Case report

**Idiopathic benign retroperitoneal cyst: a case report**

Ahmed Alzaraa*1, Husam Mousa1, Paul Dickens2, Jonathan Allen1 and Abduljalil Benhamida1

Address: 1Department of General Surgery, Tameside General Hospital, Manchester, UK and 2Department of Histopathology, Tameside General Hospital, Manchester, UK

Email: Ahmed Alzaraa* - ahmedwahabfl@gmail.com; Husam Mousa - hmousa2006@hotmail.com; Paul Dickens - paul.dickens@tgh.nhs.uk; Jonathan Allen - allenjay99@yahoo.com; Abduljalil Benhamida - abduljalilbenhamida@tgh.nhs.uk

* Corresponding author

**Abstract**

**Introduction:** Retroperitoneal cysts are uncommon, with an estimated incidence of 1/5750 to 1/250,000 [1]. Approximately one third of patients with retroperitoneal cysts are asymptomatic and the cyst is found incidentally. The cyst can grow to a considerable size before becoming symptomatic. CT scan might help in confirming the diagnosis, and surgery remains the best treatment option.

**Case presentation:** A male patient was admitted with an abdominal pain, jaundice and fever. Clinical examination and investigations confirmed an idiopathic benign retroperitoneal cyst. He underwent surgery and was discharged after making good recovery.

**Conclusion:** Retroperitoneal cysts are very rare, and most of the time they are discovered incidentally. Patients may be asymptomatic or present with abdominal pain, referred pain to the legs or weight loss. Imaging may help diagnose these lesions, but surgery is the keystone in confirming the diagnosis. This case is very rare and very educational as it highlights an unusual presentation of a benign retroperitoneal cyst. In our patient, the course of the disease was unique as the patient presented with jaundice.
In January 2004, the patient was readmitted for an abdominal pain and pyrexia. A repeat CT scan confirmed recollection of fluids at the same site (Figure 1). He underwent a laparotomy for excision of the mass and right adrenalectomy in February 2004. The specimen was sent for histopathology.

Macroscopical examination of the specimen reported an open cyst measuring 190 mm × 110 mm × 0.5 mm. The outer surface was pale-dark brown with an irregular defect measuring 1.8 cm × 1.5 cm in one area. Another area showed an adrenal tissue measuring 3.0 cm × 1.0 cm × 0.5 cm with yellow areas on the surface of the cyst wall. The inner area of the cyst wall was wrinkled with an exudate-like substance coating it in places.

Microscopically, the sections showed that the normal adrenal gland was adherent by fibrous tissues to the external wall of the cyst, but the cyst was not arising from the adrenal. The cyst wall consisted of a thick layer of fibrous tissues which showed focal calcifications and areas of acute and chronic inflammation. There was no epithelial lining present, but clusters of cholesterol crystals were adherent to the internal cyst wall. Granulation tissue also formed part of the lining of the cyst (Figures 2 & 3). There was no atypia or malignancy. The overall appearances were those of an idiopathic benign retroperitoneal cyst.

Discussion
Based on embryologic origin and histological differentiation, RPCs are classified into (a): Urogenital; (b): Mesocolic; (c): Cysts arising in cell inclusions; (d): Traumatic; (e): Parasitic and (f): Lymphatic [1,2]. Only those cysts that lie in the retroperitoneum without connection with any adult anatomical structure, except by areolar tissue, are included in this group of cysts [3]. The majority of urogenital cysts occur near the kidney, behind the colon, and near the head or tail of the pancreas. They arise from the vestiges of the embryonic urogenital apparatus and can be classified into pronephric, mesonephric, metanephric, and mullerian. When these cysts are exposed and seen in situ, they appear bluish thin-walled cysts and rather flabby with no visible vessels in their walls, and when removed, they are translucent and lose their bluish tinge. They have no pedicle and no connections apart from the areolar tissues with the surrounding structures. When opened, they have a smooth, glistening lining membrane; are single, not multilocular; and contain a clear serous fluid of low specific gravity in which there is occasionally cholesterol. Under the microscope, the wall is thin and consists of a cellular fibrous tissue usually lined by a low
and in approximately one third of patients, the cyst is
There are no pathognomonic signs or symptoms for RPCs,
cysts in males and females is included (Table 1).
The complete differential diagnoses of retroperitoneal
stream, by transcaelomic implantation after the rupture of
neal space. They may reach this location by the blood
such as hydatid cysts are not infrequent in the retroperito-
ment of a cyst is a well-recognised result [2]. Parasitic cysts
[4,2]. If the haematoma is not large enough, the develop-
abdominal aortic aneurysm, anticoagulant therapy, or
due to haematoma resulting from an injury, ruptured
celescent material and hair [2]. Traumatic blood cysts may be
[6,7]. The mass tend to be mobile in a transverse plane, or
in all directions when the cyst is omental. More com-
monly, only a soft tissue mass with displacement of the
bowel is seen [3].

CT is ideal for assessing RPCs because it provides discrete
sectional images of the organs and retroperitoneal compart-
ments, and in some case, familiarity with the most rel-
vant radiologic features, in combination with clinical
information, allows adequate lesion characterization [4].
Mullerian cyst, for example, manifest as a unilocular or
multilocular thin-walled cyst containing clear fluid, and
clinical history may help differentiate it from other retro-
peritoneal masses as it is more common in obese patients
with menstrual irregularities [4]. A mature teratoma man-
ifests as a complex mass containing a well-circumscribed
fluid component, adipose tissue, and calcification. The
presence of hypoattenuating fat within the cyst is consid-
ered highly suggestive of this cyst. The CT appearance of a
retroperitoneal haematoma depends on the time elapsed
between the traumatic event and imaging. Acute or suba-
cute haematoma has a higher attenuation value than pure
fluid due to clot formation. However, chronic haematoma
has decreased attenuation because of the breakdown of
blood products [4]. Cystic lymphangioma typically
appears as a large, thin-walled, multisepate cystic mass.
Its attenuation values vary from that of fluid to that of fat.
An elongated shape and a crossing from one retroperito-
neal compartment to an adjacent one are characteristic of
the mass, and calcification of the wall is rare [4].

Symptomatic cysts should be enucleated or excised, while
preserving the surrounding vital structures. At times, the
cyst can be marsupialised or drained if surgical enuclea-
tion is difficult or the cyst is infected [8]. However, drain-
ing the cyst usually result in a recurrence. In the analysis
of the 162 patients who had mesenteric and RPCs, Kurtz
R, et al [5] concluded that patients with RPCs were more
likely to have incomplete excision of the cyst and there-
fore had a higher incidence of recurrence. They also
required marsupialisation more often. Our patient should
have had the cyst excised in the first place regardless of
being jaundiced or not. Unfortunately, its pathogenesis
was not known as the cyst did not have any epithelial lin-
ing.

Conclusion
Cysts arising within the retroperitoneum outside the
major organs within that compartment are very rare.
Approximately one third of patients with retroperitoneal
cysts are asymptomatic and the cyst is found incidentally.

Table 1: Differential diagnoses of retroperitoneal cysts.

| Female                          | Male                      |
|--------------------------------|----------------------------|
| Lymphangioma                   | Lymphangioma               |
| Cystic teratoma                | Cystic teratoma            |
| Cystic haematoma               | Cystic haematoma           |
| Cystic mesothelioma            | Cystic mesothelioma        |
| Bronchogenic cyst               | Bronchogenic cyst           |
| Epidermoid cyst                | Epidermoid cyst            |
| Tailgut cyst                   | Tailgut cyst               |
| Mesenteric cyst                | Mesenteric cyst            |
| Pseudocyst (non-pancreatic)    | Pseudocyst (non-pancreatic) |
| Pseudomyxoma peritonei         | Pseudomyxoma peritonei     |
| Urinoma                        | Urinoma                    |
| Lymphocele                     | Lymphocele                 |
| Endosalpingiosis               |                            |
| Mullerian cyst                 |                            |
| Vulval cyst                    |                            |
| Paroavain cyst                 |                            |
| Vaginal cyst                   |                            |
| Paraurethral cyst              |                            |
| Mucinous cystadenoma           |                            |

There are no pathognomonic signs or symptoms for RPCs,
and in approximately one third of patients, the cyst is
found incidentally [3,5]. Two thirds of patients present
with an abdominal mass or chronic abdominal symp-
toms, most of them are omental in origin [3]. Other
symptoms include back pain, referred pain to the lower
limbs, oedema of the lower limbs, weight loss or fever
[6,7]. The mass tend to be mobile in a transverse plane, or
in all directions when the cyst is omental. More com-
monly, only a soft tissue mass with displacement of the
bowel is seen [3].
CT may help diagnose these lesions, but surgery remains the keystone in determining the diagnosis.

Competing interests
The author(s) declare that they have no competing interests.

Authors’ contributions
A A: Reviewed literature and wrote the manuscript, H M: Contributed to the concept of the manuscript, P D: Evaluated histopathology, J A: Searched literature, A B: Operated on the patient. All authors have read and approved the manuscript.

Written informed consent was obtained from the patient for publication of this report and any accompanying images.

References
1. Guile M, Fagan M, Simopolous A, Ellerkman M: Retroperitoneal Cyst of Mullerian Origin: A case report and review of the literature. J of Pelvic Medicine and Surgery 2007, 13(1):149-152.
2. Handfield-Jones R: Retroperitoneal Cysts: Their Pathology, Diagnosis and Treatment. BJ 1942:119-134.
3. Felix Edward L, Wood Donald K, Das Gupta Tapas K: Tumours of the Retroperitoneum. Cancer 1981, 6(1):1-47.
4. Yang D, Jung D, Kim H, Kang H, Kim S, Kim J, Hwang H: Retroperitoneal cystic masses: CT, Clinical and Pathological Findings and Literature Review. RG 2004, 25(5):1353-1365.
5. Kurtz R, Heimann T, Beck R, Holt J: Mesenteric and Retroperitoneal Cysts. Ann Surg 1986, 203(1):109-112.
6. Haysaka Kazumasa, Yamada Tonomori, Saitoh Yasuhiro, Yoshikawa Daihei, et al.: CT Evaluation of Primary Benign Retroperitoneal Tumour. Diagnostic Radiology 1994, 12(3):115-120.
7. Konishi Eichi, Nakashima Yasuaki, Iwasaki Takeki: Immunohistochemical analysis of Retroperitoneal Mullerian Cyst. Human Pathology 2003, 34(2):194-198.
8. Ravo B, Metwally N, Bai B, Ger R: Developmental retroperitoneal Cysts of the Pelvis; A Review. Dis Col & Rect 1987, 30(7):559-564.