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(CASE REPORT)

# Pleomorphic adenoma of the palatine tonsil: A rare case report and review of the literature

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## Abstract

Pleomorphic adenoma is the most common benign neoplasm of the salivary glands, accounting for approximately 60–70% of all salivary gland tumors. Although it most commonly arises within the parotid gland, it may occasionally involve the minor salivary glands of the upper aerodigestive tract. Localization to the palatine tonsil is exceptionally rare, with only a limited number of cases reported in the literature. We report the case of a 48-year-old woman who presented with chronic odynophagia and a sensation of a pharyngeal foreign body evolving over one year. Clinical examination disclosed an asymmetric bilateral tonsillar hypertrophy, predominantly on the right side, without overlying mucosal alteration. Magnetic resonance imaging demonstrated two heterogeneous oropharyngeal masses showing high signal intensity on T2-weighted sequences and heterogeneous enhancement after gadolinium injection, features suggestive of pleomorphic adenoma. The patient underwent bilateral tonsillectomy by cold dissection with bipolar hemostasis under general anesthesia, with uneventful postoperative recovery. Histopathological examination confirmed the diagnosis of pleomorphic adenoma of the tonsil, composed of epithelial and myoepithelial cells embedded in a hyalinized and myxoid stroma, without signs of malignancy. No recurrence was observed on long-term follow-up. Through this case, we review the clinical, radiological, and histopathological features of tonsillar pleomorphic adenoma, and we emphasize the importance of complete surgical excision and sustained long-term surveillance given the risk of local recurrence and late malignant transformation.

**Keywords:** Pleomorphic Adenoma; Palatine Tonsil; Minor Salivary Gland; Benign Mixed Tumor; Tonsillectomy; Carcinoma Ex Pleomorphic Adenoma

## 1. Introduction

Salivary gland neoplasms represent a relatively uncommon yet morphologically diverse group of lesions, accounting for less than 3% of all head and neck tumors [1,2]. Among them, pleomorphic adenoma (PA), also designated as benign mixed tumor, is by far the most frequent, representing roughly 60–70% of all benign salivary gland neoplasms and up to 80% of benign parotid tumors [3,4]. The term “pleomorphic” reflects the characteristic histological heterogeneity of the tumor, which arises from both epithelial and myoepithelial elements embedded in a variable stromal matrix [4].

The vast majority of pleomorphic adenomas arise within the major salivary glands, with the parotid being the most frequently involved site, followed by the submandibular and, rarely, the sublingual gland [1,3]. When a pleomorphic adenoma arises from the minor salivary glands, the palate is by far the most common location, accounting for up to 70–75% of intraoral cases [2,5]. Other intraoral sites, such as the upper lip, buccal mucosa, floor of the mouth, tongue, and

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retromolar trigone, are less commonly affected [2,6]. Involvement of the palatine tonsil is exceptionally uncommon and is reported only sporadically in the literature [6,7].

Because of its indolent growth and intrinsic location within the lymphoid tissue of the oropharynx, a tonsillar pleomorphic adenoma can remain asymptomatic for long periods, often mimicking chronic tonsillitis or asymmetric tonsillar hypertrophy. As a result, diagnosis is frequently delayed, and the lesion is sometimes discovered incidentally during routine clinical examination [8]. We report a rare case of pleomorphic adenoma arising in the palatine tonsil of a 48-year-old woman treated by bilateral tonsillectomy, and we review the current literature concerning its clinical presentation, imaging features, histopathology, management, and prognosis.

## 2. Case Presentation

### 2.1. Clinical Presentation

A 48-year-old woman, with no significant past medical or surgical history and no known environmental or occupational exposure, presented to the Otorhinolaryngology emergency department for chronic odynophagia associated with a persistent sensation of a pharyngeal foreign body that had been evolving over approximately one year. She did not complain of dysphagia, dysphonia, dyspnea, hemoptysis, or referred otalgia, and she did not report snoring or sleep-disordered breathing. Her general state was preserved, with no weight loss, night sweats, or fever.

On oral cavity examination, a bilateral tonsillar hypertrophy was noted, more pronounced on the right side and non-obstructive. The overlying mucosa was intact, without ulceration, whitish exudate, or visible crypts, and the masses were submucosal in appearance. There was no trismus. Palpation of the neck did not reveal any cervical or submandibular lymphadenopathy. Nasal endoscopy and a complete otorhinolaryngological examination were unremarkable.

A nasofibroscopy was performed to rule out extension to the base of the tongue and to assess the larynx. It confirmed that the mass was confined to the tonsillar fossa without extension to the lingual tonsil or the lateral pharyngeal wall. The larynx appeared normal in shape and color, with a free glottic plane and vocal cords of normal appearance and mobility.

### 2.2. Imaging Findings

Magnetic resonance imaging (MRI) of the neck with and without gadolinium injection revealed two lesional processes centered on the tonsillar regions. The lesions were heterogeneous in signal intensity, displaying high signal on T2-weighted images, iso-signal on T1-weighted images, and hyperintensity on diffusion sequences, with intense and heterogeneous enhancement after contrast administration. The right-sided lesion was the most voluminous, measuring 42 × 35 × 35 mm.

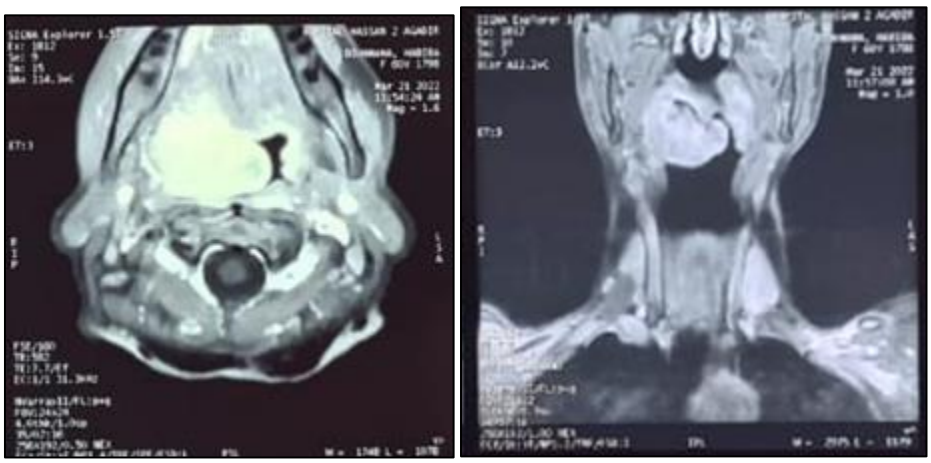

**Figure 1** MRI with axial (left) and coronal (right) images showing a hyperintense tumor of the right tonsil

The right lesion extended anteriorly toward the floor of the mouth, posteriorly to the prevertebral musculature, medially to the uvula and the homolateral vallecula, laterally respecting the medial pterygoid muscle, and inferiorly down to the proximal supraglottic region. The overall imaging pattern — namely, a well-circumscribed, lobulated mass with marked T2 hyperintensity and heterogeneous enhancement — was highly suggestive of a pleomorphic adenoma [9]. There were no features suggestive of deep tissue infiltration, bone invasion, or pathological cervical lymphadenopathy, arguing against malignancy.

### 2.3. Surgical Management

After multidisciplinary discussion and informed consent, the patient was scheduled for surgery. She underwent bilateral tonsillectomy under general anesthesia, performed by cold dissection with bipolar hemostasis. The intervention was uneventful. Intraoperatively, both tonsillar specimens were grossly enlarged; the right tonsil showed a well-demarcated, firm, rubbery submucosal mass suggestive of a benign neoplastic process. No adherence to adjacent structures was noted. Both specimens were sent in their entirety for histopathological analysis.

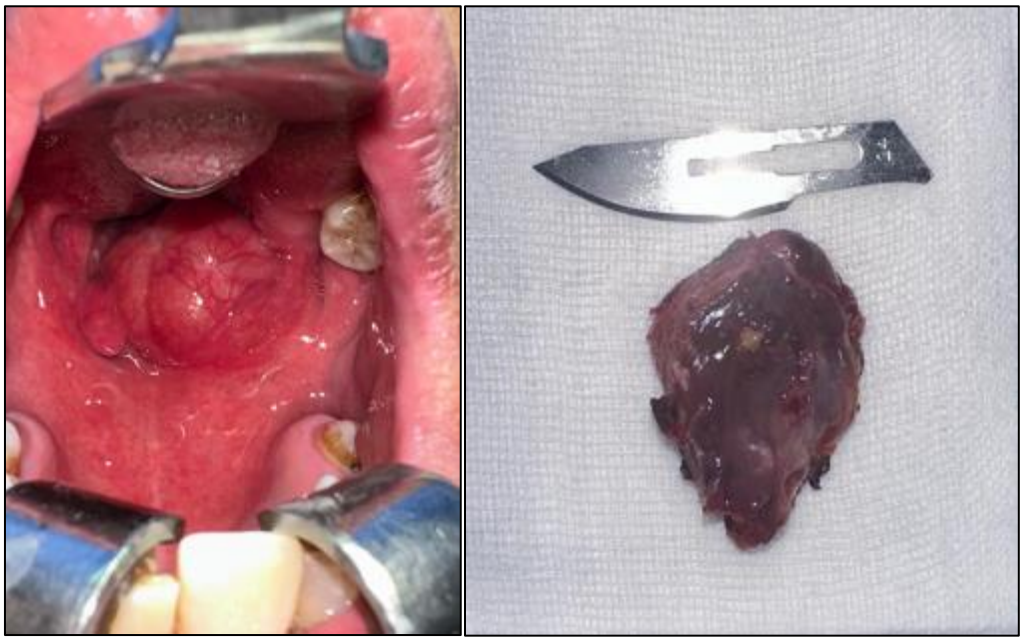

**Figure 2** Oral cavity examination showing a notable right tonsil hypertrophy (left), surgical excision piece (right)

The immediate postoperative course and short-term follow-up were uncomplicated. The patient experienced the expected post-tonsillectomy pain, which was managed with standard analgesics, and resumed normal oral intake within the usual time frame. No postoperative hemorrhage, airway compromise, or infection occurred.

### 2.4. Histopathological Findings

Microscopic examination of the surgical specimen revealed tonsillar mucosa with focally hyperplastic malpighian epithelium. Underneath the mucosa, the chorion harbored a benign proliferative process with a remodeled stroma of hyaline and myxoid character. The cellular component was composed of regular epithelial and myoepithelial cells arranged in cords, duct-like structures, and small sheets, without nuclear atypia, mitotic activity, necrosis, or infiltrative growth. No features of malignancy or of a specific aggressive subtype were identified. Taken together, these findings were consistent with a pleomorphic adenoma arising in the palatine tonsil. The surgical margins were free of tumor.

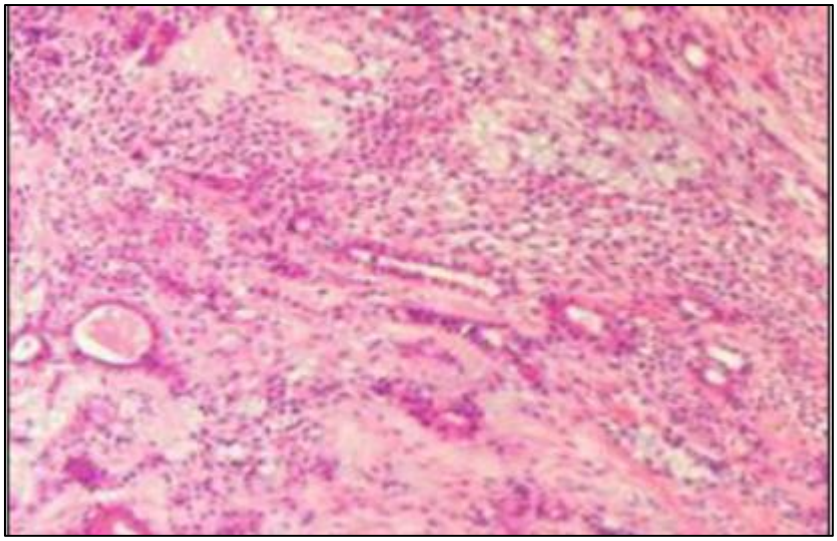

**Figure 3** Tumor with epithelial and myoepithelial cells, without nuclear atypia (magnification X 100, Hematein Eosin stain)

### 2.5. Follow-up

Given the known propensity of pleomorphic adenoma for local recurrence and, although rare, for late malignant transformation, the patient was included in a long-term follow-up program. Clinical examination and nasofibroscopy were performed every six months during the first two years, then annually. Long-term follow-up has not, to date, shown any clinical or radiological sign of recurrence or complication.

## 3. Discussion

Pleomorphic adenoma is the most common salivary gland tumor, representing 60–80% of all salivary gland neoplasms [3,4]. Approximately 80–85% arise in the major salivary glands, predominantly the parotid, while 10–15% originate from minor salivary glands of the upper aerodigestive tract [3,5]. Within intraoral sites, the palate is by far the most frequent location (70–75%), followed by the upper lip and buccal mucosa; the palatine tonsil remains an exceptionally rare site [2,5,6]. The tumor has a female predilection (approximately 2:1) and typically affects patients in the fourth to sixth decades of life [3,4,10]. Our patient, a 48-year-old woman, fits this demographic profile.

The etiology of pleomorphic adenoma remains incompletely understood. Ionizing radiation is the best-established risk factor, with latency periods of 15–30 years [4]. At the molecular level, recurrent chromosomal rearrangements involving PLAG1 (8q12) and HMGA2 (12q14-15) are characteristic and may serve as ancillary diagnostic markers [12,13]. Additional alterations such as TP53 mutations and HER2 overexpression have been implicated in malignant transformation to carcinoma ex pleomorphic adenoma [12,14].

Pleomorphic adenoma of the oral cavity and oropharynx typically presents as a painless, slow-growing submucosal mass with intact overlying mucosa [5,15]. Patients often consult late, when mechanical symptoms — dysphagia, foreign-body sensation, snoring, or dysphonia — develop [15,16]. Tonsillar pleomorphic adenoma classically manifests as unilateral, asymmetric tonsillar hypertrophy without ulceration, frequently mistaken for chronic tonsillitis or, more worryingly, for lymphoma or squamous cell carcinoma [6]. Our patient's chronic odynophagia and foreign-body sensation over one year are consistent with this indolent pattern.

MRI is the investigation of choice for tonsillar tumors. Pleomorphic adenoma typically appears as a well-circumscribed mass with low T1 and high T2 signal intensity, reflecting its myxoid and chondroid stroma, with intense post-gadolinium enhancement [9,17]. High apparent diffusion coefficient values on diffusion-weighted imaging support a benign nature. Irregular margins, perilesional fat infiltration, and suspicious lymph nodes should raise concern for malignancy [9,17]. Our patient's MRI findings — heterogeneous T2 hypersignal, iso-T1 signal, heterogeneous enhancement, and absence of invasion or adenopathy — were consistent with a benign pleomorphic adenoma.

The definitive diagnosis rests on histopathology, which demonstrates a characteristic triphasic pattern: epithelial cells, myoepithelial cells, and a variable mesenchymal stroma (myxoid, chondroid, or hyaline) [4,18]. The morphological

diversity of pleomorphic adenoma may lead to confusion with other salivary neoplasms, including adenoid cystic carcinoma and mucoepidermoid carcinoma. In intraoral sites, the capsule is often thin or incomplete, with pseudopod-like extensions explaining the high recurrence risk after incomplete excision [4,19]. Immunohistochemistry for epithelial and myoepithelial markers helps confirm the biphasic nature. In our case, histopathology showed regular epithelial and myoepithelial cells in a hyalinized and myxoid stroma without atypia or invasion, confirming a benign pleomorphic adenoma.

The main differential diagnoses of a unilateral tonsillar mass include chronic tonsillitis, lymphoid hyperplasia, non-Hodgkin lymphoma, squamous cell carcinoma, and other minor salivary gland tumors [20,21]. In our patient, the absence of ulceration, slow evolution, lack of cervical adenopathy, and typical MRI pattern collectively favored a benign minor salivary gland tumor.

Treatment relies on complete surgical excision with clear margins; simple enucleation should be avoided due to recurrence rates of 15–45%, compared with less than 2–5% after formal resection [22,23]. For tonsillar pleomorphic adenoma, tonsillectomy provides complete oncological excision with minimal morbidity. Intraoperative tumor rupture must be prevented to avoid microscopic seeding [19]. Radiotherapy is reserved for incompletely resected or recurrent tumors in non-operable patients [22].

The prognosis is favorable after complete excision, with recurrence rates of 1–5% [22,23]. Malignant transformation to carcinoma ex pleomorphic adenoma is a recognized long-term risk, estimated at approximately 1.5% at 5 years and up to 20–25% after 20 years of evolution [4,14,24]. Warning signs include rapid enlargement, new-onset pain, nerve paralysis, and ulceration [4]. Long-term follow-up is therefore mandatory, even after complete excision with benign histology. In our patient, the absence of recurrence signs is reassuring, but continued surveillance is planned.

## 4. Conclusion

Pleomorphic adenoma of the palatine tonsil is a rare entity that often remains undetected for long periods because of its slow and largely asymptomatic evolution. Its diagnosis relies on careful clinical examination, high-resolution cross-sectional imaging — particularly MRI — and definitive histopathological analysis. Complete surgical excision, typically achieved by tonsillectomy, is the mainstay of treatment and is essential to minimize the risk of local recurrence. Although malignant transformation is uncommon, its potential occurrence and the late onset of recurrences justify a prolonged, regular follow-up. Awareness of this rare location is important for otolaryngologists, who should include pleomorphic adenoma in the differential diagnosis of any asymmetric or unilateral tonsillar swelling, even in the absence of alarming clinical features.

## Compliance with ethical standards

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### *Disclosure of conflict of interest*

The authors declare no financial or non-financial conflicts of interest.

### *Statement of informed consent*

Informed consent was obtained from the patient included in this case report.

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