Case Report

A huge retroperitoneal liposarcoma mimicking ovarian teratoma: A case report

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ABSTRACT

Retroperitoneal liposarcoma is a malignant, primitive, and rare mesenchymal tumor. It can grow usually asymptomatic until large enough to compress the surrounding organs. We report an observation of a retroperitoneal liposarcoma mimicking an ovarian tumor. A 50-year-old, P1+0 postmenopausal female, presented to our Department of Obstetrics and Gynecology, with abdominopelvic mass and pressure symptoms for 2 months. Her magnetic resonance imaging abdomen and pelvis, ULTRASOUND-guided fine needle aspiration cytology, and tumor markers were done to make the provisional diagnosis after which, the patient underwent exploratory laparotomy. Complete removal of mass along with the right ovary was done in spite of mass encasing the right iliac vessels and the right ureter. Along with this, a hysterectomy with the left salpingo-oophorectomy and the right salpingectomy were done. A very huge ovarian tumor 22×15×28 cm weighing 5.5 kg was removed. Histopathological examination showed myxoid/well-differentiated liposarcoma with heterologous differentiation. Retroperitoneal liposarcomas are rare; however, they require an aggressive surgical approach, including multi-organ resection, if necessary, or multiple resections in the case of recurrence.

Key words: Huge size, Rare tumor, Retroperitoneal liposarcoma, Surgical approach

Soft tissue sarcomas are rare, accounting for <1% of all malignancies [1]. Liposarcoma is the most common soft tissue sarcoma in adults which is mostly located in the retroperitoneum, originates from the mesoderm, and is derived from adipose tissue. Liposarcomas occur at any age, but the majority occur in the age 40–60 years with a peak incidence in the fifth decade of life [2]. They pose diagnostic and therapeutic challenges because symptoms are usually late and non-specific and have a tendency to attain tremendous size due to their early silent growth. Consequently, they can grow slowly in the retroperitoneal space and extend into the female pelvis which represents a potential pitfall for gynecologists who can misdiagnose them as adnexal masses.

We report a case of retroperitoneal liposarcoma, mimicking an ovarian tumor due to radiological similarities. Retroperitoneal liposarcoma involving the ovary is a rare occurrence, and case reports documenting such instances are limited.

CASE REPORT

A 50-year-old, P1+0 postmenopausal female, presented to our Department of Obstetrics and Gynecology, in April 2023 with a complaint of abdominopelvic mass and pressure symptoms for 2 months. She had no past medical and surgical history.

On per abdominal examination, a firm non-mobile mass of 20×15 cm was noted and no free fluid was elicited. On per vaginal examination, a solid mass of approximately 22×15 cm was felt, fixed, non-mobile, non-tender, and could not be separated from the uterus, occupying all fornices, with the cervix pulled up.

All baseline investigations were normal. Ultrasound (USG) pelvis showed a large, approximately 23×12 cm ill-defined heterogenous mass arising from the fundal region suggestive of a huge fundal fibroid. USG-guided fine needle aspiration cytology revealed an atypical lipomatous lesion. Magnetic resonance imaging revealed a large, well-defined multi-lobulated heterogeneously T1, T2 hyperintense mass lesion measuring 15×22×28 cm in the pelvis, extending into the abdomen up to the epigastrium. Multiple linear soft tissue strandings were observed in this mass lesion, along with intra-tumoral fatty tissue and foci of calcification. The right ovary was not separately visualized. There was partial encasement of the right iliac vessels, with differential diagnoses of ovarian and uterine etiologies. The uterus was compressed and deviated toward the left (Fig. 1). CA-125 levels were normal.

Preoperative investigations were conducted after which the patient underwent exploratory laparotomy. During surgery, no free fluid was present, and a huge tumor mass, occupying almost

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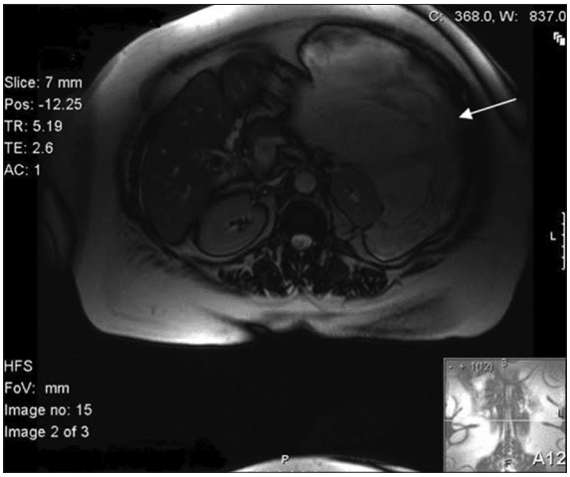

Figure 1: Magnetic resonance imaging obtained before surgery shows a hyperintense mass of 22×15×28 cm extending into the abdomen up to epigastrium, intra-tumoral fatty tissue and foci of calcification seen, right ovary not separately visualized suggestive of ovarian teratoma

the entire abdominal and pelvic cavity (Fig. 2a), originating from the retroperitoneal space and abutting the right ovary to such an extent that the ovary could not be separately demarcated from the tumor mass. The uterus was atrophied, while the left tube and ovary were normal (Fig. 2b). Complete excision of the tumor mass with the right ovary was performed, despite the mass encasing the right iliac vessels and right ureter. Along with the hysterectomy, the left salpingo-oophorectomy and the right salpingectomy were done. There were no other malignant lesions in the pelvis and abdominal cavity.

Grossly, the tumor mass comprised several lobes of fatty lobules, measuring 22×15×28 cm in size, with a weight of 5.5 kg. In the post-operative period, the patient remained stable and was discharged on day 14 after surgery. She was referred to the radiotherapy department but did not return for follow-up after one visit. After 8 months of telephonic conversations, the patient was doing well.

Histopathology report revealed myxoid/well-differentiated liposarcoma with heterologous differentiation such as metaplastic bone and cartilage formation and schwannian differentiation (Fig. 3). Multiple sections show adipocytes admixed with mature univacuolated lipoblast and separated by septa with scattered bizarre atypical spindle cells.

DISCUSSION

Liposarcomas are rare malignant tumors of adipocytic differentiation and are classified under the soft tissue sarcoma subtype histologically. Subtypes of sarcomas include liposarcoma (41%), leiomyosarcoma (28%), malignant fibrous histiocytoma (7%), and fibrosarcoma (6%) [2]. The histological classification of liposarcoma could be divided into five groups: Well-differentiated liposarcoma, myxoid liposarcoma; round cell liposarcoma, pleomorphic liposarcoma, and dedifferentiated liposarcoma (DL) [3]. It has been reported that 20% of the tumors are >10 cm at the

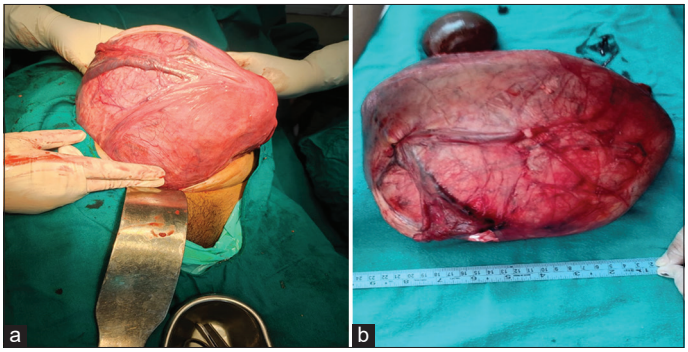

Figure 2: (a) Photograph showing a huge mass taken during surgery; (b) Photograph of the mass obtained after surgery. Gross view of liposarcoma: Of size measuring 22×15×28 cm

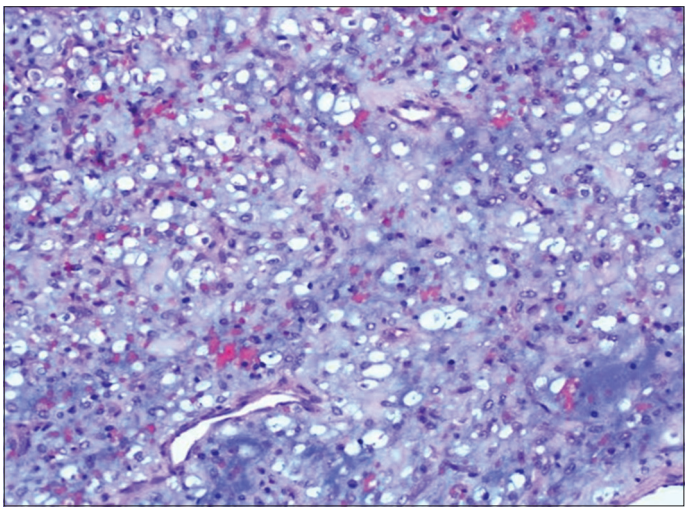

Figure 3: The histopathological findings of the tumor show a section of liposarcoma composed predominantly of myxoid stroma with a small amount of mature lipolytic cells

time of presentation [3]. Well-differentiated liposarcomas appear as well-defined predominantly fat-containing lesions with minimal soft tissue attenuation and commonly contain septa. The appearance may be indistinguishable from a lipoma and therefore, a retroperitoneal purely fatty lesion should be considered a liposarcoma rather than a lipoma until proven otherwise with histological confirmation [4]. They are generally slow-growing tumors and may attain enormous sizes, especially when they occur in a clinically silent retroperitoneum, hence they may attain giant sizes. Inoue *et al*. reported the case of an eighteen-kilogram retroperitoneal liposarcoma [5].

Radical excision is the treatment of choice for all liposarcomas whenever they occur [2,6]. The line of dissection must extend well beyond the palpable or visible limits of the tumor and its pseudo capsule to prevent recurrence. The use of radiotherapy is still controversial [7]. Slow-growing, well-differentiated liposarcomas are relatively radioresistant. Radiotherapy is generally employed in the treatment of incompletely resected tumors, recurrence at the primary site, inoperable primary tumors, and metastatic disease. They are also non-responsive to various combinations of chemotherapy [7]. Lahat *et al*. reported that clinicians generally treat DL patients with systemic chemotherapy followed by an aggressive surgical approach,

whereas, those with a well-differentiated type undergo less aggressive surgery. However, less aggressive treatment does not improve the long-term outcome in patients with well-differentiated liposarcoma [8]. Singer *et al*. stated that the histological subtype of retroperitoneal liposarcoma, incomplete resection, contiguous organ resection, and older age are strongly associated with tumor-associated mortality [9].

However, this case indicates that complete surgical resection still plays an important role in the treatment strategy and could be applied to similar patients in the future, as in our case, the patient did not undergo chemotherapy or radiotherapy after surgery and the patient is doing well 8 months post-surgery.

CONCLUSION

Retroperitoneal liposarcomas are rare; however, they require an aggressive surgical approach, potentially involving multi-organ resection or multiple resections in case of recurrence. Prognostic factors include tumor size, anatomical location, surgical resection, and histological subtype, with the latter being the most important. The necessity of chemotherapy and radiotherapy in the disease requires further clinical cases for determination. Treatment strategies for liposarcoma should be tailored on a case-by-case basis.

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