World Journal of Advanced Research and Reviews
eISSN: 2581-9615 CODEN (USA): WJARAI
Cross Ref DOI: 10.30574/wjarr
Journal homepage: https://wjarr.com/

(CASE REPORT)

High-grade leiomyosarcoma of the hard palate in a geriatric patient: A case report and review of diagnostic and surgical considerations

Omaima Qassab *, Oumaima ELMASFIOUI, Mohamed AFELLAH, Naouar OUATTASSI, Mohamed RIDAL, Najib BENMANSOUR and Abdellatif OUDIDI

ENT and Head And Neck Surgery Department, University Hospital Of Hassan II of FEZ, university SIDI MOHAMMED BENABDELLAH OF FEZ, Morocco.

World Journal of Advanced Research and Reviews, 2026, 31(01), 150–155

Publication history: Received on 28 April 2026; revised on 30 June 2026; accepted on 03 July 2026

Article DOI: https://doi.org/10.30574/wjarr.2026.31.1.1250

Abstract

Introduction: Leiomyosarcoma (LMS) is a rare, highly aggressive malignant mesenchymal tumor derived from smooth muscle cells. While common in the uterus and retroperitoneum, its primary occurrence in the oral cavity is exceptionally rare, posing significant diagnostic and therapeutic challenges, particularly in elderly patients with multiple comorbidities.

Case Presentation: We report the case of a 78-year-old male, hypertensive and diabetic, presenting with a progressively enlarging, ulcerated lesion of the hard palate evolving over five months. Preoperative imaging demonstrated an invasive mass with palatine bone erosion. Initial biopsy suggested a smooth muscle tumor of uncertain malignant potential (SmTUMP), but definitive histopathological analysis following radical surgical excision confirmed a high-grade leiomyosarcoma. The patient underwent an infrastructure maxillectomy with clear margins followed by adjuvant chemotherapy.

Conclusion: Oral leiomyosarcoma is a lethal malignancy that mimics benign smooth muscle tumors or more common carcinomas. In the geriatric population, metabolic comorbidities such as diabetes and hypertension necessitate a tailored multidisciplinary approach to manage surgical risks and adjuvant toxicity. Radical resection remains the mainstay for achieving local control and improving survival outcomes.

Keywords: Leiomyosarcoma; Hard palate; Oral cavity; SmTUMP; Infrastructure maxillectomy; Geriatric oncology

1. Introduction

Soft tissue sarcomas account for less than 1% of all adult malignancies, with leiomyosarcoma (LMS) representing approximately 7% to 10% of these cases [1]. While LMS typically affects the retroperitoneum and extremities, primary oral LMS is an extreme rarity, comprising less than 0.1% of all intraoral primary cancers [2]. These tumors are thought to originate from the tunica media of local blood vessels, myoepithelial cells, or undifferentiated mesenchymal cells [3].

The clinical presentation of oral LMS is often non-specific, frequently manifesting as a painless or ulcerated mass that may be mistaken for squamous cell carcinoma or minor salivary gland tumors [2-3]. Furthermore, smooth muscle tumors exist on a biological continuum—ranging from benign leiomyomas to smooth muscle tumors of uncertain malignant potential (SmTUMP), and finally to malignant LMS [4]. This "histological evolution" and the inherent spatial heterogeneity of sarcomas often lead to diagnostic delays or under-grading on initial biopsies. In elderly patients, the

* Corresponding author: Omaima QASSAB

management is further complicated by systemic comorbidities like hypertension and diabetes, which impact surgical hemodynamics and wound healing [2].

2. Case presentation

A 78-year-old male patient with a significant medical history of hypertension and Type 2 diabetes mellitus presented to our department with a five-month history of a progressively enlarging and ulcerated mass on the hard palate. The patient reported localized pain and occasional episodes of minor oral bleeding. Clinically, the examination revealed a firm, fixed, and ulcerated mass measuring approximately 2.5 cm in diameter, involving the central region of the hard palate, extending slightly toward the right side [Fig.1]. A nasofibroscopy was subsequently performed to evaluate the superior margins of the lesion. The examination showed that the nasal mucosa was healthy and intact, with no macroscopic signs of tumor invasion. Specifically, the floor of the nasal fossa and the inferior meatus were uninvolved, suggesting the mass was confined to the oral cavity. There was no palpable cervical lymphadenopathy.

Figure 1 Preoperative clinical view. An ulcerated, firm, and fixed mass measuring approximately 2.5 cm in diameter, located in the central and left portion of the hard palate. Note the central ulceration and peripheral inflammatory response, characteristic of a rapidly evolving high-grade lesion

Given the patient's age and the lesion's appearance, a malignancy was strongly suspected. A contrast-enhanced computed tomography (CT) scan revealed a 2.5 cm, heterogeneously enhancing, soft-tissue lesion centered on the hard palate, associated with focal cortical erosion of the palatine process of the maxilla and the horizontal plate of the palatine bone. To further characterize the mass and evaluate potential involvement of adjacent structures, a follow-up MRI was performed. Both imaging modalities confirmed that the lesion remained confined to the oral cavity, with the floor of the nasal cavity and the maxillary sinuses remaining intact [Fig. 2]. There was no evidence of extension into the sinonasal compartments, and the surrounding fat planes were well-preserved, and no significant regional lymphadenopathy was identified. No distant metastases were identified on thoraco-abdominal staging.

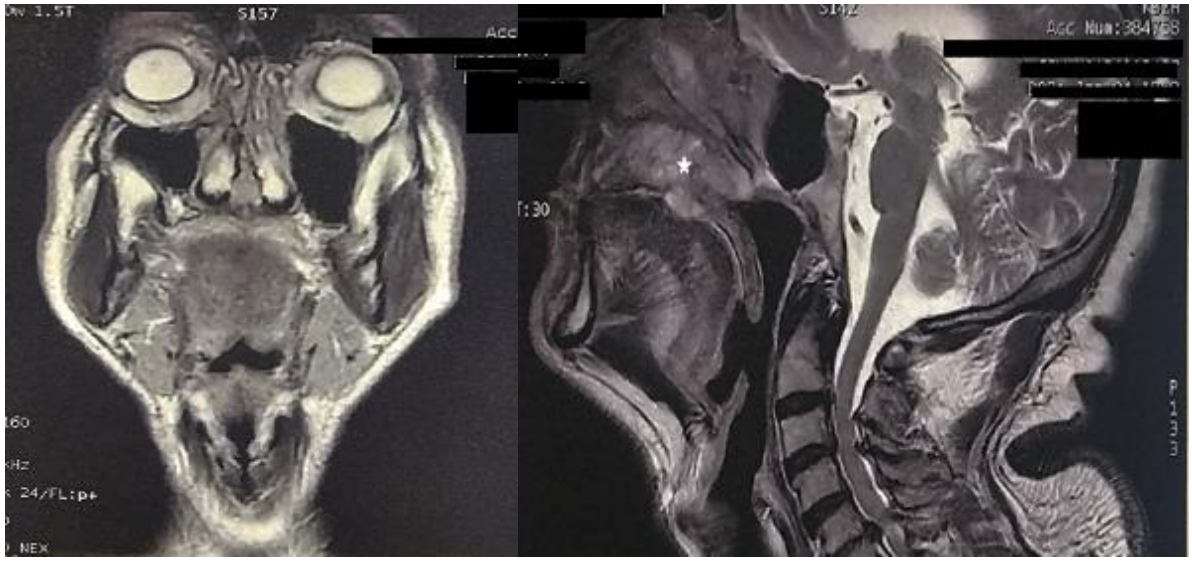

Figure 2 Axial and sagittal T2-weighted MRI demonstrating a well-defined mass of the hard palate (Star), with no evidence of invasion into the adjacent soft tissues or sinonasal extension

An initial incisional biopsy was performed, which was reported elsewhere as SmTUMP. However, given the clinical aggressiveness and ulceration, a multidisciplinary team (MDT) opted for definitive surgical management. The patient underwent a radical infrastructure maxillectomy under general anesthesia. Intraoperatively, the tumor appeared as a dark, brownish mass with soft-to-firm consistency. Meticulous dissection was carried out along grossly normal tissues to provide a 2 cm oncologic margin [Fig.3]

Figure 3 Immediate postoperative appearance. View following a radical infrastructure maxillectomy with 2 cm oncologic margins

The postoperative course was managed with strict glycemic control and antihypertensive monitoring. The patient received a course of antibiotics and analgesics. Histopathological analysis of the resected specimen confirmed a high-grade leiomyosarcoma. Microscopic examination revealed spindle cells with characteristic "cigar-shaped" blunt-ended nuclei organized in intersecting fascicles, with a high mitotic rate and focal areas of tumor necrosis.

Prior to the procedure, a preoperative maxillary impression was obtained to facilitate the fabrication of a custom prosthetic template. Following the complete removal of the tumor, prosthesis was subsequently adjusted and replaced by a definitive palatal obturator in accordance with the progressive cicatrization and remodeling of the surgical bed.

This reconstructive strategy allowed for the immediate restoration of speech and swallowing functions, significantly improving the patient's postoperative quality of life.

Following surgical recovery and stabilization of the surgical bed, the patient was referred to medical oncology and was initiated on a systemic chemotherapy protocol to mitigate the high risk of hematogenous metastasis, considering his high-grade status and age. During the follow-up period of 1 year, he remains alive and free of recurrence. The patient's episodes of care timeline is reported in figure 4.

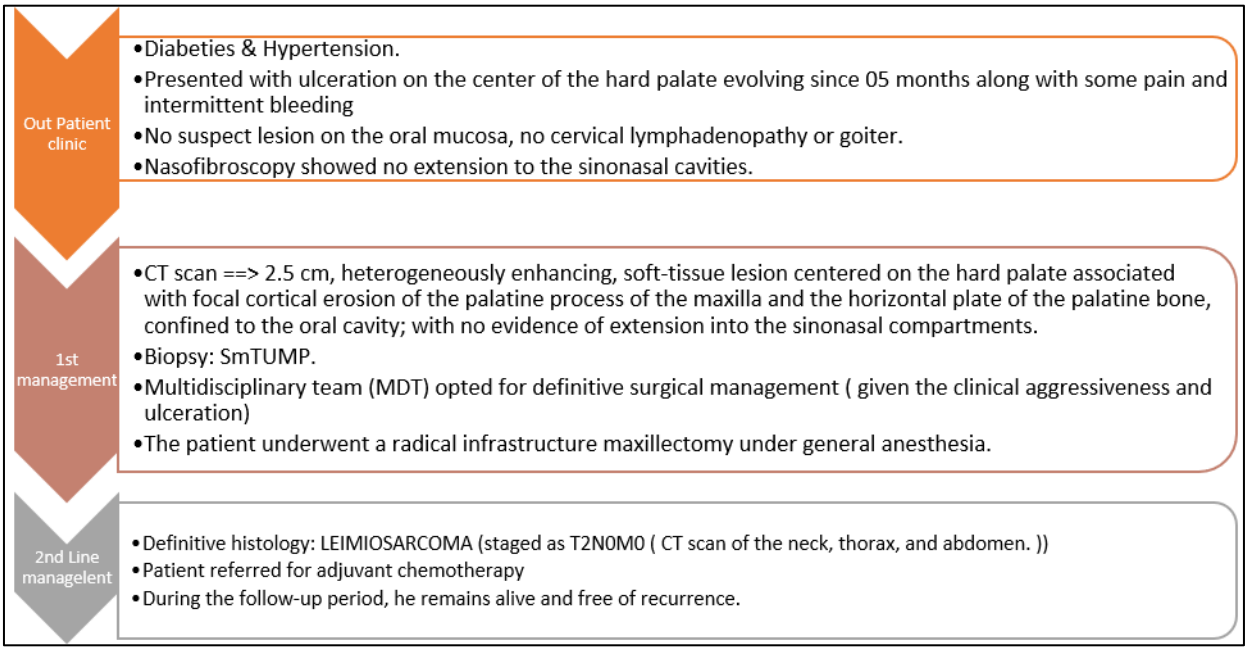

Figure 4 Patient's case management timeline

3. Discussion

Leiomyosarcoma (LMS) of the head and neck is an aggressive disease with a high propensity for local recurrence and distant metastasis, primarily to the lungs [2]. It poses significant diagnostic challenges due to its histological overlap with benign leiomyoma and smooth muscle tumors of uncertain malignant potential (SmTUMP) [2-4].

The primary challenge in managing oral LMS is its clinical "masquerade." In our 78-year-old patient, the 5-month history of an ulcerated palatal lesion initially raised suspicion for Squamous Cell Carcinoma (SCC) or a minor salivary gland tumor (e.g., Adenoid Cystic Carcinoma), which are statistically far more common in this age group. The rarity of LMS often leads to initial misdiagnosis or delayed biopsy, allowing the tumor to achieve a significant size and invade deep structures like the palatine bone or the pterygomaxillary space [2].

Histopathologically, LMS is characterized by a proliferation of spindle cells organized in long, intersecting fascicles that often cross at right angles. These cells typically possess "cigar-shaped" nuclei with blunt ends and an abundant eosinophilic cytoplasm [4-5]. However, LMS can present in various histopathological variants, including: Spindle Cell (Classic): Most common in the oral cavity; Epithelioid: Rare, characterized by rounded cells, often confused with carcinoma or melanoma; and myxoid: Noted for a prominent extracellular matrix, which can mask the malignant cells [4].

According to the Stanford criteria, a definitive diagnosis of LMS requires evidence of smooth muscle differentiation paired with proof of malignancy, such as cytologic pleomorphism, tumor cell necrosis, or a mitotic rate exceeding 4 per 50 high-power fields (HPF). In contrast, leiomyoma is cytologically bland with low mitotic activity (<1/50 HPF), while SmTUMP occupies an intermediate role with 1–4 mitoses per 50 HPF. [4-7]

The diagnostic dilemma is often rooted in intratumoral heterogeneity. As reported in the literature, sequential biopsies may show different stages of the disease—moving from "benign" tissue to SmTUMP and finally LMS—reflecting either an ongoing transitional tumorigenesis or a sampling error where early limited specimens fail to represent the most

aggressive components of the tumor [8-9]. Immunohistochemistry is vital for confirmation; LMS typically expresses Smooth Muscle Actin (SMA) and h-Caldesmon, while being negative for markers like S100 or cytokeratins [9].

Surgical management of giant palatal lesions presents complex challenges. Management follows NCCN guidelines, prioritizing radical surgical intervention [5; 11]. For this patient, an infrastructure maxillectomy with 2 cm margins was performed to ensure oncologic control while preserving functional and aesthetic outcomes. Although lymph node dissection is generally unnecessary given the low rate of occult metastasis (2–5%), adjuvant therapy is critical for high-grade lesions. Adjuvant radiotherapy is reserved for poor prognostic features—such as large tumor size or high-grade status—to improve local control [12]. However, the microvascular compromise in diabetic patients increases the risk of osteoradionecrosis. Systemic chemotherapy is considered for advanced disease or as a palliative measure, though its role in primary oral LMS remains limited. It is often utilized for high-grade lesions with a high risk of systemic spread, though it requires meticulous renal and cardiac monitoring in the elderly [13].

In geriatric patients, however, "noble" structures must be preserved while contending with metabolic fragility. Hypertension increases the risk of significant intraoperative bleeding from the maxillary artery and its branches, such as the sphenopalatine and descending palatine arteries. Furthermore, diabetes mellitus significantly impairs the microvasculature and collagen synthesis, heightening the risk of postoperative infection or oronasal fistula formation [10-11].

The prognosis is highly dependent on tumor grade and extent; The five-year overall survival for primary oral LMS is estimated between 50% and 60%, but this can reach 90% for well-differentiated, small primary oral lesions limited to soft tissue with clear margins [11-13]. high-grade lesions involving the maxillary sinus face a more guarded survival range of 50% to 90%, necessitating prompt multidisciplinary intervention

4. Conclusion

Oral leiomyosarcoma is an exceptionally rare but highly aggressive tumor that should be considered in the differential diagnosis of ulcerated palatal masses in the elderly. The "diagnostic continuum" from SmTUMP to LMS underscores the need for aggressive investigation when clinical behavior contradicts initial biopsy results. Radical surgical excision with oncologic margins remains the primary treatment, but the success of management in geriatric patients with diabetes and hypertension relies on a comprehensive, multidisciplinary approach to navigate the high risks of perioperative complications and adjuvant toxicity.

Patient's perspective

At 78 years old and already managing diabetes and hypertension, my primary fear was that cancer surgery would strip away my independence and my ability to communicate with my family. I was deeply concerned about how a radical procedure on my palate would change my daily life and my ability to eat. My surgical team addressed these fears by preparing a custom palatal obturator based on a preoperative impression, which was fitted after the resection. This prosthetic solution allowed me to speak and swallow almost normally from the very first weeks, giving me the functional stability and morale, I needed to finish my chemotherapy and return to my normal life, now free of the disease.

Compliance with ethical standards

Disclosure of conflict of interest

The authors declare that there are no conflicts of interest regarding the publication of this manuscript.

Statement of ethical approval

The IRB approved our study and consents to participate to the study were signed by the patients. Our IRB is CEHUF (comité d'ethique hospital-universitaire de Fès). Email. Comite.ethique.fes@usmba.ac.ma

Statement of Informed Consent

Explicit, written informed consent was obtained from the patient for the publication of this case report and all accompanying clinical and radiological images. A copy of the written consent is available for review by the Editor-in-Chief of this journal upon request

References

[1] Enzinger FM, Weiss SW. Soft Tissue Tumors. 7th Ed. Mosby; 2020.

[2] Suárez-Alén F, Otero-Rey E, Peñamaría-Mallón M, García-García A, Blanco-Carrión A. Oral leiomyosarcoma: the importance of early diagnosis. Gerodontology 2015; 32: 314-317.

[3] Nagpal DK, Prabhu P, Shah A, Palaskar S. Leimyosarcoma of the buccal mucosa and review of literature. J Oral Maxillofac Pathol 2013; 17: 149.

[4] Montgomery E, Goldblum JR, Fisher C. Leiomyosarcoma of the head and neck: a clinicopathological study: Head and neck leiomyosarcoma. Histopathology 2002; 40: 518-525.

[5] von Mehren M, Kane JM, Bui MM, Choy E, Connelly M, Dry S, Ganjoo KN, George S, Gonzalez RJ, Heslin MJ, Homsi J, Keedy V, Kelly CM, Kim E, Liebner D, McCarter M, McGarry SV, Meyer C, Pappo AS, Parkes AM, Paz IB, Petersen IA, Poppe M, Riedel RF, Rubin B, Schuetze S, Shabason J, Sicklick JK, Spraker MB, Zimel M, Bergman MA, George GV. NCCN Guidelines Insights: Soft Tissue Sarcoma, Version 1.2021: Featured Updates to the NCCN Guidelines. J National Compr Cancer Network 2021; 18: 1604-1612.

[6] National Comprehensive Cancer Network (NCCN). Soft Tissue Sarcoma Guidelines. v2.2025.

[7] Stanford University Medical Center. Criteria for the Diagnosis of Leiomyosarcoma. 2018.

[8] Mitsudo K, et al. Leiomyosarcoma of the maxillary region: A case report and literature review. J Oral Maxillofac Surg. 2016.

[9] E.L.T. PIALAGO and al. oral leiomyosarcoma presenting as a recurrent hard palate mass: a case report, world cancer research journal. DOI: 10.32113/wcrj_20229_2396

[10] de Bree R, van der Waal I, de Bree E, René Leemans C. Management of adult soft tissue sarcomas of the head and neck. Oral Oncology 2010; 46: 786-790.

[11] Chang AE, Chai X, Pollack SM, Loggers E, Rodler E, Dillon J, Parvathaneni U, Moe KS, Futran N, Jones RL. Analysis of Clinical Prognostic Factors for Adult Patients with Head and Neck Sarcomas. Otolaryngol Head Neck Surg 2014; 151: 976-983.

[12] Albertsmeier M, Rauch A, Roeder F, Hasenhütl S, Pratschke S, Kirschneck M, Gronchi A, Jebsen NL, Cassier PA, Sargos P, Belka C, Lindner LH, Werner J, Angele MK. External Beam Radiation Therapy for Resectable Soft Tissue Sarcoma: A Systematic Review and Meta-Analysis. Ann Surg Oncol 2018; 25: 754-767.

[13] Mitsudo K, Tohnai I, Fujimoto Y, Sawaki Y, Sugimura T, Nishiguchi H, Fukui T, Yamoto N, Ueda M. Leiomyosarcoma of the maxilla: Effective chemotherapy with docetaxel (DOC) and cisplatin (CDDP) using superselective intra-arterial infusion via superficial temporal artery. Oral Oncology Extra 2006; 42: 258-262.