

Palatal pleomorphic adenoma: A three-case series with diverse
clinical presentations

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Palatal pleomorphic adenoma: A three-case series with diverse clinical presentations

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Abstract

Pleomorphic adenoma (PA) is the most common salivary gland tumour, accounting for more than 70% of all cases, with the parotid gland being most frequently affected, followed by minor salivary glands of the palate. Although typically presenting as a slow-growing, painless, firm submucosal mass with intact mucosa, unusual findings such as ulceration may occur due to trauma. Diagnosis requires careful evaluation, as nearly half of minor salivary gland tumors are malignant. Clinical assessment supported by imaging, cytology, and histopathology remains essential for distinguishing PA from other intraoral lesions, including cysts, abscesses, and malignant salivary tumors. Histologically, PA demonstrates a variable mixture of epithelial and stromal components, and although benign, it carries some risk of malignant transformation in long-standing cases. Surgical excision with adequate margins is the treatment of choice, as inadequate removal increases recurrence risk, particularly in unencapsulated tumors of minor salivary glands. In the present report, we discuss three cases of pleomorphic adenoma arising in the palate; all cases were treated

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with conservative wide local excision, and the diagnosis was confirmed histologically. No recurrence was observed during a one-year follow-up. These findings support the importance of complete surgical management and careful follow-up in patients with palatal pleomorphic adenoma.

Keywords: Pleomorphic adenoma, Minor salivary gland tumor, Palate, Surgical treatment.

الورم الغدي متعدد الأشكال في الحنك: سلسلة تضم ثلاث حالات ذات مظاهر سريرية متنوعة

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الملخص

يُعد الورم الغدي متعدد الأشكال (Pleomorphic adenoma - PA) أكثر أورام الغدد اللعابية شيوعاً، إذ يُمثل أكثر من 70% من إجمالي الحالات، وتُعد الغدة النكفية الأكثر إصابةً به، تليها الغدة اللعابية الصغيرة في الفم. وعلى الرغم من أن هذا الورم يظهر عادةً على شكل كتلة صلبة بطيئة النمو وغير مؤلمة تقع تحت الغشاء المخاطي مع سلامة الغشاء المخاطي المغطي لها، إلا أنه قد تظهر سمات غير مُعتادة مثل التقرح نتيجة للتعرض للرضوض المتكررة. يتطلب تشخيص الورم الغدي (PA) تقييماً سريرياً دقيقاً، نظراً لأن ما يقرب من نصف أورام الغدد اللعابية الصغيرة تكون خبيثة. ويُعد التقييم السريري مدعوماً بالتصوير الطبي، وفحص الخلايا، والفحص النسيجي للمرضي أمراً

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جوهرياً للتمييز بين الورم الغُدّي مُتعدد الأشكال والأمراض الفموية الأخرى، بما في ذلك الأكياس والخراجات وأورام الغدد اللعابية الخبيثة. ومن الناحية النسيجية، يتميز الورم الغُدّي PA بتباين في مكونات النسيج الظهاري والسدويّ، ورغم كونه ورماً حميداً، إلا أنه يحمل خطراً معيناً للتحويل الخبيث في الحالات المزمنة أو طويلة الأمد. ويُعد الاستئصال الجراحي مع مُراعاة هوامش أمان كافية هو الخيار العلاجي الأمثل، إذ أن عدم الإزالة الكاملة يزيد من خطر النكس (عودة الورم)، لا سيما في الأورام غير المحاطة بمحفظة ليفية كاملة والتي تصيب الغُد اللعابية الصغيرة. في هذا التقرير نعرض ثلاث حالات لورم غُدّي مُتعدد الأشكال نشأ في الحنك؛ حيث عولجت جميع الحالات عن طريق الاستئصال الموضعي الواسع والمتحفّظ مع تأكد التشخيص بالفحص النسيجي. لم تُسجل أي حالات نكس خلال فترة متابعة استمرت عاماً واحداً. وتؤكد هذه النتائج أهمية الإجراء الجراحي الكامل والمتابعة الدقيقة للمرضى المصابين بالورم الغُدّي مُتعدد الأشكال في الحنك.

الكلمات المفتاحية: الورم الغُدّي مُتعدد الأشكال، ورم الغدة اللعابية الصغيرة، الحنك، العلاج الجراحي

Introduction

Tumors of salivary glands are rare tumors, which account for less than 3% of neoplasms arising in the head and neck region [1]. Tumors of the minor glands are less frequent than those of the major glands as reported by the literature; up to 50% of tumors affecting the small salivary glands are malignant [2].

Pleomorphic adenoma (PA) is a benign tumor and the commonest type of salivary gland tumors with a prevalence rate up to 73% , predominantly affecting the parotid gland with an incidence rate ranging between 60% - 65 %, minor glands are affected by 45% [3,4]. PA may occur over a wide age range. However, most of the cases are reported between the third and sixth decades with a female predominance [5,6].

PA arises most frequently in the hard and soft palates due to the abundance of minor salivary glands in these regions. Another favorable site that is also commonly affected is the upper lip.

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However, lesions located in the lower lip, buccal mucosa, tongue, floor of mouth, larynx, pharynx and nasal cavity have been reported [5,6,7]. Also known as a mixed tumor, PA occasionally lacks a complete fibrous capsule, especially in palatal lesions, and merges into normal host tissue as the tumor increases in size [3]. Microscopically, it shows vast variations in structural arrangements, comprising a complex intermixture of two main elements, the epithelial component and a connective tissue stroma that exhibits significant variability in proportions. The epithelial element may present as sheets, clumps, or duct-like structures resembling intercalated ducts, with inner duct-lining cells and outer clear spindle myoepithelial cells, in a mucoid/myxoid, cartilaginous, or hyaline stroma. In pleomorphic adenoma, the term pleomorphic arises from the wide range and intricate nature of appearances and does not indicate cellular pleomorphism [8]. However, long-standing lesions may transform into malignancy. Sheereen et al. report that 3% to 4% of PA lesions may degenerate into malignant tumors, mainly carcinoma [1,4].

Surgical excision is the treatment of choice for palatal pleomorphic adenomas. The procedure includes removing the fibrous capsule, the surrounding mucosa, and the periosteum, with safety margins of at least 1mm. Bone removal is unnecessary if the CT scan imaging reveals no palatal erosion [6, 7].

The present study aims to report a series of three cases of pleomorphic adenoma with different clinical presentations; all cases were treated with surgical excision of the tumors, with no evidence of recurrence during one-year of postoperative follow-up.

Case Descriptions

- Case 1

A 19-year-old, otherwise healthy female, presented to our maxillofacial clinic with a painless, firm mass involving the right posterior palate at the hard-soft palate junction. The lesion measured roughly $2.5 \times 1.8 \times 1.3$ cm and had shown gradual enlargement over the past 6 months. The patient reported recurrent ulceration of the overlying mucosa, typically exacerbated by mechanical or thermal trauma from hot or hard foods. Intraoral evaluation confirmed a

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well-circumscribed, firm swelling with a localized area of mucosal ulceration.

Clinical examination also revealed extensive caries involving the right maxillary second molar. Due to the anatomical proximity of the lesion to the advanced dental caries, a palatal abscess or radicular cyst was initially considered in the differential diagnosis. Contrast-enhanced computed tomography (CECT) imaging delineated an encapsulated soft-tissue mass in the right palatal area, showing no cortical bone erosion or local invasion. Significantly, the scan demonstrated no anatomical or radiological continuity between the mass and the carious maxillary second molar, indicating a non-odontogenic origin for the lesion

Surgical excision of the palatal mass under general anesthesia was performed on the patient, with extraction of the carious right maxillary second molar. The excised specimen was submitted for histopathological examination, which confirmed the diagnosis of pleomorphic adenoma.

- Case 2

A 68-year-old female reported to our maxillofacial clinic, accompanied by her daughter, for the evaluation of a slowly expanding mass on the hard palate, with a history of diabetes and Alzheimer's disease. Her medical history was significant for a prior cerebrovascular accident (CVA) several years ago, which was managed long-term with daily antiplatelet therapy (Plavix, 75 mg). Clinical examination revealed a firm, $2.0 \times 1.3 \times 1.4$ cm palatal mass covered by normal mucosa. Due to the patient's medical circumstances, obtaining a CT scan presented significant practical challenges. Following a 5-day suspension of her antiplatelet therapy, the lesion was completely excised under general anesthesia. Histopathological evaluation of the excised lesion confirmed the diagnosis of pleomorphic adenoma of the minor salivary glands with no evidence of malignant atypia.

- Case 3

A 35-year-old, otherwise healthy male came to our maxillofacial clinic complaining of a greater than one-year history of speaking difficulties due to a large palatal mass. Clinical evaluation revealed an extensive, firm intraoral lesion measuring $3.0 \times 3.7 \times 2.9$ cm with

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a slightly irregular outline, covered by intact, normal mucosa. Regional examination demonstrated no cervical lymphadenopathy. (Figure 1)

CECT image showed a massive palatal lesion characterized by localized thinning of cortical bone and expansion into the nasal floor. (Figure 2)

Complete surgical excision of the lesion was achieved. (Figure 3) Histopathological evaluation of the resected specimen corroborated the definitive diagnosis of a benign pleomorphic adenoma. During the 12-month post-operative follow-up period, the patient demonstrated complete symptomatic relief; furthermore, clinical and radiographic examinations revealed no evidence of local recurrence.



Figure 1. Intraoral examination showing a huge palatal swelling with an intact overlying mucosa

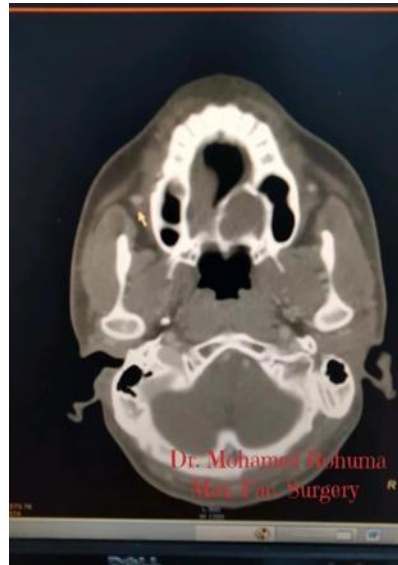


Figure 2. Axial CECT image showing a well-defined soft-tissue density mass in the palatal region, with a relatively smooth/encapsulated appearance and no obvious adjacent bony destruction

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Figure 3. Surgical specimen after removal, showing irregularly lobulated soft tissue mass

Discussion

Intraoral minor salivary gland tumors (IMSGTs) are relatively uncommon, accounting for approximately 9%-25% of salivary gland tumors. Among benign IMSGTs, pleomorphic adenoma of the palate is considered the most common. [2,9]

pleomorphic adenoma located on the palate presents clinically as a progressive slowly growing submucosal mass, which is usually firm or rubbery in consistency with no pain experienced, and an intact normal overlying epithelium. [4,10]

Conversely, case number one showed signs of recurrent ulceration due to trauma from chewing, an uncommon presentation regarding PA. Tumor dimensions for palatal pleomorphic adenomas mainly range between 0.8 and 5.0 cm at presentation. [11] The dimensions of tumors described in our report range between 2.5 and 3.7 cm. Symptoms including dysphagia, dyspnea and dysarthria have been reported in the literature [12]. However, none of these clinical signs was present in the current case.

Careful patient evaluation is required for the diagnosis of intraoral PA, as a high percentage of minor salivary gland tumors are malignant. The diagnosis mainly includes history and clinical examination, cytopathology and histopathology reports ,

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furthermore, radio-imaging is necessary (Computerized tomography scan CT is excellent for demonstrating bony invasion, magnetic resonance imaging MRI , provides high soft tissue description) to identify the extent and the relation of the tumor margins to the surrounding superficial and deep vital structures [13]. On examination, the differential diagnosis of PA includes palatal abscess, odontogenic and non-odontogenic cysts. Furthermore, lesions such as fibroma, lipoma, neurofibroma, neurolemmoma, mucoepidermoid carcinoma, adenoid cystic carcinoma and squamous cell carcinoma should also be considered in the differential diagnosis due to the nature of the palatal tissue. [14]

Contrast-enhanced computed tomography (CT) was the sole imaging modality performed in cases 1 and 3. The radiological evaluation demonstrated no evidence of cortical bone invasion or erosion of the hard palate in any of the cases. However, in Case 3, thinning of the adjacent bony structures with expansion toward the nasal cavity was observed. In Case 1, a palatal abscess was included in the initial differential diagnosis because of the presence of a severely decayed adjacent tooth. However, CECT demonstrated no radiological evidence of a direct relationship between the dental pathology and the palatal mass, thereby making an odontogenic origin less likely. The definitive diagnosis in all three cases was established through histopathological examination. Following surgical excision, all specimens were submitted for microscopic evaluation, which demonstrated the characteristic histopathological features of pleomorphic adenoma and confirmed the final diagnosis in each case.

Although pleomorphic adenomas are generally well circumscribed, complete encapsulation may be absent, particularly in tumors arising from minor salivary glands. The absence of a complete capsule and the presence of microscopic pseudopodia may increase the risk of local recurrence, with recurrence rates ranging from 0% to 14% in the literature. Recurrence has been associated with inadequate surgical excision, particularly simple enucleation without an adequate safety margin, which may leave microscopic extensions of the tumor within the surrounding tissue. In addition, rupture of the tumor capsule during surgery may contribute to the

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dissemination of tumor cells and subsequent recurrence. [4,13,15]
All three patients underwent wide local conservative excision of the
tumors. This approach was selected to achieve complete removal of
the lesions while preserving the surrounding palatal structures.
As noted previously, recurrence of pleomorphic adenoma is most
commonly associated with incomplete or inadequate surgical
excision and may become clinically evident after a prolonged
follow-up period [12,15]. In the present report, the patients were
observed over a one-year follow-up period and showed no signs of
recurrence

Conclusion

Pleomorphic adenoma of the hard palate represents the most
frequently occurring tumor in the minor salivary glands. In spite of
its benign behavior, the tumor is locally invasive and carries a
significant risk of recurrence. Therefore, it is important to establish
an early diagnosis whenever possible. This relies on thorough
clinical examination supported by advanced imaging and definitive
histopathological assessment. Complete excision of the lesion is a
must when outlining the treatment plan, as inadequate surgical
treatment correlates with high re-occurrences after a long follow-up
period, and the potential for malignant transformation if left
untreated.

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