Retroperitoneal Teratomas A Diagnostic Dilemma

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Yes

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Illustration
Retoperitoneal teratoma
Retroperitoneal Teratomas A Diagnostic Dilemma

Author(s): Athavale V, Calcuttawala MA, Nirhale, Sahkhe M

Abstract

Dermoid cysts (benign cystic mature teratomas) are congenital tumors consisting of derivatives from the ectoderm, endoderm and mesoderm germ cell layers. A teratoma is considered to be a non-seminomatous germ cell tumour and is typically located in either the sacrococcygeal region or in the gonads. Retroperitoneal teratomas are commonly identified in early childhood, but are rarely reported in adults [1, 2]. They constitute less than 4% of all extra-gonadal teratomas with less than 120 cases having been reported, and only partly described in the retroperitoneum of adults [3]. We report here a case of a histologically unusual retroperitoneal tumour detected on magnetic resonance imaging during the workup of low backache in a 55-year-old male. The evaluation and treatment of this condition and a review of the literature are included in this paper

Case Report

A 55-year-old Indian male presented with a complaint of low backache radiating to right lower limb and vague abdominal discomfort localized to umbilicus since 3 months. There was no associated history of vomiting, bowel or bladder complaints, weight loss or tingling and numbness in the lower limbs. His general physical examination revealed averagely built & nourished, active male with no jaundice, pallor, cyanosis, clubbing and lymphadenopathy. Abdominal examination revealed a soft, diffuse, intra-abdominal, non-tender, vague palpable mass in umbilical and right lumbar region. There was no organomegaly. Bowel sounds were normal. Rest of the physical examination was unremarkable. Spine examination was normal with no spine tenderness or deformity. Laboratory investigations were within normal limits.

Ultrasonography of abdomen & pelvis was suggestive of a lobulated lesion of 9.5 x 7.6 x 5.2 cm size arising from right psoas muscle, displacing lower pole of right kidney.

In view of the backache which failed to improve even with continuous medication and physiotherapy, radiograph of lumbo-sacral spine as well as further investigation of MRI (Magnetic Resonance Imaging) lumbar spine with whole spine screening was done.

X Ray LS spine revealed there was destruction of the lateral margin of the right pedicle of L4 vertebra with evidence of a retroperitoneal mass with two discrete areas of calcification.

MRI lumbar spine with whole spine screening showed a mass arising from the right psoas muscle with multiple foci of calcifications measuring 11 x 6 x 6.2 cm causing compression of right pelvic ureteric junction. There was also scalloping of the right lateral margin of L2 vertebra due to the mass with no neurological compromise suggestive of chronic psoas abscess.

CT(Computer Tomography) scan of abdomen and pelvis showed a well-defined solid mass measuring 11.2 x 6.0 x6.8 cm noted in retroperitoneum on right side in relation to anterior surface of right psoas causing extrinsic compression and anterior displacement of adjoining right upper ureter with resultant fullness of pelvicalyeal system. Also, Medially, it was abutting right lateral margin of IVC with obliteration of intervening fat plane and scalloping of right lateral cortex of L3 vertebral body was noted-findings suggestive of possibly a neoplastic etiology - ? Liposarcoma.

With all the above investigations and provisional diagnosis of a retroperitoneal mass, possibly a neoplastic lesion- neurogenic or liposarcoma, a decision of excision of mass was made.

Operative findings : Under General Anaesthesia, upper midline vertical incision was taken. After mobilization of the right colon, a well circumscribed, encapsulated, cystic swelling of about 11x 6 x 6 cm was seen closely connected to the inferior vena cava. The cyst was freed intra-abdominally, paying special attention to inferior vena cava, kidney vessels and ureter. No enlarged lymph nodes were detected. Haemostasis was achieved. Abdomen was closed in layers, keeping a drain. Patient tolerated the procedure well. Post-operatively the patient had an unremarkable recovery.

Retroperitoneal mass closely connected to the inferior vena cava was seen

A small rent occurred over the swelling with free flow of cheesy foul smelling putty material containing cheese like secretion.

Operative specimen showing retroperitoneal cystic mass about 11 cm in greatest dimensions is seen.
Histopathological Report: Cystic mass shows an inner lining of squamous epithelium of the epidermis. The outer layer consists of thick fibrocollagenous tissue with multifocal areas of lymphocytic infiltration. The cavity showed presence of lamellated type of keratinous material. The features are consistent with a dermoid cyst with secondary inflammatory changes – Retroperitoneum.

Follow-up: The patient was followed up till 1 year & is doing well with no symptoms of backache. Follow up Ultrasound Abdomen and pelvis showed no evidence of recurrence.

Discussion

A teratoma is a true tumour or neoplasm composed of multiple tissues of kinds foreign to the part in which it arises. Macroscopically there are two types: Cystic teratoma: usually benign, contains yellowish liquid material, composed of fully developed tissue. Solid teratoma: generally malignant, have a varied aspect, formed of fibrous, fatty, cartilaginous and bone tissue consists of immature embryonic tissue. Retroperitoneal dermoid is rare and usually develops, in childhood.

The order of frequency of teratoma localisation is: Ovarian, Testicular, Anterior Mediastinal, with retroperitoneal localisation occurring least of all. Symptoms of Retroperitoneal Teratoma (RPT) are variable. In benign cases there is never an alteration in the patient’s general condition. In malignant forms the initial clinical picture may be normal, but there are often general symptoms or disturbances due to compression. Complications are rare. However, as benignity cannot be ascertained; the tumour must be removed surgically. Tissue adherence, which has been observed with malignant and benign lesions, may hinder complete removal or require extended surgery. Patients who have had benign teratomas surgically removed have an excellent prognosis.

The operative management of RPTs, especially those with rupture, may be complex and challenging. Despite their benign nature, the lesions can attenuate and surround major vessels, making resection difficult. Preoperative imaging has been known to offer limited help in demonstrating the position of the major vessels. A computed tomography (CT) scan or magnetic resonance image (MRI) can identify various components of these tumours, including bone, soft-tissue density structures, adipose tissue, and sebaceous and serous-type fluids. These imaging studies also can display the precise location, morphology, and adjacent structures of the tumour, which provide better preoperative planning and increased likelihood of complete removal of the tumour with less iatrogenic damage.

Surgical resection remains the mainstay of therapy for mature teratomas and is required for definitive diagnosis. Benign tumours, when resected, yield a 5-year survival rate of 100%. A long-term study showed that complete surgical resection is associated with the best survival rates for primary retroperitoneal tumours. However it may be difficult to make a preoperative diagnosis and the surgical excision could be a challenging task.

References


Illustrations

Illustration 1

Illustration 1

Illustration 2

Illustration 2
Illustration 3

Illustration 4
Illustration 5

Illustration 6
Retropertioneal mass closely connected to the inferior vena cava was seen
Illustration 7

A small rent occurred over the swelling with free flow of cheesy foul smelling putty material containing cheesy-like secretion.

Illustration 8

Operative specimen showing retroperitoneal cystic mass about 11 cm in greatest dimensions is seen.
Reviews

Review 1

Review Title: Retroperitoneal teratomas a diagnostic dilemma

Posted by Prof. Sanjeev K Gupta on 16 Jun 2014 07:09:53 AM GMT

1. Is the subject of the article within the scope of the subject category?
2. Are the interpretations / conclusions sound and justified by the data?
3. Is this a new and original contribution?
4. Does this paper exemplify an awareness of other research on the topic?
5. Are structure and length satisfactory?
6. Can you suggest brief additions or amendments or an introductory statement that will increase the value of this paper for an international audience?
7. Can you suggest any reductions in the paper, or deletions of parts?
8. Is the quality of the diction satisfactory?
9. Are the illustrations and tables necessary and acceptable?
10. Are the references adequate and are they all necessary?
11. Are the keywords and abstract or summary informative?

Rating: 6

Comment: Reasonably well written but report of a single case.

Competing interests: None

Invited by the author to make a review on this article?: Yes

Experience and credentials in the specific area of science:
Working as a faculty member in a teaching Department of General Surgery (tertiary care centre) for the last 25 years

Publications in the same or a related area of science: No

References:
None

How to cite: Gupta S. Retroperitoneal teratomas a diagnostic dilemma [Review of the article 'Retroperitoneal Teratomas A Diagnostic Dilemma' by Calcuttawala M]. WebmedCentral General Surgery 1970;5(6):WMCRW003074
Review 2

Review Title: Retroperitoneal teratomas a diagnostic dilemma

Posted by Prof. Sanjeev K Gupta on 16 Jun 2014 07:09:53 AM GMT

1. Is the subject of the article within the scope of the subject category?
2. Are the interpretations / conclusions sound and justified by the data?
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Rating: 6

Comment: Reasonably well written but report of a single case.

Invited by the author to make a review on this article?: Yes

Experience and credentials in the specific area of science: Working as a faculty member in a teaching Department of General Surgery (tertiary care centre) for the last 25 years

Publications in the same or a related area of science: No

How to cite: Gupta S. Retroperitoneal teratomas a diagnostic dilemma[Review of the article 'Retroperitoneal Teratomas A Diagnostic Dilemma ' by Calcuttawala M].WebmedCentral General Surgery 1970;5(6):WMCRW003075
Review 3

Review Title: A Doss. Review on Retroperitoneal Teratomas A Diagnostic Dilemma.

Posted by Dr. Arockia X Doss on 12 May 2014 10:15:36 PM GMT

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<th>Rating:</th>
<th>5</th>
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<td>Comment:</td>
<td>This is an interesting case report that reminds us of a rare and important differential diagnosis.</td>
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<tr>
<td>The patient has a benign lesion that is locally causing mass effect eg: compression to the renal outflow tract.</td>
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<td>The operative images are of good quality although labelling is incorrect.</td>
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<td>The radiological figures and descriptions could have been more clearer with attention to the coverage of the mass on all figures, the inclusion in the legend of the plane of imaging and techniques of scanning. Also the image qualities of the imaging studies are substandard.</td>
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<tr>
<td>In future the authors should ensure imaging illustrations are of better quality. This would certainly add value in such papers.</td>
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<td>Competing interests:</td>
<td>None</td>
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<tr>
<td>Invited by the author to make a review on this article? :</td>
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<td>Experience and credentials in the specific area of science:</td>
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<td>Doss A.A Doss. Review on Retroperitoneal Teratomas A Diagnostic Dilemma.[Review of the article 'Retroperitoneal Teratomas A Diagnostic Dilemma ' by Calcuttawala M].WebmedCentral General Surgery 1970;5(5):WMCRW003047</td>
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Review 4

Review Title: **Well written report of an unusual and interesting case**

Posted by Prof. Pietro G Calo on 28 Apr 2014 03:14:15 PM GMT

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<td>11</td>
<td>Are the keywords and abstract or summary informative?</td>
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Rating: 7

Comment:
The report is well written and very interesting. Many diagnostic tests were performed and are documented. The case is very unusual but not exceptional

**Competing interests:** None

**Invited by the author to make a review on this article?** : Yes

**Experience and credentials in the specific area of science:**
Experience in surgical oncology

**Publications in the same or a related area of science:** Yes

**References:**

**How to cite:** Calo P. Well written report of an unusual and interesting case[Review of the article 'Retroperitoneal Teratomas A Diagnostic Dilemma ' by Calcuttawala M]. WebmedCentral General Surgery 1970;5(4):WMCRW003038