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CASE REPORT

# A rare case of laryngeal spindle cell lipoma

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**Summary**
We report a rare case of an intrinsic spindle cell laryngeal lipoma in a young immunocompromised adult causing acute upper airway obstruction. We discuss the management objectives and key points relating to the case. There are only 165 reported cases of laryngeal lipomatous lesions in the literature, with 30 being intrinsic lipomas and 50 being liposarcomas. It is challenging to differentiate between lipomas and liposarcomas of the larynx clinically and even histopathologically. Long-term follow-up is therefore recommended, and there should be a high level of clinical suspicion for liposarcoma in recurrences of surgically excised laryngeal lipomas.
**Keywords:** otorhinolaryngology, laryngeal spindle cell lipoma

## Case report

A 37-year-old male presented to the emergency department with an acute-on-chronic history of difficulty breathing, intermittent odynodysphagia, loss of weight and a non-productive cough. The patient was known to have tested positive with the human immunodeficiency virus (HIV), with a low viral load. Clinically he had a "hot potato" voice (a muffled, indistinct speech quality which is caused by oropharyngeal swelling), biphasic stridor and was distressed. He was unable to lie flat and felt partial relief in the left lateral position. There was no cervical lymphadenopathy or neck masses, and the oral cavity was unremarkable. Flexible fiberoptic laryngopharyngoscopy revealed a large supraglottic, well circumscribed mass that was exhibiting a ball-valving effect, intermittently obstructing the glottic inlet, causing variable airway compromise and fluctuating stridor.

A CT scan showed a well-defined thin walled, hypoechoic mass arising in the epiglottic/supraglottic region measuring 38 mm x 12 mm x 26 mm (Figure 2). It extended across the

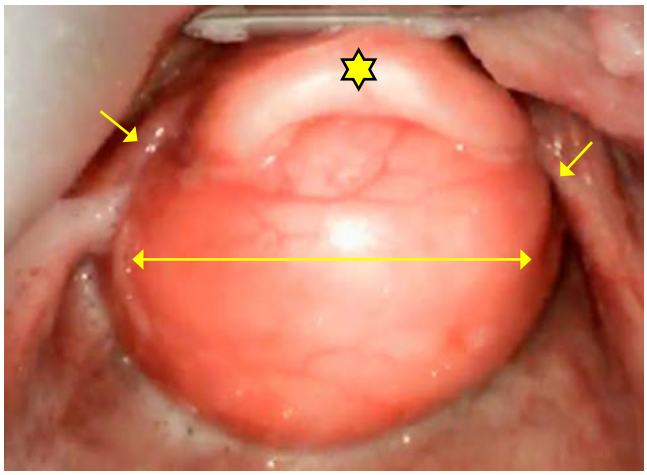

*Figure 1: A well circumscribed, supraglottic laryngeal lipoma (dashed arrow) posterior to the epiglottis (star) obstructing the laryngeal inlet*
Star – Epiglottis, Dashed arrow – Laryngeal mass, Arrow – Aryepiglottic fold

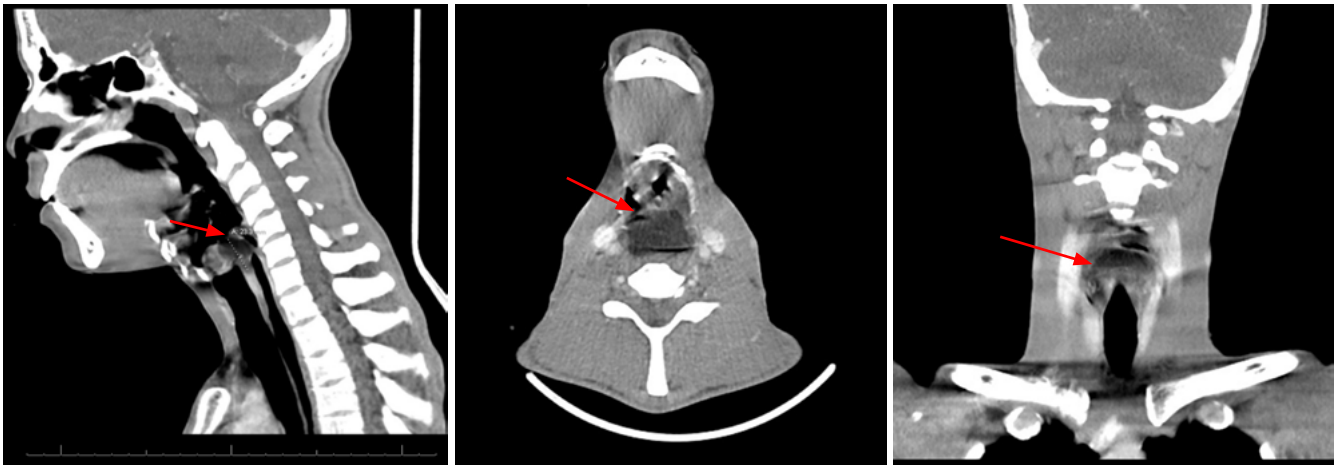

*Figure 2: Sagittal, axial and coronal views of CT scan depicting the mass (arrows)*

*Figure 3: Excised specimen*

airway with near complete airway obstruction. There was effacement of both piriform recesses. Mean Hounsfield units measured as -60, in keeping with fat attenuation.

The patient underwent emergency intubation, direct laryngoscopy, and surgical excision of the mass. The mass was better visualised intraoperatively and was seen to be arising from the left aryepiglottic fold and arytenoid, obstructing the supraglottic airway. There was no involvement of the false or true vocal cords. A transoral extracapsular excision of the mass was performed using standard microlaryngeal instruments (Figure 3). Following surgical excision, the patient required a tracheostomy for 2 days to protect the airway. At follow-up 3 months later, the larynx was anatomically normal with no evidence of recurrence.

Histopathology revealed an encapsulated nodular lesion with lobules of mature adipose tissue separated by fibrous septae and a solid spindle cell component. The spindle cell component showed variably myxoid, loose fascicular and streaming morphology. There were no atypical spindle cells or adipocytes. The specimen was negative for malignancy.

## Discussion

Lipomas are the most common benign mesenchymal tumours. However laryngeal lipomas are extremely rare, with only 115 cases reported, with almost all anatomically located in the supraglottic region.[1-3] Laryngeal lipomas are categorised as either intrinsic or extrinsic. Intrinsic lipomas are particularly rare, accounting for only 30 of 115 reported cases. Intralaryngeal lipomas account for only 0.1% of all benign laryngeal tumours. They are predominantly located on the epiglottis and aryepiglottic fold, where there is an abundance of subepithelial fat.[4] The presenting symptoms are related to the size and location of the mass and include typical symptoms of a laryngeal mass that might include dyspnoea, dysphagia, a globus sensation, hoarseness, and upper airway obstruction. Nonspecific symptoms include sleep apnoea, snoring and paroxysmal nocturnal cough. With delayed presentation, progressive upper airway obstruction may develop, as depicted in this case.[1-3] Laryngeal lipomas are more commonly seen in elderly males from the 4th–6th decades of life.[3] Pain, cervical lymphadenopathy, and constitutional symptoms should raise concern of malignancy or infectious causes.

Laryngeal lipomas, similar to lipomas in other anatomical positions, typically exhibit a smooth or lobulated appearance and are well-defined or encapsulated, displaying a yellowish-tan colour. On a cut surface, they reveal bright fat interspersed with delicate fibrous trabeculae. Other than their distinct boundaries, they generally resemble normal fat.[2] Other pathologies to consider when examining a fatty, well circumscribed mass in the larynx are a well-differentiated liposarcoma, lipoblastoma, and hibernoma.[5,6]

Laryngeal lipomas are categorised as either intrinsic or extrinsic. Intrinsic lipomas, which are less common, may develop in regions where fat is found within the subepithelial tissue and affect structures such as the aryepiglottic fold, false vocal cord, and the laryngeal epiglottis all affecting the laryngeal inlet.[4] Extrinsic lipomas, on the other hand are more common, and involve the pyriform sinus and the lingual surface of the epiglottis, and posterior pharyngeal wall.[6] Laryngeal lipomas can additionally be described as pedunculated, or submucosal. Pedunculated lipomas compress nearby anatomical structures, potentially leading to airway obstruction. Submucosal lipomas, on the other hand, alter the shape of the larynx, causing minor phonatory disturbances and ultimately aerodigestive obstruction by mass effect.[7]

Microscopically, lipomas consist of mature adipose tissue without cellular atypia.[2] The cells typically contain a prominent central vacuole, which often causes displacement of the nucleus toward the cell periphery.[2] Histologically, most lipomas are simple, with only 20% of cases being of variant in nature, which include spindle cell lipomas, fibrolipomas, angiolipomas, myxolipomas, and atypical lipomas.[6]

A benign lipoma and a well-differentiated liposarcoma can present with similar symptoms and can appear similar in clinical appearance. While there is debate surrounding the topic, current consensus suggests that liposarcomas originate spontaneously, with limited evidence supporting the concept of a benign lipoma undergoing malignant transformation.[5] They can be difficult to distinguish even on histopathology. As such, despite a clear surgical resection of a histopathologically benign laryngeal lipoma, consensus recommends prolonged monitoring for recurrence. Recurrence of a lipomatous lesion on clinical follow-up despite surgical resection should raise clinical suspicion for a liposarcoma. In institutions where it can be provided, fluorescence in situ hybridisation (FISH) testing for MDM2 amplification, which is a genetic mutation found in well differentiated liposarcomas, can allow definitive discrimination of lipoma from well-differentiated liposarcoma.[8]

Surgical excision with conservative margins is the gold standard of treatment. The majority of laryngeal lipomas may be excised transorally via suspension laryngopharyngoscopy. Endoscopic and/or microscopic techniques can assist with visualisation. Surgical resection can be achieved using standard cold steel microsurgical techniques or laser or coblation devices may be used to minimise bleeding.[9] It has been advised in the literature that tumours less than 2 cm and with a pedunculated attachment favour a transoral approach.[3] However, as lipomas are benign, piecemeal resection is acceptable to obtain access to the tumour's point of attachment. For tumours that are larger than 2 cm that are non-pedunculated, it is suggested that an external approach

may be required, e.g. a transcervical incision including thyrotomy, lateral pharyngotomy, or transhyoid approach.[3]

### *Ethical approval*

Ethical approval was obtained from the University of Cape Town Faculty of Health Sciences Human Research Ethics Committee (Ref: HREC 535/2024).

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