

Pleomorphic Adenoma of the Hard and Soft Palate: A Case Presentation and Literature Review of Minor Salivary Gland Neoplasms

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Abstract

Introduction: Minor salivary gland tumors are relatively rare, but have a higher chance of malignancy than major salivary gland tumors. The palate appears to be the most commonly involved site. The most frequent benign tumor is the pleomorphic adenoma. **Case report:** We report a case of a pleomorphic adenoma, which occurred in the hard and soft palate of a 34-year-old female and presented as an asymptomatic slow growing, painless mass. The patient was successfully treated with surgical excision. **Discussion:** Minor salivary gland tumors should be considered in the differential diagnosis of oral cavity and especially palate tumors. A histological examination is necessary due to the high percentage of malignancy.

Keywords

Minor Salivary Glands, Palate Tumor, Intraoral Tumors, Pleomorphic Adenoma

1. Introduction

The minor salivary glands are widely dispersed throughout the upper respiratory tract, including the palate, lip, pharynx, nasopharynx, larynx, parapharyngeal space and sinonasal cavities. The greatest densities of glands are found in the hard and soft palates, while they are not present in the gingival or the midline and anterior part of the hard palate [1]. The most common tumor of the palate is the pleomorphic adenoma, accounting for approximately 40% - 52% of all palatal minor salivary gland tumors [2]-[4].

In our case presentation, we aim to summarize the incidence and clinical characteristics of minor salivary gland neoplasms (especially the pleomorphic adenomas) and to

alert the medical community to consider these tumors in the differential diagnosis of oral cavity tumors, particularly in the palate.

2. Case Report

A 34-year-old female presented with a 4-week-history of mouth dryness and painless swelling at the hard and soft palate. Clinical examination revealed a firm, nodular, non-tender, 1 cm large mass. There were no other neck masses. The patient denied tobacco or alcohol consumption; the medical, surgical and family history was unremarkable. A magnetic resonance imaging (MRI) scan of the head and neck revealed a 1 cm mixed hyper-and hypo attenuated irregular lesion (**Figure 1** and **Figure 2**). A contrast-enhanced computed tomography (CT) demonstrated an inhomogeneously enhanced mass and excluded a possible bone erosion. The tumor was surgically removed in its entity. The gross examination of the surgical specimen revealed a 1 cm, encapsulated, partly solid, partly papillary epithelial tumor with a pseudo-capsule.

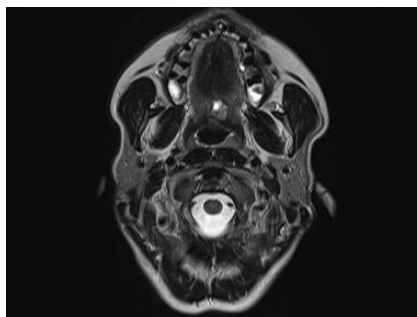


Figure 1. T2-weighted MRI in transversal plane showing the well demarcated, mixed hyperintense and hypointense lesion of the palate.



Figure 2. T2-weighted MRI in sagittal plane revealing a mass confined to the palate. Fibrous capsules appearing as hypointense on T2-weighted images are characteristic of pleomorphic adenoma.

3. Discussion

The minor salivary glands account for 22% of all salivary gland neoplasms [5]. Unlike parotid and submandibular salivary gland tumors, tumors originating from the minor salivary glands have a greater chance of malignancy. A retrospective case-series study of 546 minor salivary gland tumors concluded that 56% of minor salivary gland tumors were benign, and 44% were malignant [2]. These results are consistent with other studies, which showed that 57.5% of intraoral minor salivary gland tumors were benign and 42.5% were classified as malignant or potentially malignant [4]. Concerning localization, the oral cavity is the most frequent site of minor salivary gland cancer, primarily appearing in the hard and soft palate, the lips and the buccal mucosa. 55% of the tumors occur in the palate-mainly at the junction between the hard and soft palate-and 15% occur in the lips. More specifically, regarding palate tumors, a case-series study showed that these tumors are mainly benign (67% benign, 37% malignant). In addition, the upper lip is more frequently involved than the lower lip. The remaining tumors are distributed about equally among the other glands in the tongue, floor of the mouth, retromolar region, buccal mucosa and peritonsillar area [6].

The most common benign and malignant tumors of the minor salivary glands are presented in **Table 1**. Pleomorphic adenoma is the most common salivary gland tumor and accounts for about 60% of all salivary neoplasms [7]. About 80% of pleomorphic adenomas arise in the parotid, 10% in the submandibular gland and 10% in the minor salivary glands of the oral cavity, nasal cavity and paranasal sinuses, and the upper respiratory and alimentary tracts [8]. The reported annual incidence is 2.4 - 4.29 per 100,000 people [7]. There is a slight female predominance [4]. In the minor salivary glands, the incidence of pleomorphic adenoma ranges from 33% - 70% of all tumors [4] [9].

MRI with contrast agent is the diagnostic modality of choice for the imaging of palate tumors, as it allows for a determination of the extent and nature of the lesion and local spread of the tumor. On MRI-images, the borders of parotid and submandibular gland lesions often show lobulation, while those of palatal lesions are usually smooth [10]. A CT-scan (CT) can exclude a bone erosion [11]. In our case, MRI was primarily used to determine size and, more importantly, infiltration of the lesion into the surrounding tissues. We found the lesion to be a 1 × 1 cm soft tissue dense mass, not involving adjacent tissues.

Table 1. The Commonest histological types of minor salivary gland tumors.

The Commonest minor salivary gland tumors	
Benign	Malignant
Pleomorphic adenoma	Mucoepidermoid carcinoma
Canalicular adenoma	Adenoid cystic carcinoma
Papillary cystadenoma	Polymorphous low-grade adenocarcinoma
Ductal cystadenoma	Acinic cell adenocarcinoma
Sialadenoma papilliferum	Adenocarcinoma NOS (not otherwise specified)

Histologically, pleomorphic adenomas display great diversity of morphologic features and growth patterns. They usually contain a capsule (which may be in some cases poorly developed or absent), as well as epithelial and mesenchymal (myoepithelial) components (**Figure 3**). The epithelial component varies in cell types and usually forms sheets or duct-like structures. This presence of ducts or duct-like structures is the reason why the pleomorphic adenomas are called adenomas [12].

The differential diagnosis includes palatal abscess, odontogenic and non-odontogenic cyst, fibroma, lipoma, neurofibroma, neurilemmoma, condyloma acuminata, oral papilloma and squamous cell carcinoma [13]. Indicators for malignancy include the erosion of the overlying mucosa, bleeding or pain. The benign growth-like torus palatinus will be bony hard on palpation with an irregular appearance [13]. The soft tissue benign tumor can be differentiated through cytological/histopathological investigation like Fine-Needle-Aspiration Cytology or incisional biopsy.

Surgical excision is the treatment of choice and should be performed, since a rate of 1.9% - 23.3% of malignant transformation is described in the literature [14]. Recurrences are rare in the minor salivary glands [15]. The primary goal of the surgical excision should be the complete removal of the tumor. We performed a complete excision of the tumor and overlying mucosa, and the surgical wound was closed with the advancement of adjacent mucosa. This produced an excellent result. The excised region can also be left to heal by secondary intention. Follow-up examinations are essential to quickly detect local recurrence. In our case, no recurrence has been noted after a period of 6 months.

4. Conclusion

In summary, this case demonstrates a case of pleomorphic adenoma occurring in a young female. Neoplasms in the minor salivary glands are relatively rare, but pleomorphic adenoma is the most common type of tumor. The treatment goal is the surgical excision of the tumor, considering the relative high rate of malignant transformation. Follow-up examinations are recommended in order to detect recurrences early.

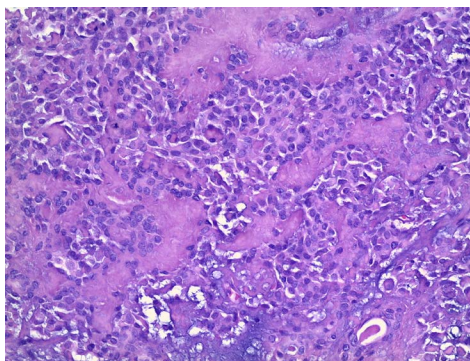


Figure 3. Epithelial cells forming sheets, among them hyalinized bulks can be seen (hematoxylin and eosin, magnification 10 × 20).

Ethical Approval

This article does not contain any experimental studies with human participants or animals performed by any of the authors.

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Financial Disclosure

There are no financial relationships that could be broadly relevant to the work.

Conflict of Interest

The authors have no conflicts of interest to disclose.

Informed Consent

Informed consent was obtained from all individual participants included in the study. No identifying information about participants is available in the article.

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