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Pleomorphic Adenoma of the Palate: A Case Report

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ABSTRACT

Pleomorphic adenoma represents the most prevalent benign neoplasm of the major salivary glands, with less frequent occurrence in the minor salivary glands. While the parotid gland is the most commonly affected among major glands, the palate is the typical site of involvement for minor salivary glands. This report describes a case of pleomorphic adenoma originating from a palatal minor salivary gland, which was effectively managed through surgical excision.

Keywords: Pleomorphic adenoma; Hard palate; Minor salivary glands; Benign salivary gland tumor

INTRODUCTION

Pleomorphic adenoma (PA) is a benign mixed salivary gland tumour characterized by a combination of epithelial and myoepithelial cells arranged in diverse architectural patterns. It is typically encapsulated by a fibrous tissue layer that separates it from adjacent structures. PA can arise in both major and minor salivary glands and accounts for approximately 40% to 70% of all salivary gland tumors.[1] The parotid gland is the most frequently involved major salivary gland. On a global scale, between 13.9% and 51.4% of salivary gland tumors originate from intraoral sites, with 34.7% to 67.1% of these being benign lesions.[2] Pleomorphic adenoma demonstrates a higher prevalence in females compared to males, with an approximate female-to-male ratio of 2:1. While it can manifest at any age, it predominantly occurs during the fourth and fifth decades of life. It represents the most common benign neoplasm of the minor salivary glands, with the palate being the most frequently affected site, accounting for approximately 73% of cases.[3] Among the intraoral minor salivary glands, the palate is the most common site of involvement (42.63%), followed by the lip (10%), buccal mucosa (5.5%), retromolar region (0.7%), and the floor of the mouth.[4]

CASE PRESENTATION

A 65-year-old male presented to the Department of Oral and Maxillofacial Surgery at Hi-Tech Dental College and Hospital, Bhubaneswar, Odisha, India, with a chief complaint of swelling in the right back palatal region(Figure 1a & b). The patient reported that the swelling was painless and had gradually increased in size over the past one year. There were no associated symptoms such as numbness, dysphagia, stridor, speech impairment, or difficulty in mastication. The patient denied any history of trauma, fever, or similar swellings elsewhere in the body.

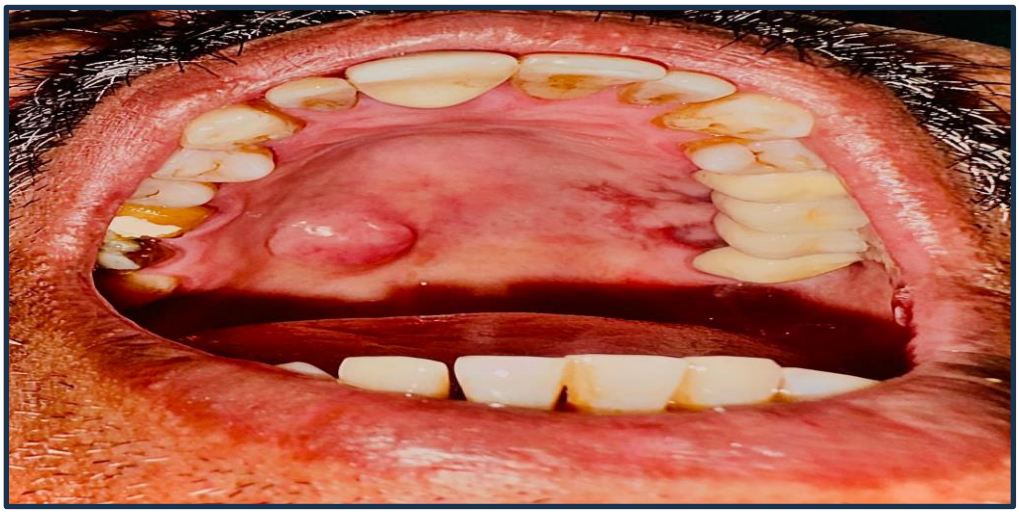

Figure 1a: Pre-operative

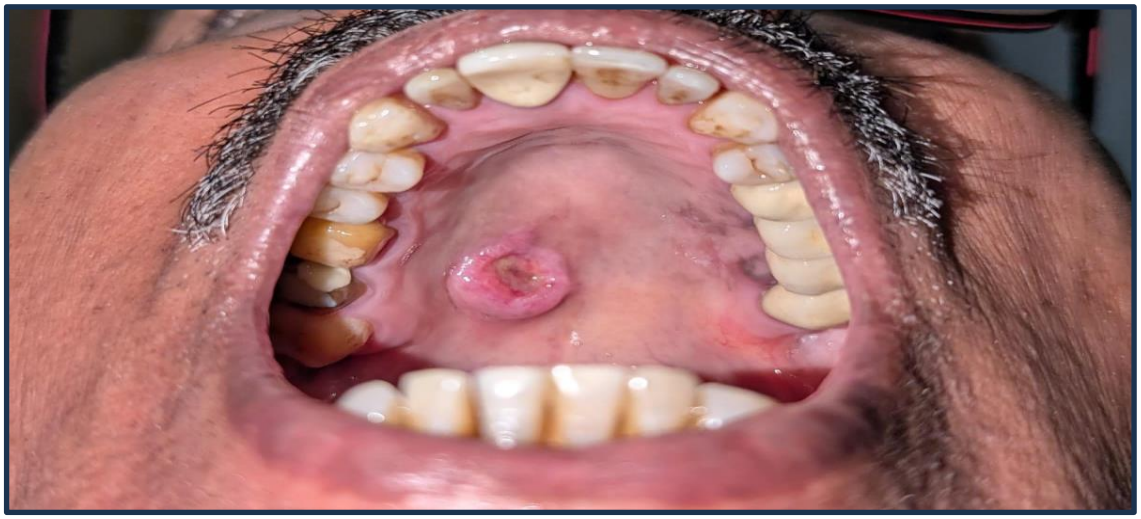

Figure 1b: Pre-operative

The medical history was significant for epilepsy, for which the patient was on regular medication carbamazepine 75 milligram. The dental history included the extraction of teeth 26 and 27 and placement of a prosthesis spanning teeth 25 to 28; and root canal treated tooth 16 and 17 with dislodged prosthesis approximately two years prior. On general physical examination, the patient appeared moderately built, alert, and ambulatory with normal vital signs. Extraoral examination revealed no facial asymmetry or regional lymphadenopathy.

Intraoral examination revealed a solitary, ovoid swelling measuring approximately 3 cm × 2 cm on the right posteromedial surface of the hard palate. The lesion extended antero-posteriorly from the region of tooth 16 to tooth 17. On palpation, the swelling was firm, non-tender, non-pulsatile, unilocular, immobile, and had well-defined margins. The overlying mucosa appeared stretched and non-pinchable. Incisional biopsy performed under local anaesthesia 2% lignocaine hydrocolloid with adrenaline; incisional biopsy revelled pleomorphic adenoma.

Routine hematological investigations were within normal limits. Intraoral hard tissue examination revealed no dental anomalies in the region of interest. An orthopantomogram did not show any pathological alterations in the underlying bony structures.

Based on the clinical presentation, history, and physical findings, surgical excision of the lesion under general anesthesia was planned. Under sterile and aseptic conditions, a wide local excision of the lesion, including the periosteum, was carried out with a 1 cm margin of healthy tissue (Figure 2a), and followed by peripheral osteotomy of the underlying bone. The procedure was performed using dissecting scissors and electrocautery, with electrocautery also utilized for effective haemostasis. The greater palatine neurovascular bundle was identified and ligated using 3-0 vicryl suture. A medicated Jelonet dressing (Figure 2b) was applied, and an acrylic splint (Figure 2c) was placed to protect the surgical site. Nasogastric tube 16-FG was placed for feeding. The excised specimen (Figure 3) was submitted to Department of oral and maxillofacial pathology for histopathological examination. Postoperative medications were prescribed, and granulation tissue formation was observed by the third week following surgery. Nasogastric tube was removed on post-operative day 7. The healing process was uncomplicated, with no adverse events. The patient has been placed on regular follow-up at the post-operative one month (Figure 4) and two month (Figure 5). There was no signs of recurrence have been observed at the two-month review.

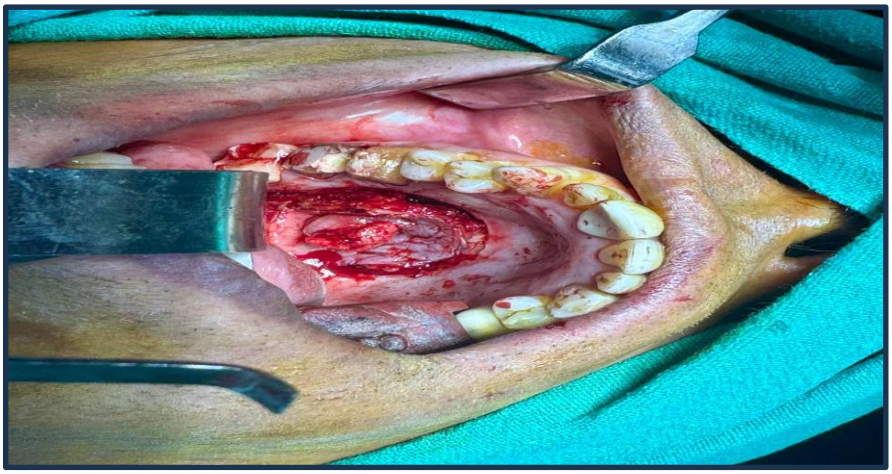

Figure 2a: Intra-operative with 1cm clear margin

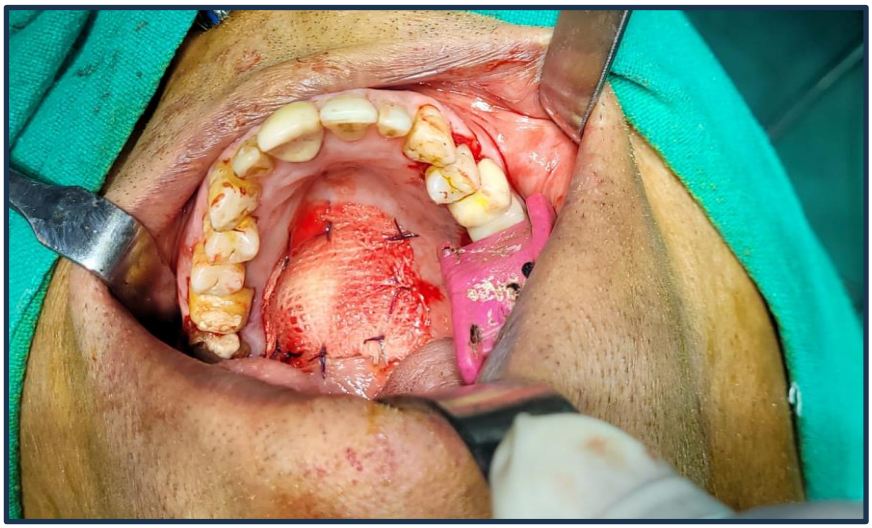

Figure 2b: Intra-operative Gelo-net packing

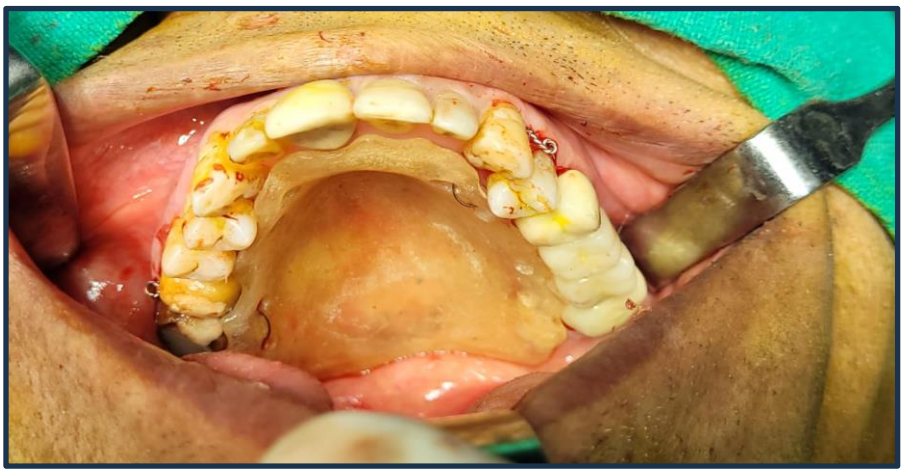

Figure 2c: Intra-operative surgical splint placement

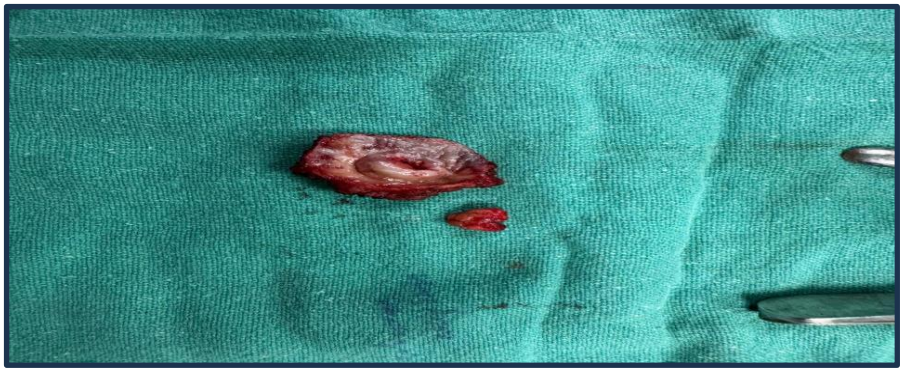

Figure 3: Excised primary tumour

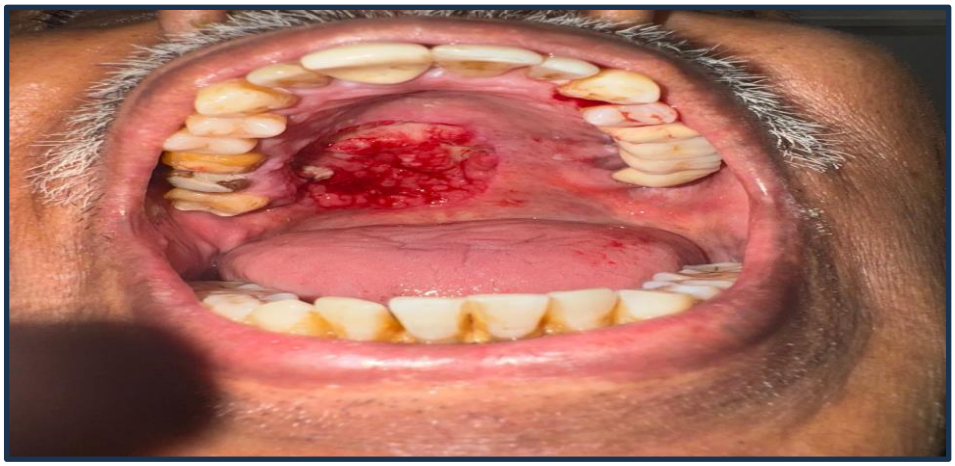

Figure 4: Post-operative 30days

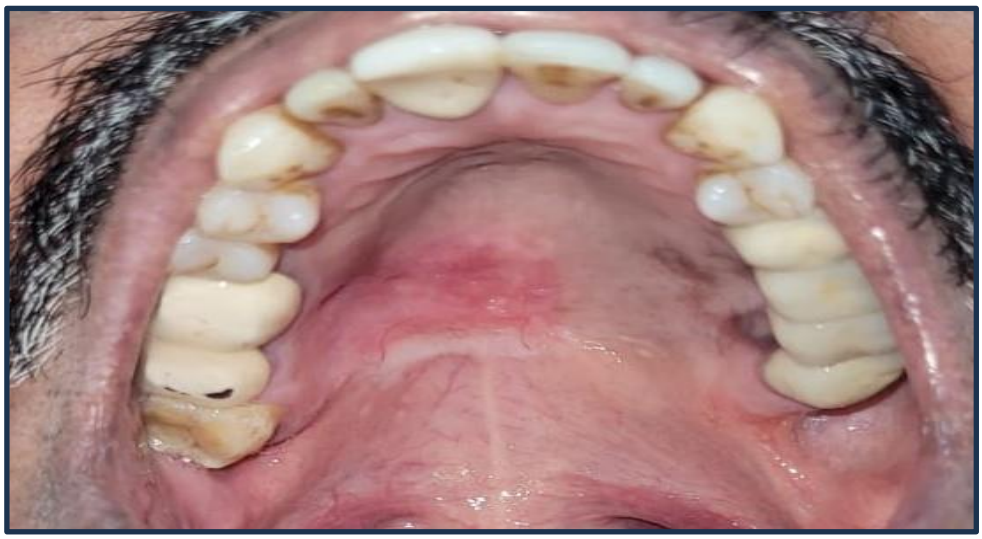

Figure 5: Post-operative 60days

HISTOPATHOLOGICAL FINDINGS

Microscopic examination of the excised specimen revealed para-keratinized stratified squamous epithelium overlying connective tissue. The underlying stroma demonstrated a well-encapsulated tumour composed of sheets and islands of myoepithelial cells interspersed with occasional duct-like structures containing eosinophilic material. The islands of myoepithelial cells were embedded within an abundant eosinophilic myxoid matrix. These histological features were compatible with pleomorphic adenoma (PA).

DISCUSSION

PAs are the most common salivary gland tumours, accounting for 45–74% of all salivary gland tumours.[1] According to Vuppalapati et al., pleomorphic adenoma (PA) derives its name from the architectural pleomorphism observed under light microscopy. It is also referred to as a "mixed tumor" of the salivary gland type, a term that reflects its variable histological appearance rather than its dual cellular origin from epithelial and myoepithelial components. This "mixed tumor" variant accounts for approximately 73% of all salivary gland neoplasms. Among intraoral locations, the palate is the most frequently affected site, correlating with the high density of minor salivary glands in that region.[5] In a study involving 2,078 patients, Spiro et al. reported that 20% to 40% of all salivary gland tumors originate from minor salivary glands, with mixed tumors occurring predominantly in individuals between the fourth and sixth decades of life and showing a slight female predilection.[4] Pleomorphic adenoma typically presents as a painless, firm swelling that rarely leads to ulceration of the overlying mucosa. It is usually mobile; however, when located on the hard palate, the lesion tends to be fixed due to the tightly bound mucosa. Intraorally, it most commonly arises on the posterior lateral aspect of the hard palate and appears as a smooth, dome-shaped, slowly enlarging mass.[6] The diagnosis of pleomorphic adenoma is established through a combination of clinical history, physical examination, radiographic imaging, and confirmatory histopathological evaluation. Clinically, the differential diagnosis may include palatal abscesses, odontogenic or non-odontogenic cysts, and benign soft tissue tumors such as fibromas, neurofibromas, or neurilemmomas.[7] Pleomorphic adenomas of the minor salivary glands are often identified and managed earlier than those arising in the major salivary glands due to their interference with oral functions. However, if the overlying mucosa is ulcerated without a history of trauma or biopsy, the possibility of malignant transformation should be considered.[8] Histologically, pleomorphic adenoma is characterized by a mixture of epithelial and myoepithelial cells arranged in diverse architectural patterns within a mucopolysaccharide-rich stromal background. A pseudo capsule may be present, typically formed by fibrous tissue from compressed surrounding salivary gland parenchyma.[9] In addition to the typical epithelial and myoepithelial components, pleomorphic adenoma may also contain spindle-shaped, clear, or oxyphilic cells. Its mesenchymal component can exhibit chondroid, myxoid, or even osseous differentiation. In a reported case of palatal PA, Daryani et al. considered several differential diagnoses, including hematoma (due to bluish discoloration), mucocele, necrotizing sialo metaplasia, mucoepidermoid carcinoma, adenoid cystic carcinoma, and polymorphous low-grade adenocarcinoma.[10] Sharma et al. also documented a similar palatal swelling, in which the differential diagnoses included neuroma, palatal abscess, and neurofibroma.[8] The preferred treatment for pleomorphic adenoma is wide local excision, including the removal of adjacent periosteum or bone if involved. Simple enucleation is discouraged, as it is associated with a higher risk of recurrence.[11] Radiation

therapy is contraindicated in the management of pleomorphic adenoma, as these tumors are known to be radioresistant.[12] Recurrence is a recognized risk following enucleation of pleomorphic adenoma, primarily due to the presence of pseudopod-like microscopic extensions and the absence of a true capsule in some cases. In a review of 1,342 patients with benign minor salivary gland tumors, Spiro reported a recurrence rate of approximately 60%.[4] The recurrence of pleomorphic adenoma is often attributed to factors such as implantation due to capsule rupture, the inadvertent retention of tumor islands after surgery, and the tumor's multicentric nature. As a result, long-term follow-up is essential for early detection of recurrence.[13]

Palatal reconstruction is often considered in cases where large defects occur following the surgical excision of aggressive tumors, such as pleomorphic adenoma, especially when significant bone involvement or functional impairment is anticipated. Surgical repair options, including local flaps or prosthetic reconstruction, may be necessary to restore both form and function in these situations. However, in the present case, the patient did not require any palatal reconstruction. The minimal bony involvement observed during surgery allowed for natural regeneration of the palatal mucosa, and no fistula formation was noted during the follow-up period. This highlights the importance of early detection and appropriate surgical management, which can reduce the need for extensive reconstructive procedures.

CONCLUSION

Pleomorphic adenoma (PA) of the palate is an uncommon benign tumor, generally found in adult patients. It usually manifests as a slow-growing, painless submucosal mass on the hard palate. The diagnosis is definitively confirmed through histopathological examination. The recommended treatment is surgical excision with wide margins (around 1 cm), ensuring the preservation of surrounding anatomical structures. Although recurrence is rare, it can occur, making meticulous surgical removal crucial to prevent multifocal spread, recurrence, and potential malignant transformation. Early detection and intervention are important to prevent complications such as difficulty with mastication and speech.

ADDITIONAL INFORMATION

Disclosures

Human Subjects: Informed consent was obtained from all participants involved in this study. Approval was granted by Hi-Tech Dental College and Hospital Payment/Services Information: No financial support was received from any organization for the submitted work.

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