



Pleomorphic Adenoma of the Palate: A Case Report

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Abstract

Introduction: Pleomorphic Adenoma (PA) is the most common benign neoplasm of major and minor salivary glands. The aim of this paper is to report a case of PA of the palate treated successfully by surgical excision. **Case report:** A 34-year-old man exhibited a firm swelling on the right hard palate evolving over eight years. After confirming the diagnosis of Pleomorphic Adenoma (PA) through biopsy and histological analysis, a complete surgical excision of the tumor was undertaken. **Discussion:** This benign tumor is mostly seen in adult patients. The most common symptom is a slow-growing, painless submucosal mass on the hard palate. Definitive diagnosis lies in the histopathological examination, and treatment is by surgical excision with wide margins. Excellent results are seen after surgery, as recurrences are uncommon. **Conclusion:** This case report emphasizes the need for awareness of PA's presentation, which could significantly influence the outcome. Therefore, the histopathological diagnosis is crucial before any definitive treatment.

Subject Areas

Dentistry, Diagnostics, Surgery & Surgical Specialties

Keywords

Adenoma, Pleomorphic, Pathology, Surgery, Salivary Glandes, Neoplasms, Benign, Malignant

1. Introduction

Pleomorphic adenoma, affecting both the major and minor salivary glands, is the most common benign tumor of the salivary glands. The tumor was first termed by Willis. It derives its name from its pleomorphism, which refers to the architec-

tural diversity visible under light microscopy [1]. It's classified by the World Health Organization as an independent entity among the salivary gland neoplasms [2]. It occurs in most cases in the parotid gland. However, it can also have extra-parotid localizations, such as in minor salivary glands which concerns more dentists. [1] Which is why, knowing and recognizing its symptoms and how to act toward it is crucial. In this paper, we aim to present a case report of a pleomorphic adenoma of the palatal salivary glands, and to discuss the necessary approaches and concerns toward this tumor.

2. Case Report

We report the case of a 34-year-old man, received consultation from the Oral Surgery Department of the Dental Consultation and Treatment Center of Casablanca, complaining of an oral painless swelling on the palate, which was causing functional discomfort during phonation, swallowing, and chewing, and that had been evolving for 8 years. The patient was a non-smoker and had no underlying disease.

The extraoral examination was unremarkable without the detection of cervical-facial lymphadenopathy. The intraoral examination revealed an extended mass all over the right half of the palate and over the median raphe of the palate, painless, non-indurated, sessile and covered with normal mucosa, extending from the upper second right premolar to the upper second right molar. The upper first right molar was necrotic and filled with amalgam, and the second molar was vital and filled with composite. (Figure 1)

A preoperative Cone Beam Computed Tomography (CBCT) was carried out to show the true extent of the lesion and the relationship with anatomical structures. The CBCT axial and sagittal sections were suggestive of a well-defined homogeneously enhancing lesion in the right half of the palate without invasion of the adjacent structures or bone destruction (Figure 2, Figure 3).

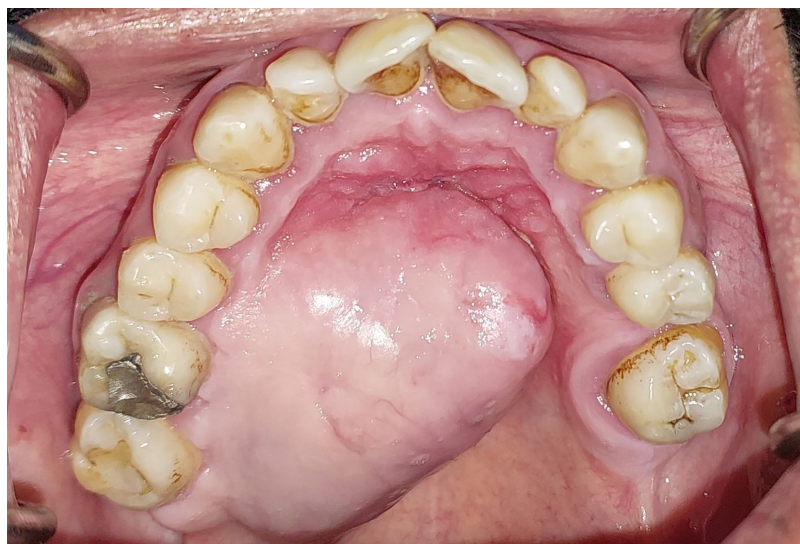


Figure 1. Intraoral examination showing a palatal swelling.

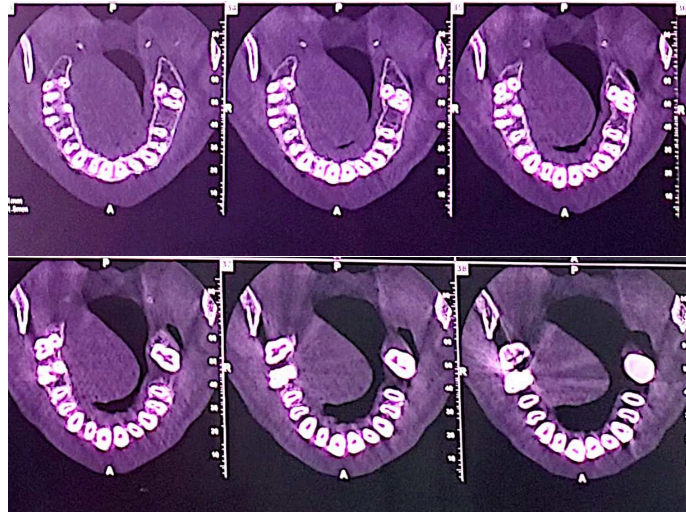


Figure 2. Preoperative CBCT axial sections showing a well-defined homogeneous palatal lesion with no bone destruction.



Figure 3. Preoperative CBCT sagittal sections showing a well-defined homogeneous palatal lesion with no bone destruction.

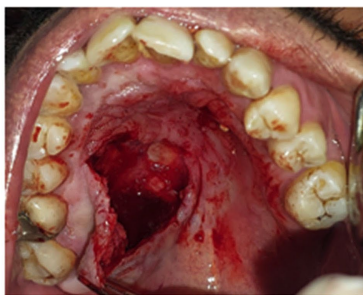
Differential diagnosis of the lesion included: pleomorphic adenoma of the palatal minor salivary glands, lymphoma of the salivary glands, adenoid cystic carcinoma, and other salivary gland tumors. Lymphoma was considered due to the long-standing evolution of the swelling and its soft, non-ulcerated presentation, although the absence of lymphadenopathy made it less likely. Adenoid cystic carcinoma was included because it commonly arises from minor salivary glands of the palate and may initially present as a slow-growing mass, despite its typical association with pain or perineural invasion, which were not observed in our case. Pleomorphic adenoma remained the leading hypothesis given the well-circumscribed, painless, and very slow-growing nature of the lesion with absence of lymphadenopathy.

To confirm our diagnosis and for the huge size of the mass, before proceeding with the complete surgical excision, we began with a biopsy and histopathological examination which confirmed the diagnosis of a pleomorphic adenoma (**Figure 4**).

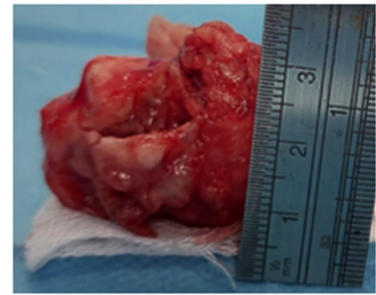


Figure 4. Intraoperative photograph of the biopsy of the mass.

After confirming the diagnosis of pleomorphic adenoma of the palate, we proceeded with the complete surgical excision of the mass under local anesthesia (**Figure 5**).



Surgical removal of the entire lump under local anesthesia



Macroscopic aspect of the surgical specimen



Simple continuous sutures

Figure 5. Surgical management of the pleomorphic adenoma.

We could maintain the follow-up of the patient for 2 weeks after the surgery (**Figure 6**), but once the patient stopped having functional issues related to the pleomorphic adenoma, he stopped showing up to his follow-up appointments.



Figure 6. 2 weeks follow-up.

3. Discussion

Pleomorphic Adenomas (PA) are the most common benign tumors of the salivary glands. While they primarily originate in the major salivary glands, they can also develop in the minor salivary glands [3].

Pleomorphic adenoma accounts for approximately 60% of oral salivary tumors. It primarily appears in individuals aged from 30 to 60 years, with a higher incidence in women. The most common location for this tumor is the parotid gland, followed by the submandibular salivary glands and the accessory salivary glands, particularly in the palate. The high frequency of palatal tumors is due to the richness of the palatal submucosa in accessory salivary glands, representing 50% of cases [3].

Pleomorphic adenoma is influenced by both hereditary and environmental risk factors. Hereditary factors include a familial component and genetic predisposition, indicating that individuals with a family history of this condition may have a higher likelihood of developing it [3]. Environmental factors also play a significant role, particularly exposure to cervico-facial radiotherapy, commonly administered for treating cancers during childhood [4]. Additionally, infection with simian virus 40 (SV40), a highly oncogenic tumor virus, has been implicated in the development of pleomorphic adenoma [5]. In the present case, the patient's medical history was carefully reviewed, and no exposure to childhood head and neck radiotherapy, SV40 virus infection, or other documented environmental risk factors was identified.

When assessing a pleomorphic adenoma, patient history is crucial. Typically, the patient reports a non-painful swelling that develops slowly and progressively. Functional symptoms depend on the tumor's size; initially, there may be no signs, but as it grows, it can cause functional impairments in chewing, speaking, breathing, and swallowing [6]. Further investigation should include inquiring about harmful habits such as tobacco and alcohol use, as well as any medications taken by the patient, to better guide the diagnosis process [7].

In the clinical examination of pleomorphic adenoma, particularly concerning

the accessory salivary glands, there are typically no external clinical signs. Additionally, there is an absence of any cervical lymphadenopathy, indicating that there are no swollen or enlarged lymph nodes detectable during the examination [3].

As for the intra-oral examination, a well-defined, firm, and painless swelling is typically observed. This swelling is covered by a mucosa that appears normal. Clinical signs may vary depending on the tumor's location and size [6] [7].

For additional examinations, a radiological exam is essential before any intervention. It is recommended to prescribe a CBCT or a CT scan to evaluate the location, size of tumor and extension to the surrounding areas such as bone involvement, which will guide our surgical approach [8].

The diagnosis of a pleomorphic adenoma of the minor salivary glands is considered by correlating the information from the patient's history, clinical examination, and radiological findings. However, there are several differential diagnoses that must not be overlooked, including squamous cell carcinoma, adenoid cystic carcinoma, other salivary gland tumors, lymphoma, odontogenic cysts, non-odontogenic cysts, soft tissue tumors, and palatal or subperiosteal abscesses [9], which underscores the importance of preoperative biopsy followed by histopathological examination. It is recommended for several reasons. First, it is essential to confirm the diagnosis before proceeding with the complete excision of the tumor. Second, it helps to assess the degree of encapsulation, which is crucial for guiding the surgical approach. The tumor may be fully encapsulated, partially covered by a capsule, or entirely lacking a capsule. To minimize the risk of cellular dissemination and damage to the specimen, the biopsy should ideally be taken from the center of the tumor [10]. In our case, the preoperative biopsy confirmed a benign pleomorphic adenoma with no histological signs of invasion or capsular breach, which supported a conservative but complete surgical excision with careful dissection along the presumed capsule.

In terms of the histopathological features of pleomorphic adenoma, the epithelium typically forms sheets or ductal structures with an epithelial layer of myoepithelial cells surrounding an inner layer of large, cuboidal cells. Eosinophilic secretory material is often present in the ducts. Myoepithelial cells can appear transparent, hyaline, spindle-shaped, polygonal, or various other shapes. Occasionally, the tumor is predominantly composed of hyalinized, myxoid/mucoid, or cartilaginous mesenchymal cells. The myoepithelial cells are thought to produce the myxoid, chondroid, and hyalinized stromal components [3].

The appropriate management strategy for pleomorphic adenoma of the palatal minor salivary glands aims to remove the tumor in its entirety by surgical enucleation and removal of the periosteum or involved bone with adequate margins of tumor-free tissue [3] [10].

Regarding the prognosis of pleomorphic adenoma of the salivary glands and its potential for malignant transformation, it has a particularly high probability of transforming into carcinoma ex-pleomorphic adenoma. Recurrence occurs in 3%

of cases after 12.5 years, and of those, 6% exhibit malignant transformation. Recurrences are mainly observed in the accessory salivary glands in 10% of cases, often due to insufficient initial surgery. In rare cases, it can metastasize without undergoing transformation, a condition known as metastasizing pleomorphic adenoma, which remains histologically identical to pleomorphic adenoma. This highlights the crucial importance of regular follow-up [3]. However, although long-term follow-up is essential to detect possible recurrence of pleomorphic adenoma, our patient was unfortunately lost to follow-up two weeks after surgery. This represents a limitation of the present case. Patient non-compliance with scheduled postoperative visits is a well-recognized challenge in clinical practice, particularly for asymptomatic conditions once functional complaints resolve. This limitation highlights the importance of reinforcing patient education regarding the risk of recurrence and the need for prolonged surveillance, even after successful excision.

4. Conclusion

To summarize, pleomorphic adenoma is a benign tumor that carries a risk of malignant transformation, particularly in cases where the initial surgical excision is incomplete. Proper follow-up is essential, along with a thorough preoperative radiological assessment to evaluate the local extent of the tumor and aid in surgical planning. Equally important, an incisional biopsy should be performed prior to definitive excisional surgery to establish the histopathological diagnosis and guide the choice of the most appropriate surgical approach, as was done in the present case. This approach helps to minimize the risk of recurrence and reduces the risk of complications, including malignant transformation.

Conflicts of Interest

The authors declare no conflicts of interest.

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