

Case report

Myxoid liposarcoma of the broad ligament

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Abstract. Singh TT, Hopkins MP, Price J, Schuen R. Myxoid liposarcoma of the broad ligament. *Int J Gynecol Cancer* 1992; 2: 220–223.

A patient diagnosed as having a myxoid liposarcoma of the broad ligament is presented. She was treated with surgical resection and radiation therapy and is free of disease 2 years after completing surgery.

KEYWORDS: liposarcoma, retroperitoneal sarcoma, sarcoma.

Pelvic sarcomas of gynecologic origin arise from the uterus, ovary, cervix and vulva. The most common site is uterine, and prognostic factors are related to geographical spread as well as depth of myometrial invasion⁽¹⁾. The retroperitoneum also gives rise to sarcomas with leiomyosarcoma and liposarcomas being the most common in this area: they usually attain a large size before giving rise to symptoms. We recently treated a patient in whom a liposarcoma arose from the broad ligament. This case is reported in detail to bring attention to this extremely unusual presentation of a liposarcoma.

Case report

A 54-year-old gravida 4, para 4 woman, postmenopausal for 2 years, presented with the complaint of a mass protruding from the left side of her abdomen. She had been on cyclic estrogen and progesterone (Estraderm patch 0.05 mg, day 1–25 and Provera 10 mg, day 15–25). Her physical examination 6 years prior to presentation was normal except for an enlarged uterus that we thought to be due to leiomyomas. On physical examination she had a tender mass in the left adnexal area. This was thought to be a uterus enlarged to three times normal size. A pelvic ultrasound scan confirmed the pelvic mass but showed a probable ovarian neoplasm. Exploratory

laparotomy revealed a necrotic mass arising from the left broad ligament. The tumor extended along the entire side of the uterus from the area of the pelvic diaphragm and cardinal ligament to the pelvic brim. The large mass consisting of various types of tissue was easily excised. A total abdominal hysterectomy and bilateral salpingo oophorectomy was performed. The ovaries appeared normal. Palpation of the retroperitoneal spaces in the paraaortic and pelvic area revealed no evidence of either metastatic disease or a primary process. Adjuvant radiation therapy was given because of the involved lateral surgical margins. Radiation consisted of 4500 centigray (180 centigray day⁻¹) whole pelvis radiation (anterior and posterior portals with field size 16×17 cm² by Linac 6mv). A boost to the vagina was given for a total of 5040 centigray. She is clinically free of disease 2 years after completing therapy. Chest X-ray and abdominal pelvic CAT scan performed one year and 2 years after completion of therapy are negative for disease.

Pathology

Multiple histologic sections prepared from formalin-fixed tissue of the left broad ligament demonstrate a nodular myxomatous malignant tumor extending with a broad, pushing infiltrating growth pattern into a fibroligamentous stroma. The myxoid tissue is moderately cellular, and often has thin fibrous septa containing delicate capillary vasculature (Fig. 1). The myxoid tissue contains classical lipoblasts, but because of formalin fixation a fat stain is not possible.

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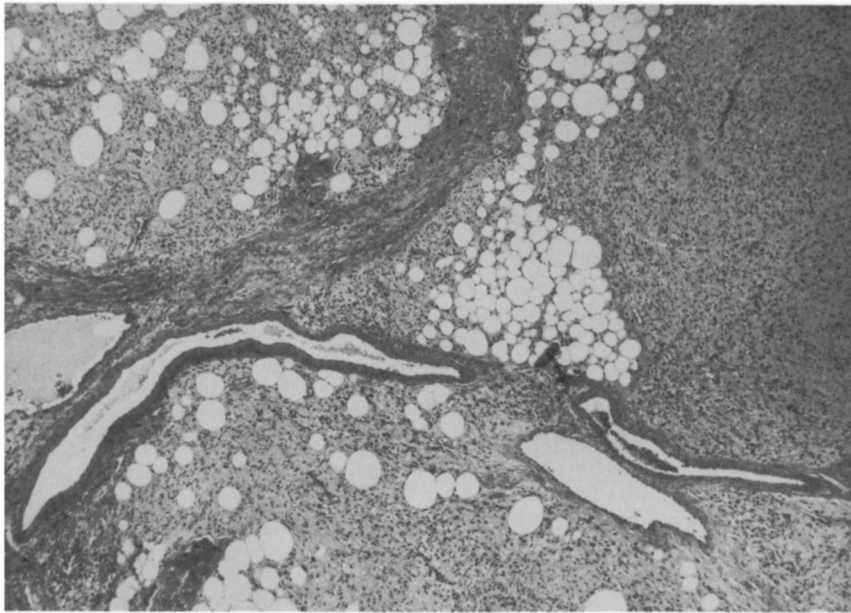


Fig. 1. A broad infiltrative myxoid neoplasm replaces mature fat cells and surrounds vessels and nerves.

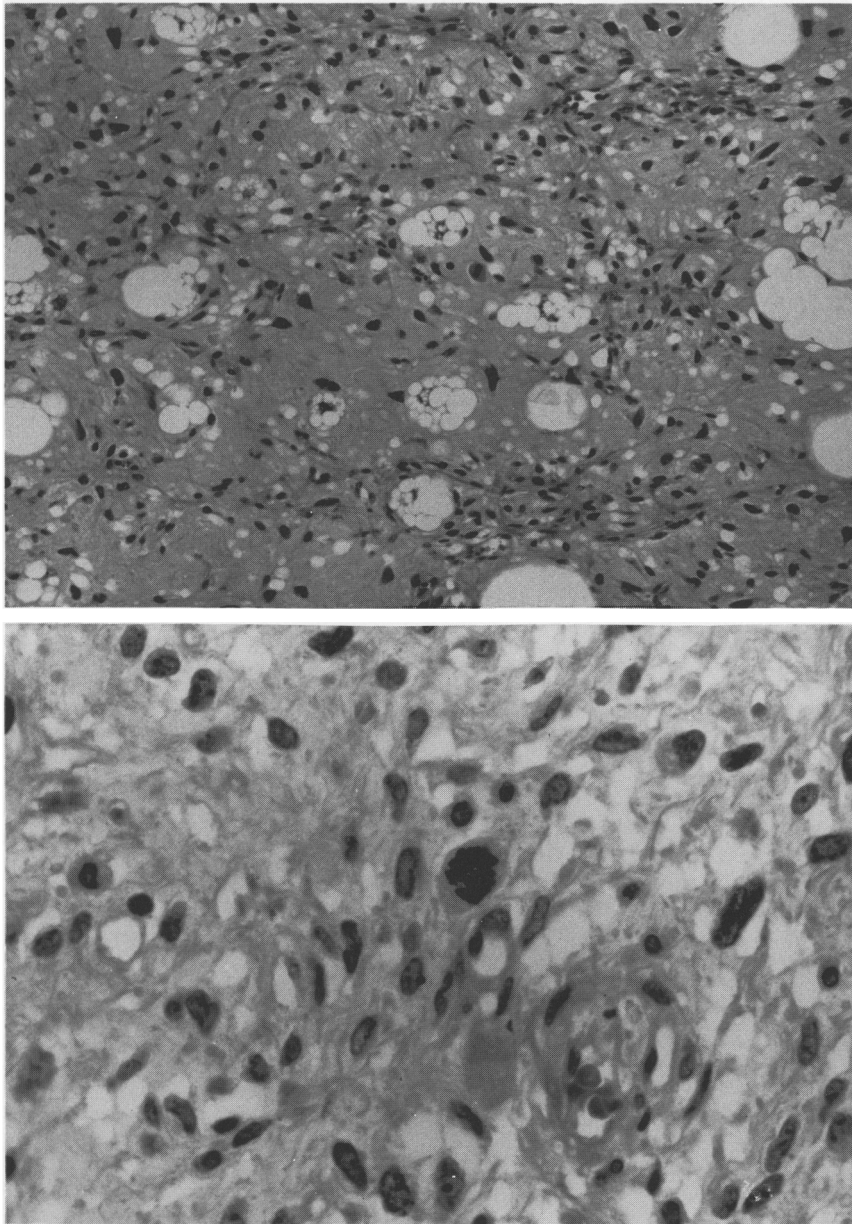
There is hyperchromatic nuclear enlargement and prominent amphophilic nucleoli with bizarre mitotic figures readily identifiable. Also, there is a diffuse, minimal, infiltrate of mature lymphocytes and plasma cells (Figs 2 and 3). This lesion is consistent with a moderately differentiated myxoid liposarcoma. The left ovary is adherent to the neoplasm in the broad ligament, but the left tube and ovary, uterus, right tube and ovary do not contain neoplasm.

The histologic differential diagnosis may include aggressive angiomyxoma, and particularly myxoid leiomyoma. These neoplasms may have similar gross findings including large size. This moderately differentiated myxoid liposarcoma is distinguished by its classical lipoblast cellular architecture. The myxoid leiomyoma is distinguishable by a lesser prominent vascular pattern, and also the presence of smooth muscle fibers within the myxoid matrix. The aggressive angiomyxoma is distinguishable by its relatively abundant vasculature, and the absence of demonstrable lipoblasts. In turn, the aggressive angiomyxoma may be distinguished from the myxoid leiomyoma by trichrome of desmin stains.

Discussion

Sarcomas arising in the broad ligament have only been reported rarely. Persad reported an endometrial stromal sarcoma of the broad ligament⁽²⁾. This appeared to arise in an area of endometriosis that was in a paramesonephric cyst. Swann *et al.* reported a mixed

Mullerian sarcoma of the broad ligament⁽³⁾. Although not a sarcoma, Lung reported a leiomyoma of the broad ligament that appeared to arise in an obturator hernia⁽⁴⁾. Broad ligament adenocarcinoma has been reported previously in 9 patients. In their review, Rojansky *et al.*⁽⁵⁾ reported the ninth patient in the world's literature who had an adenocarcinoma which appeared to arise in a parovarian cyst. Among these 9 patients, 6 had low-grade papillary adenocarcinoma while the other 3 were considered to be a well or moderately differentiated adenocarcinoma. All of these were believed to be of Mullerian origin. Follow-up was limited for the 9 patients, however only one of these patients died from disease. Breen & Neubecker in a large review of tumors of the round ligament, reported that the most common tumor arising from the round ligament was a leiomyoma⁽⁶⁾. In their report they did have 2 patients who had a lipoma of the round ligament. To our knowledge, this is the first patient reported with a liposarcoma arising from the broad ligament. The origin of the tumors reported in the broad ligament is unclear, although most authors believe these can arise in structures such as the round ligament and then extend into or between the leaves of the broad ligament. In patients with adenocarcinoma arising from the broad ligament the tumors were thought to arise from the parovarian structures contiguous with the broad ligament. Liposarcomas usually arise from the retroperitoneal space and it is possible that this tumor arose in the retroperitoneal planes in the region of the broad ligament.



Figs 2,3. A myxomatous pattern with vacuolated lipoblasts, hyperchromatism, and mitotic activity is demonstrated.

Truncal liposarcomas represent 42% of all liposarcomas, and of this group 19% are of retroperitoneal origin⁽⁷⁾. The retroperitoneal liposarcomas are usually large and situated near vital structures. Thus, they represent a major challenge in terms of radical resection. Liposarcomas are histologically classified as: (1) well-differentiated liposarcoma; (2) myxoid liposarcoma; (3) round cell liposarcoma; (4) pleomorphic liposarcoma. Of this group, myxoid liposarcomas represent 50% of all liposarcomas, and they are the predominant form of retroperitoneal sarcoma.

The most important prognostic factors in soft tissue sarcomas are the histologic grade and the amount of necrosis present. There also is an inverse relationship between prognosis and perioperative red blood cell transfusions in patients who undergo resection of localized sarcomas. The site usually determines the extent of surgical resection. Martin *et al.* reported a local recurrence rate of 28% versus 77% in patients who had radical versus conservative resections of their tumors⁽⁸⁾. Thus, surgical resection remains the mainstay of treatment for all sarcomas. Since the

surgical margins of our patient's tumor were positive for malignant cells, she was given radiation in an attempt to prevent progression of her disease.

A prospective randomized trial at the National Cancer Institute, comparing intraoperative radiotherapy to postoperative external beam radiation with a retroperitoneal soft tissue sarcoma, revealed no differences in therapeutic effectiveness⁽⁹⁾. Without radical resection, the local recurrence rate is 75%. Lindberg *et al.* reported a local recurrence rate of 22% using 5500 to 6500 rads after conservative surgery⁽¹⁰⁾. The patients with intra-abdominal primaries had a 5-year survival of 33% versus an overall survival of 61% for all sarcomas.

Adjuvant chemotherapy for soft tissue sarcomas of the extremities has been shown to improve the disease-free survival with a trend towards increased overall survival. Some improvements in survival and disease-free status in truncal soft tissue sarcomas have been achieved also⁽¹⁰⁾. Unfortunately, no such benefits have been shown in soft tissue sarcomas of the retroperitoneal area. Our patient, thus, received postoperative radiation therapy, but no chemotherapy.

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