Giant Primary Retroperitoneal Teratoma: A Case Report

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Abstract
Teratomas are congenital tumors derived from embryonic tissues that may contain derivatives of all three germ layers (ectoderm, mesoderm and endoderm). Primary retroperitoneal teratomas are rare entities. Here we report a case of a 15 yrs old girl with huge abdominal lump extending from epigastrium to the pelvic cavity, covering almost all the abdominal quadrants with mild diffuse pain over whole abdomen. Radiological evaluation revealed a retroperitoneal mass displacing pancreas, left kidney and bowel loops, composed of calcifications and solid cystic components. The tumour was resected through a midline laparotomy and the pathology report confirmed the diagnosis of a mature cystic teratoma with no evidence of malignancy or immature components. The postoperative recovery was uneventful.

Keywords: Teratoma, Retroperitoneal, Primary, Case report

I. Introduction
Primary retroperitoneal teratomas often occur in infancy and childhood but are rare in adults. Teratomas are uncommon neoplasm that contain derivatives of all three germ layers (ectoderm, mesoderm and endoderm) and are typically located in gonadal region. Most common location of these tumours being ovaries and testes in adults and only 4% are located in retroperitoneal space (1). Only a few case reports have been reported in literature so far.

II. Case Report
A 15 year old female presented to Surgery OPD, AMCH, Dibrugarh with painless abdominal swelling since childhood without fever or any bowel or urinary complaint. On examination, a large mass was palpable extending from epigastrium to the pelvic cavity.

On general examination, the patient was poorly nourished with blood pressure of 120/70 mm of Hg, pulse rate of 68 bpm and RR 21 breaths/min. On physical examination a large mass was palpable in both right and left flanks and in epigastrium with varying consistency. The margins of swelling could not be well appreciated. Her laboratory parameters were as follows: Hb 13.5 g/dL, WBC 8500/mm³, RBS 90 mg/dL, amylase 40 U/L, and S. creatinine 1.0 mg/dL.

Abdominal ultrasound demonstrated a huge retroperitoneal mass. CECT abdomen (Fig. 1) revealed a (32×16×17) cm multiloculated, solid and cystic SOL with calcifications in retroperitoneum.
Patient underwent a midline exploratory laparotomy. Operative findings revealed a horseshoe shaped retroperitoneal mass in both flanks extending up to right and left iliac fossa crossing midline with isthmus of tumour lying behind hepatoduodenal ligament causing anterior displacement of pancreas with stretched duodenum and bowel loops (Fig.2).

After mobilization of the mass, left sided cystic components were evacuated and pushed towards the right side through the tunnel created by isthmus behind the hepatoduodenal ligament (Fig.3). The mass was completely excised, hemostasis achieved and a chest tube drain was placed in hepatorenal pouch of Morrison.
Macroscopically the tumour appeared to be an encapsulated solid cystic mass with bones, hair and sebaceous material weighing about 13kgs (Fig. 3). Histopathological evaluation confirmed the diagnosis of a benign primary mature teratoma (Fig. 4).
Fig. 3(a) Excised specimen of retroperitoneal teratoma with ruptured capsule and sebaceous material
(b) cut section
Post operative course has been uneventful except mild fever and malaise. She got discharged on 18th post operative day and is doing well on follow up.

III. Discussion

Overall, primary retroperitoneal teratoma constitute about 1-11% of all retroperitoneal tumours in children and 4% in adults. The incidence is bimodal with peak in first decade of life and rarely after 30 years of age.

Teratomas can macroscopically be divided into two categories: cystic and solid. Cystic teratomas are mostly benign, containing sebaceous materials and mature tissue types. On the other hand, solid teratomas are often malignant and composed of immature embryonic tissues in addition to adipose, cartilaginous, fibrous and bony components.

The distribution of teratoma listed in order of decreasing frequency is: Sacrococcygeal region (in infants), Ovaries, testes, anterior mediastinum, retroperitoneal space, cranial cavity and neck.

Examination of the tumour on different imaging studies helps in making diagnosis preoperatively. The incidence is usually asymptomatic except when compression symptoms occur like back pain, genitourinary and gastrointestinal symptoms (abdominal distention, pain, nausea, vomiting) as well as lower extremity and genital oedema due to lymphatic obstruction.

Differential diagnosis can be Ovarian tumour, renal cyst, adrenal tumours, retroperitoneal sarcoma (usually liposarcoma) and fibroma, hemangiomas and perirenal abscesses.

Radiological investigations play an important role in clinching the diagnosis as well as planning for surgery. Abdominal ultrasonography can identify solid, cystic or complex components of the tumour. CT scan appears better at defining extent of tumour into surrounding organs and vessels. MRI is superior to both ultrasound and CT in predicting resectability and evaluating nature (benign or malignant), staging and recurrence.

Various serum tumor markers can be elevated in retroperitoneal teratomas such as AFP, CEA and CA-19-9. These markers can be used for monitoring successful treatment or relapse of the tumor in the patients.

Surgical excision of benign (mature) teratoma is required for a definitive diagnosis by histopathological examination and remains the mainstay of treatment. It is largely resistant to radio-and chemotherapy.

Prognosis is excellent after complete surgical excision with overall five-year survival rate of nearly 100%.

IV. Conclusion

Primary retroperitoneal teratoma is a rare tumour mostly present as abdominal lump. Distinctive features on different imaging studies help in making diagnosis preoperatively. Malignancy is very uncommon in retroperitoneal teratomas. The prognosis is excellent for benign retroperitoneal teratomas if complete resection can be accomplished.

Declarations
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Ethics approval: Approval was obtained from the ethics committee of Department of Surgery, Assam Medical College (Srimanta Sankardeva University Of Health Sciences), Dibrugarh, Assam, India. The procedures used in this study adhere to the tenets of the Declaration of Helsinki.

Consent to participate: Written informed consent was obtained from the parents.

Consent for publication: The participant has consented to the submission of the case report to the journal.

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Code availability: not applicable

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