

Oropharyngeal epidermoid cyst – A malignancy masquerade

Grace Zhang ¹, Raisa Tikhtman ², Dustin A. Silverman ²

ABSTRACT

Adult oropharyngeal masses are typically considered malignant until proven otherwise. While rare, a broad range of benign masses may also arise within the oropharynx. Herein, we report a rare case of a tonsillar epidermoid cyst in an adult patient, initially concerning for malignancy.

A 70-year-old male with multiple medical comorbidities including tobacco use, atrial fibrillation, and coronary artery disease was admitted for acute ischemic stroke. Subsequent imaging revealed an incidental 2.0 x 1.5 cm pedunculated right oropharyngeal mass concerning for malignancy.

Operative evaluation demonstrated a cystic mass arising from the right palatine tonsil. Diagnostic right palatine tonsillectomy with complete excision of the mass was performed. Histopathologic analysis revealed a 2.0 cm benign squamous-lined cyst containing keratinaceous debris consistent with a benign epidermoid cyst.

Benign oropharyngeal cysts are rare in adults and are typically considered malignant until proven otherwise. We present a report of an epidermoid palatine tonsillar cyst in an older patient with history of chronic tobacco abuse initially highly concerning for oropharyngeal squamous cell carcinoma. The importance of tonsillectomy for both diagnostic and therapeutic purposes is highlighted; considerations in surgical technique for similar oral cavity and oropharyngeal epidermoid cysts is also provided.

Keywords: dysphagia; epidermoid cyst; head and neck cancer; oropharynx; tonsillectomy

INTRODUCTION

Epidermoid cysts, also known as epidermal inclusion cysts, are benign lesions arising from the entrapment of keratinized epithelium within deeper tissues. Characterized by a lining of simple squamous epithelium encasing cystic spaces, these lesions commonly present as cutaneous lesions on the torso and scalp and less frequently in deeper tissues. Notably, only 7% of epidermoid and dermoid cysts arise in the head and neck¹. Within this region, the most common sub-sites for epidermoid cysts include the scalp, face, neck, and ears. These cysts are exceptionally rare in the oral cavity, accounting for only 1.6% of head and neck epidermoid cysts and 0.01% of all oral cysts².

The workup of epidermoid cysts, as well as for other head and neck masses, involves a thorough combination of clinical examination and imaging modalities. Initial assessment includes a detailed physical examination focused on the evaluation of the size, location, and characteristics of the mass. Imaging modalities such as ultrasound, computed tomography (CT), or magnetic resonance imaging (MRI) may be employed to further delineate the lesion's extent and relationship to surrounding neurovascular structures^{3,4}. Definitive diagnosis is achieved through histopathological analysis and complete

Department and Institution Affiliation: ¹University of Cincinnati College of Medicine, Cincinnati, OH, USA, ²University of Cincinnati Medical Center – Department of Otolaryngology, Head & Neck Surgery, Cincinnati, OH, USA.

Corresponding author: Dustin A. Silverman, University of Cincinnati Medical Center – Department of Otolaryngology, Head & Neck Surgery, Cincinnati, OH, USA Email: silverdt@ucmail.uc.edu

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resection of superficial, easily accessible lesions⁴.

Epidemiologically, squamous cell carcinoma is the most common malignancy identified in the oropharynx, largely attributed to risk factors such as tobacco use, alcohol consumption, and more recently, human papillomavirus (HPV) infection^{5,6}. Adult oropharyngeal masses are generally presumed to be malignant until proven otherwise due to the high incidence of head and neck cancers in this region^{4,5}. However, it is crucial to recognize that a variety of benign lesions may

also manifest within the oropharynx and may often mimic the presentation of more ominous pathologies. Herein, we present the case of a patient with significant tobacco abuse history presenting with an incidental palatine tonsillar mass, ultimately diagnosed as an epidermoid cyst. The importance of palatine tonsillectomy for both diagnostic and therapeutic purposes is highlighted; considerations in surgical technique for similar oral cavity and oropharyngeal epidermoid cysts is also provided.

CASE PRESENTATION

A 70-year-old male with multiple medical comorbidities including significant 25 pack-year smoking use, atrial fibrillation, and coronary artery disease presented to our tertiary care institution with acute left facial weakness. CT imaging of the head revealed an acute ischemic stroke. Additional contrast-enhanced CT imaging of the neck further demonstrated an incidental 2.0 x 1.5 cm pedunculated and well-circumscribed

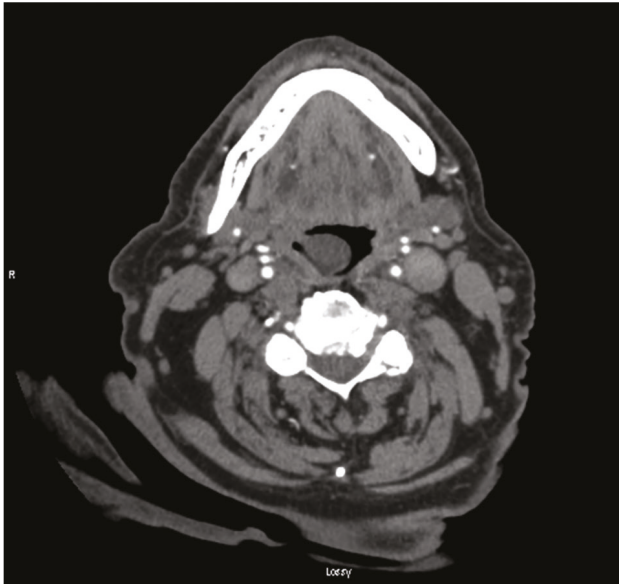


Figure 1: Contrast-enhanced computed tomography axial image demonstrating a pedunculated soft tissue mass projecting from the right oropharynx measuring 2.0 x 1.5 cm.



Figure 2: A 2.5 cm yellow, non-inflamed cystic mass with a thin stalk emanating from the right palatine tonsil

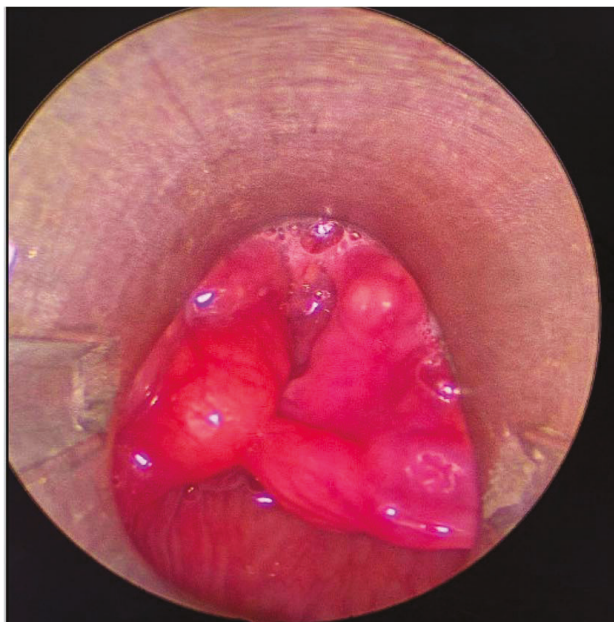


Figure 3: Flexible laryngoscopy demonstrating a cystic mass with a thin stalk in the right oropharynx arising from the palatine tonsil.



Figure 4: Postoperative surgical specimen. During diagnostic palatine tonsillectomy, a cystic mass tonsillar mass with keratinized debris was appreciated. Histopathology confirmed a 2.0 cm tonsillar epidermoid cyst with squamous lining and keratinaceous content, without evidence of malignancy.

oropharyngeal mass emanating from the right oropharynx and palatine tonsil (Figure 1). The patient was subsequently admitted and treated with tenecteplase and endovascular thrombolysis leading to cerebral reperfusion. During his admission, Otolaryngology was consulted for evaluation of the oropharyngeal mass and tonsillar asymmetry. On initial evaluation, the patient was breathing comfortably on room air without stridor or stertor. He endorsed mild dysphagia but denied additional symptoms including dyspnea, odynophagia, or dysphonia. There was an absence of constitutional symptoms such as fevers, weight loss, or chills. On exam, a 2.5 cm yellow, non-inflamed cystic mass with a thin stalk arising from the right palatine tonsil was observed (Figure 2); no cervical lymphadenopathy was appreciated. Flexible laryngoscopy was reassuring against other upper aerodigestive masses (Figure 3).

After medical optimization and stroke treatment, the patient was taken to the operating room for an upper airway evaluation and diagnostic resection of the oropharyngeal mass. Under rigid endoscopic visualization, the pedunculated oropharyngeal mass was observed to be pedicled at the mid to superior pole of the right palatine tonsil. A diagnostic right tonsillectomy was performed with completed resection of the oropharyngeal mass. Histopathologic analysis demonstrated benign tonsillar tissue with a 2.0 cm benign squamous-lined cyst containing keratinaceous debris, consistent with an epidermoid cyst (Figure 4). There was no evidence of dysplasia or malignancy. At the patient's most recent follow-up appointment 6 months following hospital discharge, he reported a full recovery with return to normal neurovascular baseline, was tolerating normal oral diet, and without signs of oropharyngeal asymmetry or recurrence.

DISCUSSION

Our case is particularly noteworthy given the rarity of tonsillar epidermoid cysts and highlights the unique challenge in accurate differentiation between a benign oropharyngeal mass presenting as concerning for malignancy. Epidermoid cysts in the head and neck region are thought to embryologically arise from ectodermal cells that are entrapped along lines of fusion during the closure of neural tube and branchial clefts, forming cysts^{7,8}. Additionally, incomplete obliteration of the second or third branchial derivatives may result in cysts tracking to the upper aerodigestive tract^{9,10,11}. Thyroglossal duct remnants may also evolve into epidermoid cysts⁷. As these remnants proliferate and become lined with squamous epithelium, keratinous material fills the hallowed space, characteristic of epidermoid cysts along mucosal surfaces¹⁰. Given their congenital origins, benign oropharyngeal masses are more commonly encountered in pediatric populations⁸. Compared to other benign etiologies, the current patient's smoking history and tonsillar asymmetry with large, cystic mass raised the concern for oropharyngeal malignancy.

Reports of epidermoid cysts occurring within the upper aerodigestive tract and oropharynx are limited. Erol et al. and Bouatay et al. separately described a similar case of an epidermoid cyst localized to the palatine tonsil with extension into

the nasopharynx and role of cross-sectional imaging and histopathologic analysis following diagnostic tonsillectomy to exclude malignancy in the event of asymmetric tonsillar hypertrophy^{12,13}. Notably, reports of squamous cell carcinoma arising from chronically untreated epidermoid cysts have been described; however, to the authors' knowledge, none have been documented to occur in the presence of a known intratonsillar epidermoid cyst¹⁴. Our case differs from those previously reported given the degree of tonsillar asymmetry and high concern for oropharyngeal malignancy with multiple risk factors including significant tobacco abuse. Further, HPV has emerged as a significant pathogenic risk factor for the development of oropharyngeal squamous cell carcinoma, particularly among younger patients without a history of smoking or alcohol use¹⁵. Importantly, there exists overlap in presentation between HPV-mediated oropharyngeal carcinoma and those driven by tobacco use in older patients, and again underscores the need to maintain a high index of suspicion as evidenced in the current case.

More commonly, epidermoid cysts may be localized to the oral cavity and involve buccal, floor of mouth, and sublingual subsites^{4,5}. Ozan et al. reported a cystic floor of mouth mass in a 25-year-old male preoperatively diagnosed as an epidermoid cyst following needle aspiration; cyst fluid revealed keratin-containing debris, and the cyst did not recur following transoral excision². Likewise, Sejati et al. described an epidermoid cyst in the sublingual space of an adolescent male patient who presented with dysphagia, dyspnea, and difficulty speaking; he also underwent transoral resection without recurrence.¹¹ The management of epidermoid cysts generally entails surgical excision, especially when the cysts are symptomatic, increasing in size, or located in areas where they may cause functional impairment or cosmetic concerns¹⁶. In the current case, transoral palatine tonsillectomy was both curative and diagnostic, with low risk of subsequent recurrence⁸.

In the setting of larger oral cavity epidermoid cysts, a combined trans- and extraoral approach may ultimately be required when such lesions extend deep to the geniohyoid muscle of the tongue^{2,17}. Following resection of cystic masses of the oral cavity and oropharynx, significant edema may result in airway obstruction; thus, surgeons must carefully consider appropriate airway management and role of elective tracheostomy or delayed extubation until edema is fully resolved¹⁸. Nonetheless, in patients with a significant smoking history and longstanding, large oropharyngeal mass, comprehensive workup, biopsy, and diagnostic tonsillectomy is required to assess for the presence of malignancy.

CONCLUSION

Tonsillar epidermoid cysts are rare and present a diagnostic challenge for surgeons in the era of HPV-mediated oropharyngeal malignancy. This case highlights the need to maintain a broad differential diagnosis when evaluating upper aerodigestive masses and highlights the diagnostic and therapeutic role of tonsillectomy in ruling out potentially malignant disease.



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