CASE REPORT

DOI: 10.37047/jos.2023-98802

Nasopharyngeal Metastasis from Uterine Leiomyosarcoma

Demet IŞIK BAYRAKTAR[a], Güzin DEMİRAĞ[a], Seda GÜN[b], İlkay ÇAMLIDAĞ[c]

[a]Division of Medical Oncology, Ondokuz Mayıs University Faculty of Medicine, Samsun, Türkiye
[b]Department of Pathology, Ondokuz Mayıs University Faculty of Medicine, Samsun, Türkiye
[c]Department of Radiology, Ondokuz Mayıs University Faculty of Medicine, Samsun, Türkiye

ABSTRACT Uterine leiomyosarcoma constitutes one of the rare gynecological cancers and contributes to less than 1% of female genital tract cancers. Being one of the rare sites for metastasis development, metastasis of uterine neoplasms in the nasopharyngeal region is extremely rare. A 53-year-old multiparous woman with FIGO Stage Ib uterine leiomyosarcoma presented with nasal congestion 1 year following primary treatment. Paranasal computed tomography revealed a nasopharyngeal mass. The immunohistochemical study demonstrated that tumor cells were stained negative for desmin, h-caldesmon, and estrogen receptor, and were positive for p16 and Ki67. The proliferative index was 50 to 60%, confirming the nasopharyngeal metastasis of uterine leiomyosarcoma. No distant metastasis or local recurrence was evident in her systemic radiological evaluation. The patient received curative radiotherapy after nasopharyngeal mass excision, following which systemic chemotherapy was initiated. After the completion of treatment, the patient was followed for 9 months without recurrence or metastasis. These findings demonstrated that local treatments for metastases will contribute to patient survival.

Keywords: Uterine leiomyosarcoma; nasopharyngeal metastasis; leiomyosarcoma

Uterine sarcoma is one of the rare gynecological cancers that comprise less than 1% of female genital cancers worldwide. It constitutes 3 to 7% of all uterine cancers.[1] The most common form of uterine sarcoma is leiomyosarcoma (30-40%), with an annual incidence of approximately 0.8 per 100,000.[2] The myometrial localization of the tumor significantly contributes to early lymphovascular invasion and spreads to the extrapelvic areas. Although 60% of patients are diagnosed at an early stage, the prognosis is poor. The recurrence rate varies widely from 45 to 75%. The most common site of first recurrence is the lungs.[1] The time for recurrence is between 12 and 24 months.[3] Mortality in metastatic patients can occur within 2 years.

Uterine leiomyosarcoma can metastasize either through the lymphatic system or via hematogenous spread. The most common metastatic sites are the lungs, peritoneal cavity, and liver.[3] The resection of isolated extrapelvic metastases is associated with prolonged survival.[4,5] No nasopharyngeal metastasis of uterine leiomyosarcoma has been previously reported in the English literature. In the present report, we present a case of uterine leiomyosarcoma with nasopharyngeal metastases while being followed up after surgery.

CASE REPORT

A 53-year-old multiparous woman presented to the gynecology outpatient clinic with a complaint of vaginal bleeding. After a thorough physical examination, pelvic magnetic resonance imaging (MRI) was requested. MRI of the lower abdomen revealed nodular lesions in the uterus, the largest of which was 100×95 mm in size, which were evaluated for intramural and subserosal myoma.

TO CITE THIS ARTICLE:
Işık Bayraktar D, Demrağ G, Gün S, Çamlıdağ İ. Nasopharyngeal Metastasis from Uterine Leiomyosarcoma. Journal of Oncological Sciences. 2024;10(1):65-8.

Correspondence: Demet IŞIK BAYRAKTAR
Division of Medical Oncology, Ondokuz Mayıs University Faculty of Medicine, Samsun, Türkiye
E-mail: demetdoruk82@gmail.com

Peer review under responsibility of Journal of Oncological Sciences.

Received: 13 Jul 2023 ***Accepted:*** 15 Dec 2023 ***Available online:*** 28 Dec 2023

After the endometrial biopsy result was compatible with leiomyosarcoma, total abdominal hysterectomy+bilateral salphingo-opherectomy (TAH+BSO) was performed. Histopathological examination revealed that the submucosal tumor consisted of cells with nodal spindle morphology and clear to moderate cytological atypia. Thirty atypical mitoses were observed per 10 high-power fields. Tumor necrosis and extensive degeneration were present and bizarre leiomyoma nodules adjacent to the tumor were observed. The Ki 67 proliferation index was 60%. The tumor was reported as leiomyosarcoma (Figure 1). No recurrence or residual mass was observed in postoperative abdominal imaging. After surgery, the patient was followed up without adjuvant treatment. After 1 year of follow-up, the patient complained of nasal congestion lasting 1 month, and subsequent physical examination revealed a nasopharyngeal mass. Paranasal computed tomography (CT) revealed a polypoid soft tissue structure with a diameter of approximately 3.5 cm, obliterating the air column in the posterior-superior nasopharynx (Figure 2). Histopathology of the excised mass revealed hyperchromatic nuclei, prominent nucleoli, and coarse vesicular chromatin structure, which partially comprised multinuclear spindle, round, oval, prominent pleomorphism, and atypia cells (Figure 3). Widespread necrosis foci were noted, and an immunohistochemical study revealed that tumor cells were negatively stained for myoD1, S100, CD34, and SMA, whereas these were positively stained for desmin, h-caldesmon, estrogen receptor (ER), and p16 (Figure 4). Immunohistochemical studies with Ki67 revealed a proliferative index of 50 to 60% and corroborated with "leiomyosarcoma metastasis" due to positive staining for desmin and ER of tumor cells and similar histomorphology to the previous tumor histology from the uterus. We planned radiotherapy because the surgical margins were positive. We did not observe evidence of recurrence or metastasis on the brain and neck MRI and also on the thorax and abdominal CT. After systemic scans, the patient received 66 Gray (Gy) curative RT at a dose of 2 Gy/fx, which was applied to the nasopharyngeal tumor lodge using the volumetric modulated arc therapy technique. Gemcitabine and docetaxel chemotherapy was initiated after radiotherapy. The patient was administered six cycles of gemcitabine 850 mg/m^2 intravenously (D1 and D8) and docetaxel 75 mg/m^2 intravenously (D1) every 21 days. After the comple-

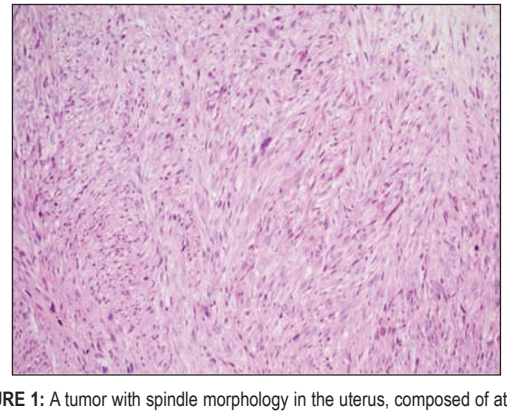

FIGURE 1: A tumor with spindle morphology in the uterus, composed of atypical cells forming fascicles (H&E, x200).

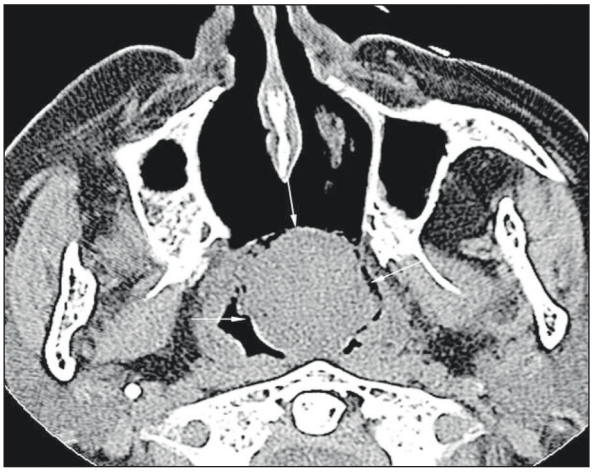

FIGURE 2: Polypoid soft tissue structure with a diameter of approximately 3.5 cm obliterating the air column in the posterior nasopharynx in paranasal computed tomography.

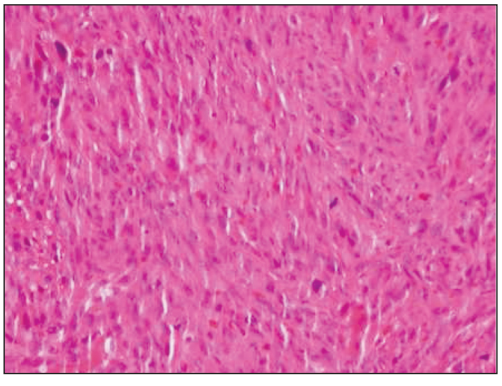

FIGURE 3: Atypical, spindle-shaped, pleomorphic cells with atypical mitosis in the nasopharynx (H&E, x400).

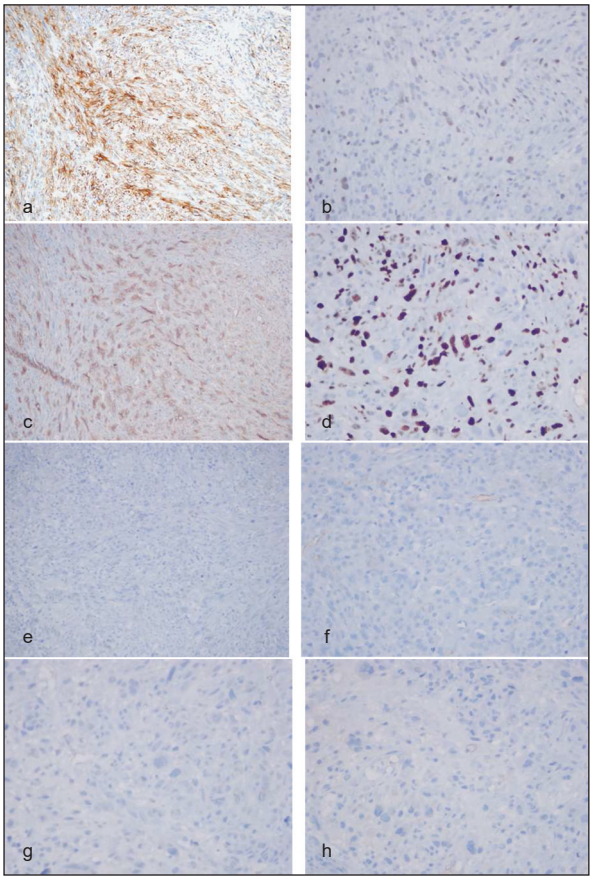

FIGURE 4: a) Desmin positivity (DAB, x200); **b)** Estrogen receptor positivity (DAB, x400); **c)** Caldesmon positivity (DAB, x200); **d)** Ki67 positivity (DAB, x400); **e)** CAM5.2 negativity (DAB, x200); **f)** CD34 negativity (DAB, x400); **g)** SMA negativity (DAB, x400); **h)** MYOD1 negativity (DAB, x400).

tion of chemotherapy, the patient was followed for 9 months without recurrence or metastasis.

DISCUSSION

Several factors effective in the prognosis of uterine leiomyosarcomas, such as age, stage, grade, surgical margins, tumor diameter, cellular atypia, mitotic rate, lymphovascular invasion, lymph node positivity, oophorectomy, presence of necrosis, have been widely studied. Because no correlation was observed between survival and grade, leiomyosarcomas were not graded. The stage and mitotic activity affect the survival in leiomyosarcoma.[1,6] No histological and prognostic marker is yet available. Therefore, the stage of the disease at the time of diagnosis is considered the most important prognostic factor. Histological markers include spindle cells, atypical mitotic activity (>10 mitosis/10 BBA), nuclear pleomorphism, coagulation necrosis, hypercellularity with fascicular growth pattern, and invasion into the surrounding myometrium. The differentiation between infarct and hyaline necrosis becomes necessary in the presence of coagulation necrosis. In our case, the diagnosis was confirmed by a second pathological evaluation. In addition, p53 overexpression and p16 positivity were detected, and our patient had p16 positivity. Because Ki67 is indicative of increased proliferation capacity, it is used to differentiate benign and malignant tumors, along with positive steroid receptors. In the present case, Ki 67 was high at 60%, and ER positivity was present.

The 5-year survival rate is approximately 63.6% in premenopausal patients, which decreases to 5.5% in postmenopausal patients.[7] The tumor peaks in the perimenopausal period and is often diagnosed between the ages of 35 and 75 years.[3,8] Presenting symptoms may include abnormal uterine bleeding (56%), palpable pelvic mass (54%), or pelvic pain (22%). Because symptoms are similar to benign leiomyoma, the disease is diagnosed by histopathological examination of myomectomy or hysterectomy materials. Leiomyosarcomas are usually diagnosed when they are large and solitary, and 75% of them are larger than 5 cm.[9] In our patient, three myomas were present in the uterus; 7 cm, 4 cm, and 1 cm in size. The patient was diagnosed with leiomyosarcoma from a 4 cm myoma, which was a bleeding focus.

The 5-year survival is over 76% in Stage 1 disease and around 60% in Stage 2 disease. However, this rate decreases to 10 to 15% in metastatic disease.[10] The mainstay treatment for uterine leiomyosarcoma is surgical resection. Adjuvant chemotherapy and/or radiotherapy can be added to treatment depending on the stage at the time of diagnosis. No additional survival benefit of adjuvant therapy following surgery has been reported in Stage 1 and 2 diseases. Because ovarian metastasis of primary uterine leiomyosarcoma is rare, oophorectomy is controversial. In our case, we performed TAH+BSO. The oral cavity and oropharynx are very rare sites of metastasis. Metastases from other pri-

mary foci can be observed in 1 to 2% of oral malignant tumors.[11,12] A case of colon cancer with nasopharyngeal metastasis has been reported in the literature.[13] Nasopharyngeal carcinoma has been reported to often develop from the ceiling of the posterior wall of the nasopharynx.[14] The distinction between primary malignancy and metastasis is not possible with physical examination. Nasopharyngeal carcinoma frequently presents as a mass in the neck, with accompanying hearing problems. The rate of lymph node metastasis at the time of first diagnosis is approximately 80%. Advanced cases are characterized by ocular findings due to local invasion. Metastasis is often hematogenous, most commonly to the lungs, followed by the peritoneal cavity, liver parenchyma, brain, and bones.[3] Resection in isolated extrapelvic metastases is associated with prolonged survival.[4,5] The literature does not report any case of nasopharyngeal metastasis of uterine leiomyosarcoma, and our case is the first case reported in the English literature.

In conclusion, clinically, nasopharyngeal metastases from uterine leiomyosarcoma are extremely rare. To the best of our knowledge, this is the first case reporting the occurrence of uterine leiomyosarcoma. We believe this case report not only extends the disease database but also serves as a warning to doctors to heed these clinical scenarios. Strict monitoring of patients with uterine leiomyosarcoma after primary treatment could lead to early diagnosis of metastases and provide patients with better opportunities for treatment and improved prognosis.

Informed consent was obtained from the patient who is the subject of our article.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: *Demet Işık Bayraktar;* ***Design:*** *Demet Işık Bayraktar;* ***Control/Supervision:*** *Güzin Demirağ;* ***Data Collection and/or Processing:*** *Demet Işık Bayraktar, Seda Gün, İlkay Çamlıdağ;* ***Analysis and/or Interpretation:*** *Güzin Demirağ;* ***Literature Review:*** *Güzin Demirağ;* ***Writing the Article:*** *Demet Işık Bayraktar;* ***Critical Review:*** *Demet Işık Bayraktar.*

REFERENCES

1. Abeler VM, Røyne O, Thoresen S, Danielsen HE, Nesland JM, Kristensen GB. Uterine sarcomas in Norway. A histopathological and prognostic survey of a total population from 1970 to 2000 including 419 patients. Histopathology. 2009;54(3):355-364. [Crossref] [PubMed]
2. Skorstad M, Kent A, Lieng M. Uterine leiomyosarcoma-incidence, treatment, and the impact of morcellation. A nationwide cohort study. Acta Obstet Gynecol Scand. 2016;95(9):984-990. [Crossref] [PubMed]
3. Bartosch C, Afonso M, Pires-Luís AS, et al. Distant metastases in uterine leiomyosarcomas: the wide variety of body sites and time intervals to metastatic relapse. Int J Gynecol Pathol. 2017;36(1):31-41. [Crossref] [PubMed]
4. Wroński M, de Palma P, Arbit E. Leiomyosarcoma of the uterus metastatic to brain: a case report and a review of the literature. Gynecol Oncol. 1994;54(2):237-241. [Crossref] [PubMed]
5. Leitao MM, Brennan MF, Hensley M, et al. Surgical resection of pulmonary and extrapulmonary recurrences of uterine leiomyosarcoma. Gynecol Oncol. 2002;87(3):287-294. [Crossref] [PubMed]
6. Pautier P, Genestie C, Rey A, et al. Analysis of clinicopathologic prognostic factors for 157 uterine sarcomas and evaluation of a grading score validated for soft tissue sarcoma. Cancer. 2000;88(6):1425-1431. [Crossref] [PubMed]
7. Brooks SE, Zhan M, Cote T, Baquet CR. Surveillance, epidemiology, and end results analysis of 2677 cases of uterine sarcoma 1989-1999. Gynecol Oncol. 2004;93(1):204-208. [Crossref] [PubMed]
8. Lakhman Y, Veeraraghavan H, Chaim J, et al. Differentiation of uterine leiomyosarcoma from atypical leiomyoma: diagnostic accuracy of qualitative mr imaging features and feasibility of texture analysis. Eur Radiol. 2017;27(7):2903-2915. [Crossref] [PubMed] [PMC]
9. D'Angelo E, Prat J. Uterine sarcomas: a review. Gynecol Oncol. 2010;116(1):131-139. [Crossref] [PubMed]
10. Seagle BL, Sobecki-Rausch J, Strohl AE, Shilpi A, Grace A, Shahabi S. Prognosis and treatment of uterine leiomyosarcoma: a National Cancer Database study. Gynecol Oncol. 2017;145(1):61-70. [Crossref] [PubMed]
11. Meyer I, Shklar G. Malignant tumors metastatic to mouth and jaws. Oral Surg Oral Med Oral Pathol. 1965;20:350-362. [Crossref] [PubMed]
12. Tohyama T, Sakamoto K, Tamura K, et al. Pharyngeal metastasis following living-donor liver transplantation for hepatocellular carcinoma: a case report and literature review. World J Surg Oncol. 2020;18(1):109. [Crossref] [PubMed] [PMC]
13. Liu YH, Lin BB, Lv SX. Nasopharyngeal metastasis from colorectal cancer: a case report. Ann Palliat Med. 2021;10(4):4911-4816. [Crossref] [PubMed]
14. Liu WW, Guo ZM, Zeng ZY. [Clinicopathological features and prognosis of nasopharyngeal adenocarcinoma]. Zhonghua Er Bi Yan Hou Tou Jing Wai Ke Za Zhi. 2009;44(3):232-236. [PubMed]