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# THE UNUSUAL LUMP IN THE CHEEK: PLEOMORPHIC ADENOMA OF THE BUCCAL MUCOSA- A RARE CASE REPORT

Dentistry

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## ABSTRACT

**Introduction:** Pleomorphic adenoma (PA) is the most common benign salivary gland tumor, accounting for 40–70% of salivary gland neoplasms. The palate is the most frequent intraoral site, while buccal mucosa involvement is rare. PA typically presents as a slow-growing, painless, firm swelling with intact mucosa. Despite its benign nature, recurrence is seen in 5–30% of cases, emphasizing the need for complete excision and regular follow-up. **Case Presentation:** We report case of 20-year-old female who presented with a painless, gradually enlarging swelling on the right buccal mucosa. Clinical examination revealed a firm, well-circumscribed, oval mass (3.5 × 2.5 cm) with normal mucosa and positive slip sign. Ultrasonography suggested a lipoma or vascular lesion; aspiration yielded no fluid. A benign salivary gland tumor was provisionally diagnosed. **Management:** Surgical excision was performed via intraoral approach under local anaesthesia, taking care to preserve the parotid duct. Histopathology showed a well-circumscribed, partially encapsulated biphasic lesion with epithelial and myoepithelial components and myxoid stroma, confirming PA. **Conclusion:** Pleomorphic adenoma of the buccal mucosa is rare and may present a diagnostic challenge due to its clinical similarity to other benign submucosal lesions. Careful clinical examination, imaging, and histopathology are essential for accurate diagnosis. Complete surgical excision with adequate margins is the treatment of choice, and long-term follow-up is crucial to monitor for recurrence.

## KEYWORDS

Pleomorphic Adenoma, Buccal Mucosa, Minor Salivary Gland Tumor, Diagnostic Challenge, Surgical Excision, Mixed Cell Tumor

## INTRODUCTION

Salivary gland tumours account for 3% of the head and neck tumours (1). Pleomorphic adenoma (PA) is the most common salivary gland tumor, accounting for about 40%-70% of all major and minor salivary gland tumors (2). Pleomorphic adenoma (PA) is defined by World Health Organization in 1972 as a circumscribed tumor characterized by its pleomorphic or mixed appearance clearly recognizable epithelial tissue being intermingled with tissue of mucoid, myxoid and chondroid appearance.

The palate is considered as the most common intraoral site (42.8-68.8%), followed by the upper lip (10.1%) and cheek (5.5%) (3). Other rare sites include the throat (2.5%), retromolar region (0.7%), floor of the mouth and the alveolar mucosa(4). The mucosa of the cheek is an uncommon site of occurrence for intraoral PA (5). They are more common in adult females from the 3rd to 5th decades (6). It is of glandular origin, usually presenting as a slowly growing, painless, firm swelling that does not cause ulceration of the overlying mucosa (7). Histologically, it consists of cells with epithelial and mesenchymal differentiation.

The treatment of choice for PA is surgical removal with safety margins, to prevent the recurrence. Recurrence rate of 5-30% has been found for PA, so a periodic follow-up is must, due to the important relapse potential and aggressivity of these lesions(8).

### Case Presentation

A 20-year-old female presented to the Department of Oral and Maxillofacial Surgery with the chief complaint of a gradually enlarging, painless swelling localized to the right buccal mucosa since 6 months. The swelling was insidious in onset and slowly progressive. The patient denied any history of trauma, pain, fever, bleeding, sensory disturbances, or alterations in salivation. Both dental and medical histories were non-contributory.

On extraoral examination, facial symmetry was preserved. Intraoral assessment revealed an oval lesion measuring 3.5 × 2.5 cm at its greatest diameter, exhibiting a firm consistency. The mass was non-fluctuant, non-compressible, non-pulsatile, and mobile upon palpation. The overlying mucosa was unremarkable in coloration and texture, and a positive slip sign was elicited. Salivary flow was noted to be thin and watery.

Based on clinical evaluation, a provisional diagnosis of a benign buccal submucosal nodule was established. The differential diagnosis encompassed neurofibroma, benign minor salivary gland neoplasm, lipoma, dermoid cyst, intraoral sebaceous cyst, fibrosed mucocele, and hemangioma, among others. Ultrasonographic examination suggested features compatible with either lipoma or a vascular lesion. Aspiration of the mass did not yield any fluid content.

Given the superficial location of the lesion, surgical excision via a intraoral approach was planned and executed under local anaesthesia, with meticulous preservation of the parotid duct. The tumor was interposed between the buccal mucosa and buccinator muscle. Careful dissection enabled complete removal of the lesion, including an adequate margin of adjacent normal tissue. The excised specimen was encapsulated by a thin fibrous capsule. Primary closure of the surgical site was achieved.

Histopathological analysis revealed a well-circumscribed, partially encapsulated neoplasm comprising both epithelial and myoepithelial components arranged in ductal structures. The duct-like spaces were lined by an inner cuboidal epithelial layer and an outer layer of myoepithelial cells. The latter demonstrated variable morphology, predominantly spindle-shaped with occasional plasmacytoid forms. Epithelial cells formed nests and sheets amidst a stroma showing notable myxoid alteration, foci of osteoid metaplasia, and areas of hyalinization. The specimen also contained adipose tissue, muscle fibers, and residual minor salivary gland elements. Collectively, these morphologic features were diagnostic of pleomorphic adenoma.

The patient's postoperative course was unremarkable, and she remains under regular follow-up with no evidence of recurrence at subsequent clinical evaluations.

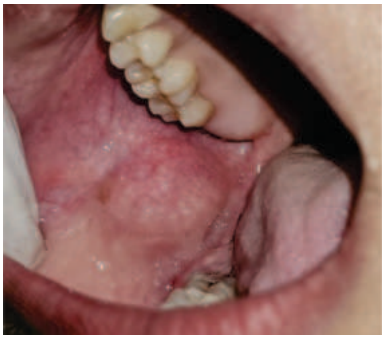

**Figure 1 Pre-operative Image**

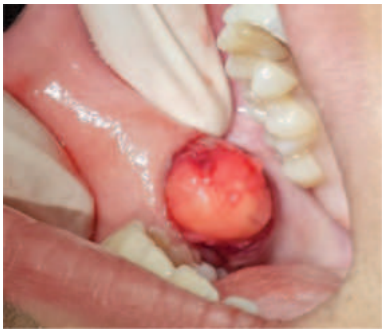

**Figure 2 Exposure of the Mass**

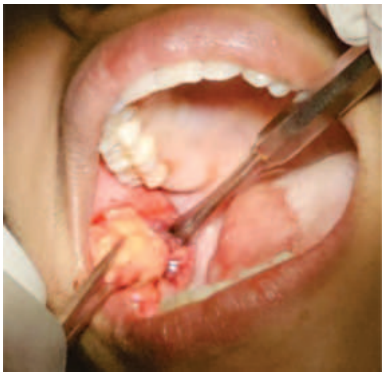

**Figure 3 Lesion Freed From Surrounding Tissue**

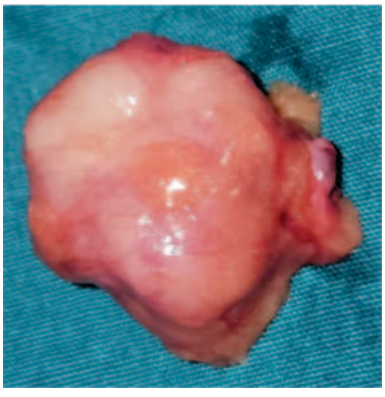

**Figure 4 Excised Specimen**

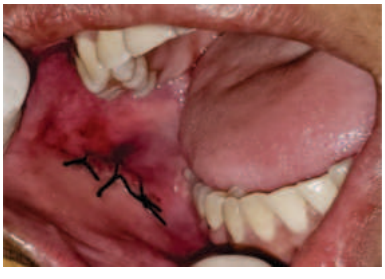

**Figure 5 Closure**

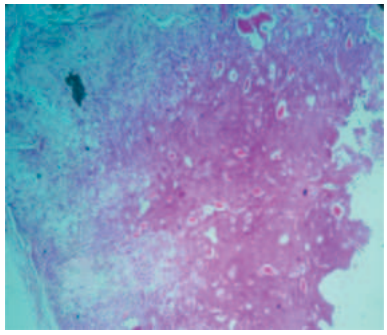

**Figure 6 Histopathological Image Showing**

**Discussion**

Minor salivary gland tumors constitute for 22% of all salivary gland neoplasms. Majority of them are malignant with only 18% being benign. Waldron et al. reported that 53%-65% of the Minor Salivary Gland Tumor are benign [9]. Pleomorphic adenoma (PA) is recognised as the most common benign salivary gland tumour. The term Pleomorphic adenoma was coined by Willis. The most common site of PA of the minor salivary gland is the palate followed by lip, buccal mucosa, floor of mouth, tongue, tonsil, pharynx, retromolar area, and nasal cavity [9]. They are more common in adults than in children. It usually occurs in the fourth to sixth decades of life and is found more commonly in women than in men [9,10].

These tumors in the buccal mucosa are thought to arise from minor salivary glands located either within the submucosal layer or from the accessory buccal glands positioned external to the buccinator muscle, also referred to as molar glands [11]. Clinically, PA is typically characterized by a slow-growing, painless, firm, and mobile swelling beneath intact mucosa. Symptoms such as ulceration, pain, or bleeding are unusual and when present, may raise suspicion of secondary changes or alternative pathology.

The differential diagnosis of a cheek mass is broad and includes both benign and malignant conditions. Non-neoplastic lesions such as buccal space abscess, lipoma, dermoid cyst, hemangioma, and mucoceles can simulate this presentation but are generally excluded based on clinical features like consistency, fluctuation, pulsatility, or tenderness. Among neoplasms, mucoepidermoid carcinoma, adenoid cystic carcinoma, and carcinoma ex pleomorphic adenoma can be considered [9,12]. Absence of consistency, ulceration, fixity of lesion to underlying tissue, and absence of neck nodes can help exclude these lesions from differential diagnosis.

Radiological investigations such as ultrasonography, computed tomography, or magnetic resonance imaging are valuable adjuncts in assessing tumor size, location, and relation to adjacent structures; however, imaging and cytology alone are insufficient for definitive diagnosis, as aspiration cytology often yields non-conclusive findings. Histopathology remains the diagnostic gold standard [13].

Histopathological examination is essential, as carcinoma ex pleomorphic adenoma demonstrates marked nuclear atypia, necrosis, infiltrative growth, and frequent mitoses, while adenoid cystic carcinoma is distinguished by cribriform or tubular architecture, perineural invasion, and high proliferative indices. In contrast, PA remains non-invasive, often showing biphasic architecture with epithelial and myoepithelial proliferation within a myxoid, chondroid, or hyalinized stroma. The presence of glial fibrillary acidic protein expression in myxochondromatous areas is also a distinguishing immunohistochemical feature [14,15] Histologically, these tumors will have epithelial cells arranged in cord or duct-like cell patterns, along with epidermoid metaplasia. The intercellular matrix shows fibrous, hyaline, myxoid, cartilaginous, and osseous areas. Myoepithelial cells or ductal reserve cells are responsible for such pleomorphic extracellular matrix production. Histologic variants of pleomorphic adenoma include pleomorphic adenoma with lipomatous change, myxolipomatous pleomorphic adenoma, pleomorphic adenoma with squamous differentiation, and benign metastasizing mixed tumor.[16]

Surgical excision with an adequate margin of uninvolved tissue is the treatment of choice. Although PA is generally encapsulated, the

capsule may be thin, incomplete, or show microscopic pseudopod-like extensions into surrounding tissue. This creates a potential for incomplete removal, particularly in cases where excision is attempted without sufficient margin, and explains the recurrence rates reported between 5% and 30%. Factors contributing to recurrence include capsular rupture, tumor cell spillage, and inadequate surgical clearance. Notably, even after apparently complete excision, recurrences may manifest many years post-operatively, with reports of late recurrence occurring up to 18 years later [17,18]. For this reason, incisional biopsy should be avoided, and excisional biopsy with careful handling is preferred in suspected cases of PA.

Despite its benign nature, PA carries a recognized risk of malignant transformation, most commonly to carcinoma ex pleomorphic adenoma, which constitutes approximately 3% of all salivary gland tumors. This potential underscores the importance of meticulous surgical technique and vigilant postoperative surveillance [16,19]. Follow-up should extend for a minimum of five years, consisting of routine clinical evaluation supplemented by imaging when indicated. Patient education regarding adherence to long-term follow-up is essential to ensure timely detection of recurrence or malignant transformation.

## CONCLUSION

The varied presentation of a minor salivary gland tumor makes the diagnosis challenging even for an experienced surgeon. PA of the cheek is a rare neoplasm and therefore its diagnosis requires a high index of suspicion. PA should be considered in the differential diagnosis of cheek masses both in young and adult patients. Surgical excision of the tumour with wide margins is the treatment of choice. So early diagnosis, prompt treatment, regular follow up and close monitoring at least for 5 years is necessary to prevent the risk of recurrence and rare chances of malignant transformation.

### Informed Consent

Patients consented to publish the photograph, and all the findings related to their condition.

### Conflict of Interest

None declared

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