# Pleomorphic Adenoma of palate- A case report

Dr. Prachi Ravikant Naik [1], Dr. Amita R. Navalkar[2], Dr. Deepa Das A.[3], Dr. Gopal Sharma[4]

## ABSTRACT

Pleomorphic adenoma is a mixed benign tumor of the salivary glands that has elements of both epithelial and mesenchymal tissues. It is one of the salivary gland tumors affecting both major and minor salivary glands. The tumor most commonly arises in the parotid or submandibular glands. Parotid gland is the most commonly affected of the major group, and the palate is the most common site of the minor salivary glands group and other intraoral sites of this tumor are the lips, Buccal mucosa, floor of the mouth, tongue, tonsils, pharynx and the retromolar area. We present a case of benign pleomorphic adenoma of the palate in a 32-year-old male with radiographic and histopathological findings.

**Key-words:** histopathological, palate, pleomorphic, salivary, tumor

Senior Lecturer [1], Professor [2], Professor [3], Professor and Head of the Department [4]
Department of Oral Medicine and Radiology, YMT Dental College and Hospital, Kharghar, Navi Mumbai, India
Corresponding author mail: prachident@gmail.com

**Conflict of interest:**

## INTRODUCTION

Approximately 1% of the head and neck tumors are comprised of salivary gland tumors.[1] Pleomorphic adenoma is the commonest benign tumor to arise in the minor salivary glands.[1, 2] However, majority of minor salivary gland tumors are of the malignant variety. Parotid gland constitutes 60% of all pleomorphic adenomas while minor salivary glands constitute 8% of them.[3] Pleomorphic adenoma is a benign salivary gland tumor that exhibits wide cytomorphologic and architectural diversity.

The tumor has the following 3 components:

- An epithelial cell component
- A myoepithelial cell component
- A stromal (mesenchymal) component.[4]

Identification of these 3 components, which may vary quantitatively from one tumor to another, is essential to the recognition of pleomorphic adenoma.[4] The tumors may be derived from the salivary epithelium or the supportive stroma. Among the benign tumors, pleomorphic adenoma is the most common, accounting for approximately 60% of all salivary gland neoplasms. [3] 50% of all oral minor salivary gland tumors are pleomorphic

adenoma of which 55% arise in the palate, 25% in the lip, 10% in buccal mucosa, and 10% from other sites in oropharynx.[5] The tumor cells show a wide spectrum of epithelial and mesenchymal differentiation and thus the name pleomorphic adenoma or benign mixed tumor. Pleomorphic adenoma appears as a painless mass that does not cause ulceration overlying the mucosa. Generally, it is mobile except when it occurs in the hard palate.[5, 6] They can occur at any age groups that vary from 5th to 6th decade and 60% of them are women.[6] With this information, we report a case of a 32 year old male patient diagnosed with benign pleomorphic adenoma of the palate.

**CASE REPORT**

A 32 year old male patient, residing in Navi Mumbai, reported to the department of Oral Medicine and Radiology, with a complaint of a slow growing swelling on the right side of the palate since the past 6 months.

The patient was apparently asymptomatic when he noticed a small swelling in the mouth on the right side posterior of the palate. The swelling to begin with was a small pea sized swelling which gradually increased in size over the next 6 months to attain its present size. There was no pain, ulceration or discharge associated with the swelling. There was no preceding history of trauma. His medical history was unremarkable. General physical examination revealed no variations in his vital parameters. The face was bilaterally symmetrical. The regional lymph nodes were non palpable. The patient gave a positive history of chewing guthka 5-6 times a day since the past 10 years.

Intraoral examination on inspection revealed a single swelling on the right side of the palate involving the hard palate and extending posterior towards the soft palate. Teeth associated with the swelling were 15, 16, 17 and 18. The swelling was ovoid in shape measuring approximately 2cmx2cmx2cm in dimension with a smooth, pink overlying surface.

Figure 1- 32 year old, male patient (Profile figure)

The swelling extended antero- posteriorly from the distal aspect of 15 to the mesial aspect of 17 and medio-laterally from the mid-palatine raphae to the alveolar mucosa in relation to 15, 16, 17 with maximum convexity towards the mid-palatine raphae (Figure 2). On palpation the site, size, shape, surface and extensions were confirmed. The swelling was non-tender, soft to firm in consistency, immobile, compressible and did not show any fluctuation or pus discharge. The swelling did not cross the midline. Teeth associated with the swelling showed evidence of stains and grade II calculus. There was no mobility and displacement associated with the teeth.

Figure 2- Intra oral picture of swelling in relation to 15, 16, 17

On the basis of history and clinical examination, a provisional diagnosis of solid non- infectious mass of palate, likely of benign etiology was made. Differential diagnoses of a palatal abscess, benign minor salivary gland tumors possibly a PA, neuroma, neurofibroma were considered.

Radiological investigations were done including an (IOPA) intraoral periapical radiograph of the 15, 16, 17 region, Maxillary occlusal view and an OPG.

On the IOPA, the crown of 15, 16, 17 appears to be normal. A fairly well-defined radiolucency at the apex of the palatal root of 16, about 1cm in diameter with no definite margins was noted. The interdental alveolar bone showed crestal resorption. The surrounding structures were normal (Figure 3). Occlusal radiograph showed fairly defined radiolucency at the apex of the palatal root of 16 with no definite margins (Figure 3).

The OPG did not reveal any significant radiographic changes (Figure 3).

(A)

(B)

(C)

(D)

Figure 3- (A) Intra oral periapical radiograph, (B) maxillary occulsal view, (C) maxillary lateral occlusal view (D) OPG

Based on the radiographic features the diagnosis of a neoplastic mass of benign etiology was made.

The patient underwent surgical excision of the lesion under general anesthesia. The excised lesion was a white nodular soft tissue mass, measuring 2cm x2cmx 2cm firm in consistency. The area healed after 6 weeks and The patient was followed up every month and there was no recurrence noted.

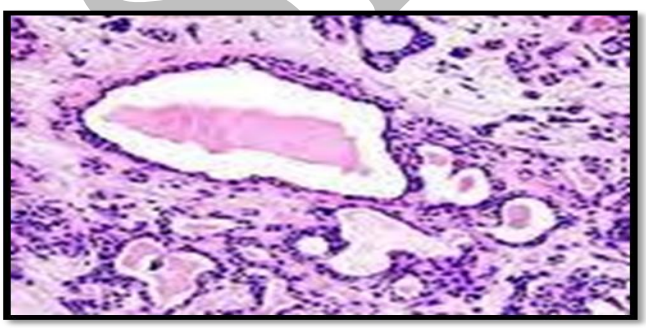

Figure 4- Histopathologic view

the post operative healing was uneventful.

Histopathological examination revealed, epithelial and mesenchymal cells and along with other features suggestive of pleomorphic adenoma (Figure 4).

## DISCUSSION

Pleomorphic adenoma (PA) or mixed tumor is a benign salivary gland tumor, presenting usually in the parotid or submandibular glands.[2, 6] The term pleomorphic describes the embryonic genesis of these tumors, which contain both epithelial and mesenchymal tissues. Infrequently, it may arise from the minor salivary glands localized in the hard

palate and other parts of oral mucosa.[4, 9] Seventy percent of the tumors of the minor salivary glands are PA, and the most common intra oral site is the palate, followed by the upper lip and buccal mucosa.[8] PA appears as a painless firm mass and, in most cases, does not cause ulceration of the overlying mucosa. Generally it is mobile, except when it occurs in the hard palate. Intra oral mixed tumors, especially those noted within the palate, lack a well-defined capsule.[10] Lesions of the palate frequently involve periosteum or bone. Approximately 25% of benign mixed tumors undergo malignant transformation. Treatment for the PA is radical surgery. Pleomorphic adenomas, in general, comprise 40% of minor salivary gland tumors, amongst which palate is one of the commonest sites. The palate has the highest concentration of minor salivary glands in the upper aero digestive tract, and it is the most common site for benign and malignant minor salivary gland tumors.[4, 9] PA of the palate is the most common intraoral tumor followed by tumors arising from the upper lip and buccal mucosa. Palatal tumors are almost always found on the posterior aspect of the palate. 80% of pleomorphic adenomas are found in the parotid gland. They may arise in the nasal cavity, paranasal sinuses, and larynx. PA usually present in the 4$^{th}$ to 6$^{th}$ decades of life with slight female predominance.[6] Intraorally, when they originate in the palate, they usually represent as a unilateral, slowly growing, non tender, firm to rubbery swelling with no surface ulceration. The palatal pleomorphic adenoma may appear fixed to the underlying bone, but is not invasive. The differential diagnoses for this case included palatal abscess, adenoid hyperplasia of minor salivary glands, Odontogenic and non-Odontogenic cysts, and other soft tissue tumors- neuroma and neurofibroma.[12, 13] The plexiform neurofibroma is also uncommon intraorally and may be soft and fluctuant. The gross appearance of pleomorphic adenoma is that of a firm smooth mass within a pseudo capsule.[4] Microscopically the tumor demonstrates islands of stellate and spindle cells interspersed in a myxoid stroma. The pleomorphic nature is determined by an outer layer of myoepithelial cells arranged in a variety of patterns.[13]

One characteristic feature of pleomorphic adenoma is the presence of microscopic projections of tumor outside of the capsule. Three main histological subgroups have been identified: myxoid (80% stroma), cellular (myoepithelial predominant), and mixed (classic) type.[13]

Most of the salivary gland tumors although benign in nature may have a great potential to change into malignancy. About 6% of all

pleomorphic adenomas harbor malignancy, most often in the form of Ca ex pleomorphic adenoma.[14] A very rare variant, called metastasizing pleomorphic adenoma, is histologically benign, but inexplicably presents with distant metastasis. Surgical resection with wide adequate margins is the treatment of choice, as the tumor has a presence of microscopic projections.[2, 6]

The non-invasive diagnostic aids for salivary gland tumors include ultrasound, CT and Magnetic resonance imaging (MRI).[4] These are useful methods in determining the size of the lesion as well as verifying any bony involvement. CT and MRI both provide important information on the location, size, and extension of the tumor into the surrounding superficial and deep tissues.[4] CT is superior to MRI in evaluating bone, especially in diagnosing erosion and perforation of the bony palate and possible involvement of the nasal cavity or maxillary sinus. Treatment of palatal pleomorphic adenoma involves wide local excision of the tumor by careful dissection of the palatal mucosa from the encapsulated mass, including its surrounding capsule, together with clear margins involving the periosteum and associated mucosa, followed by curettage of the underlying bone with a sharp spoon or bur under copious sterile normal saline irrigation, to avoid recurrence.[15]

Tumors at other intraoral sites can be enucleated. A recurrence rate of 2 to 44% in the pleomorphic adenoma (mainly of the parotid gland) has been reported in the literature.[15]

## CONCLUSION

In cases of non inflammatory palatal swellings of long duration a suspicion of minor salivary gland neoplasm should be always raised. Specialized radio diagnostic aids such as CT, MRI and USG should be made use of to assess the pharyngeal spread of the tumor. Although pleomorphic adenoma does not recur after adequate surgical excision a post treatment evaluation should be maintained so as to detect early recurrence, if any.

## REFERENCES

1. Van der Wal JE, Leverstein H, Snow GB, Kraaijenhagen HA,Van der Waal I. Parotid gland tumors: histologic revaluation andreclassification of 478 cases. Head Neck. 1998;20:204-7.
2. Suen J Y, Synderman NL. Benign neoplasms of the salivary glands. In: Cummings CW, Fredrickson JM, Harker LA, Krause CJ, Schuller DE eds., Otolaryngology-Head and Neck surgery. Mosby Year Book, 2nd edition, 1993; Vol. 2, 1029-1042.
3. Baglam T, Durucu C, Cevik C, Bakir K, Oz A, Kanlikama M. Giant pleomorphic adenoma of the nasal septum. Indian J Otolaryngol Head Neck Surg. 2011 Oct;

63(4):393-5.

4. Mubeen K, Vijayalakshmi K. R , Abhishek Ranjan Pati1, Girish B. Giraddi Benign pleomorphic adenoma of minor salivary gland of palate., Journal of Dentistry and Oral Hygiene June 2011;Vol. 3(6), pp. 82-88.
5. Takahama A Jr, Da Cruz Perez DE, Magrin J, De Almeida OP,Kowalski LP. Giant pleomorphic adenoma of the parotid gland.Med Oral Patol Oral Cir Buccal. 2008 ;13: E58-60.
6. Feinmesser R, Gay I. Pleomorphic adenoma of the hard palate: an invasive tumour. J Laryngol Otol 1983; 97:1169-1171.
7. Frazell EL Clinical aspects of tumors of the major salivary glands. Cancer.1954; 637-642.
8. Torske K (2006) Benign neoplasm of the salivary glands. In: Thompson LDR (ed.) Head and neck pathology, 1st edn. Elsevier, Philadelphia, pp. 295–300.
9. Tian Z, Li L, Wang L, Hu Y, Li J (2009). Salivary gland neoplasms in oral and maxillofacial regions: A 23-year retrospective study of 6982 cases in an eastern Chinese population. Int. J. Oral Maxillofac. Surg., 39: 235-242.
10. Neville BW, Damm DD, Allen CM, Bouquout JE. Salivary gland pathology. In: Oral and Maxillofacial Pathology, 2nd ed. Philadelphia: W.B. Saunders company; 2002:406-413.
11. Wood NK, Goaz PW. Peripheral Oral Exophytic Lesions. In: Differential Diagnosis of Oral and Maxillofacial Lesions. 5th ed. St. Louis: Mosby; 1997: 149-155.
12. Byakodi S, Charanthimath S, Hiremath S, Kashalik JJ. Pleomorphic adenoma of palate: A case report. Int J Dent Case Reports. 2011 May: 1(1):36-40.
13. Ogata H, Ebihara S, Mukai K(1994). Salivary gland neoplasms in children. Jpn. J. Clin. Oncol., 24: 88-93.
14. Gnepp DR (2009). Salivary gland (major and minor) and lacrimal gland. In: Gnepp DR (ed) Diagnostic surgical pathology of the head and neck, 2nd edn, WB Saunders, Philadelphia, pp. 434–449.
15. Krolls SO, Boyers RC (1971). Mixed tumor of salivary glands. Longterm follow-up. Cancer, 30: 276–28.