

Case Report

Extreme long survival of a patient operated with uterine leiomyosarcoma

Zsolt Baranyai^{1*}, Valéria Jóna¹, Attila Zaránd²

*Correspondence: baranyai.zsolt@tumorgenetika.hu

¹ Tumorgenetika Human Biospecimen Collection and Research, Budapest, Hungary

² Semmelweis University, 1st Department of Surgery, Budapest, Hungary

Abstract: Leiomyosarcomas of the uterus are rare tumours that recur and metastasize early. Adjuvant chemotherapy or postoperative radiotherapy has not been proven effective in treating it. The most successful therapeutic approach seems to be repeated surgical resection and removal of metastases. The authors presented a case of a female who had metastases resections, both from the abdomen and thoracic cavity, for a total of 10 times following hysterectomy due to leiomyosarcoma of the uterus. The patient is still alive 23 years later following the first surgery.

Keywords: Leiomyosarcoma of the uterus; repeated resection; adjuvant chemotherapy; adjuvant irradiation; oophorectomy; pulmonary metastases; survival.

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Introduction

Uterine leiomyosarcoma is a very rare tumour, accounting for 1% of uterine malignancies. The incidence is 0.64/100,000 women per year^[1]. Its aetiology is unknown; pregnancy and delivery have no role in its development. Most women are in their fifties at the time of diagnosis. The disease is mainly localized to the fundus of the uterus, the cervix, or both. The prognosis for uterine leiomyosarcoma is poor: the five-year survival in completely removed stage 1 and 2 tumours is 50%–65%. 80% of recurrences occur outside the pelvis. More than 70% of leiomyosarcomas are confined to the uterus and almost all extrauterine disease recurs within approximately 8–16 months.

Case report

A 64-year-old woman was operated originally in 1986 due to a 40-mm mass noted above the vaginal portion filling the uterovesical pouch. Total abdominal hysterectomy was performed and histological examination showed leiomyosarcoma. Based on the pathological report, the patient was re-operated to remove the adnexa. Pelvic telecobalt radiation therapy was administered postoperatively. In 1995, after a 9-year disease-free period, a 20-mm mass was noted in the 3rd segment of the right lung (Figure 1). The metastasis was removed via atypical wedge resection from the right upper lobe. In 1997, an ultrasound revealed a 30-mm mass para-aortically suspicious for lymph node metastasis. Lymphadenectomy was performed followed by doxorubicin chemotherapy. In 1999, 7–8 mm nodules were noted in the 2nd, 6th and 10th segments of the left, and a 10-mm mass in the 6th and 10th segments of the right lung. Resections of the pulmonary metastases were performed on both sides from a horizontal sternotomy approach. Altogether, seven metastases were removed.

In 2000, a 25-mm soft tissue mass was found on CT above the aortic bifurcation, in front of the inferior vena cava. Follow-up CT scans showed progression of the mass. In 2002, this mass had grown to 40 mm; therefore, repeated surgeries were done. In 2004, MRI showed a lymph node of 55 × 35 mm below the bifurcation of the aorta on the left side among the small intestines, and two lymph nodes of 34 × 23 mm and 30 × 20 mm in the left parailiac region. The masses were removed (Figure 2). In 2005, during a follow-up examination, a 70 × 100 mm- mass was found on the left side of the minor pelvis next to the urinary bladder, pushing onto its wall. The mass was removed from the pre-sacral region.

In 2006, PET-CT scan showed a 51-mm and a 58-mm mass on the left side of the pelvis at the acetabulum and a 28-mm mass on the right side at the same location. In 2007, three masses revealed by CT were removed: a 50-mm subcutaneous



Figure 1. Metastasis in the 3rd segment of the right lung

mass in the right subcostal region, a 150-mm mass in the bifurcation of the left common iliac artery and a 40-mm mass located under the left iliac vein and the inferior vena cava. The last operation was carried out in January 2009; a 40 × 30 × 30 mm-mass localized next to the spleen was removed from the vicinity of the chest wall and the diaphragm.

In May 2009, multiple pulmonary metastases were found on CT but further surgical intervention was impossible due to the resulting impaired pulmonary reserve, according to the thoracic surgeon. The patient accepted that no further therapy was possible. All masses were removed.

Discussion

Uterine leiomyosarcoma is a rare disease and there is little data in literature to define its treatment strategy. It is generally accepted that at the least, total abdominal hysterectomy has to be done. In practice, the ovaries are removed in the same setting. However, there are two studies that did not indicate any improvement in survival after oophorectomy. According to one study, oophorectomy had negative impact on survival^[2]. Therefore, oophorectomy is not routinely recommended in premenopausal women and in this way menopausal symptoms can be avoided. A recent study involving 1,396 patients showed no influence of oophorectomy on survival^[3].

It is controversial whether para-aortic lymphadenectomy should be performed. Metastasis to the lymph nodes is rare in leiomyosarcoma (6.6% to 9.1%). If it occurs, it is usually accompanied by extrauterine metastases^[3]. Removal of the lymph



Figure 2. Tumour removed from the para-iliac region during this period proved to be metastases of the primary tumour. Histological reports showed low-grade tumour with moderate number of mitotic cells and no necrosis.

nodes has no impact on survival; hence, if there is no enlargement of the lymph node or no extrauterine metastasis present, it is not recommended^[2,3].

Leiomyosarcoma recurs in 45%–73% cases. The first recurrence usually occurs within 18 months^[2]. A number of women showed long survival despite their metastases; nevertheless, in some patients, recurrence is very aggressive. The small number of patients and missing standardized staging system can be responsible for the discrepancy of this clinical observation. Generally, the extension, grade and potential rupture of the tumour are decisive in the development of recurrences^[2]. The role of adjuvant therapy is ambiguous. There are limited data suggesting improved survival. Doxorubicin and ifosfamide are the most effective agents in the therapy of leiomyosarcoma, although the benefits in survival are unclear. The addition of cisplatin or paclitaxel improves progression-free survival (PFS) and overall survival (OS). Hormonal therapy has beneficial effects in some patients. Radiation therapy to the minor pelvis is widely used as adjuvant treatment in early-stage disease. Some studies reported a decrease of local recurrence rates. However, little evidence supports improved survival as most patient recurrences occur outside the radiated field.

As the oncological treatment of patients with metastatic disease is extremely limited, there are numerous data on the results of different surgical interventions. According to the present data, resection of pulmonary metastases improves survival^[4,5]. McCormack and Martini reported a 27% 5-year survival in 21 patients following pulmonary operation^[5]. Levenback *et al.* observed a 43% and a 35% for the 5- and 10-year survival, respectively, following removal of isolated pulmonary metastases in a heterogeneous group of 45 patients with uterine sarcoma^[4]. Leitao *et al.* found a 71% survival at two years in patients with surgery due to metastasis is a good result, considering that patients live for only 7–15 months if only treated with chemotherapy. The mean survival was 60 months if pulmonary resection was performed more than 60 months after hysterectomy. If thoracotomy was followed by hysterectomy within 60 months, the mean survival was only 31–32 months. If the localization (thoracic or extrathoracic) of metastasis was compared concerning survival, no significant difference could be noted^[6]. Billingsley *et al.* established that even incomplete removal of pulmonary metastases resulted in a better survival, as if no operation had been done. The best survival rate could be achieved in these patients if a complete resection was done^[7].

There are several factors affecting survival. Giuntoli *et al.* observed 208 patients with leiomyosarcoma for 24 years^[2]. They studied the predictive value of different prognostic factors and the effects of surgical and adjuvant therapy on the outcome of the disease. Better survival (mean: 4.9 years) was noted if the patient was at a younger age (< 51 years), when the disease was in the early stage or the tumour size was smaller than 5 cm at the time of diagnosis. In a univariate analysis, they found that the grade, size of the tumour, extension of the disease and type of surgical therapy were decisive in survival. However, in a multivariate analysis, only the type of surgical therapy (complete or incomplete resection, and rupture of the tumour during or before the operation) affected survival^[2].

Leitao *et al.* showed via univariate analysis that optimal tumour resection and longer disease-free period resulted in a better survival. If the disease-free period was shorter than 12 months, the mean survival was significantly worse. However, it can be assumed that very early recurrence is rather persistent with the disease^[6]. Pautier *et al.* studied 157 patients with uterine sarcoma, out of which 78 had leiomyosarcoma. The only factor affecting recurrence and survival was the stage of the disease^[8]. Sagae *et al.* found that the most important prognostic factor was a complete resection of the tumour^[9].

Conclusion

Literature does not support that adjuvant therapy decreases the spread of disease or metastasis formation, or improves survival. Presently, the primary therapy is by surgical resection. It makes no difference whether the disease is pulmonary or extrapulmonary; essentially, it has to be removed. Our case is an example of this. At present, there are no non-surgical curative therapeutic approaches. Therefore, we suggest that surgical therapy has to be offered to every patient with leiomyosarcoma if the tumour can be removed.

Conflict of interest

The authors declared no potential conflict of interest with respect to the research, authorship, and/or publication of this article.

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