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A large retropharyngeal lipoma causing upper airway obstruction in a 64-year-old patient: case study

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Abstract

Introduction and Purpose

Retropharyngeal lipomas are extremely rare benign mesenchymal tumors that often remain asymptomatic until reaching a considerable size. Due to their deep anatomical location, they may cause progressive airway or digestive tract compression, leading to potentially life-threatening symptoms. The purpose of this case report is to present a large retropharyngeal lipoma causing upper airway obstruction, outline the diagnostic difficulties, and describe the surgical management.

Material and Methods

A 64-year-old male patient with a one-month history of worsening dyspnea, dysphagia, and orthopnea was evaluated using computed tomography (CT) and magnetic resonance imaging (MRI). Imaging studies assessed the size, boundaries, and anatomical relationships of the lesion. The patient underwent planned tracheostomy followed by complete transpharyngeal surgical excision of the tumor. Histopathological examination was performed postoperatively.

Results

CT and MRI revealed a well-defined encapsulated fatty mass in the retropharyngeal space measuring up to 130 × 83 × 31 mm, leading to narrowing of the pharyngeal lumen and upper laryngeal segment. The lesion displaced adjacent cervical vascular structures and compressed the airway. Complete surgical removal was achieved without intraoperative complications. The postoperative course was uneventful, with successful decannulation on day 10. Histopathology confirmed a non-infiltrating lipoma with focal fibrolipomatous features.

Conclusion

Although benign, retropharyngeal lipomas may cause significant airway obstruction and require timely diagnosis and management. Precise radiological evaluation is essential to determine tumor extent and guide the surgical approach. Complete excision remains the treatment of choice, ensuring symptom resolution and minimizing the risk of recurrence or complications.

Keywords: lipoma, retropharyngeal space, head and neck tumors, surgical treatment

Introduction

Retropharyngeal lipomas are exceptionally rare lesions that may remain asymptomatic for a prolonged period and often go undetected until they reach a considerable size. The clinical presentation varies and depends on which part of the upper respiratory or digestive tract becomes compressed or displaced by the expanding mass [1,2]. Lipomas account for approximately 1-4.4% of all benign tumors and can occur at any age, although the highest incidence is observed in the fourth to sixth decade of life. A typical lipoma presents as a small, soft, oval, spongy mass that is well circumscribed and easily movable beneath the skin. Pain, discomfort, or tenderness are uncommon and usually result from compression of adjacent structures or nearby nerves. In most cases, these tumors are of cosmetic relevance only and do not produce significant clinical symptoms [3].Only about 15% of all lipomas are located within the head and neck region. They most frequently develop in the posterior cervical triangle, while lipomas arising in the retropharyngeal space are exceedingly uncommon [4,5].

Case description

A 64-year-old man was admitted to the Department of Otolaryngology due to progressively worsening dyspnea, present even at rest, difficulty breathing, and the need to maintain a seated position. He also reported a sensation of a „lump in the throat," which made swallowing solid foods difficult. Symptoms had been present for approximately one month and had gradually

intensified. Clinical examination revealed bulging of the posterior and lateral walls of the oral cavity and pharynx, leading to near-complete obstruction of the laryngeal inlet. The mucosal surface in this region appeared normal.

The patient's medical history included ischemic heart disease, atherosclerotic cardiosclerosis, dilation of the left ventricle, left atrium, and ascending aorta; grade I tricuspid, mitral, and aortic regurgitation; grade 3 arterial hypertension; NYHA IIa heart failure; and post-infectious fibrosis of the lower lobe of the left lung.

Due to pronounced, partially compensated airway stenosis, a planned tracheostomy was performed.

Contrast-enhanced computed tomography (CT) of the maxillofacial region and neck revealed a well-delineated, non-enhancing fatty mass located in the retropharyngeal space, predominantly in the midline with rightward protrusion.

Lesion parameters:
• maximal thickness: 31 mm,
• total vertical length: 130 mm,
• maximal transverse dimension: 83 mm.

The mass caused lateral displacement of the cervical vascular bundles and narrowing of the pharyngeal lumen and the upper laryngeal segment over a length of approximately 53 mm. The piriform sinuses were not differentiated, the aryepiglottic folds were deformed, and the vocal folds remained normal. No internal contrast enhancement was observed (Fig. 1).

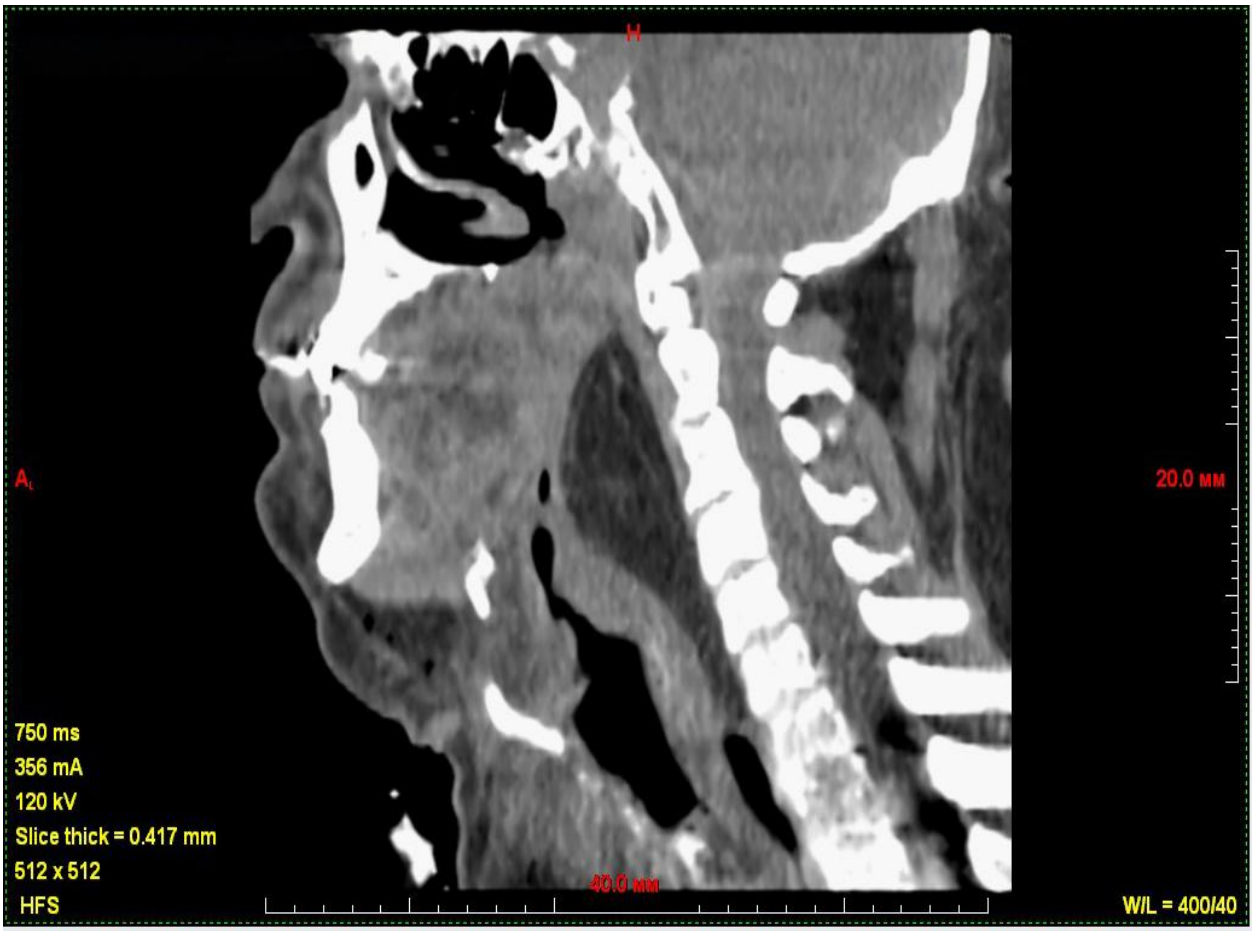

Figure 1. Computed tomography of the neck in a sagittal view

Magnetic resonance imaging (MRI) of the neck revealed an irregularly shaped lesion with imaging characteristics typical of adipose tissue, located in the retropharyngeal and prevertebral spaces from C1 to C6. The lesion measured 99 × 27 × 62 mm (vertical, anteroposterior, and coronal planes), compressed the oropharyngeal lumen, and showed no contrast enhancement. Conclusion: retropharyngeal lipoma (Figs. 2-3).

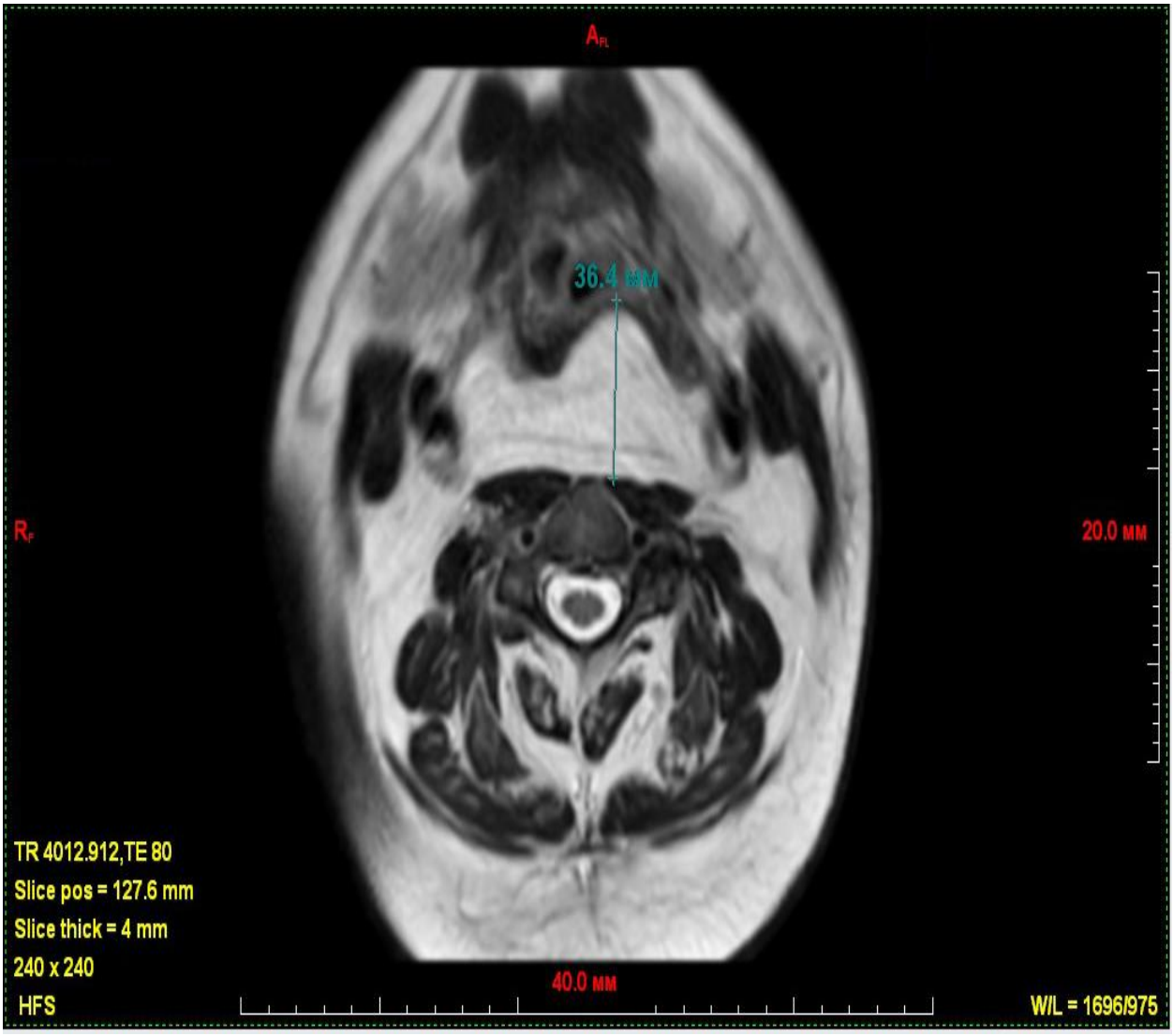

Figure 2. MRI of the larynx - axial section.

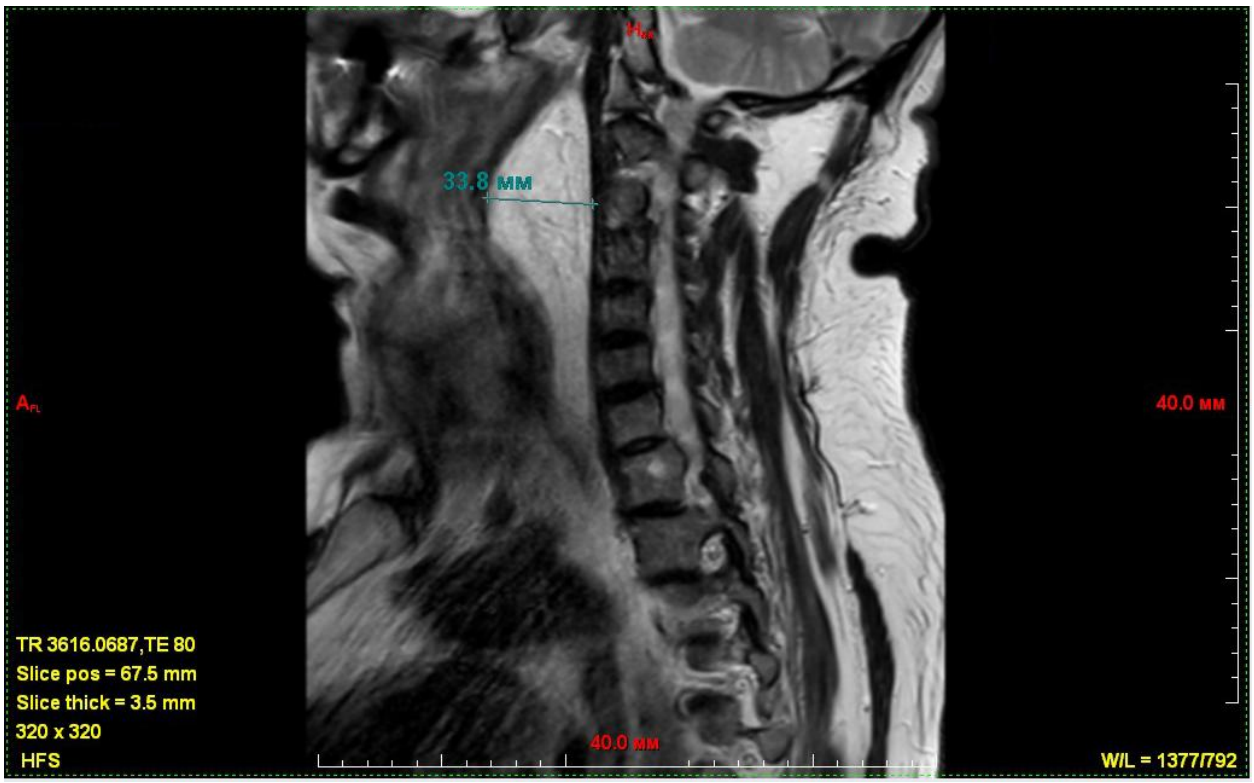

Figure 3. MRI of the neck - sagittal section at the level of the cervical spine and larynx.

Given the size and location of the tumor, surgical treatment was recommended. The patient was thoroughly informed about the nature of the condition, risks, and the planned operative procedure, and written informed consent was obtained.

A paramedian vertical incision was made along the posterior pharyngeal wall. After careful dissection of the tissues surrounding the lesion, intraoperative biopsy confirmed the absence of a fluid component. The tumor was subsequently mobilized and found to be well circumscribed, soft, smooth, encapsulated, and extending from the larynx to the pharynx. It was removed completely within healthy margins. The integrity of the pharyngeal musculature was preserved throughout the procedure. Bleeding was minimal and effectively controlled. Four sutures were placed.

The excised mass - a smooth, yellow, encapsulated lesion measuring 12 × 8 × 2 cm - was sent for histopathological examination (Fig. 4).

Figure 4. Resected postoperative specimen

The postoperative course was uneventful. On postoperative day 2, the nasogastric tube was removed, and oral feeding was initiated. Decannulation was performed on postoperative day 10. The patient was discharged home in good general condition.

Histopathological examination confirmed a non-infiltrating lipoma, partially with fibrolipomatous features.

Discussion

Lipomas are among the most common benign mesenchymal tumors; however, their occurrence within the head and neck region is relatively rare. They most frequently arise in the shoulders, upper torso, and abdominal cavity, while retropharyngeal involvement is only sporadically

reported. These tumors typically remain asymptomatic until they reach a size sufficient to compress respiratory or digestive structures [1,6].

Because of their deep anatomical location and delayed symptom onset, diagnosing retropharyngeal lipomas can be challenging. Larger tumors may cause posterior pharyngeal wall bulging or significant narrowing of the pharyngeal lumen. Therefore, preoperative imaging is fundamental, allowing assessment of lesion extent and selection of the appropriate surgical approach [7].

CT is essential for evaluating the size and spread of laryngeal and pharyngeal lipomas, which typically present as solitary, hypodense, well-defined lesions with attenuation values between -60 and -120 HU. MRI provides superior delineation of tumor borders and demonstrates high signal intensity on T1- and T2-weighted sequences [8].

Lipomas of the head and neck may also occur as part of generalized lipomatosis. One rare variant is Madelung's disease (Launois–Bensaude syndrome), also known as benign or familial symmetric lipomatosis. This disorder involves numerous, symmetric, non-encapsulated adipose deposits in the neck, face, shoulders, trunk, and extremities. These masses may cause deformity, restricted cervical mobility, and, in some cases, airway compromise [9,10]. The disease predominantly affects middle-aged men and is more common in Mediterranean populations. Airway management is often challenging, and postoperative respiratory failure represents a common complication [11].

Complete surgical excision remains the treatment of choice for lipomas of the head and neck, with the objective of minimizing recurrence. The choice of surgical technique depends on tumor size and location: smaller lesions may be removed endoscopically, whereas large or deeply situated tumors require conventional surgical access [12].

The present case demonstrates that although rare, retropharyngeal lipomas may reach substantial dimensions and manifest abruptly, posing a potential life-threatening risk due to airway obstruction.

Conclusions

Retropharyngeal lipomas, although benign, may lead to severe upper airway obstruction once they reach a considerable size, as symptoms typically appear late due to their deep anatomical location. This case demonstrates that progressive dyspnea, dysphagia and orthopnea should prompt immediate radiological evaluation, with CT and MRI playing a key role in determining the size, boundaries and surgical accessibility of the lesion. Securing the airway-such as through planned tracheostomy—may be essential in patients with significant airway compromise. Complete surgical excision remains the most effective treatment method, ensuring symptom resolution and minimizing the risk of recurrence. Early diagnosis combined with appropriate surgical management is crucial for preventing life-threatening complications.

Author's contribution:

Conceptualization, supervision and project administration- TS, AK

Methodology- TS

Software, validation-MTS, MS

Formal analysis-DW,IH,FP

Investigation, resources- TS,AK,KS

Writing original draft preparation-AK, TS, KS,

Writing review editing and visualization- TS,AK

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