Junior researchers

ახალგაზრდა მკვლევარები

Vol. 2 No. 1, 2024

https://doi.org/10.52340/jr.2024.02.01.02

კლინიკური შემთხვევა: პაციენტი ფარული ლეიომიოსარკომითა და ლეიომიოსარკომის რეციდივებით

ქეთევან ქიმაძე[1], ანა ახვლედიანი[1], მარიამ გაბლიშვილი[2]

1 თბილისის სახელმწიფო სამედიცინო უნივერსიტეტის მედიცინის ფაკულტეტი

2 კლინიკური ონკოლოგიის ინსტიტუტი, თბილისი

აბსტრაქტი

საშვილოსნოს სარკომები წარმოადგენს საკმაოდ იშვიათ, მაღალი ავთვისებიანობის მეზენქიმური სიმსივნეების ჰეტეროგენულ ჯგუფს, რომელიც საშვილოსნოს სიმსივნეების 3–7% -ს შეადგენს. საშვილოსნოს სარკომები უმეტესად ვითარდება 40 წლის ასაკის შემდეგ და საშუალო ასაკი შეადგენს 60 წელს. იშვიათობის და მაღალი ჰეტეროგენობის გამო, საერთაშორისო შეთანხმება აღნიშნული ადრეული კლინიკური დიაგნოსტიკის მიღწეული არ არის.

პოსტოპერაციული რეაბილიტაციის ნაკლები დროისა და ინფექციის განვითარების ნაკლები რისკის გამო კლინიცისტთა ნაწილი ღია ქირურგიულ ოპერაციასთან შედარებით უპირატესობას ანიჭებს ლაპარასკოპიულ მიომექტომიას ან ჰისტერექტომიას მორცელირების მეთოდით, რომელიც გვაძლევს საშვილოსნოს დანაწევრების და მცირე ზომის ლაპარასკოპიული არხიდან გამოტანის (2სმ ან ნაკლები) საშუალებას. პაციენტებში, ლეიომიომის დიაგნოზით, რომელთაც აქვთ საშვილოსნოს სარკომა, ლაპაროსკოპიული მორცელაციის გამოყენება ასოცირდება სიმსივნური ქსოვილის გავრცელების და იმპლანტირების რისკთან პერიტონეუმში, და შესაბამისად პაციენტის სიცოცხლის ხანგრძლივობის შემცირებასთან.

მოცემულ სტატიაში აღწერილია პაციენტის კლინიკური შემთხვევა მორეციდივე ლეიომიოსარკომით. პაციენტს 2014 წელს 60 წლის ასაკში სიმპტომური მიომის გამო ჩაუტარდა ლაპაროსკოპიული ჰისტერექტომია მორცელირებით. პოსტოპერაციულმა ჰისტოლოგიურმა გამოკვლევამ გამოავლინა საშვილოსნოს ტიპური ლეიომიომა ყველა გამოკვლეულ ნიმუშში. ორი წლის შემდეგ პაციენტმა, მუცლის ზომაში ზრდის გამო, მიმართა კლინიკას.

გამოკვლევით დადგინდა ორგანოსგარეშე მოცულობითი წარმონაქმნები მუცლის ღრუში,

ზომებით 12x13x8cm და 3.5x2cm და 4x3cm. ამოღებულ კვანძებში ჰისტოლოგიურად დადგინდა ლეიომიოსარკომა დიფერენცირების ხარისხით G1. 2018, 2019, 2020, 2022 წლებში აღინიშნებოდა სხვადასხვა ზომის რეციდივები მცირე მენჯის ღრუსა და თეძოს ფოსოში. კვანძების ზომები და მდებარეობა ვარირებდა, თუმცა თითოეული მათგანი იყო მაღალდიფერენცირებული -ხარისხით G1.

დღეისათვის არსებული პრეოპერაციული დიაგნოსტიკური მეთოდები არ გვაძლევს საშუალებას მოვახდინოთ დიფერენციაცია ლეიომიოსარკომასა და ლეიომიომას შორის, ამიტომ მნიშვნელოვანია მკურნალობის მეთოდის დაგეგმვისას ყურადღება გამახვილდეს ავთვისებიანობის ნიშნებზე, გათვალისწინებულ იქნას FDA-ის მიერ მოწოდებული რეკომენდაციები და ისეთი ატიპური შემთხვევა, როგორიცაა ფარული ლეიმიოსარკომა. აღნიშნულს ადასტურებს მოცემულ კლინიკურ შემთხვევაში ნაჩვენები უარყოფითი შედეგიც.

საკვანძო სიტყვები: საშვილოსნოს ლეიომიოსარკომა, საშვილოსნოს ლეიომიომა, ლაპარასკოპიული მორცელირება, ფარული ლეიომიოსაკომა, ლეიომიოსარკომის რეციდივები.

A Case Report: A patient with hidden leiomyosarcoma and leiomyosarcoma recurrences

KETEVEN KIMADZE[1]; ANA AKHVLEDIANI[1]; MARIAM GABLISHVILI [2]

1 Faculty of Medicine of Tbilisi State Medical University, Georgia;
2 Institute of Clinical Oncology Tbilisi, Georgia;

Abstract

Uterine sarcomas are a heterogeneous group of rare, highly malignant mesenchymal tumors that account for 3–7% of uterine tumors. mostly developing after the age of 40 and the average age is 60 years. Due to the rarity and high heterogeneity, the international agreement of this early clinical diagnosis has not been achieved. Differential diagnosis of these two diseases is difficult before surgery and requires postoperative histopathological examination of the material.

Due to shorter postoperative rehabilitation time and lower risk of infection, some clinicians over open surgery prefer laparoscopic myomectomy or hysterectomy with morcellation, which allows us to cut the uterus and remove it through a small laparoscopic channel. In patients with a diagnosis of leiomyoma who in reallity have uterine sarcoma, the use of laparoscopic morcellation is associated with the risk of spread and implantation of tumor tissue in the peritoneum, and therefore with a decrease in the patient's life expectancy.

The patient underwent laparoscopic hysterectomy with morcellation in 2014 at the age of 60 due to symptomatic myoma. Postoperative histological examination revealed typical uterine leiomyoma in all examined specimens. Two years later, the patient referred to the clinic due to an increase in the size of the abdomen.

During the examination, non-organ volumetric formations in the abdominal cavity were determined, with dimensions of 12x13x8cm and 3.5x2cm and 4x3cm. In the removed nodules, leiomyosarcoma with G1 differentiation degree was histologically diagnosed. In 2018, 2019, 2020, 2022 there were recurrences of various sizes in the small pelvis and iliac fossa. The size and location of the nodules varied, but each was highly differentiated -grade G1.

The current preoperative diagnostic methods do not allow us to differentiate between leiomyosarcoma and leiomyoma, so it is important to focus on the signs of malignancy when planning the treatment method, to take into account the recommendations provided by the FDA and such atypical cases as hidden leiomyosarcoma. This is confirmed by the negative result shown in this clinical case.

Key words: uterine leiomyosarcoma, uterine leiomyoma, laparoscopic morcellation, hidden leiomyosarcoma, leiomyosarcoma recurrences.

Introduction

Uterine sarcomas are a heterogeneous group of rare, highly malignant mesenchymal tumors, which account for 3-7% of uterine tumors. Uterine sarcomas mostly develop after the age of 40 and the average age is 60 years.[1] Due to the rarity and high heterogeneity of uterine sarcomas, the international agreement on the mentioned early clinical diagnosis has not been reached.[2] Relatively more common are tumors of benign smooth muscle genesis of the uterus - leiomyomas, which occur in 70% of women.[3] Signs and symptoms of leiomyosarcoma are similar to those occurring with leiomyomas, and include abnormal vaginal bleeding (56%), palpable pelvic mass (54%) and pelvic pain (22%). Less frequently, they can present as hemoperitoneum (due to tumor rupture), or symptoms resulting from extra-uterine extension or metastases[4], and the risk factors are as follows: postmenopausal status, long-term treatment with tamoxifen, solitary tumor and hereditary retinoblastoma.[5]

Leiomyosarcomas develop both independently and in association with leiomyomas. When sarcoma develops with leiomyomas, leiomyosarcoma is the largest tumor. Leiomyosarcomas are usually large tumors with an average diameter of 10 centimeters. [6] However, hidden leiomyosarcoma- where small malignant sarcomas are acompained with the bigger leiomyoma nodules, remains one of the greatest challange for current diagnostic approaches. [7] In many cases, uterine sarcomas are diagnosed postoperatively (myomectomy or hysterectomy), against the background of a preliminary diagnosis of leiomyoma (presumed leyomioma).[8]

Differential diagnosis of uterine leiomyomas from sarcomas before surgery is difficult and requires histopathological examination of the surgical specimens. [2] On macroscopic examination, the surface of leiomyosarcomas is usually soft, convex, necrotic and hemorrhagic. They are not characterized by nodulation like leiomyomas. However, in morphological examination crutial is numbers of samples and microscopical examination of them[9]. Histological features, on the basis of which uterine sarcoma subtypes are diagnosed, are mitotic index (which usually exceeds 15 mitotic figures in 10 large fields of view), cellular atypia, and the presence of coagulation necrosis of the tumor.[10] In case of immunohistochemical profile Leiomyosarcomas commonly express smooth muscle markers such as desmin, h-caldesmon, smooth muscle actin, and histone deacetylase 8.[11] Leiomyosarcomas are usually also positive for estrogen receptors, progesterone receptors, and androgen receptors in 30-40% of cases.[12] it is important to note, that The immunohistochemical profile of uterine sarcomas is characterized by high heterogeneity, and because of that it is impossible to verify the nosological entity based only on the immunohistochemical data. [9]

Nowadays, making a diagnosis preoperatively is especially important, as in the majority of cases it decides which surgical method would be appropriate. Transvaginal ultrasonography is the primary method for examination of gynecological organs. Suspicious signs of aggressive uterine sarcoma include central necrosis or cystic changes, heterogeneous echotexture, and hypervascularization. However, many of these features can also be seen in leiomyomas[13]. It is known that the form of leiomyoma: with hydropulous degeneration, as well as leiomyomas with ossifying degeneration, which can be suspected as cancerous radiologically, although this cannot be confirmed by morphological examination. Further examination of formations is possible with magnetic resonance examination, with gadolinium contrast, to localize the tumor and identify irregular or nodular edges, as well as to assess the depth of invasion and the presence of necrosis[14]. Uterine leiomyosarcomas have the closest resemblance to uterine leiomyomas, but using T2 signal intensity and diffusion coefficient estimation, it is possible to diagnose uterine malignancies with 92.4% accuracy[14]. However, none of the imaging technologies allows for definitive diagnosis, and the gold standard for diagnosis remains histopathological examination and, of course, the immunohistochemical method of research[15].

Surgery is the standard of care for uterine sarcomas regardless of grade. Complete resection of disease without fragmentation and with negative surgical margins is the gold standard for treatment. Standard procedures for leiomyosarcomas include total abdominal hysterectomy and excision of cancerous nodes outside the uterus. [15] Due to shorter postoperative rehabilitation time and lower risk of infection, some clinicians prefer laparoscopic myomectomy or hysterectomy with morcellation over open surgery, which allows us to cut the uterus and remove it through a small laparoscopic channel (2 cm or less).[16] as previosly was mentioned Leiomyomas may contain small areas with malignant transformation that escape initial diagnosis but later can give rise to local recurrences and metastases. This hidden uterine sarcomas may be present in approximately 1 in 225 to 1 in 580 women undergoing surgery for uterine fibroids. [17]

When laparoscopic power morcellation is used for women with presumed uterine fibroids that are actually uterine sarcomas(or contain malignant cells-like hidden leyomiosarcoma), the procedure

poses a risk of spreading cancerous tissue beyond the uterus, worsening a woman's chance of long-term survival . The FDA recommends health care providers share this information with patients and warn against using laparoscopic power morcellators in gynecologic surgeries to treat patients with suspected or confirmed cancer and in women over 50 years of age having a myomectomy or hysterectomy for uterine fibroids.[17]

Clinical Case:

Here, we describe a case report of woman who experienced recurrent occurrences of leiomyosarcoma following laparoscopic morcellation initially performed for suspected leiomyoma.

A 62-year-old postmenopausal multiparous female presented to the gynecologic outpatient department due to abdominal mass growth. Two years earlier, at the age of 60, she had undergone laparoscopic hysterectomy with morcellation for symptomatic fibroids at another clinic in 2014. Postoperative histologic examination revealed typical uterine leiomyoma in all samples investigated, and she remained asymptomatic for two years. However, after this period, she came to the clinic due to abdominal growth.

Upon examination, three non-organ volumetric formations were identified in the abdominal cavity, measuring 12x13x8cm, 3.5x2cm, and 4x3cm. The nodules were surgically removed through open surgery, and histological analysis confirmed leiomyosarcoma with G1 differentiation degree. The patient underwent postoperative care and was discharged home.

Two years later, in 2018, she presented to the hospital with the same complaint. Multiple nodules were discovered in the true pelvis with varying sizes (61x75mm; 88x75mm; 10mm). A year later, a second recurrence occurred with two nodules - one in the left iliac fossa (10-11cm) and the second in the true pelvis (7-8cm). Nodulotomy (removal of nodules) was performed again, and all samples were confirmed as G1. In 2020, six nodules, each measuring 5-6 cm, were found and classified as G1. in 2022 9 nodules were found of Soft Consistency in size the smallest - 1 cm and the largest - 14 cm, with the differentiation G1. The specimens are shown on the figure 1.

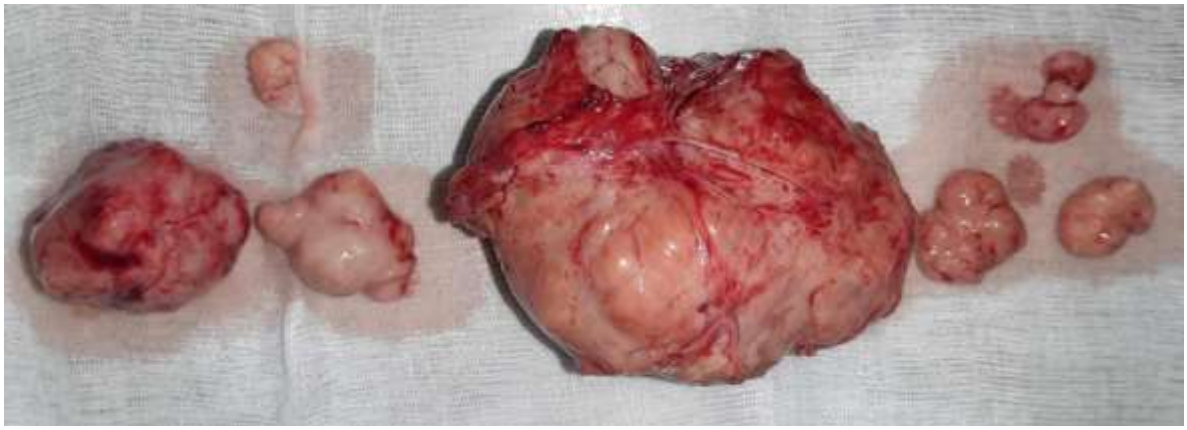

Figure 1. On the figure we see multiple nodules. the smallest in size 1cm, the largest sized 14cm.

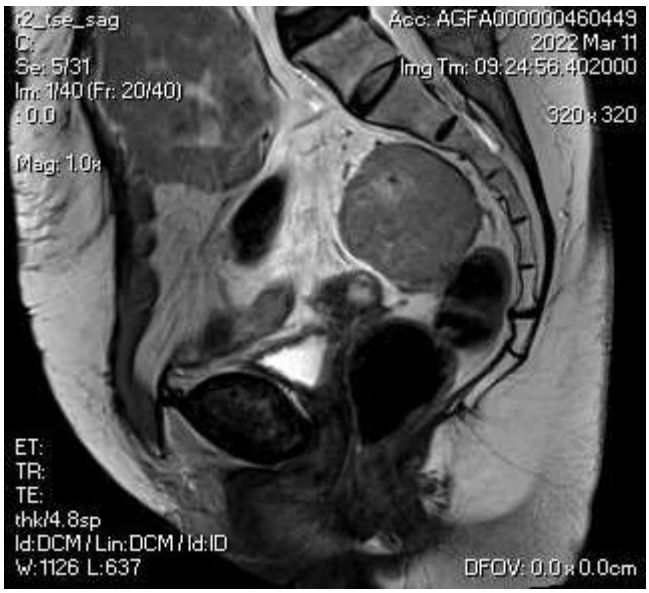

Figure 2.

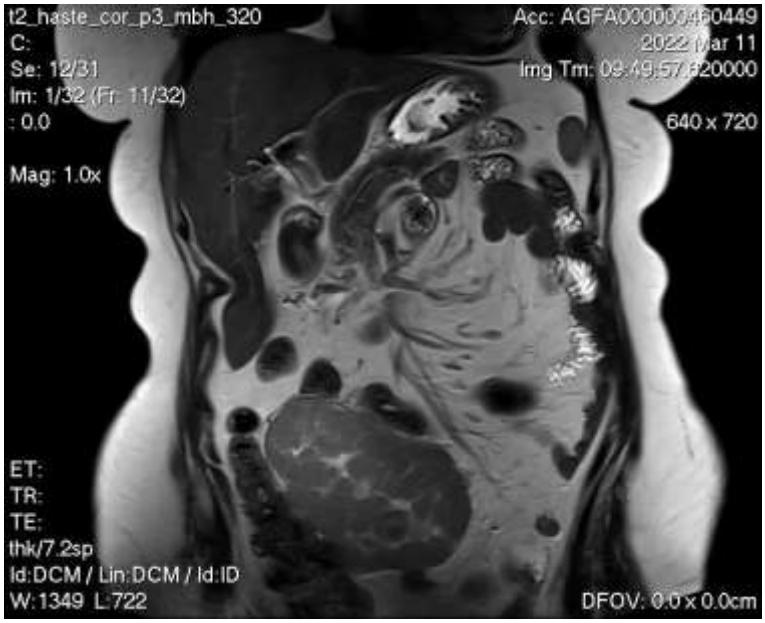

Figure 3.

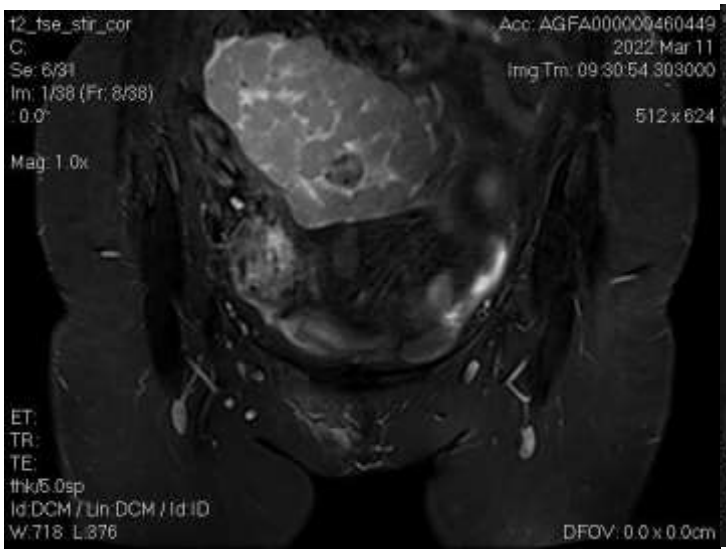

Figure 4.

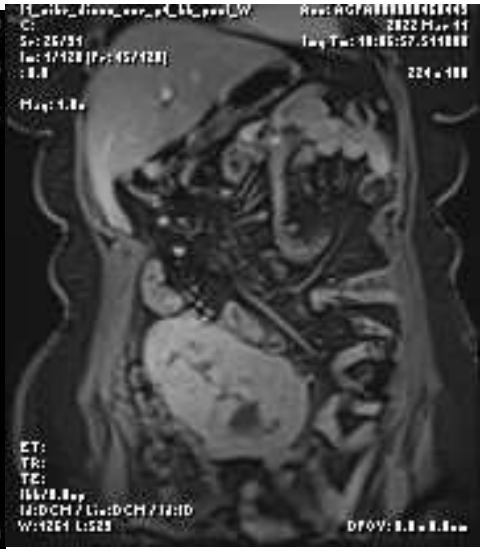

Figure 5.

Figure 2 – 5. MRI scans of patient in 2022

Discussion:

The presented case underscores the intricate challenges associated with the diagnosis and management of leiomyosarcomas. The patient's history of laparoscopic morcellation for suspected leiomyoma and subsequent recurrence of leiomyosarcoma highlights the critical need for improved diagnostic methods and awareness regarding the risks associated with morcellation.

The diagnostic difficulties in distinguishing between benign leiomyomas and leiomyosarcomas are well-established. Despite advancements in imaging technologies, such as transvaginal ultrasonography and MRI, definitive preoperative diagnosis remains elusive. Clinicians should pay attention to High risk sighs, especially in patinets in the high risk age.[4]

This case exemplifies the limitations of relying solely on postoperative histological examination. The quality of histological approach lies on both the number of samples examined and the accuracy of microscopic examination expetially In cases such hidden leiomyosarcoma, where small malignant parts of sarcoma are hidden in myomatic tissue and is more likely to stay out from investigated samples.[9]

The recurrence of leiomyosarcoma following laparoscopic morcellation raises concerns about the potential dissemination of malignant cells during the initial morcellation. The FDA's caution against morcellation in cases of suspected or confirmed cancer, especially in women over 50 years of age, emphasizes the need for thorough preoperative evaluation and risk assessment.

Therefore, it is recommended that (1) uterine morcellation be avoided if ultrasound examination shows an oval shape, central necrosis, increased blood supply, and rapid postmenopausal growth within 3 months; (2) when uterine morcellation is planned, preoperative endometrial biopsy by hysteroscopy is indicated and ultrasound-guided biopsy of the myoma should be performed; (3) fragmentation of fibroids during myomectomy in endocontainers.[18]

The case may be related to the phenomenon of hidden uterine sarcomas within leiomyomas, a situation that may be more common than initially anticipated (1 in 225 to 1 in 580 women). [17] The prevalence of small areas with malignant transformation within leiomyomas poses a significant challenge in achieving accurate preoperative diagnoses, leading to potential risks during surgical interventions.

The recurrence of leiomyosarcoma over multiple instances, despite the initial classification as G1, underscores the aggressive nature of these tumors. the frequent recurrences represent a major issue. About one-third of patients develop recurrences, most commonly in the pelvis and abdomen.[19] Tumor behavior- number of reccurences and the fact that all nodules were G1-in differentiation, raises questions about the mechanisms driving recurrences and progression, and whether there are inherent characteristics or molecular factors contributing to the reappearance of malignancy.

Future Directions:

The existing preoperative diagnostic techniques lack the capability to distinguish between leiomyosarcoma and leiomyoma. Therefore, it becomes crucial to concentrate on identifying malignancy indicators when formulating a treatment strategy, incorporating recommendations from

regulatory bodies such as the FDA, and considering unconventional scenarios like concealed leiomyosarcoma. This is underscored by the adverse outcome observed in this clinical instance – the frequent recurrence of leiomyosarcoma subsequent to total hysterectomy performed through laparoscopic morcellation for leiomyoma treatment. This recurrence appears to be linked to the dispersion of latent sarcoma cells in the peritoneum resulting from morcellation. Cases of this nature underscore the complexities involved in enhancing diagnostic methodologies and achieving a precise differential diagnosis.

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