

Case Report

Liposarcoma arising from the fallopian tube: A case report and review of the literature

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Abstract

Background: Liposarcoma is the most common soft tissue sarcomas in adults, and it typically occurs in either the retroperitoneum or extremities. However, this malignant tumor is very rare in the female reproductive system.

Case: As 58-year-old female presented with acute abdominal pain, and computed tomography (CT) scan detected multiple masses measuring 4-6 cm in size with a fatty density in her adnexal region. Laparoscopic evaluation revealed tumors of the left fallopian tube with normal left ovary. Histopathologic evaluation of the resected pelvic tumors showed lipocytes and lipoblasts of various sizes, leading to diagnosis of well-differentiated liposarcoma of the left adnexal region.

Conclusion: This is the first known case of a liposarcoma arising from the fallopian tube.

When a pelvic mass with fatty density that does not show typical findings of a mature cystic teratoma is detected by either CT or magnetic resonance image (MRI) imaging, the possibility of a liposarcoma should be considered.

Key words : liposarcoma, fallopian tube, mature cystic teratoma

Introduction

Liposarcomas, which account for at least 20% of all sarcomas in adults, typically occur in either the retroperitoneum or lower extremities. However, in the gynecologic field, there have been very few reports of either retroperitoneal liposarcoma or intraabdominal liposarcoma. To date, although several cases of liposarcoma from the uterine body have been reported, there is no case of a liposarcoma occurring in the adnexal region.

We report here the first known case of liposarcoma arising from stroma of the fallopian tube, which we mistakenly diagnosed to be a mature cystic teratoma before operation.

Case Report

A 58-year-old female was transferred to our hospital due to acute onset of lower abdominal pain. She was taking medication for hypertension and diabetes mellitus, but was otherwise in good health prior to onset of abdominal pain. A pelvic examination revealed severe tenderness in the left adnexal region but a pelvic mass was not palpable.

A complete blood count showed leukocytosis. Chest X-ray and ECG findings were both normal. Emergency computed tomography (CT) scan of the abdomen detected multiple pelvic masses measuring 4-6 cm in size with a fatty density. In addition, MRI showed heterogeneous masses with a high signal intensity on the T1-weighted and T2-weighted images. She was initially diagnosed with probable torsion of ovarian mature cystic teratomas, which are the most common ovarian neoplasms. Laparoscopic surgery was performed to remove the pelvic masses. Although no ascites was seen in the abdominal cavity, a normal left ovary and three yellowish smooth masses, with pedicles originating from the left fallopian tube, were detected. These pedicles, consisting of three masses, had become intertwined with each other, thus most likely being the cause of the patient's abdominal pain. Since the cut surface appearance of these tumors, which we first resected by laparoscopic surgery, comprised a yellowish fatty and grayish white lobulated solid mass, malignant tumors were suspected even though the pelvic masses were not ovarian tumors (Fig. 1a and 1b). We therefore changed from laparoscopic surgery to a laparotomy in order to perform a complete resection, in addition to a total hysterectomy, bilateral salpingoophorectomy, partial omentectomy, and peritoneal

washing cytology as treatment for the tubal cancer. No biopsies of the lymph nodes or peritoneal regions were performed because no lymph node swelling or peritoneal dissemination was detected during the operation.

Pathological evaluation of the resected specimen showed the presence of well-differentiated liposarcoma, which was characterized by the proliferation of mature fat cells whose size ranged from small to large and lipoblasts which contained multiple vacuoles in the cytoplasm with enlarged, irregular, dense nuclei in fibrous tissue. The collagenous stroma was congested due to torsion of the pedicle (Fig.2a and 2b). The resected tumors were diagnosed to be well-differentiated liposarcoma from the stroma of the fallopian tube. The resection margin was negative and no metastasis was seen in any other specimens. An immunohistochemical study indicated that vimentin and S-100 protein were positive while CD68 was negative. No malignant cells were observed in any peritoneal washing cytology specimens.

Neither chemotherapy nor any other adjuvant therapies were added, because the masses were considered to have been adequately resected. The patient remains disease-free 22 months after the surgery.

DISCUSSION

The presence of a fatty component in pelvic masses usually indicates a mature cystic teratoma, since they are the most common ovarian neoplasm found in women. However, a small number of cases of retroperitoneal liposarcoma or intraabdominal liposarcoma have been reported, and therefore pelvic masses with a fatty component should be managed as potentially malignant tumors. The CT and MRI findings in our patient showed three distinct masses consisting of fat with septations, which are characteristic of well-differentiated liposarcoma [1]. We therefore could have made a diagnosis of liposarcoma before the operation if we had included the possibility of liposarcoma in the differential diagnosis.

The poor prognosis of liposarcoma depends on several factors including age older than 60 years, tumor size greater than 5 cm, and high grade histology [2].

The histologic cell type of liposarcoma, which is classified as being either well differentiated, myxoid/round cell, pleomorphic, or dedifferentiated, is the most important factor predicting survival rates for case of liposarcoma. The five year-survival

for well differentiated subtypes is 90%, while myxoid liposarcomas have a 5-year survival probability of 70~90% and both round cell liposarcoma and pleomorphic liposarcoma have a high metastatic potential and a 5-year survival probability of only 20~50%[3]. According to the American Joint Committee staging protocol for sarcoma of the soft tissue [4], the stage is determined by the histologic grade, the presence of lymph node metastasis and distant metastasis, the tumor size and its location. In this case of a 58-year-old female, the tumor was an intraabdominal mass measuring more than 5 cm in size but without any metastasis, and the histologic grade of the tumor was a low grade (well differentiated type). Therefore, this case was classified to be stage I disease.

The recommendation of National Cancer Institute for the treatment for adult soft tissue sarcoma of patients with stage I disease is a surgical excision. If the tumor is unresectable, preoperative radiation therapy and/or postoperative radiation therapy may be used. In addition, chemotherapy is not performed in cases of tumors with a low metastatic potential[5]. In this case, 1) a total hysterectomy, a bilateral salpingoophorectomy and a partial omentectomy were all performed, 2) no metastases

were detected by chest X-ray, CT and MRI examinations, 3) the peritoneal washing cytology findings were negative and 4) her histological diagnosis was well differentiated liposarcoma with a minimal metastatic potential. Accordingly, neither radiation therapy nor chemotherapy was performed as adjuvant treatment. She is being followed up clinically and by serial chest X-rays and CT scans of the chest, abdomen and pelvis, and no relapse of symptoms has been observed.

This is the first reported case of liposarcoma arising from a fallopian tube. Since the normal treatment protocol for tubal cancer was selected, we performed a total hysterectomy, a bilateral salpingoophorectomy and a partial omentectomy for the liposarcoma arising from the stroma of the fallopian tube.

When multiple pelvic masses with a fatty density are detected by either CT or MRI examinations which do not correspond to the typical findings of mature cystic ovarian teratomas, then the possibility of a liposarcoma should therefore be taken into consideration and included in the differential diagnosis.

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2. Figure legend

Figure 1. Macroscopic findings of the specimen

- a. The resected masses, uterus and bilateral adnexas. The black arrow indicates the fallopian tube and the white arrow indicates the left ovary.
- b. The cut surface appearance of the tumor was composed of a yellowish fatty and grayish-white lobulated solid mass.

Figure 2.

- a. A low-power view of the tumor showing mature fat tissue and proliferation of fibrous tissue, HE, original magnification x40.
- b. A high-power view of the tumor cells. Several mature lipocytes and lipoblasts with vacuoles in the cytoplasm, enlarged hyperchromatic nuclei and prominent nucleoli were found. HE, original magnification x400.