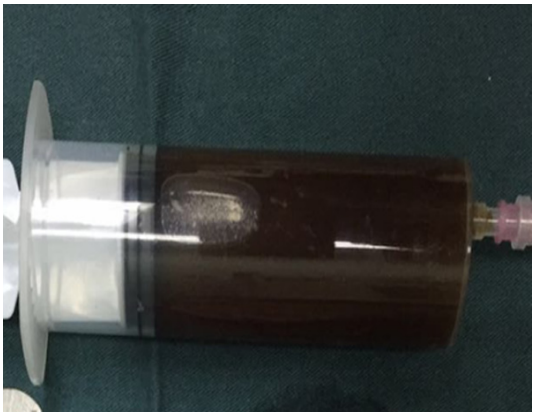

Figure 4. The brown fluid of the cyst.

The punctured incision was sutured to prevent the remnant fluid from flowing out. The brown fluid be sent to biochemical examination and cytological examination. Lastly, adhesions to the left kidney were dissected out. Up to this point the cyst wall was preserved, the texture of the left kidney, abdominal vessel was normal.

We proceeded with a complete excision of the cyst using a combination of blunt and sharp dissection, removed the specimen via extended trocar A incision. All wounds were closed after a thorough wash and hemostasis. The negative pressure soft tube was placed in the wound surface to drain.

Total operating time was 123 minutes and blood loss was about 100 ml. The postopera-

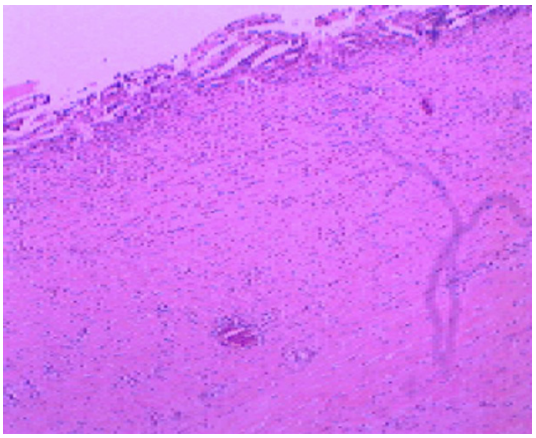

Figure 5. Histology of the cyst showing the absence of epithelium.

tive period was uneventful. She fed herself on the first postoperative day and was discharged on the 3rd postoperative day. Cytological examination of the fluid revealed cyst fluid with no malignant cells or epithelial cells. Microscopic examination showed that the cyst wall was devoid of lining epithelium with extensive inflammatory cells and multinucleate giant cells, confirming the diagnosis of a pseudocyst (**Figure 5**).

There was no evidence of pancreatic or adrenal tissue, or malignancy. The patient was followed up for 12 months, she has remained asymptomatic and there has been no evidence of recurrence.

Discussion

Retroperitoneal cysts are rare, with an incidence of 1/5750-1/250000 [3], cysts originate within the fatty areolar tissue of the retroperitoneum without any communication to the adjacent structures. Cysts that do not have an epithelial lining are termed as pseudocysts. Pseudocysts are rarer in the retroperitoneum [4], a pseudocyst is mostly pancreatic in origin, more common in the peripancreatic region [5]. Our patient had no previous history of acute pancreatitis and trumua. If they are derived from the pancreatic, they are filled with brown fluid, but this was filled with brown fluid. The pathogenesis of these cysts remains unclear. They are usually slow growing within the connective tissue and do not give rise to symptoms until they attain large size and compress over the adjacent structures. There are no classical clinical signs of retroperitoneal cysts, though vague abdominal pain and distension are present in 50% of cases [6], our patient that presented with discovery a cyst in the left upper quadrant of six years duration and abdominal distention of ten days confirmed this findings. They may occasionally present with acute abdominal pain if they become hemorrhagic or infected.

Both ultrasonography and CT scan of the abdomen can be diagnostic. Long-standing cysts can get calcified and give the classical appearance of an egg shell [7]. These cysts may be unilocular or multilocular and need to be distinguished from hydronephrosis or giant ovarian cysts [8, 9].

The treatment of choice for these cysts is complete excision with, if necessary, resection of a portion of the adherent bowel. Partial excision of the cyst are less satisfactory procedures, as recurrence is common. The conventional methods of surgery are laparotomy. Laparoscopic excision of a retroperitoneal pseudocyst has been one reported, including the extraperitoneal approach, and the transperitoneal flank approach. They all have advantages of less wound and shorter hospital stay. Also, heat loss are minimal as there is no large laparotomy incision The extraperitoneal approach has advantages of no bowel handling, no postoperative adhesions [10]. Recurrence following excision of retroperitoneal cyst can occur if excision is incomplete. The true incidence of recurrence is 25% in one series [11]. In this case, the excision was complete and there has not been any evidence of recurrence after 12 months of follow up. In our experience, a few points for anttentions: 1. Easy first should be followed in laparoscopic surgery. 2. If the cyst is too large to dissect the posterior wall of the cyst and adhesions to the left kidney, it can puncture the cyst wall and absord the fluid to depress the pressure of the cyst, for separating the whole cyst easily. In order to avoid cavity pollution, the punctured incision was sutured to prevent the remnant fluid from flowing out. 3. It must be careful of peripheral vascular, don't amputate the kidney and adrenal blood vessels in mistake for tumor vessels. 4. It should protect the important anatomic landmarks, such as abdominal aorta, inferior vena cava, renal vessels and ureter, iliac blood vessels from being injured carefully during operation. 5. A routine

frozen section is necessary for cyst wall during operation, which can distinguish the benign tumor from the malignant tumor, can proved the cutting margin positive or not, and helps to remove the cyst completely. 6. Patients must be converted to laparotomy timely if the base of the tumor is very wide, rich in blood supply, or with compact adhesion of important organ and vascular, also, if vascular reconstruction is difficult to accomplish in the laparoscopic operation.

In conclusion, retroperitoneal pseudocysts are very rare lesions and have to be distinguished from malignancy. Laparoscopic excision has the advantages of clearer vision, less trauma, less pain, earlier recovery, less cost, shorter stay in hospital, is definitely beneficial for the patient. It is safe and effective to carry out laparoscopic surgery in a rich experience hospital. It should certain the location, size, blood supply of the tumor and the relationship among the location of the large blood vessels, as far as possible to improve and perfect the B ultrasound, CT, MRI and other imaging examination before operation. Operator need to have a wealth of experience in the open retroperitoneal tumor resection and skillfull laparoscopic operation. Complete removal of the cyst wall is the key to prevent recurrence.

Acknowledgements

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Disclosure of conflict of interest

None.

Authors' contribution

W-ZM and H-HJ drafted and revised the manuscript. M-XC and C-XF were responsible for acquisition and interpretation of data. All authors read and approved the final manuscript.

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