



Case Series

## Pleomorphic Adenoma of the Minor Salivary Glands of the Hard Palate: A Case Series

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### ABSTRACT

**Introduction:** Pleomorphic adenoma of the minor salivary glands of the hard palate is an uncommon benign neoplasm characterized by the presence of both epithelial and mesenchymal components. It typically presents as a slow-growing, painless submucosal mass of the hard palate. Diagnosis is based on clinical evaluation and histopathological examination, with radiological investigations aiding in assessment and surgical planning.

**Aim and objective:** This study adds a small series of cases to the existing literature on this relatively rare condition and discusses their clinical presentation and management.

**Case description:** We report a case series of three patients presenting with hard palate masses that were subsequently diagnosed as pleomorphic adenoma, with a discussion of their clinical management.

**Conclusion:** Treatment of choice for pleomorphic adenoma of hard palate is wide local excision with removal of periosteum with low recurrence rate.

**Keywords:** Hard palate, Pleomorphic adenoma, Salivary gland.

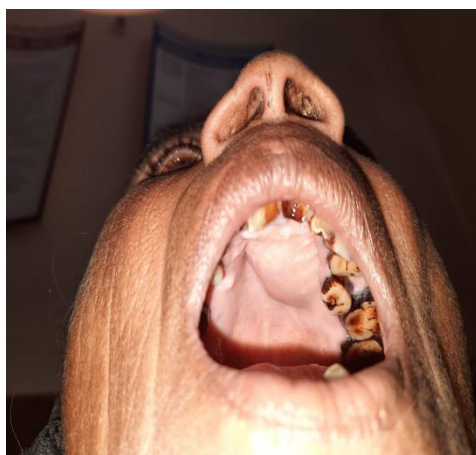
### INTRODUCTION

Pleomorphic adenoma is the most common benign neoplasm of both major and minor salivary glands, with the hard palate being its predominant intraoral site <sup>(1)</sup>. These tumors typically present as slow-growing, painless submucosal masses arising laterally due to the distribution of palatal minor salivary glands, their close proximity to periosteum may result in pressure effects or bone remodeling. Histologically, they consist of epithelial and myoepithelial components arranged in diverse patterns within a fibrous capsule of variable completeness <sup>(1,2)</sup>. Despite being benign, pleomorphic adenoma warrants timely diagnosis and complete surgical excision due to its potential for continued growth and the rare possibility of malignant transformation <sup>(2,3,4)</sup>. We report a case series detailing the clinical, radiological, and therapeutic aspects of pleomorphic adenoma of the hard palate treated at our institution.

### Case description

#### Case 1.

A 59-year-old male presented to our outpatient department with an 8-month history of a gradually enlarging left palatal swelling (Image 1). The lesion was asymptomatic, with no associated pain, history of trauma, or relevant medical history. Intraoral examination revealed a well-circumscribed, 3 × 4 cm mass on the left anterior hard palate, covered by intact mucosa. The swelling was firm, non-tender, and non-mobile. There was no evidence of regional lymphadenopathy, and both general and systemic examinations were unremarkable. Fine-needle aspiration cytology (FNAC) indicated a pleomorphic adenoma. Computed tomography (CT) demonstrated a 2.9 × 3.5 × 1.2 cm lesion on the left hard palate, with no signs of periosteal erosion or bone invasion, consistent with a benign neoplastic process. The lesion was excised and diagnosis was confirmed to be pleomorphic adenoma. 6 months follow up showed no recurrence.



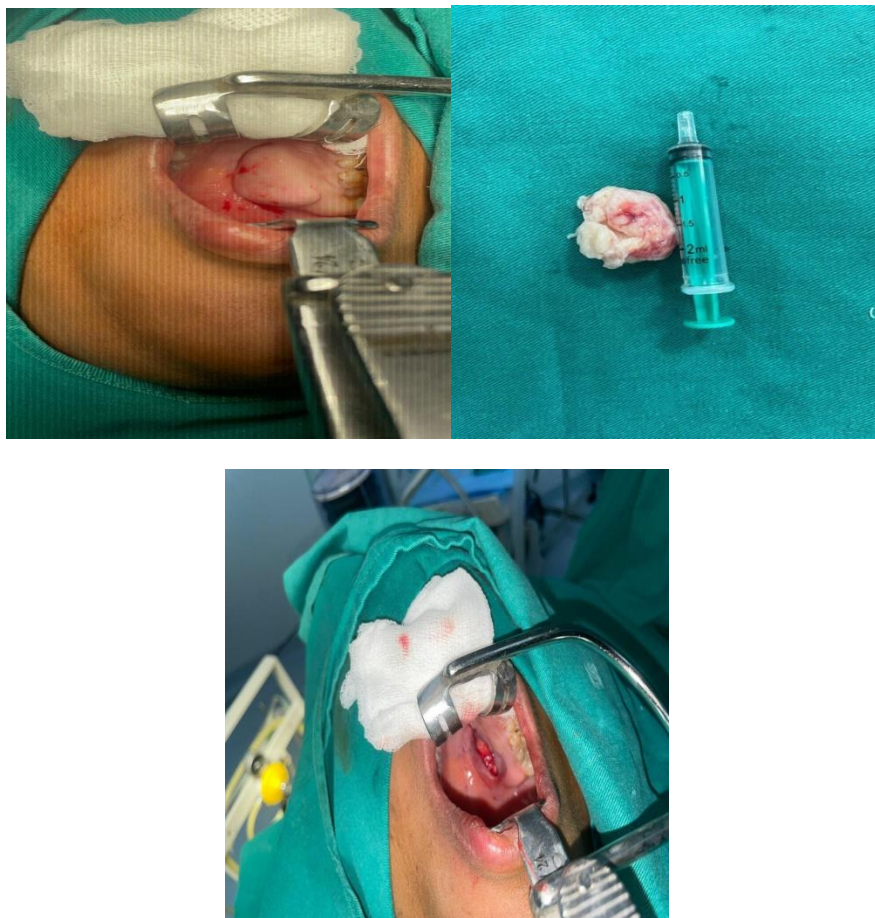
### Case 2.

A 50-year-old female came to our outpatient department complaining of a painless swelling over the palate for 1 year. On examination, a  $2 \times 1.5 \times 1.5$  cm<sup>3</sup> non-tender, firm swelling was present on the right side of the hard palate with intact overlying mucosa (Image 2), with systemic and general examinations being normal. FNAC was done, which was suggestive of pleomorphic adenoma, while CECT scan showed it to be a benign neoplastic lesion over the right side of the hard palate with focal 4.5 mm breach in the floor of the nasal cavity and mild to moderate homogeneous post contrast enhancement. The lesion was excised, and histopathology confirmed a pleomorphic adenoma (Image 3 and 4). At the 6-month follow-up, no recurrence was observed.



### Case 3.

A 40-year-old female patient came to us with a slow-growing swelling over the palate for the past 9 months. A  $4 \times 4 \times 3$  cm<sup>3</sup> non-tender, soft to firm swelling was seen on the left side of the hard palate with normal overlying mucosa (Image 5). FNAC and CT scan showed it to be a pleomorphic adenoma without the involvement of the underlying bone. All these patients were treated by wide local excision without curettage of bone under general anesthesia (Image 6 and 7). The specimen was sent for histopathological examination, which confirmed the diagnosis of pleomorphic adenoma. The excised lesion was confirmed to be a pleomorphic adenoma, and no recurrence was detected at the 6-month review.



## DISCUSSION

Pleomorphic adenoma arises from intercalated ductal and myoepithelial cells and is characterized by the presence of both epithelial and mesenchymal components. The epithelial elements may be arranged in duct-like structures, sheets, nests, or interlacing cords, while the stromal component can exhibit mucoid, myxoid, cartilaginous, or hyalinized features. These tumors are typically surrounded by a fibrous pseudocapsule rather than a true capsule <sup>(5,6)</sup>.

Based on the relative proportions of epithelial and stromal elements, Seifert and colleagues classified pleomorphic adenoma into four histological types. Type I consists predominantly of a myxoid variant, Type II contains a mixture of myxoid and cellular components, Type III is mainly cellular, and Type IV represents an extremely cellular form. Pleomorphic adenomas arising from minor salivary glands tend to show a higher degree of cellularity compared to those of major salivary glands. Cytogenetic studies have demonstrated that pleomorphic adenoma is associated with clonal chromosomal abnormalities, most commonly involving regions 8q12 and 12q15 <sup>(7)</sup>.

The differential diagnosis of pleomorphic adenoma includes both odontogenic and non-odontogenic cysts, palatal abscess, mucoepidermoid carcinoma, adenoid cystic carcinoma, rhabdomyosarcoma, lymphoma, and various soft tissue tumors such as neurofibroma, fibroma, lipoma, and schwannoma <sup>(2,8)</sup>.

Diagnosis is established through a combination of patient history, clinical examination, cytological evaluation using fine-needle aspiration cytology (FNAC), and histopathological assessment. Imaging modalities such as computed tomography (CT) and magnetic resonance imaging (MRI) are valuable for determining the tumor's size, location, and extent, as well as its involvement with adjacent superficial and deep structures. Core needle biopsy has been shown to provide a higher diagnostic accuracy, exceeding 97%, when compared to FNAC <sup>(8)</sup>.

Management of pleomorphic adenoma of the hard palate involves wide local excision, including removal of the underlying periosteum or bone when involved <sup>(9)</sup>. This approach is necessary because the tumor lacks a true capsule and often exhibits microscopic pseudopod-like extensions into surrounding tissues. Reconstruction is indicated when full-thickness bony defects are present and may be accomplished using a palatal flap based on the greater palatine vessels or

an obturator prosthesis. Soft tissue defects without bony involvement may be allowed to heal by secondary intention. Reconstruction plays a critical role in preserving speech, swallowing, and facial contour <sup>(9,10)</sup>.

According to Spiro, pleomorphic adenoma has an overall recurrence rate of approximately 6%. Recurrence is most often attributed to inadequate surgical techniques, including simple enucleation, capsular violation, or intraoperative tumor spillage. As a result, simple enucleation is strongly discouraged. Recurrent pleomorphic adenomas are frequently multinodular and lack a surrounding capsule, making subsequent surgical management more challenging. The risk of malignant transformation in pleomorphic adenoma is estimated to be around 6% <sup>(11)</sup>.

## CONCLUSION

Pleomorphic adenoma of the hard palate is an uncommon salivary gland tumor whose diagnosis relies on clinical evaluation, cytology, and histopathological confirmation. Wide local excision remains the treatment of choice, as it significantly reduces the risk of recurrence. Simple enucleation should be avoided due to its strong association with tumor recurrence.

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