

Retroperitoneal Dermoid Cyst: Case Report and Its Management

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Abstract

Retroperitoneal dermoid is a rare clinical entity. It usually presents as an abdominal mass as it was found in our case. At the time of presentation, it usually has large size ($D > 10$ cm). Here, we describe a 20 years male presenting to our hospital with swelling of the abdomen. After radiological and cytological examination, a provisional diagnosis of the dermoid cyst was done. On laparotomy, it was found to be retroperitoneal in location. Histopathology study was suggestive of benign cystic teratoma. Post-operative recovery was uneventful. After 6 months of follow-up patient is doing well, and there are no sign and symptoms of recurrence.

Key words: Abdominal Mass, Dermoid, Retroperitoneum, Teratoma

INTRODUCTION

Dermoid cyst in the retroperitoneum is a rare phenomenon occurs due to aberrant migration of germ cells from the yolk sac during fetal development.¹ It usually occurs in midline structures. Gonadal structures, e.g., ovary, testis are the most common site for teratoma localisation.² It comprises the tissues derived from all the three germ cell layers. It is lined by squamous epithelium showing fully formed or rudimentary dermal papillae, sebaceous glands, hair, and sweat follicles and it contains sebaceous materials. Most are benign, but any tissue type can undergo malignant transformation. Retroperitoneal cysts are asymptomatic in one-third of patients.^{3,4} Symptomatic patients have large size cyst at the time of presentation. Contrast-enhanced computed tomography (CECT) of the abdomen is used to confirm the diagnosis.^{2,5} Surgical excision of the whole cystic mass is the choice of treatment. After complete surgical resection the 5 years survival rate is nearly 100%. The presence of malignant

transformation tissue in the cyst needs more aggressive treatment.^{2,3}

CASE REPORT

A 20 years male presented with swelling in the lower abdomen since 3 months. He had no history of pain, fever, loss of appetite and weight, hematemesis, malena and normal bladder, and bowel habit. His general physical examination was normal. Abdominal examination revealed a palpable mass of size $15\text{ cm} \times 10\text{ cm}$ occupying hypogastric, right and left iliac, right and left lumbar, lower part of the umbilical region. It was non-tender, firm, smooth surface, well-defined margin (lower margin could not be reached), fixed, does not move with respiration. On head and leg raised the swelling decreases in size. There was no other organomegaly, no shifting dullness, no other mass palpable, scrotum well developed, and bilateral testis normal in size and sensation intact. On digital rectal examination, no abnormality detected. Rest of the systemic physical examinations was unremarkable. Ultrasonogram shows a large solid mass of $140\text{ cm} \times 125\text{ cm} \times 80\text{ cm}$ size having irregular and ill-defined margin seen in the mid-lower abdomen possibly retroperitoneal with displacement of bowel loops and causing obstruction in both ureter, right > left. Cystic areas and multiple septa were seen in the posterior part of the mass. The solid area shows

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posterior echo diminution. CECT of the whole abdomen showed a large mixed density mass of size 143 mm × 131 mm × 105 mm seen in the right side of the pelvic cavity and right iliac fossa, extends up to the bifurcation of aorta level (Figures 1 and 2). The lesions caused displacement and splicing of the rectum, displacement of small bowel loops and compression of both ureters causing bilateral hydronephrosis (right > left). It also causing abutment with splicing of right common iliac vessels suggestive of retroperitoneal location. It contains nodular and speculated, linear, and serpentine calcification with wall calcification and isointense solid parts and fat containing areas suggestive of dermoid tumor. On fine needle aspiration cytology of the mass about 1 ml of thick straw colored fluid aspirated which showed clusters of cells with round to oval nucleus and multivaculated cytoplasm, few giant cells. This is suggestive of benign cystic tumor with sebaceous differentiation. Laboratory investigations were within normal limits.

Laparotomy was done with the mid-midline incision. The cyst was strongly adherent to small bowel at the upper level, sigmoid colon at left side, ascending colon at the right side and fixed to the posterior structures (Figures 3 and 4). So meticulously, we excised about 40% of the cyst wall from its adherents. Posterior cyst wall (around 60%) left behind (considering dense adhesion to retroperitoneal major vessels) and inner wall is cauterized (Figure 5). Hemostasis achieved and excised specimen send for histopathology study. Post-

operatively patient recovered unevently and discharged. A histopathological study was consistent with benign cystic teratoma as it lined by squamous epithelium, contains intraluminal hair, bone pieces, sebaceous gland, fat cells.

DISCUSSION

Dermoid cyst is a cystic teratoma that contains an array of developmentally mature and solid tissues. Whereas a teratoma is a true tumor composed of multiple tissues of kinds foreign to the part in which it arises. Retroperitoneum is a rare site for dermoid cyst. Other rare sites are mediastinum, sacrococcygeal, central nervous system. Primary retroperitoneal teratoma constitute about 1-11% of all primary retroperitoneal tumors.^{2,3} Where retroperitoneal tumors do not include tumors of organs and retroperitoneal metastasis. About 43-45% of retroperitoneal teratomas diagnosed within the 1st year of life and 10-20% after 30 years of age. Adult retroperitoneal dermoid cyst commonly affects females (15-40 years of age). There is 25% chance of malignancy,⁶ malignant degeneration is higher in adults than children (25.8%:6.8%). Endodermal sinus tumor most common occurs in children (median age 1.5 years, alpha-fetoprotein [AFP] +ve), whereas in adults squamous cell carcinoma. The sign

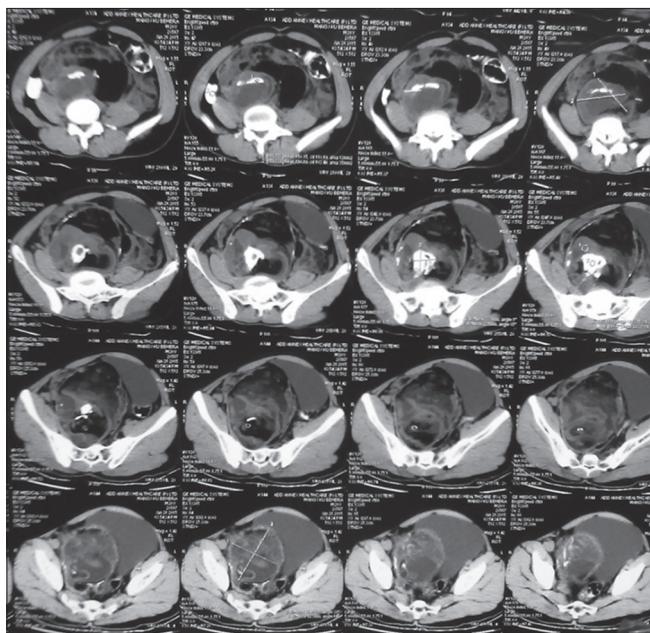


Figure 1: Axial images of contrast-enhanced computed tomography pelvis showing well-defined heterogenous retroperitoneal mass lesion present in the right side anterior to the psoas muscle, pushing the bladder to the left anteriorly containing fatty tissues and calcifications

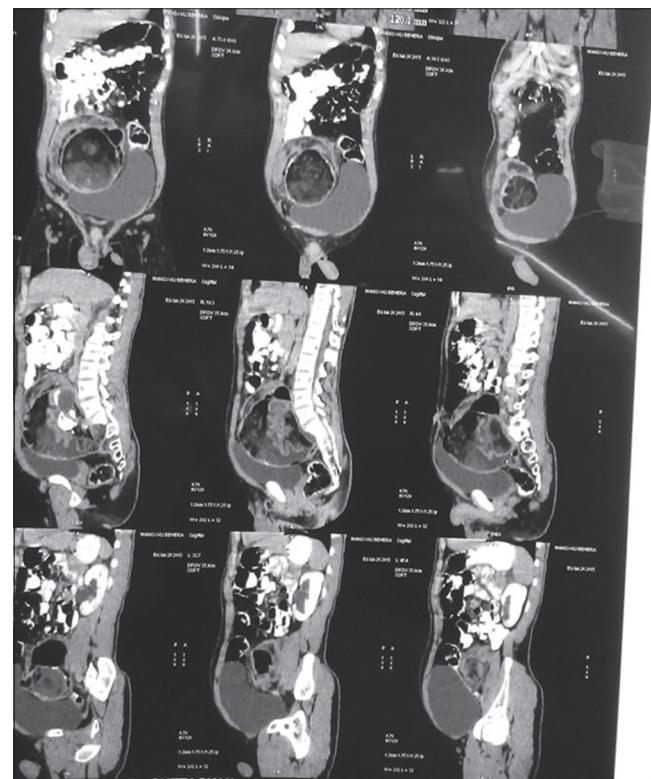


Figure 2: Coronal and sagittal images of contrast-enhanced computed tomography abdomen and pelvis showing heterogenous well-defined lesion in the pelvis superior to urinary bladder

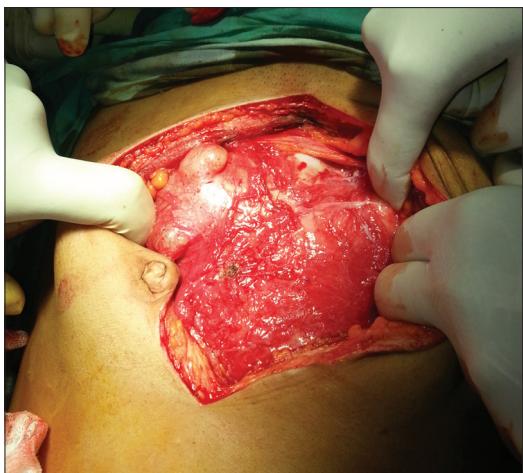


Figure 3: Cyst is adherent to the adjacent intra-abdominal hollow viscera



Figure 4: Removal of the contents of cyst e.g., hairs, fatty tissues, bone pieces

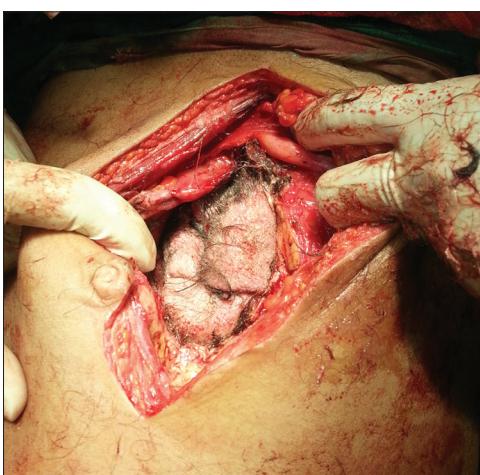


Figure 5: Posterior wall of the cyst, strongly adherent to the major vessels posteriorly

and symptoms of the retroperitoneal cyst are due to its compression to the adjacent structures, e.g., abdominal

pain, back pain, genitourinary symptoms, lower extremity, or genital edema.^{3,7} It can present as an unexplained abscess in the sacrococcygeal area, gonads, mediastinum or retroperitoneum.⁸ Differential diagnosis retroperitoneal cysts includes retroperitoneal sarcoma, hydatid cyst, ovarian tumor, mesenteric cyst, and renal tumors.⁴

CECT is the investigation of choice for diagnosis and to assess the extent of the cyst preoperatively.⁹ Magnetic resonance image is superior to ultrasonography and CECT, it predict respectability.^{5,10} About 50% of men with retroperitoneal tumors also have testicular carcinoma in situ, so testicular ultrasonogram is mandatory for them. Definitive diagnosis is made by histopathological examination.¹¹ Serum tumor markers (AFP, CEA, CA 19-9) level should be measured in suspicious patients of malignancy.⁷ They can be helpful in diagnosis, monitoring disease, and detecting relapse.

Whenever possible symptomatic cyst should be excised completely while adjacent vitals structure should be preserved. Complete resection of the tumor is curative. Marsupialization or draining of the cyst usually results in a recurrence, as we are expecting in our case. Spillage of cyst contents may lead to infection or recurrence. Between 1932 and 1987, 32 adults cases, male 17, female 15 were reported. In them left kidney upper pole was mostly affected.¹² Adjuvant radio and chemotherapy are given if malignant transformed retroperitoneal cyst detected histopathologically.

CONCLUSION

Though successful removal of dermoid cyst has been reported in difficult situations, open surgery is the most reliable and safe procedure for retroperitoneal dermoid. One should kept in mind that excision of the cyst as well as the preservation of the adjacent vital structures is also utmost important.

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