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Cystic retroperitoneal metastasis from testicular seminoma, radiologically mimicking as lymphangioma

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Abstract

Background: Retroperitoneal nodal metastasis in a primary testicular tumor is not uncommon and usually presents as solid or solid-cystic nodal masses. A completely cystic appearance with fluid attenuation or fluid signal intensity on computed tomography (CT) and magnetic resonance imaging (MRI), respectively, is an uncommon presentation. There are many case reports of different types of cystic retroperitoneal masses; however, to our knowledge, metastatic retroperitoneal cystic masses showing fluid attenuation/fluid signal intensity on CT/ MRI secondary to primary testicular seminoma masquerading as cystic lymphangioma has been rarely reported in the medical literature. Our case report reports a case of a metastatic retroperitoneal cystic mass in a known case of testicular seminoma patient, which was misdiagnosed as cystic lymphangioma initially based on imaging.

Case presentation: A 55-year-old—patient presented to our hospital with abdominal pain, which was on and off in character. The patient underwent routine ultrasound abdomen, CT and MRI, which revealed multiple cystic lesions in the retroperitoneum. Initially, a provisional diagnosis of cystic lymphangioma was made based on the utterly cystic nature of the lesion and the presence of calcification. However, fine-needle aspiration cytology (FNAC) confirmed the metastatic origin of the lesion and was strengthened by the previous clinical history of orchidectomy.

Conclusion: The treatment strategy for cystic retroperitoneal masses varies depending on the cause and its nature, so differentiation between the cystic masses is essential. Metastasis should also be kept in the differentials in all cystic retroperitoneal masses. Moreover, clinical history and FNAC can assist in making the correct diagnosis.

Keywords: Retroperitoneal cystic lesion, Metastasis, Lymphangioma, Paradoxical appearance, Seminoma

Introduction

Primary testicular tumors often produce nodal retroperitoneal metastases, which are usually solid or solid-cystic in appearance due to necrosis. These metastatic nodes can infrequently be cystic, which can mimic other cystic retroperitoneal masses on imaging. As the treatment strategy is different for different cystic retroperitoneal masses, so differentiation between the cystic masses is essential. Metastatic retroperitoneal nodes with an utterly cystic nature in a case of primary testicular seminoma have been rarely reported in the medical literature.

Case report

A 55-year-old—patient presented to the outpatient department of general surgery with abdominal pain, which was on and off in character. The patient underwent for routine ultrasound abdomen, which showed multiple anechoic cystic lesions with few internal septae in the retroperitoneum. No solid component or debris was seen within the cystic lesions. No vascularity was seen on Color Doppler.

On CT, multiple fluid attenuating thin-walled cystic lesions with few thin internal septations were seen in the

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retroperitoneum on both sides (Fig. 1). The attenuation coefficient of the mass was in the +5 to 10 Hounsfield Unit range. Few showed thin septal and peripheral calcifications with no evidence of fat density or solid enhancing component. Ureters were separately visualized from the masses. Multiple thin-walled cystic lesions were seen on MRI with few thin internal septations (Fig. 2). Based on imaging, a provisional diagnosis of cystic lymphangioma was made. However, on close inspection of the CT and MRI images, a small discrete lymph node with cystic changes similar to the retroperitoneal cystic masses was seen in the left inguinal region, which made us suspicious and against our provisional diagnosis of cystic lymphangioma (Fig. 3). The patient was asked for his previous medical history. There was a history of orchidectomy for some left testicular lesion 9 years back. No follow-up

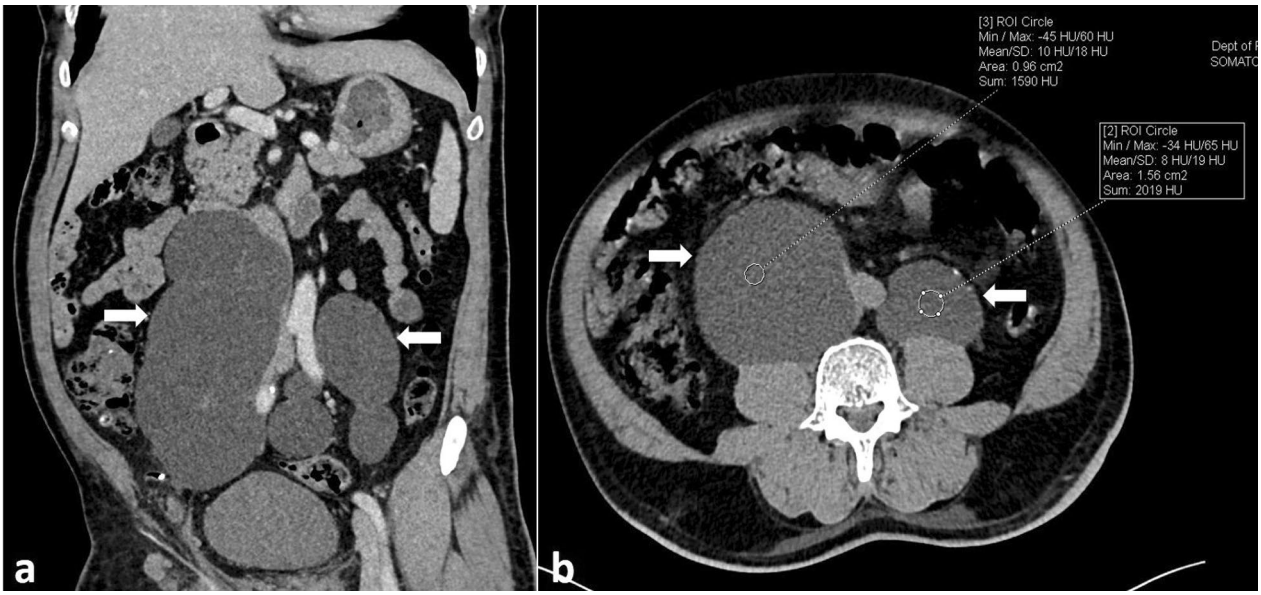

Fig. 1 CT coronal (**a**) and axial (**b**) images showing thin walled cystic masses (white arrows) in retroperitoneum with mean Hounsfield Unit value of 5–10

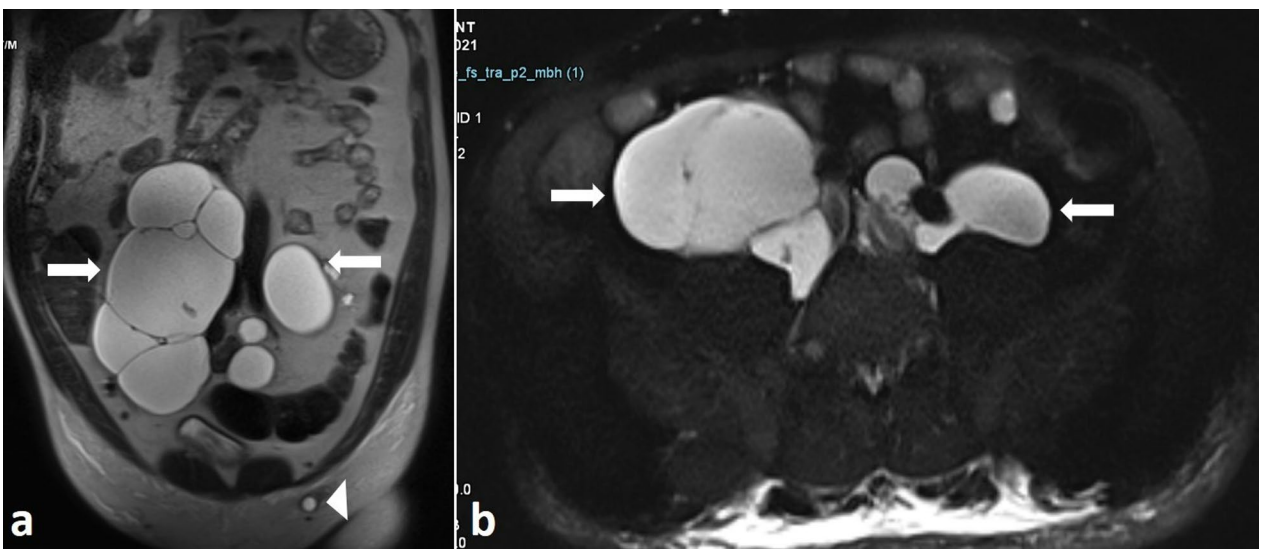

Fig. 2 MRI coronal (**a**) and axial (**b**) T2W images showing cystic masses (white arrows) with thin internal septations. A left inguinal cystic lymph node (arrow head)

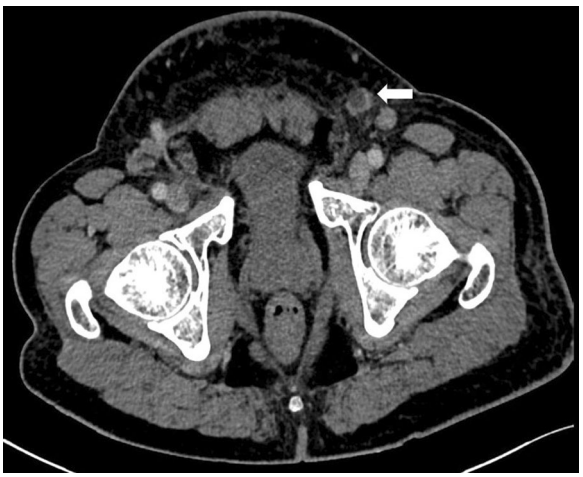

Fig. 3 CT axial image showing a discrete node with cystic changes in left inguinal region (white arrow)

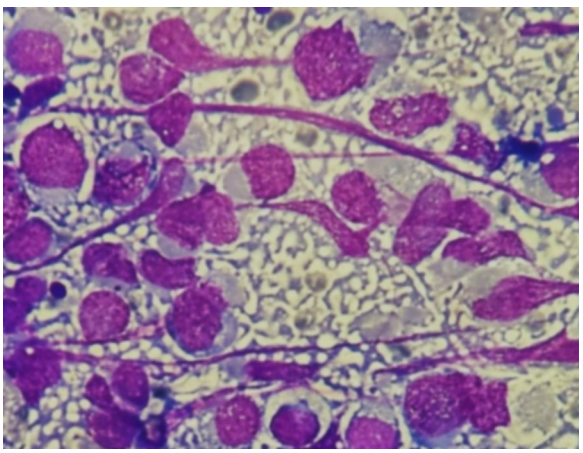

Fig. 4 Cytosmear (400X) showing dispersed neoplastic cells having large nuclei in a tigroid background

imaging or documents were available with the patient for the same at the time of imaging.

Ultrasound-guided FNAC was done from this cystic left inguinal node which revealed dispersed neoplastic cells having large pale nuclei and single to multiple prominent nucleoli against a tigroid background with scattered lymphocytes giving us a clue of seminoma (Fig. 4). The patient underwent resection of the retroperitoneal cystic lesions and is currently under chemotherapy.

Discussion

Retroperitoneal cystic masses arising outside from the major retroperitoneal organs within that compartment are rare. The treatment strategy for cystic retroperitoneal masses varies depending on the cause and its nature, so differentiation between the cystic masses is essential. Cystic retroperitoneal masses can be divided into neoplastic (cystic lymphangioma, teratoma, mucinous cystadenoma, cystic changes in solid neoplasm, metastatic nodes, pseudomyxoma retrpopertonei), and nonneoplastic (pseudocyst, lymphangioma, lymphocele, urinoma) masses. Sometimes it is not easy to diagnose a cystic retroperitoneal mass as many overlapping features exist among the various retroperitoneal cystic masses.

Cystic retroperitoneal nodal metastasis is seen in ovarian carcinoma, gastric primaries, and rarely in renal cell carcinoma and cervical carcinoma [1–3].

The cystic nature of the nodes has been attributed to the tumor cells obstructing the flow of the lymph resulting in cystic enlargement of the nodes. Retroperitoneal metastatic nodes in a primary testicular seminoma are common, usually solid or solid cystic due to necrosis; however, nodes with an utterly cystic nature are rare.

Retroperitoneal lymphangioma is a benign tumor of congenital lymphatic origin. It occurs due to the failure of the developing lymphatic tissue to establish normal communication with the remainder of the lymphatic system [4]. Therefore lymphangiomas are considered congenital rather than an acquired tumors. The other explanations for the origin of lymphangioma include obstruction of lymph channels secondary to fibrosis, inflammation, trauma, node degeneration, or failure of endothelial secretory function [5]. Usually, they occur in the head and neck region; however, they can involve the retroperitoneum, a rare location [4, 6, 7]. Cystic lymphangiomas can occur anywhere in the pararenal, perirenal, or pelvic extraperitoneal spaces and may cross more than one compartment of the retroperitoneum [4]. Cystic lymphangioma or hygroma consists of multiple dilated, poorly developed lymphatic channels. The cystic spaces are lined with endothelium and contain multiple thin septa and chylous fluid. On ultrasound, a lymphangioma is seen as a cystic mass with multiple, fluid-containing cystic regions, separated by thin septae. In CT, they typically appear as thin-walled, multiseptated cystic masses [4, 6]. The attenuation values are usually that of fluid and may cross one retroperitoneal compartment to an adjacent one is characteristic of the mass [4]. Sometimes, the walls and septae are imperceptible. Rarely, they may have wall calcification [4]. In our case, the lesions had all the above-mentioned cystic lymphangioma features on ultrasonography, CT, and MRI.

The other close differential in our case was pseudomyxoma retroperitonei. These usually occur in the peritoneal cavity; however, these may occur in the retroperitoneum [8, 9]. On CT, they appear as multicystic masses with thick walls and septa that displace and distort adjacent

structures [8, 9]. Curvilinear or punctate mural calcifications may also occur.

Conclusion

CT or MRI can be beneficial in diagnosing a cystic retroperitoneal mass. It provides essential information regarding the exact location, origin, and involvement of adjacent structures. It can identify enhancing solid components, fat, or calcification within the lesion. However, various retroperitoneal cystic masses may show a substantial overlap of radiological features. In our case, the lesion was elongated and involved the entire retroperitoneum on both sides. The lesions were of fluid attenuation or fluid signal intensity in CT and MRI, respectively. Moreover, few of them were showing septal and wall calcifications. These all-radiological features were highly suggestive of retroperitoneal cystic lymphangioma. However, his age, i.e., 55 years, and the presence of a discrete cystic node in the left inguinal region raised suspicion of some other pathology. Retroperitoneal lymphangioma usually presents in infancy and is rarely seen in adults. Only a few cases of adult retroperitoneal lymphangioma have been reported so far [1, 10].

FNAC from the cystic node confirmed the metastatic origin of the lesion, which was strengthened by the retrospective history of orchidectomy 9 years back for some left testicular lesions.

With cystic retroperitoneal lymphangioma, a benign pathology, simple total excision is usually preferred with a good outcome. The other treatment modalities, including aspiration, drainage, and sclerosis, can be used. However, the treatment options for retroperitoneal cystic metastasis include surgical resection of the nodal masses, chemotherapy, or radiotherapy. So differentiation between the retroperitoneal cystic masses is essential as the treatment strategy varies depending on the cause and its nature.

Retroperitoneal metastatic nodes in a case of primary testicular seminoma with an utterly cystic nature is a rare clinical entity. So, metastasis should also be kept in the differentials in all cystic retroperitoneal masses. Moreover, clinical history and FNAC can assist in making the correct diagnosis.

Abbreviations

CT: Computed tomography; MRI: Magnetic resonance imaging; FNAC: Fine needle aspiration cytology.

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Authors' contributions

BS developed the original draft. MS and RKP did the supervision. SJ and AA performed review and editing. All authors read and approved the final manuscript.

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Declarations

Ethics approval and consent to participate

Not applicable.

Consent for publication

Written informed consent for publication of their clinical details and/or clinical images was obtained from the patient. A copy of the consent form is available for review by the Editor of this journal.

Competing interests

The authors declare that they have no competing interests.

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