

Case Report

Pleomorphic adenoma of the hard palate: a case report

Yeseera Alavudeen*, Stalin Sivagurunathan, Shailaja Mathivanan

Department of ENT, Indira Gandhi Government General Hospital and Post Graduate Institute, Puducherry, India

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*Correspondence:

Dr. Yeseera Alavudeen,

E-mail: yeseera@gmail.com

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ABSTRACT

Pleomorphic adenoma is the most common benign salivary gland tumor. It is a mixed tumor composed of epithelial and myoepithelial cells arranged in various morphological patterns and is usually demarcated by a fibrous capsule from surrounding tissues. While it commonly affects major salivary glands, its occurrence in minor salivary glands is less frequent. It shows a female predominance (60%) compared to males (40%). We report a case of a 45-year-old male patient, a driver by occupation, with a history of smoking, alcohol intake, and tobacco chewing for 25 years. He presented with a painless swelling over the hard palate for the past 2 years. Clinical examination and investigations led to a provisional diagnosis of pleomorphic adenoma of the minor salivary glands of the hard palate. The lesion was treated with wide local excision under local anesthesia. The excised specimen was sent for histopathological examination for definitive diagnosis. Histopathological examination confirmed the diagnosis of pleomorphic adenoma. The patient had an uneventful postoperative recovery with good healing. The palatal defect was allowed to heal by secondary intention, and satisfactory granulation with complete healing was observed. Pleomorphic adenoma of the minor salivary glands of the hard palate is a relatively rare entity but carries an excellent prognosis when treated with wide local excision. Definitive diagnosis depends on histopathological evaluation. Early diagnosis and adequate surgical management ensure good functional and cosmetic outcomes.

Keywords: Pleomorphic adenoma, Hard palate, Minor salivary gland tumor, Wide local excision, Histopathology, Case report

INTRODUCTION

Pleomorphic adenoma is the most common benign tumor affecting the salivary glands, with a higher prevalence in major salivary glands. It infrequently arises from minor salivary glands, such as those in the hard palate. This tumor is more common in women (60%) than in men (40%).¹ Histologically, it is a mixed tumor, consisting of epithelial and myoepithelial cells within a chondromyxoid stroma and surrounded by a fibrous capsule.

The exact etiology of pleomorphic adenoma remains unclear, but recent studies suggest a potential genetic basis. Mutations in genes such as PLAG1 (pleomorphic adenoma gene 1) and HMGA2 (high mobility group A2) are frequently implicated in the development of pleomorphic adenomas.² These genetic alterations can

lead to dysregulated cell proliferation and tumor formation.

Despite being benign, these tumors require timely intervention, as their long-standing presence can lead to complications, including malignant transformation into carcinoma ex pleomorphic adenoma, which occurs in approximately 5-15% of untreated cases.³

We report a rare case of pleomorphic adenoma of the hard palate arising from minor salivary glands in a male patient, successfully managed with wide local excision under local anesthesia and achieving excellent postoperative results.

CASE REPORT

A 45-year-old male, a driver by occupation, came to our outpatient department with complaints of painless

swelling in the hard palate that had been gradually increasing in size over two years. Initially the size of a peanut, the lesion had grown to the present size, causing foreign body sensation but not associated with difficulty in swallowing or pain while swallowing. There was no history of pain, bleeding, or discharge from the swelling. There was no history of trauma, radiation exposure or any other similar swelling in the body.

The patient had a history of smoking, alcohol use, and chewing tobacco for 25 years. On intraoral examination, a single, ovoid-shaped swelling measuring 2×3 cm was noted in the posterior one-third of the hard palate on the left side. The overlying mucosa appeared smooth and stretched but non-pinchable. On palpation, the swelling was firm, non-tender, nonpulsatile, immobile, and well-defined (Figure 1).



Figure 1: Pre-operative image showing ovoid swelling in the hard palate.



Figure 2: Computed tomography image showing homogenous globular mass without calcification and bony erosion.

Complete blood count, coagulation profile, serum electrolytes, renal function test, electrocardiogram were normal. Patient underwent a computed tomography (CT) which revealed a smoothly margined homogenous soft tissue density globular mass without calcification or bony erosion (Figure 2). Based on clinical and radiological findings, a provisional diagnosis of pleomorphic adenoma was made. The patient was planned for surgical excision, he underwent wide local excision under local anesthesia, removing the tumor in toto along with the overlying mucosa including margin of surrounding normal tissue (Figures 3 and 4).



Figure 3: Intraoperative image showing wide local excision of lesion.



Figure 4: Excised gross specimen in toto.

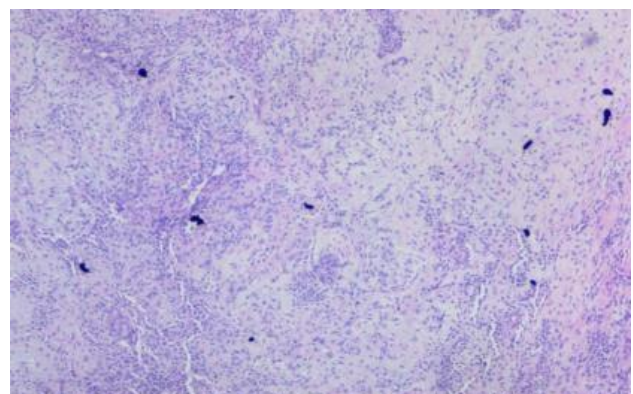


Figure 5: Histopathology slide showing features of pleomorphic adenoma.

Histopathological examination confirmed pleomorphic adenoma, characterized by lobules of epithelial cells

separated by fibrous septa. The tumor exhibited round-to-oval epithelial cells and spindle-shaped myoepithelial cells within a chondromyxoid matrix (Figure 5).

The postoperative course was uneventful, and the wound healed by secondary intention within two weeks. Follow-up showed no evidence of recurrence or complications (Figure 6).

Histopathological examination confirmed the diagnosis of pleomorphic adenoma, showing epithelial and myoepithelial cells arranged in a chondromyxoid stroma. The tumor was completely excised with adequate margins under local anesthesia. The postoperative course was uneventful, with complete healing by secondary intention and no evidence of recurrence on follow-up.



Figure 6: Post operative image showing well healed wound by secondary intension at the end of 2 weeks.

DISCUSSION

Pleomorphic adenoma is a mixed salivary gland tumor containing epithelial and myoepithelial elements. While it commonly affects the parotid gland, its occurrence in minor salivary glands is rare. The etiology of pleomorphic adenomas is not entirely understood, but genetic mutations, chronic irritation, and environmental factors are thought to play a role.⁴ Notably, lifestyle factors like smoking and tobacco use, as seen in our patient, may increase susceptibility by causing chronic inflammation or genetic alterations in salivary gland tissues.⁵

Diagnosis is based on clinical history, imaging, and histopathology, with CT scans being ideal for evaluating the extent of the lesion and bony involvement. CT scans are particularly useful for hard palate lesions to identify bony erosion, which was absent in this patient, ruling out more aggressive malignancies like adenoid cystic carcinoma.⁶

Histopathologically, pleomorphic adenomas are characterized by a biphasic structure with epithelial and myoepithelial cells in a stromal matrix. The stromal component may vary from chondromyxoid to fibrous, which correlates with the tumor's "mixed" appearance.⁷ The lack of invasive or malignant features, as confirmed in this case, is essential for diagnosis.

Wide local excision remains the treatment of choice for pleomorphic adenomas of the minor salivary glands. Complete removal with clear margins is crucial to prevent recurrence, which is more likely with incomplete excision or enucleation.⁸ Recurrence rates have been reported to range from 2% for adequately excised tumors to as high as 40% for incompletely treated cases.⁹

Although pleomorphic adenomas are benign, malignant transformation to carcinoma ex pleomorphic adenoma occurs in approximately 5% of cases, particularly in long-standing tumors or those with recurrent growth.³ This underscores the importance of early intervention and regular follow-up.

This case emphasizes the role of risk factors such as Environmental and lifestyle factors include chronic mechanical trauma or irritation to salivary glands (smoking, alcohol consumption) tobacco use (weak association) has been linked to the risk factor for pleomorphic adenoma.¹⁰ Public health efforts targeting these behaviours could reduce the prevalence of such tumors.

This case highlights the importance of a multidisciplinary approach involving otolaryngologists, radiologists, and pathologists to ensure accurate diagnosis and effective management. Education regarding the risks associated with untreated or poorly managed benign tumors is crucial, especially in resource-limited settings.

This case also underscores the potential role of modifiable lifestyle factors, such as smoking and tobacco use, in salivary gland tumor development. Addressing these factors may help reduce the incidence of such tumors.

CONCLUSION

Pleomorphic adenoma of the hard palate arising from minor salivary glands is a rare but significant entity in clinical practice. It commonly presents as a slow-growing, painless, submucosal mass, and its diagnosis requires a thorough combination of clinical, radiological, and histopathological evaluations. Surgical excision with clear margins remains the gold standard treatment, offering excellent outcomes with minimal recurrence risk when properly executed.

This case underscores the importance of early recognition and definitive management to prevent complications, including malignant transformation. Furthermore, it highlights the potential role of modifiable risk factors such as smoking and tobacco use in the development of salivary gland tumors. Raising awareness about these factors and promoting healthy lifestyle choices can contribute to reducing the burden of such neoplasms in the population. Regular follow-up is essential to monitor for recurrence and ensure long-term success.

This case exemplifies how early diagnosis, appropriate surgical management, and patient education about risk factors can collectively lead to optimal outcomes in rare cases of pleomorphic adenoma in minor salivary glands.

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