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Case Series

Case series of retroperitoneal cyst: a clinical challenge and diagnostic dilemma

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ABSTRACT

Cyst in retroperitoneal region is a rare occurrence with reported incidence of 1 in 5750-2,50,000. They present incidentally in one third patients or with pain or sometimes clinical palpable painless mass. Their management remains a clinical dilemma. Here, we report five cases of retroperitoneal cyst which presented to our hospital between August 2022-February 2023 and summarize the clinical features, diagnosis, and their treatment. All patients presented to our outpatient department. All patients were female youngest 20 years and oldest 76 years of age. Two patients had pain abdomen with clinically palpable mass. Two patients had painless mass. One patient was detected incidentally. All the patients were evaluated with CECT and MRI pelvis wherever needed. Cyst excision was done laparoscopically in 3 patients and by open laparotomy in 2 patients and histopathology report was followed post operatively. All patients were discharged without any complications. Retroperitoneal cyst is uncommon pathology of abdomen. Their presentation is quite vague. Imaging is the key in diagnosis. It poses a great clinical challenge in the management of such patients due to suspected malignancy. Our study shows that these cysts can be managed with simple excision irrespective of size after evaluation and laparoscopic approach is better where feasible.

Keywords: Retroperitoneum, Retroperitoneal cysts, Benign cysts, Laparoscopic cyst excision

INTRODUCTION

Cyst in retroperitoneal region are mostly benign masses of unknown etiology. They are rare occurrence in clinical practice with reported incidence of 1 in 5750 to 2,50,000.[1] Females have higher incidence compared to males. They have bimodal age distribution and seen mostly in young adults or in old age. They present incidentally in one-third patients without any symptoms.[1,2] Because of vague clinical symptoms, their management remains a clinical dilemma. Contrast enhanced CT (CECT) of abdomen remains investigation of choice as it can determine the size, location, relation to adjacent structures, consistency and helps to differentiate from malignant lesions.[2] Surgical excision remains treatment of choice. Literature evidence showed large number of single case reports, but we present conglomerate of five cases in a series which presented to our outpatient department between short period (September 2022 to February 2023).[3-5]

CASE SERIES

Case 1

A 20 year female presented with dull aching pain in right lower abdomen since 2 months. On examination 8×5 cm soft, non tender mass was palpable in right iliac fossa. Blood investigations were normal. CECT scan (Figure 1) showed 9.3×7×8.5 cm well defined, non enhancing cystic lesion noted in retroperitoneum lateral to right psoas muscle pushing ascending colon anteriorly. CA 125 was normal. Colonoscopy was also normal. Patient underwent Laparoscopic cyst excision. Intraoperatively (Figure 2)

9×8 cm cystic lesion was noted adherent to caecum. Cyst was carefully dissected all around without rupture. Cyst placed in endobag, aspirated and removed in toto. HPE showed benign mucinous neoplasm

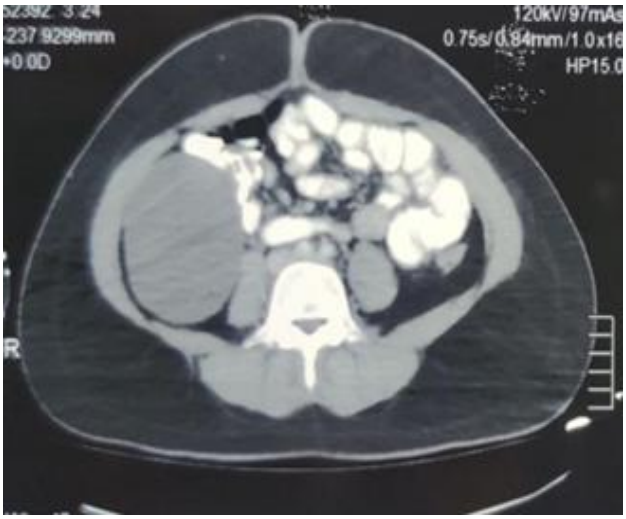

Figure 1: CECT of retroperitoneal cyst adjacent to right colon (Case 1).

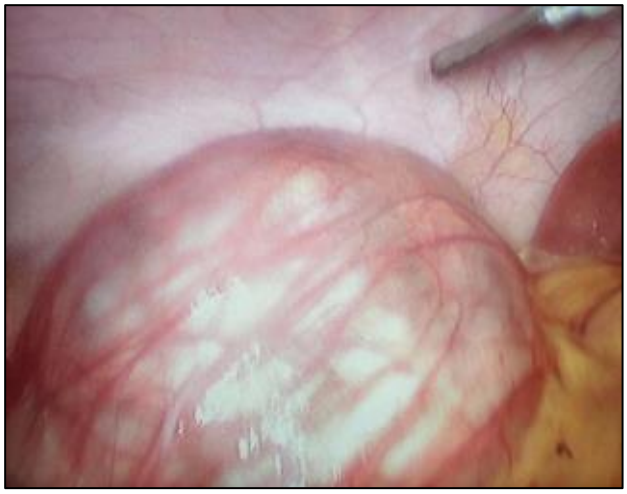

Figure 2: Laparoscopy of cyst adjoining right colon (Case 1).

Case 2

A 46 year female with history of hysterectomy with adnexal cyst excision (done in 2016) was admitted for rectal prolapse and planned for rectopexy. CECT scan (Figure 3) showed incidental finding of large, loculated, homogenous cyst of size 12×17×12 cm in retroperitoneum extending to pelvic cavity. MRI pelvis showed T2 hyperintense 15x10 cm retroperitoneal cyst near left adnexa and another 9×2 cm retroperitoneal cyst near right adnexa. CA 125 was normal. Open B/L cyst excision was done without spillage. Intraoperatively (Figure 4) 15×10 cm cyst filled with serous fluid on left side behind sigmoid mesocolon in retroperitoneum, another similar cyst of size 9×2 cm in right paracolonic space in retroperitoneum noted. Cyst was carefully separated and b/l ureter identified and preserved. HPE showed simple lymphatic cyst.

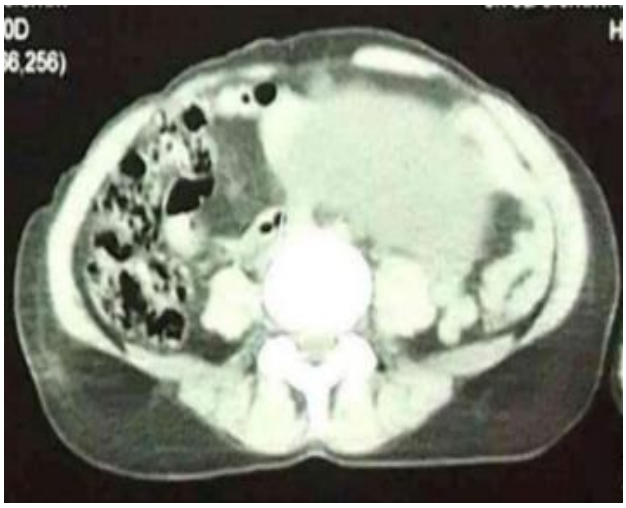

Figure 3: CECT of large retroperitoneal cyst extending to pelvis (Case 2).

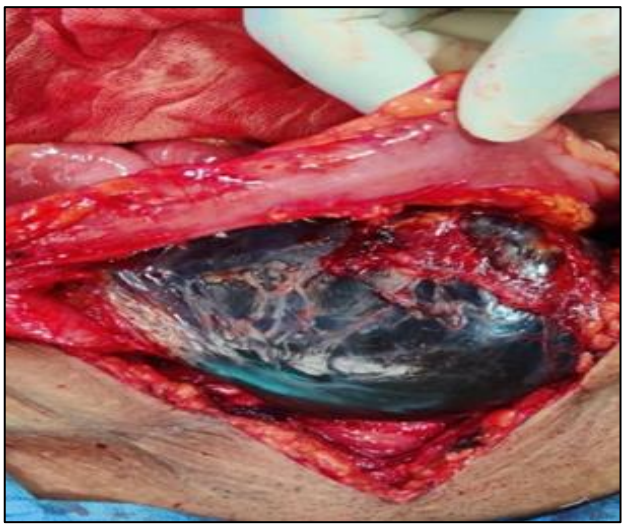

Figure 4: Intra operative of cyst behind sigmoid colon in retroperitoneum extending to pelvis (Case 2).

Case 3

A 76 year female presented with dull aching abdominal pain and lump in lower abdomen since 6 months. Per abdomen examination showed soft non tender lump of size 15×10 cm in lower abdomen. CECT abdomen showed well defined 15×10 cm retroperitoneal cyst displacing right ureter. CA 125 was normal. Preoperative ureter stenting was done and later open cyst excision done. Intraoperatively (Figure 5) 15×12 cm cyst presents just below the right mesocolon in retroperitoneum with adhesions to iliac vessels and duodenum. Cyst was displacing right ureter medially. HPE showed simple epithelial cyst.

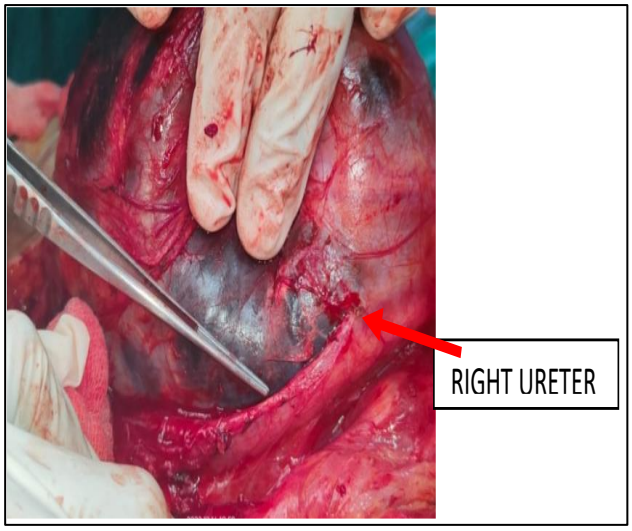

Figure 5: Intra operative picture of cyst with ureter (Case 3).

Case 4

A 51 year female presented with complaints of pain in left lower abdomen since 2 months with history of diabetes mellitus. On examination mild tenderness was noted in left iliac fossa. Patient was admitted in view of suspected diverticular perforation with collection. CT scan (Figure 6) showed well defined hypodense collection of size 4×3×2 cm noted adjacent to descending colon in retroperitoneum with peripheral calcification. Diagnostic laparoscopy (Figure 7) was done and 4x3 cm cystic lesion was seen in left paracolonic area near descending colon in retroperitoneum with no communication with bowel. Cyst was excised laparoscopically. HPE showed simple mucinous cyst

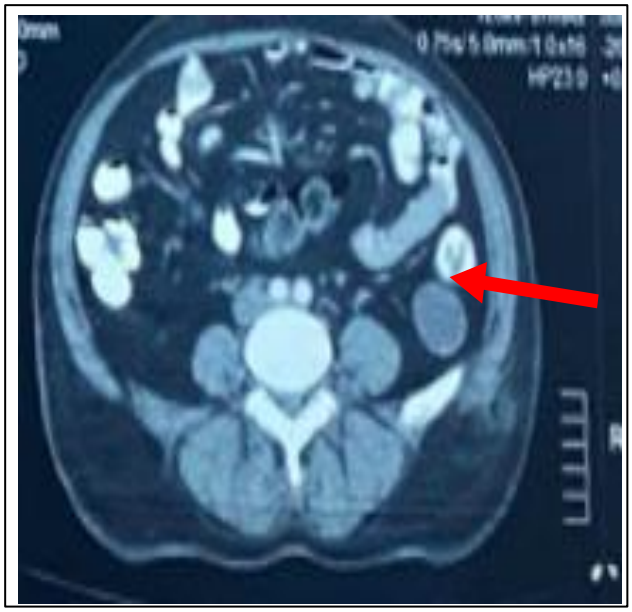

Figure 6: CECT scan of retroperitoneal cyst with calcified wall (Case 4).

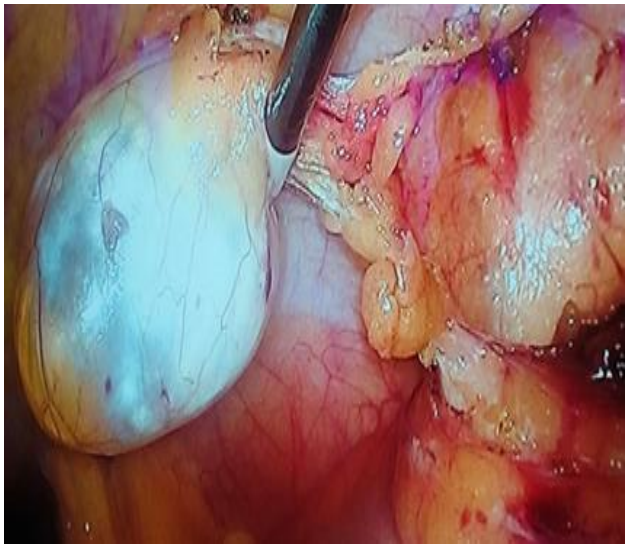

Figure 7: Laparoscopic picture of retroperitoneal cyst (Case 4).

Case 5

A 32 year female presented with painless mass per abdomen since 6 years. Per abdomen examination showed mass of size 10×10 cm in left lumbar area in retroperitoneum. CECT scan (Figure 8) showed well defined cystic lesion measuring 13×12×13 cm noted in left lumbar and iliac regions abutting small bowel loops in retroperitoneum. Diagnostic laparoscopy showed 10×10 cm cyst noted behind sigmoid mesocolon in retroperitoneum. Cyst excision was done laparoscopically after careful dissection without injury to adjacent bowel. HPE showed simple mesenteric cyst.

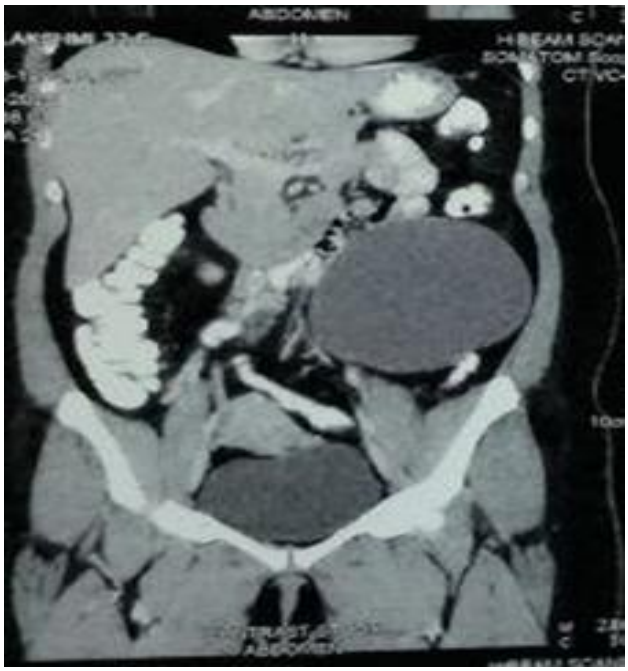

Figure 8: CECT scan of retroperitoneal cyst in left lumbar and iliac area (Case 5).

Table 1: Other studies.

Case	Age (in years)	Size of cyst (in cm)	Location of cyst	Duration	Surgery	HPE
1	20	9×8	Right retroperitoneum behind ascending colon	2 months	Laparoscopic	Simple mucinous cyst
2	46	15×10, 9×2 cm	2 cysts one behind sigmoid mesocolon and another behind caecum	Incidental	Open	Simple lymphatic cyst
3	76	15×12	Right retroperitoneum behind ascending colon	6 months	Open	Simple epithelial cyst
4	51	4×3	Left retroperitoneum behind descending colon	2 months	Laparoscopic	Simple mucinous cyst
5	32	10×10	Left retroperitoneum adjacent sigmoid mesocolon and descending colon	6 years	Laparoscopic	Simple mesentric cyst

DISCUSSION

Retroperitoneal cysts arise from loose areolar tissue in retroperitoneal region and do not share any connection with adjacent solid organ.[2,6,7] They are classified as benign, malignant or non neoplastic cyst (Figure 9).[3,8]

Most of the neoplastic retroperitoneal cysts are benign in nature with very little evidence of malignant primary retroperitoneal cysts (0.1% incidence).

All our cases fell under the category of benign neoplastic lesions.

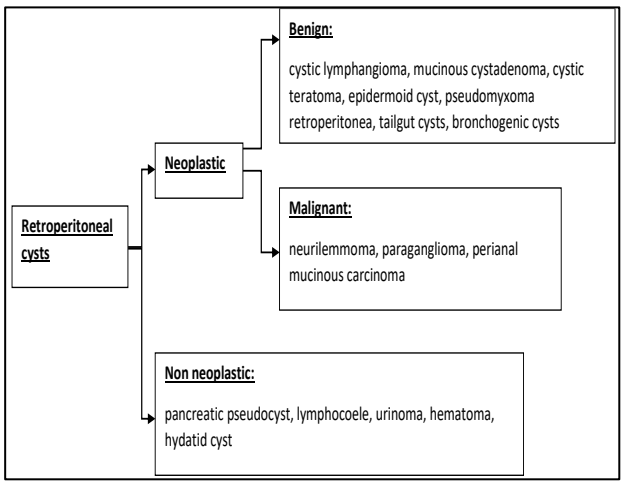

Figure 9: Flow chart.

These cysts have diverse clinical presentations with half the patients having dull aching pain and others with painless mass.[4] About one third have incidental finding on a radiological investigation. In our series two patients (Case 1 and 3) had painful palpable mass, one patient (Case 4) had only pain with tenderness without clinical palpable mass. One patient (Case 5) had painless mass while one patient (Case 2) had incidental finding on evaluation for some other unrelated condition. History of these patients support that these retroperitoneal cysts have mixed clinical presentation. Symptoms occur mainly due to large size with compression to adjacent structure. One patient (case 3) had displacement of adjacent ureter.

These cysts are best evaluated with contrast enhanced computed tomography which helps to find the location, size, shape, wall thickness, consistency and calcification.[2,9] MRI scan can be done in patients in whom CT scan is contraindicated to characterize the cyst and adjacent organ involvement. In our cases CT scan was useful in identifying these characteristics and also in preoperative localisation and for planning surgical approach. Colonoscopy was additionally done in cases 1, 2 and 4 to rule out large bowel pathology.

Tumor marker CA-125 was done to differentiate these cysts from ovarian malignancy in cases 2 and 3. Cyst in pelvis and mesentery can masquerade like ovarian or para ovarian cyst and need to be differentiated. Similarly, cyst near pancreas can be confused with pseudocyst. Due to similar clinical symptoms and diagnostic dilemma these cysts mandate such additional investigations to arrive at correct diagnosis and should be done preoperatively whenever needed to prevent intraoperative surprise.

The treatment of choice however remains surgery. In our series three patients (Case 1, 4 and 5) underwent laparoscopic approach while rest two patients (Cases 2 and 3) needed open laparotomy due to large size and suspicion of malignancy. Laparoscopic approach should be tried if technical expertise and equipment are available and remains the best approach if feasible with minimal post operative complications.[5,10] The most important principle of surgery remains careful complete dissection all around to free it from adjacent structures and to prevent spillage. Spillage if occurs can lead to unwanted consequences with high chances of recurrence even though they are benign and so must be avoided. Adjacent structures like ureter, iliac, gonadal vessels should be identified and preserved. Preoperative ureteric stenting

may be needed for safer dissection (Case 3). Aspiration and cytology should be avoided due to poor yield and high recurrence rate.[11-13] Intra op frozen biopsy can be done if solid element is found to differentiate from malignancy, however complete surgical excision remains the principle treatment of choice without any major post operative complications according to Clavien-Dindo classification.[14,15]

Recurrence after excision of these cysts have not been documented in literature.

Limitation

This study is a case series of only five patients. This case series was done at a single centre

CONCLUSION

Retroperitoneal cysts are uncommon. Imaging is the key in diagnosis. Our study shows that these cysts can be managed with surgery and laparoscopic approach is better where ever feasible.

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