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Case Report

An Unusual Presentation of Uterine Leiomyosarcoma and Diagnostic Challenges.

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Abstract

Uterine leiomyosarcoma (ULMS) is a rare and aggressive type of uterine cancer that is difficult to diagnose due to its nonspecific symptoms and resemblance to other gynaecological conditions. This case report describes a 66-year-old woman who was initially diagnosed with carcinosarcoma following hysteroscopic endometrial polypectomy and curettage, post-operative histology revealed stage 1B leiomyosarcoma with no metastasis. This report highlights the diagnostic challenges of distinguishing between leiomyosarcoma and carcinosarcoma and emphasises the importance of increased awareness and prompt diagnosis to improve patient outcomes.

Keywords: Leiomyosarcomas; Uterine Neoplasms; Female Genital Neoplasms

Background

Uterine leiomyosarcoma (ULMS) is indeed a rare and aggressive malignancy originating from the smooth muscle of the uterine wall. Compared to other uterine cancers, ULMS carries a poor prognosis, characterized by a heightened risk of recurrence and mortality, even when diagnosed at an early stage. In the United Kingdom, approximately 600 individuals are diagnosed with leiomyosarcoma each year, and the five-year survival rate stands at a mere 40%.1,2 Although the incidence of ULMS is relatively low, early diagnosis and management are critical to improve patient outcomes. The cornerstone of management for early-stage ULMS is extra-fascial total hysterectomy with or without bilateral salpingectomy. However, in young women, oophorectomy may not be mandatory, as ovarian metastasis is rare in early-stage disease.3 Also, systematic pelvic lymphadenectomy for staging purposes is not routinely recommended, given the low incidence of lymph node involvement, and it has not been shown to provide any survival benefit.4 Nevertheless, debulking of enlarged lymph nodes should be considered to reduce disease burden, provided that acceptable surgical morbidity can be achieved. In this case report, we present a patient with ULMS who underwent surgical management according to current guidelines and discuss the clinical challenges and management options for this rare and aggressive tumour.

Case Presentation

A woman in her mid-sixties, postmenopausal, presented to the gynaecology emergency unit with vaginal bleeding. She denied any other symptoms such as loss of appetite, weight loss, bladder or bowel issues, or difficulty breathing. She did not have significant medical history or risk factors including previous history of sexually transmitted infections, pelvic inflammatory disease, or risk factors such as smoking, tamoxifen therapy, hormone replacement therapy, radiotherapy, or obesity. She had normal cervical smear history. There was no significant family history except for her father who died of lung cancer at the age of 70 years. Abdominal examination was unremarkable, but a pelvic examination revealed a bleeding fungating mass arising from the cervix.

Investigation

A cervical biopsy was taken during the pelvic examination which was sent for urgent histology. She had a pelvic ultrasound scan which revealed a bulky uterus with an abnormal and irregular echo mass in the cervix that appeared to extend into the endometrial cavity (Endometrial thickness =34.6 mm) (Figure 1). She subsequently had an MRI scan which confirmed a polypoidal mass attached to the posterior fundal mucosa protruding into the cervix. The results of the cervical biopsy showed inflamed atypical spindle cells, but no evidence of malignancy was detected. The case was then discussed at the gynaecology multidisciplinary team (MDT) meeting who recommended hysteroscopy and resection of the polyp under general anaesthesia to establish a diagnosis.

After the diagnosis of malignant mixed Mullerian tumour (MMMT) was made based on the histology of the polyp removed, further imaging studies were performed to evaluate the extent of disease. A computerised tomography (CT) scan of the chest and abdomen was carried out, which revealed a bulky uterus showing local disease progression but no distant metastasis (Figure 2). An area suspicious of pulmonary embolism within the right/left lung was also detected, and this was confirmed using a computerised tomography pulmonary angiogram (CTPA), and as a result anti-thrombotic therapy was initiated.

The patient subsequently underwent total abdominal hysterectomy with bilateral salpingo-oophorectomy, pelvic lymphadenectomy, and omentectomy. The gross specimen pictures and histopathology pictures are shown in figure 3 and figure 4. The surgical pathology report indicated a diagnosis of stage 1B

leiomyosarcoma with no involvement of the lymph nodes, omentum, or ovaries. The MDT discussed adjuvant therapy for the patient based on this diagnosis.

Discussion

Uterine sarcomas are a rare form of uterine neoplasm, unlike leiomyomas which are common (with a lifetime risk of 70 to 80 percent). According to a review by the Agency for Healthcare Research and Quality of data from 160 studies, the prevalence of unexpected leiomyosarcoma at the time of surgery for presumed symptomatic leiomyomas ranges from less than 1 to 13 per 10,000 surgeries.5 Most uterine sarcomas are diagnosed in patients over age 40, the mean age at diagnosis is around 60 years old.6 Additionally, black patients have a higher incidence of leiomyosarcomas (but not other types of uterine sarcoma) than white patients, with a two-fold increase in incidence.7

The identification of risk factors associated with the development of uterine sarcoma is crucial for early detection and management of this rare malignancy. One known risk factor is long-term use of tamoxifen, which has been found to be associated with an increased risk of developing uterine sarcoma.8 In randomized trials where tamoxifen was used for breast cancer prevention, the incidence of uterine sarcoma in patients assigned to the drug was found to be 17 per 100,000 person-years.9 While the absolute risk is small, patients who are on tamoxifen for five or more years should be monitored for the development of uterine sarcoma. Another potential risk factor for uterine sarcoma is exposure to pelvic radiation.8 While this association is not as strong as the one with tamoxifen, it is important to note that pelvic radiation may increase the risk of developing uterine sarcoma. However, it is worth noting that this association appears to be stronger for carcinosarcoma, which is no longer classified as a sarcoma.10 It is important to note that the vast majority of uterine sarcomas occur sporadically, without any identifiable risk factors. Therefore, regular gynaecological exams and appropriate diagnostic testing are crucial in the early detection and management of uterine sarcoma.

In addition to the previously discussed risk factors, certain hereditary conditions have also been associated with an increased risk of uterine sarcoma. One such condition is hereditary leiomyomatosis and renal cell carcinoma (HLRCC) syndrome, which is a rare autosomal dominant syndrome (OMIM #605839) caused by mutations in the fumarate hydratase enzyme.8,11 Patients with HLRCC syndrome may have cutaneous and uterine leiomyomas as well as an aggressive form of papillary renal cell cancer. An increased risk for

uterine sarcomas has also been observed in some populations, particularly in premenopausal patients.

Another hereditary condition associated with an increased risk of uterine sarcomas is childhood retinoblastoma, particularly the hereditary type.12 Long-term survivors of this type of retinoblastoma are at higher-than-average risk for a variety of sarcomas, including those arising in the uterus.12 It is important for patients with these hereditary conditions to receive appropriate screening and follow-up to monitor for any potential development of uterine sarcomas.

The clinical features of uterine sarcoma often include abnormal uterine bleeding, pelvic pain/pressure, and/or a uterine mass. However, some patients may not present with any symptoms, and in rare cases, the sarcoma may prolapse through the cervix. A foul-smelling vaginal discharge may also be present in some cases.13 According to one study, the distribution of stages at presentation was stage I in 60% of cases, stage II and III in 16% of cases, and stage IV in 22% of cases.14

Imaging studies such as ultrasound can help distinguish between sarcomas and leiomyomas, as both appear as focal masses within the uterus. Features suggestive of sarcoma include mixed echogenic and poor echogenic parts, central necrosis, and irregular vessel distribution on colour Doppler imaging. However, some of these characteristics can also be found in benign leiomyomas.

Endometrial sampling can provide a diagnosis of uterine sarcoma in some patients, but there are limited data on the sensitivity of this test. In one study that included 21 patients with different types of sarcomas, preoperative endometrial sampling correctly identified the histology as sarcoma in 62% of cases, suggested another diagnosis in 3 cases (2 adenocarcinoma, 1 carcinosarcoma), and was negative in 5 cases. Curettage and endometrial biopsy had similar sensitivity.15 However, in a smaller series of eight patients, the sensitivity of endometrial sampling for diagnosing sarcoma was only 38%.

Uterine sarcoma, particularly leiomyosarcoma (LMS), is diagnosed based on histologic examination of the tumour. Mitotic index, cellular atypia, and geographic areas of coagulative necrosis separated from viable neoplasm are the most important criteria. Leiomyosarcomas usually exhibit cellular atypia, abundant mitoses, and areas of coagulative necrosis. Total hysterectomy is the standard treatment for patients with uterine-confined LMS, while for those with extrauterine disease, the role of surgery is controversial. Observation is the standard management for patients with surgical stage I or II LMS, while adjuvant treatment such as chemotherapy or radiation therapy has no impact on survival outcomes for patients with early-stage LMS. Patients with LMS have a poor prognosis regardless of stage, with a five-year disease-

specific survival of 66 percent.16

In the case presented, the patient had a leiomyosarcoma that presented as a fungating cervical mass and postmenopausal bleeding. While abnormal uterine bleeding, pain, and pelvic mass are usual presenting complaints, the patient did not have any risk factors or prior history of leiomyoma, although most leiomyosarcomas are diagnosed in women with a history of leiomyoma. Also, these cases rarely present as fungating polypoid lesions at the cervix. This is an uncommon presentation and may be confused with other pathologies such cervical tumours. Although the initial histology was negative for malignancy, the appearance of the mass at examination necessitated further assessment under anaesthesia, hysteroscopy and endometrial polypectomy. This reiterates the importance of thorough and detailed clinical assessment of patients and the importance of marrying up findings at clinical assessment with investigation reports, and seeking further explanations if there are doubts or uncertainty. It is important that these cases are diagnosed and treated early to improve the chances of survival of the patient.

Learning Points

•Fungating cervical mass in a postmenopausal women should be investigated thoroughly to rule out differential diagnosis.

•Atypical clinical presentation potentially misled the clinicians and tend to initiate treatment. Prompt diagnosis improves the treatment outcome and utilise less resources.

•Role of Multi-disciplinary team is vital in the patient-centred care.

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