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Case Report

Oropharyngeal Schwannoma: A Rare Case Report and Literature Review

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A B S T R A C T

Schwannomas are tumors arising from the nerve sheath usually benign, solitary and usually slow growing. In head and neck region, they are mostly located in tongue, floor of mouth but rarely in oropharynx and tonsils. They are usually asymptomatic but may cause dysphagia. They rarely undergo malignant degeneration. We present a case of dysphagia in a 17 year old female caused by giant schwannoma of the oropharynx. An MRI was performed showing a pharyngeal process affecting the posterior pharyngeal wall and compressing the oropharyngeal airway. The treatment was based on surgical excision with no sign of recurrence in the follow up.

Keywords: Schwannoma; Transoral; Oropharynx; histological; Treatment; Dysphagia

Introduction

Schwannomas (also called schwannomas), first described by Verocay[1], are benign tumors of the peripheral nerves that typically appear as slow-growing, solitary lesions. It originates from the proliferation of Schwann cells[2]; these are individual, encapsulated benign tumors arising from tumors Schwann cells of peripheral nerves, cranial nerves and autonomic nerves[3]. While they can develop in any part of the body, the head and neck region is the most common location (25-48%), with intraoral origins being rare occurrences (1%)[4,5]. We present a case of dysphagia in a 17 year old female caused by giant schwannoma of the oropharynx.

Case Report

We present the case of a 17-year-old girl with no prior medical conditions, who sought evaluation at our department due to a four-month history of increasing throat swelling, which caused swallowing difficulties, changes in her voice and nocturnal snoring. Clinical examination using a tongue depressor revealed a large bulging mass rising from the posterior wall of the pharynx, posterior and inferior to the left posterior tonsillar pillar. The overlaying mucosa was unevenly covered with a white membrane. Indirect laryngoscopy showed a sizable mass towering above the bent-forward epiglottis. **(Figure 1)** No signs of lymphadenopathy were detected upon physical examination. The rest of the otorhinolaryngologic examination showed no abnormalities.

An MRI was performed showing a pharyngeal process affecting the posterior pharyngeal wall and compressing the oropharyngeal airway. The mass appears well-defined, roughly

oval in shape, with irregular contours. It exhibits isosignal on T1 and heterogeneous hypersignal on T2 imaging. Post Gadolinium injection, it shows intense and heterogeneous enhancement. Its was measuring approximately 40x30.5 mm, extending to 48 mm. It displaces the epiglottis and extends to the supraglottic level, filling the left piriform sinus completely and the right piriform sinus partially. It comes into intimate contact, with loss of separation line in places, with the left palatine tonsil. Posteriorly, It comes into contact with the vertebral bodies of C2-C3 and C4 without osseous lysis, as well as the intervertebral discs of C2-C3 and C3-C4 **(Figure 2)**.

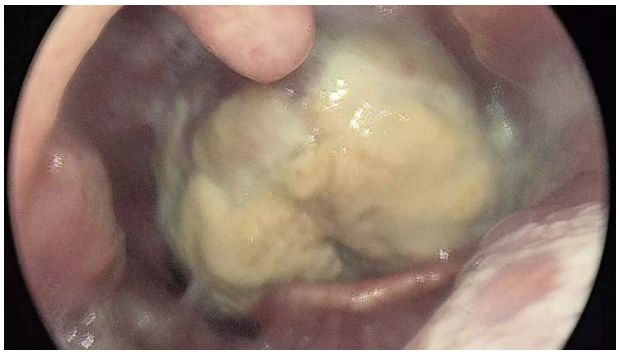

Figure 1: Clinical examination showing a bulging mass rising from the posterior wall of the pharynx.

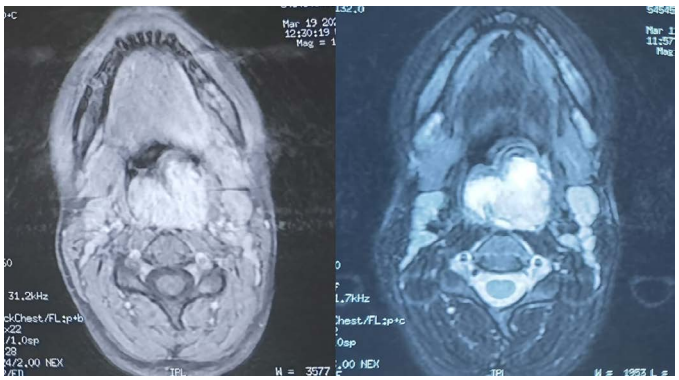

Figure 2: Facial MRI performed showing a pharyngeal process affecting the posterior pharyngeal wall.

An initial biopsy under local anesthesia was performed revealing a remodeled and ulcerated Schwannoma. Given the benign nature of the tumor, it was decided to perform a transoral excision under general anesthesia. The tumor was friable and bled upon contact. The excision was thorough, reaching deep into the tissue and extending to the superior pharyngeal constrictor muscle. The surgical planes were closed using 2-0 Vicryl sutures. **(Figure 3)** The post-operative course was uneventful with no complications noted. the patient was discharged after 24-hour observation period.

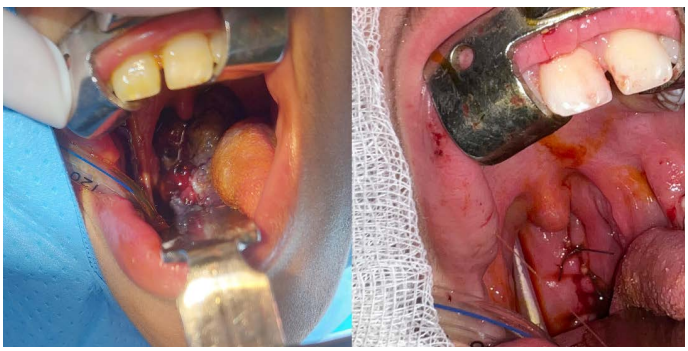

Figure 3: Post-operative image after the excision of the mass and surgical suture.

The histological examination reveals a spindle-shaped tumor proliferation arranged in bundles. It consists of spindle cells without visible cytoplasmic boundaries, arranged in short or intertwined bundles, with nuclear palisades and cellular whorls. The cells have elongated nuclei, which are non-atypical. The blood vessels have thin walls. Immunohistochemical analysis demonstrates diffuse expression of pS100 in tumor cells. They did not express CD34, EMA, or AML. **(Figure 4)** Definitive diagnostic of schwannoma was favored. After a one-year follow-up, the patient showed no signs of tumor recurrence.

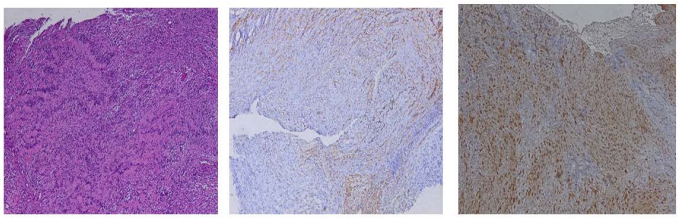

Figure 4: Histological aspect.

Discussion

The schwannoma, also known as neurilemmoma, neurinoma, perineural fibroblastoma, is a tumor that grows slowly and typically remains encapsulated. It is generally asymptomatic and does not cause any symptoms. Malignant transformation of schwannomas is extremely rare. Pharyngeal presentations of extracranial schwannomas, although rare, account for a quarter of all cases that occur in the head and neck[6]. However, it appears to be more prevalent during the ages spanning the second and third decades of life[7]. Research conducted by William et al. revealed that 83% of the cases studied was male population, whereas Lucas showed a stronger inclination towards females. Hatziotis and Asprides, along with Enzinger and Weiss, observed an equal distribution between both genders[8,9].

In the oral cavity, lesions are most common in the soft tissues, more commonly the tongue, followed by the palate and buccal mucosa, and may have clinical manifestations similar to other benign lesions, lesions such as mucoceles, fibromas, lipomas, and benign salivary gland tumors[10,11]. The most common location is in the parapharyngeal space of the neck. Clinical signs and symptoms vary depending on the size and location of the tumor and the nerve of origin. They are usually asymptomatic and app ear as painless swelling. Oropharyngeal schwannoma rarely occ urs and causes dysphagia, odynophagia, radiating pain[12].

The patient was initially asymptomatic, dysphagia gradually develops due to growth. There, tumor spread to surrounding areas is well sealed parapharyngeal spaces are rare but can cause compression vascular structure[12] However, isolated supraglottic oropharyngeal schwannomas are rare. Holinger and Johnston[13] found among 1197 cases of supraglottic oropharyngeal benign lesions only one case of schwannoma. New and Erich[14] found only one case of schwannoma among 722 cases of benign supraglottic oropharyngeal tumors.

The process of diagnosing involves the use of imaging studies, such as CT scans, and histology[12]. CT scans are important, but so are Magnetic Resonance Imaging (MRI). Schwannomas, when scanned, appear to have lower density and exhibit peripheral enhancement when contrast is applied. This is observed in MRI scans of schwannomas. On T1-weighted images, these tumors exhibit a relatively low signal intensity, while on T2-weighted images, they display a high signal intensity. Typically, the enhancement of these tumors is uniform throughout[12]. The

MRI sequence exhibits a distinct contrast in the 'salt-pepper' characteristics representing the low signal intensity of vascular flow[12]. Schwannomas are macroscopically usually bordered and encapsulated. Histopathologically, five schwannoma variants have been described: common schwannomas, plexiform schwannomas, cellular schwannomas, epithelioid schwannomas, and ancient schwannoma[15]. There are two different histological patterns of common schwannoma: known as Antoni type A and type B. Antoni type A tissue is characterized by dense Schwann cells with nuclear palisades, whereas Antoni type B tissue has loosely arranged cellular pleomorphism. Vascularity is not a prominent feature, and necrosis and mitotic activity are rare. In type A, cells are sometimes arranged in a palisade-like arrangement with nuclei next to each other in strips and cytoplasm in adjacent strips, a pattern known as "Verocay bodies."[16].

Conclusion

Schwannoma located in the oropharynx is extremely rare causing a progressive difficulty of swallowing. The diagnosis is based on MRI and histological studies. The treatment of the choice is surgical excision with a less frequently recurrence after complete excision.

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