Case Report

International Journal of Tumor Research

Atypical Spindle Cell Lipoma of the Larynx: Case Report

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Received: 11 Oct 2025; **Accepted:** 13 Nov 2025; **Published:** 26 Nov 2025

Citation: Micaela Redivo, María del Pilar Minghera, Federica Fernandez Long, et al. TAtypical Spindle Cell Lipoma of the Larynx: Case Report. Int J Tumor Res. 2025; 1(1): 1-3.

ABSTRACT

We describe the case of a male patient who presented with dysphonia and inspiratory dyspnea that had been present for 3 months. A contrast-enhanced neck CT scan diagnosed an expansile lesion in the left pyriform sinus, with fatty density and mild enhancement with intravenous contrast. The biopsy result was an atypical spindle cell lipoma. It was resected using transoral microsurgery with cautery, avoiding a tracheostomy. Two weeks later, he was able to feed orally. During the 36-month follow-up, he had no recurrences.

Keywords

Atypical spindle cell lipoma, Well-differentiated liposarcoma, Larynx, Hypopharynx, Transoral surgery.

Introduction

Liposarcomas are uncommon tumors in the head and neck region, occurring more frequently in adult males [1]. In the larynx, they predominantly arise in the supraglottis and hypopharynx. Four histological subtypes are described: well-differentiated/atypical lipoma, with low malignant potential; myxoid, with intermediate malignancy; and pleomorphic and dedifferentiated types, which are highly malignant [2].

Atypical spindle cell lipoma is a variant of well-differentiated liposarcoma, composed of spindle cells intermixed with atypical lipogenic cells.

This neoplasm shows local aggressiveness but has a very low metastatic potential. Due to the rarity of this neoplasm, its unusual presentation in the larynx, and the use of a transoral surgical approach, we found this case worth reporting.

Case Report

A 77-year-old male patient presented with hoarseness, pharyngeal discomfort, and mild exertional dyspnea of 3 months' duration. He had a history of heavy smoking (40 cigarettes/day) and had undergone microlaryngeal surgery 6 years earlier for a tumor in the left piriform sinus, which was diagnosed histologically as a spindle cell lipoma. Immunohistochemistry was positive for CD34 and negative for smooth muscle actin, desmin, and S100 protein. Postoperative follow-up included video- nasofibrolaryngoscopy and contrast-enhanced computed tomography (CT) of the neck, with no evidence of recurrence during a 3-year follow-up. However, he discontinued follow-up during the pandemic. Neck examination was unremarkable. Video-nasofibrolaryngoscopy revealed a large mass in the left piriform sinus and supraglottis.

Contrast-enhanced neck CT showed an expansive lesion in the left piriform sinus, measuring 30 mm transversely, 23 mm anteroposteriorly, and 42 mm craniocaudally. The mass had fat density, heterogeneous characteristics, and mild enhancement with intravenous contrast. There was no erosion of the laryngeal cartilages, but the glottic airway was narrowed (Figure 1).

MRI could not be performed due to the presence of a non-MRI-compatible pacemaker. A microlaryngoscopic biopsy was performed. Histopathological examination revealed a proliferation of spindle-shaped, regular nuclei without a defined pattern, set against a background of collagen fibers and mature adipose tissue. Some cells exhibited large, hyperchromatic, irregular

nuclei. Immunohistochemical findings were consistent with the prior biopsy. The diagnosis was atypical spindle cell lipoma. Definitive transoral microlaryngeal surgery was performed using a Bouchayer cautery tip at intensity 15, resecting the tumor from the piriform sinus, paraglottic space, and supraglottis. A tracheostomy was avoided.

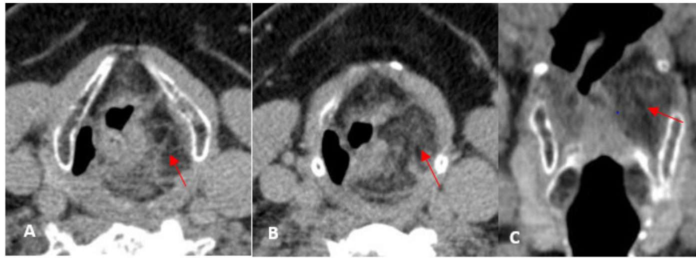

Figure 1: Contrast-enhanced CT of the neck.

A and B: axial slices; C: coronal slice showing a heterogeneous fat-density tumor with mild contrast enhancement and no cartilage erosion.

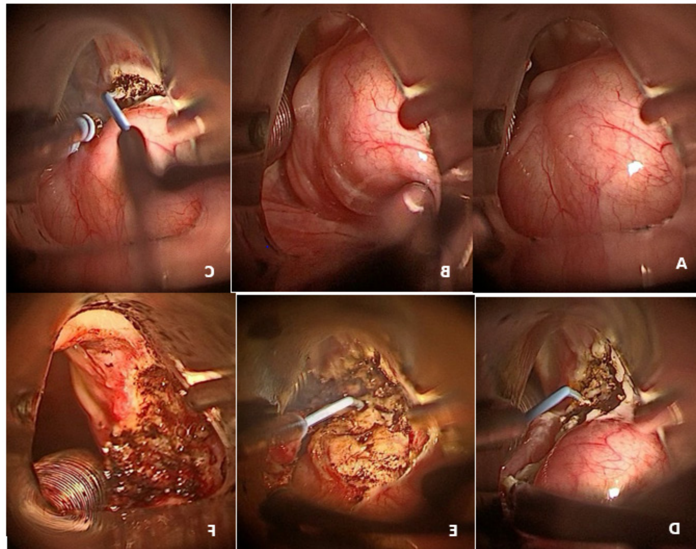

Figure 2: Transoral microlaryngeal surgery: microscopic view via laryngoscope. A and B: tumor originating in the paraglottic space, supraglottis, and left piriform sinus, occupying the full laryngoscopic view. C and D: tumor resection using Bouchayer cautery. E: adipose tissue appearance seen during dissection in the paraglottic space. F: final surgical field, showing the depth of the paraglottic space and a tumor-free piriform sinus.

The patient remained in the intermediate care unit for 5 days. Histopathological examination of the surgical specimen confirmed the diagnosis of atypical spindle cell lipoma (Figure 3).

A swallowing function test performed the day after surgery revealed silent aspiration of semisolids and liquids.

Enteral nutrition via nasogastric tube and speech-swallowing therapy were initiated. Two months later, a repeat swallowing study was normal, and the patient resumed oral intake. Left vocal cord immobility and compensatory phonation with the left ventricular band were observed, and voice therapy was prescribed. Follow-up with video-nasofibrolaryngoscopy and contrast-enhanced CT of the neck showed no evidence of recurrence after 36 months (Figure 4).

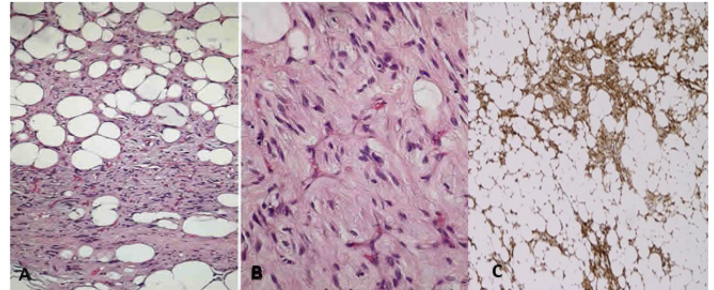

Figure 3: Atypical spindle cell lipoma.

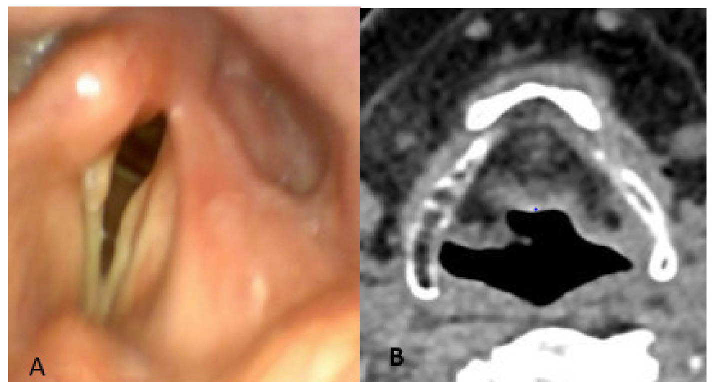

Figure 4: A: follow-up video-nasofibrolaryngoscopy 12 months after microlaryngeal surgery: normal-appearing vocal cords, supraglottis, and left piriform sinus with no tumor recurrence. B: axial contrast-enhanced CT image showing no evidence of tumor recurrence.

Discussion

Liposarcoma is the most common soft tissue sarcoma, accounting for approximately 20% of malignant mesenchymal tumors [3].

Liposarcomas located in the head and neck region represent only 3% of all liposarcomas. They are typically subcutaneous, exhibit a low histological grade of malignancy, and less frequently produce nodal or distant metastases when compared to liposarcomas located elsewhere [4]. A review of the literature identified 50 cases of liposarcomas located in the larynx published between 1968 and 2020 in the English-language literature [5]. Well-differentiated spindle cell liposarcoma is an uncommon variant composed of spindle cells intermixed with atypical lipogenic cells within a collagenous or fibromyxoid stroma.

The term *atypical spindle cell lipoma* is preferred when the lesion arises in surgically accessible, superficial locations such as the extremities or trunk, while the term *well-differentiated liposarcoma* is used for tumors in deep locations like the retroperitoneum or mediastinum [6].

Diagnosing a histologically well-differentiated liposarcoma as either an atypical spindle cell lipoma or a well-differentiated liposarcoma is primarily based on the tumor's anatomical location and surgical resectability.

Some authors argue that in the larynx, due to the typically large size of the tumors at diagnosis, their tendency to recur after several years, and their rare but possible capacity for dedifferentiation, they should be classified as well-differentiated liposarcomas [7].

The most common sites of involvement are the trunk, lower extremities, and head and neck region. These tumors are locally aggressive, and although metastasis and dedifferentiation are rare, up to 10% of cases may undergo dedifferentiation [8], and local recurrence occurs in 30–50% of cases. Recurrence can also result from factors such as misdiagnosis as a benign tumor or incomplete surgical resection. Although recurrence is frequent, it has not been shown to affect overall survival. The optimal treatment is complete surgical excision [9]. For tumors located in the larynx or hypopharynx, complete resection may require total laryngectomy and/or pharyngectomy with permanent tracheostomy.

In selected cases, transoral surgery may allow for wide resections with narrow but acceptable margins according to the principles of CO_2 laser transoral microsurgery, often avoiding the need for a permanent tracheostomy [10].

In the case presented, we performed tumor resection using electrocautery with a Bouchayer monopolar tip set at intensity 12 in cut and coagulation mode, which allowed for a faster resection. The role of adjuvant radiotherapy remains controversial.

A study involving 76 patients with head and neck liposarcomas found no benefit to adjuvant radiotherapy compared to surgery as a single therapeutic modality. Many of these patients had more pleomorphic liposarcomas, which are associated with a worse prognosis [11]. Other authors suggest that radiotherapy may be useful in cases with positive margins, high-grade liposarcomas, or in the myxoid variant [5]. The average time from initial resection to first recurrence is 3.9 years, but recurrences have been described even after 20 years [12], underscoring the need for lifelong follow-up with office-based endoscopy and imaging.

References

1. Hui Zhu, Jihong Sun, Shi Wei, et al. Well-Differentiated Laryngeal/Hypopharyngeal Liposarcoma in the MDM2 Era Report of Three Cases and Literature Review. Head Neck Pathol. 2017; 11: 146-151.
2. Burak Bahadır, Kemal Behzatoglu, Ezgi Hacıhasanoglu, et al. Atypical spindle cell/pleomorphic lipomatous tumor: A clinicopathologic, immunohistochemical, and molecular study of 20 cases. Pathol Int. 2018; 68: 550-556.
3. Dei Tos AP. Liposarcoma: new entities and evolving concepts. Ann Diagn Pathol. 2000; 4: 252-266.
4. Gerry D, Fox NF, Spruill LS, et al. Liposarcoma ofthe head and neck: analysis of 318 cases with comparison to non-head and neck sites. Head Neck. 2014; 36: 393-400.
5. Jyotiman Nath, Gautam Sarma, Lopamudra Kakoti, et al. Liposarcoma of Larynx-A Case Report and Updated Review of Literature. Indian J Otolaryngol Head Neck Surg. 2022; 74: 4918-4926.
6. Joyson Kodiyan, Jason R Rudman, David E Rosow, et al. Lipoma and liposarcoma of the larynx: case reports and literature review. Am J Otolaryngol. 2015; 36: 611-615.
7. Wenig B, Heffher DK. Liposarcomas of the larynx and hypopharynx: A clinicopathologic study of eight new cases and a review of the literature. Laryngoscope.1995; 105: 747-756.
8. Wanes P, Nolte DA, Tranesh GA. Hypopharyngeal Dedifferentiated Liposarcoma in the MDM2 Era: A Case Report and Short Review. Case Reports in Pathology. 2020.
9. Xiaoyan L, Fulmer S, Zhang D. Well-differentiated Spindle Cell Liposarcoma of the Larynx: A Rare Case Report and Review of Literature. In vivo. 2021; 35: 2779-2783.
10. Steiner W, Ambrosch. Endoscopic Laser Surgery of the Upper Aerodigestive Tract. Thieme Stuttgart-New York. 2000.
11. Golledge J, Fisher C, Rhys Evans PH. Head and neck liposarcoma. Cancer. 1995; 76: 1051-1058.
12. Makeiev M, Pelliccia P, Poizat F, et al. Laryngeal dedifferentiated liposarcoma. Eur Arch Otorhinolaryngol. 2010; 267:991-994.

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