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Case Report

Unveiling Nasopharyngeal Lipoma: A Case Study and Literature Review of Reported Cases

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Abstract: Lipoma is a benign tumor that typically affects middle-aged people and is rarely found in the oral cavity. Here, we report a 27-year-old female presented with a rare case of nasopharyngeal lipoma. She has been complaining of foreign body sensation in the throat, dysphagia, and attacks of obstructive sleep apnea for six months. On examination, nasopharyngeal mass was observed, which is originated from left eustachian tube orifice and extended to oropharynx, in contact with posterior surface of soft palate and uvula. CT revealed a well-defined capsulated lesion on the left side of lateral wall of nasopharynx which is emerging from left tonsil and measuring 17x18x20 mm. Histopathological examination confirmed the diagnosis of lipoma. Therefore, the mass was removed by surgical excision. Through a combined oral and endoscopic nasopharyngeal approach.

Keywords: Nasopharyngeal lipoma, case report, literature review.

INTRODUCTION

Of all mesenchymal tumors, lipomatosis is the most prevalent and can be found in areas with fat deposits. About 30% of cases of lipomas are located in the head and neck area, and they are usually found in the subcutaneous plane of the posterior neck. But it can also be found in the pharynx, nasopharynx, and oral cavity [1]. These tumors are more common in individuals in their fifth or sixth decade of life and mostly affect the subcutaneous tissue of the neck, shoulder, back, and buttocks [1].

Because there is so little adipose tissue in the nasopharynx, lipomas are extremely rare in people in their first 20 years of life [1]. There are a few different histological forms of lipomatosis and fibro-lipomatosis, and the majority of them are rather large and do not exhibit any symptoms or cause difficulties other than cosmetic ones until years later [2-4]. Depending on the type of tissue afflicted, they manifest histologically as spindle cell lipoma, fibrolipoma, myxolipoma, myolipoma, angiolipoma, osteolipoma, pleomorphic lipoma, and chondroid lipoma [4].

Nasopharyngeal lipoma patients may have no symptoms at all or a ball sensation in their throat [5, 6]. Some patients with nasopharyngeal lipoma also reported dysphagia, snoring, breathing problems, and nasal obstruction [7, 8]. These tumors can be seen on computed tomography (CT), where they show up as normal homogenous masses with no contrast enhancement, a specific range of Hounsfield units (usually between −50 and −150), and fewer septa [4].

Salivary gland tumors, dermoid cysts, Adenoid hypertrophy, Tornwaldt cysts, and liposarcomas are key differential diagnosis of lipoma that need to be explored [9]. Trans-nasal endoscopic surgery can be used to remove tumors located in the nasopharynx and the inferior region of the eustachian tube, whereas surgical instruments or cautery have been used to treat most lipomas [10].

Here, we are presenting a case of nasopharyngeal lipoma that is rarely described in the literature.

CASE PRESENTATION

A 27-year-old female presented to our ear, nose and throat (ENT) clinic complaining of foreign body sensation in the throat, dysphagia, and attacks of obstructive sleep apnea for six months. There was no nasal obstruction or snoring. There was no fever, night sweats, fatigue, or unintended weight or appetite changes. The patient denied any previous or family history of similar conditions or previous hospitalizations, blood transfusions. Upon clinical evaluation, the patient was alert, conscious, and oriented to time, place, and person. On examination, nasopharyngeal mass was observed, which is originated from left eustachian tube orifice and extended to oropharynx, in contact with posterior surface of soft palate and uvula. CT scan of the paranasal, sinuses in coronal plane with sagittal and Axial reconstruction revealed a well-defined capsulated lesion on the left side of lateral wall of nasopharynx which is emerging from left tonsil and measuring 17x18x20 mm (Figure.1A, 1B, and 1C).

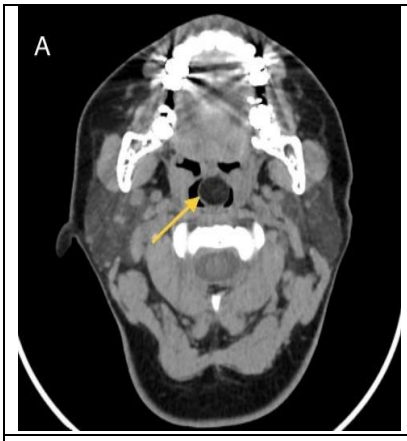

Figure 1(A): Axial view (soft tissue window)

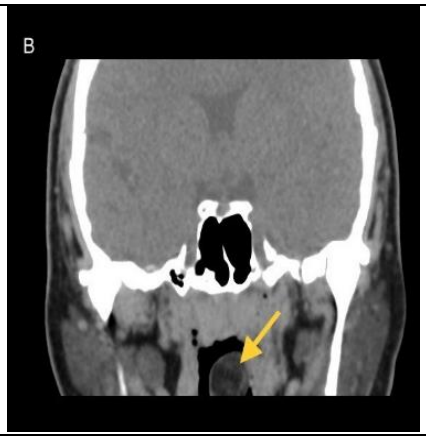

Figure 1(B): Coronal view (soft tissue window)

Figure 1(C): Sagittal view (soft tissue window)

Axial (A), Coronal (B) and sagittal (C) non-enhanced CT scan shows 1.7 x1.8 x 2 cm, well defined rounded fat density mass centered in the oropharyngeal space connected with left palatine tonsil (yellow arrows) that caused partial airway obstruction.

Histopathological examination of the mass demonstrated nasopharyngeal mass consisting of a piece of soft pale-yellow tissue measuring 2.5x2x1 cm in gross examination. Microscopic examination showed lobules of adipose tissue separated by thin fibrovascular connective tissue. The covering mucosa is made up of stratified squamous cells and submucosal benign lymphoid tissue with no evidence of any malignancy and confirmed the diagnosis of lipoma (Pic. Not available). Therefore, the mass was removed by surgical excision through a combined oral and endoscopic nasopharyngeal approach (Figures 2 and 3).

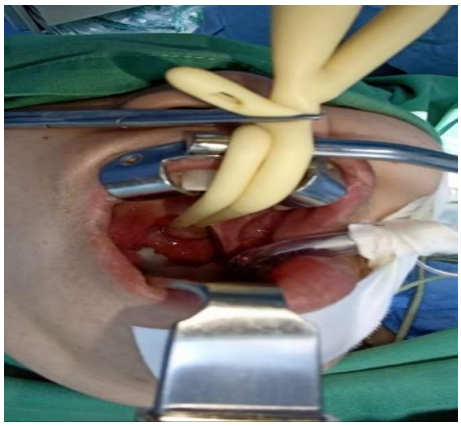

Figure 2: Intra-operative view showing surgical excision of the mass

Figure 3: Showing a surgically excised mass

The patient was seen a few weeks later with significant improvement in symptoms in which symptoms of foreign body sensation in the throat, dysphagia, and obstructive sleep apnea attacks were relieved with clear nasopharyngeal and oropharyngeal examination.

DISCUSSION

A lipoma is a slow-growing, mature fat tumor that is benign. The tongue, lips, and mouth floor are the next most prevalent locations for lipomas in the oral cavity, after the buccal mucosa, which has a lot of fatty tissue. Since the palate is not fatty, there is little chance of a lesion since the pattern of tumor localization in the oral cavity corresponds to fat accumulation [11-14].

In this instance, we highlighted a rare case of nasopharyngeal lipoma in which the patient complained of dysphagia, bouts of obstructive sleep apnea, and a foreign body sensation in the throat. Patients with nasopharyngeal lipoma presented with a range of clinical symptoms, including a ball sensation in the throat [3, 9] and asymptomatic [15]. Some patients also experienced nasal blockage [7, 12, 16-19], breathing difficulties [7], snoring [16, 20], headaches [16, 19], rhinolalia [18], hearing loss [15], ear pain and fullness [20], sleep apnea [20], and dysphagia to solids [7].

The pathophysiology of oral cavity malignancies has been explained by a variety of theories, including muscle cell metaplasia, lipoblastic embryonic cell nests, trauma, persistent irritation, and fatty degeneration [20, 21].

Although lipomas and fat cells share some histological similarities, they differ in their metabolism, with lipoma fat not being used to provide energy during famine [22]. The pathophysiology of oral lipomas is not well understood [11].

Although nasopharyngeal lipoma is a rare disorder, the first adult instance was recorded in 1982, involving a 49-year-old girl [5, 23, 24]. The clinical and para-clinical results of cases that have already been reported were compiled in Table 1 and 2.

Table 1: A literature Review of published cases of lipoma of the Nasopharynx according to published cases' references, sex, age, symptoms, and imaging.

No.	First author, Year, reference number	Sex, age	Symptoms	Imaging
1	Sivrice, 2023 [26]	Male 38 years	Dyspnea, dysphagia, obstructive sleep apnea, could only swallow liquid foods.	**MRI:** showed mass on the right side of the midline extending from the posterior inferior wall of the nasopharynx to the oropharynx
2	Manit, 2021 [16]	Male 30 years	Postnasal drip, nasal obstruction, headache snoring, mouth breathing during sleep.	**CT**: showed presence of fairly large lobulated (3x2x2 cm) predominantly fat density lesion situated over the soft palate and projecting into the nasopharynx causing significant nasopharyngeal obstruction.
3	Sekhar, 2021 [1]	Female, 3 months	Visible globular fleshy mass per mouth	Not reported

No.	First author, Year, reference number	Sex, age	Symptoms	Imaging
4	Karpishchenko, 2020 [23]	Not specified, 74 years	Feeling discomfort mainly in the right part of the throat *Endoscopic examination revealed that the yellowish soft-tissue mass was near the right torus tubarius extending to the oropharynx.	The Computed Tomography CT image showed a soft-tissue mass on the right side of the posterior pharyngeal wall extending from the right torus tubarius, 9 × 4 mm in axial dimensions and 19 mm in vertical dimensions, well-circumscribed, with an adipose component prevalent in its mixed composition, and no clear indications of contrast uptake
5	Jahandideh, 2020 [12] *Lipoma of the nasal septum	Male, 22 years	Left-sided nasal obstruction for more than 2 years. In physical examination, left-sided septal bulging, which was soft and compressible, was observed.	CT scan without contrast revealed a hypodense mass with 1.5 cm thickness. Further evaluation with MRI to inspect any possible intracranial connection showed an amorphous heterogenous 54*8*94 mm mass located in the left anterior part of the nasal septum. The mass was a hyper signal in T2-weighted images and did not enhance after gadolinium injection, contrary to its overlying normal nasal mucosa.
6	Rishabh sethia, 2019 [20]	Female, 3 years	Progressive snoring since birth, sleep apnea, and non-recurrent otitis media.	**MRI** revealed a fatty-appearing mass measuring 2.4 cm × 1.5 cm x 3.0 cm arising from the predental space of C1 and extending anteriorly through the prevertebral space into the retropharyngeal space. **CT** confirmed the involvement of the anterior spine without bony violation into the spinal canal.
7	Jae-Hoon Lee, 2019 [17]	Male, 48 years	Insidious and progressive obstruction of the left nasal cavity for 6month.	**CT nose and PNS** Showed a smooth-margined soft-tissue mass in the left side of the nasopharynx
8	Reid, 2019 [18]	Male, 77 years	A 2-year history of nasal obstruction, rhinolalia, secretory otitis media	a right septal deviation and a low-attenuation pedunculated mass in the nasopharynx, with a maximal dimension of 3.2 cm.
9	Dabiri, 2016 [4] *Lipoma arising in eustachian tube	Male, 47 years	A 3-year history of fullness in the right ear secondary to recurrent serous otitis media and right ear pain, which was especially acute during flights.	Contrast-enhanced computed tomography (CT) demonstrated a well-defined, hypodense, non-enhancing, 1.5 × 0.8-cm lesion involving the right eustachian tube. The tumor was situated on the cartilaginous portion of the tube. MRI revealed that the tumor was composed of fat.
10	Baonerkar, 2015 [25] *Lipoma of tongue	Male, 63 years	Swelling on left lateral border of the tongue since last 5 years. it was very small pointed elevation come on the lateral border of the tongue. Then it was gradually increased in present size. The swelling was painless.	Not reported
11	Davis, 2012 [19] *lipoma of sphenoid sinus	Female, 25 years	Headache in the vertex and left retro-orbital area. She also reported fatigue, nasal drainage, and significant nasal congestion.	CT showed opacification and enlargement of the left sphenoid sinus. The patient was prescribed a 4-week course of moxifloxacin and a prednisone taper. However, post-treatment CT showed no change in the sphenoid sinus opacification, although it did demonstrate

No.	First author, Year, reference number	Sex, age	Symptoms	Imaging
				an intact bony architecture without evidence of a skull base defect.
12	Kinshuck, 2010 [24]	Male, 70 years	a twelve month history of increasing nasal congestion and globus sensation.	A magnetic resonance scan of the head and neck confirmed the presence of a mass in the postnasal space arising from the right eustachian tube cushion. The scan signal intensities were consistent with a lipoma.
13	Fagan, 1996 [7]	Female, 50 years	A six-month history of left-sided nasal obstruction, left-sided dysphagia for solids and nasal obstruction. interfering with breathing during sleep	CT demonstrated a well circumscribed tumor in the nasopharynx with a diameter of 2.5 cm and a length of 4 cm.
14	James, 1982 [5]	Female, 49 year	Bilateral hearing loss of many years duration.	Not reported

Table 2: A literature Review of published cases of lipoma of the Nasopharynx according to histopathology, management and prognosis

No.	First author, Year, reference number	Histopathology	Management	Prognosis
1	Sivrice, 2023 [26]	Histopathological examination of the mass reported an atypical lipomatous tumor.	The pedicle of the mass was dissected with a transoral approach using bipolar cautery.	No recurrence was observed in the patient's six-month follow-up examination.
2	Manit, 2021 [16]	Suggested presence of abundant adipose tissue, with trace presence of fibro-collagenous tissue and chronic inflammatory cells, with no evidence of malignancy.	Endoscopic Trans-Oral excision of the mass.	Post-surgical stay of 2 days was uneventful with no residual masticatory or speech disturbances.
3	Sekhar, 2021 [1]	Mature adipose tissue typical of lipoma with no evidence of malignancy.	Endoscopic Trans-Oral excision of the mass.	The postoperative period was uneventful.
4	Karpishchenko, 2020 [23]	Revealed a cluster of round adipocytes of different dimensions separated by fibrous connective tissue, and the wall was thickened due to sclerosis.	Endoscopic Trans-Oral excision of the mass.	The patient was discharged in good condition on the day of the operation. Postoperative complications were not detected. The follow-up duration was 12 months. No recurrences have been reported so far
5	Jahandideh, 2020 [12] *Lipoma of the nasal septum	Confirmed lipoma	Endoscopic Trans-Oral excision of the mass.	The patient was followed up for 6 months. His nasal obstruction was improved significantly, and the apparent nasal deviation was alleviated to some degree. No recurrence of the tumor was detected in the follow-up period.
6	Rishabh Sethia, 2019 [20]	A well-circumscribed lipomatous lesion with mature adipose tissue divided by thickened fibrous septa with	Endoscopic Trans-Oral excision of the mass.	The patient recovered from surgery without any complications and had an unremarkable

No.	First author, Year, reference number	Histopathology	Management	Prognosis
		No cytologic atypia or lipoblasts.		postoperative hospital stay.
7	Jae-Hoon Lee, 2019 [17]	Confirmed that the mass comprised prominent bundles of mature collagenous or myxocollagenous stroma intermixed with mature adipocytes, consistent with those of a fibrolipoma.	Endoscopic Trans-Oral excision of the mass.	The postoperative period was uneventful and the patient remained symptom-free 6 months later.
8	Reid, 2019 [18]	Revealed classic features of SCL (Spindle Cell Lipoma) consisting of a mixture of mature adipocytes admixed with numerous cytologically bland spindle cells set within abackground of ropey collagen bundles and myxoid stroma.	Endoscopic Trans-Oral excision of the mass	The patient had no recurrence after 9 months of follow-up and had no further vocal symptoms nor nasal obstruction.
9	Dabiri, 2016 [4] *Lipoma arising in eustachian tube	The lesion consisted of mature adipocytes in a connective tissue stroma surrounded by a thin fibrous capsule. No cellular atypia, mitotic activity, multinucleated cells, or lipoblasts were detected.	Endoscopic Trans-Nasal excision of the mass	The patient was discharged the day after surgery without any further treatment. One year postoperatively, nasopharyngeal endoscopy showed no sign of tumor recurrence and the patient no longer complained of fullness or pain in his right ear.
10	Baonerkar, 2015 [25] *Lipoma of tongue	Squamous epithelium and an underlying zone shows a lesion enclosed by a thin fibrocollagenous capsule and composed of lobules of mature adipose tissue consistent with a picture of lipoma.	Endoscopic Tran-Oral excision of the mass	Not reported
11	Davis, 2012 [19] *lipoma of sphenoid sinus	Not reported	Endoscopic Tran-Oral excision of the mass	Not reported
12	Kinshuck, 2010 [24]	The mass was covered by a ciliated columnar epithelium showing focal squamous metaplasia. The stroma was composed of fibrous tissue exhibiting myxoid changes and mixed with mature fatty tissue and thin and thick walled blood vessels, some containing thrombi.	Endoscopic Trans-Nasal excision of the mass	Not reported
13	Fagan, 1996 [7]	Scanty striated muscle adjacent to abundant mature adult adipose tissue with prominent blood vessels.	Endoscopic Trans-oral excision of the mass.	Not reported
14	James, 1982 [5]	Nasopharyngeal lesion showing adipose tissue characteristic of lipoma.	Endoscopic Trans-oral excision of the mass.	Not reported

The most definitive method of diagnosing lipomas is endoscopic inspection, which can be used to measure the tumor's size, color, texture, form, and borders as well as take a biopsy for additional histological testing [16, 17]. Two paramedical instruments that are considered beneficial for examination processes are radiological examination employing magnetic resonance imaging (MRI) and computed tomography (CT) [16, 17].

Regardless of histology results, surgical removal is regarded as the preferred course of treatment for oral lipomas [21]. In the present instance, the tumor was excised surgically, a procedure that has been used in numerous publications [1, 12, 16-20, 25, 26]. Although they are rare, recurrences of such cases are possible and have a favorable prognosis [16].

CONCLUSION

The most common mesenchymal tumor, lipomatosis, can develop wherever in the body where fat is present, yet it is incredibly uncommon in the nasopharynx. The patient may present with one or several symptoms, or none at all. While CT and MRI are still useful for assessment and diagnosis, endoscopic examination remains the most definitive method of diagnosing lipomas. In our instance, the lipoma was surgically excised using an endoscopic nasopharyngeal and oral approach.

Data Availability: Data available upon request, due to privacy/ethical restrictions.

Consent: Written consent for publication of this case report has been obtained from the patient.

Conflicts of Interest: The authors declare that they have no conflicts of interest.

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