



**Pleomorphic Adenoma, An Omnipresent Entity: A Case Series**

<sup>1</sup>Dr. Rajan Arora, BDS, MDS, Resident, Department of Oral and Maxillofacial Surgery, ITS Dental College, Greater Noida.

<sup>2</sup>Dr. Ashish Sharma, BDS, MDS, Professor and Head, Department of Oral and Maxillofacial Surgery, ITS Dental College, Greater Noida.

<sup>3</sup>Dr. Himanshu Bhutani, BDS, MDS, Professor, Department of Oral and Maxillofacial Surgery, ITS Dental College, Greater Noida

<sup>4</sup>Dr. Sugandha Kaushik, BDS, MDS, Resident, Department of Oral and Maxillofacial Surgery, ITS Dental College, Greater Noida

<sup>5</sup>Dr. Yashobanta Biswal, BDS, MDS, Resident, Department of Oral and Maxillofacial Surgery, ITS Dental College, Greater Noida

<sup>6</sup>Dr. Anisha Grover, BDS, MDS, Resident, Department of Oral and Maxillofacial Surgery, ITS Dental College, Greater Noida

**Corresponding Author:** Dr. Rajan Arora, BDS, MDS, Resident, Department of Oral and Maxillofacial Surgery, ITS Dental College, Greater Noida.

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**Abstract**

Pleomorphic adenoma, a salivary gland tumour, characterised by its diverse histological composition and potential for recurrence. This benign neoplasm primarily affects the major and minor salivary glands, with the parotid gland being the most frequent site of occurrence. The tumour presents as a painless, slow-growing mass, often exhibiting a mobile and well-defined nature. Diagnostic modalities such as fine-needle aspiration cytology and imaging techniques aid in the preoperative evaluation of pleomorphic adenoma, assisting clinicians in treatment planning.

Surgical removal remains the primary management approach, with an emphasis on complete excision to mitigate the risk of recurrence. While the majority of cases exhibit a favourable prognosis, understanding the molecular underpinnings of pleomorphic adenoma is crucial for improving diagnostic accuracy and developing targeted therapeutic strategies. Presenting a case series with three cases of pleomorphic adenoma of different region of head and neck with clinical presentations treated surgically.

**Keywords:** Pleomorphic Adenoma, Salivary Gland Tumour, Mixed Tumour, Parotid Gland, Surgical removal, Endothelioma, Branchioma.

## Introduction

Pleomorphic adenoma (PA) is the most prevalent tumour in the salivary glands, accounting for up to two thirds of all neoplasms.[1] Willis introduced the term "pleomorphic adenoma." [2] It was also known as a mixed tumour, endothelioma, branchioma, endochroma, etc. in earlier times.[3] The submandibular glands (5%), minor salivary glands (10%), and parotid glands (85%) among the most often encountered glands.[4] A majority of adult females affected with PA are in their third or fifth decade of life.[3] As stated by the World Health Organisation, PA is classified as a localised tumour with mixed or pleomorphic characteristics of epithelial origin tangled with chondroid masses, myxoid tissue, and mucoid tissue.[1]

Adenomas usually develop in the superficial lobe although can also spread to the parapharyngeal area and deeper glandular tissues on occasion.[8] Pleomorphic adenoma usually appears as a non- symptomatic swelling which doesn't affect the facial nerve and spreads slowly over time.[5] While PA primarily shows up in the parotid glands, it is additionally found in the salivary glands of the upper lip, cheek, tongue, hard palate, and soft palate.[6]

The term "pleomorphic adenoma" emerges from the tumour's complicated morphology that fluctuates amongst individuals and glands.[1] Instead of only the concurrent multiplication of cancerous epithelium and myoepithelium cells, it is a single cell that arises into either an epithelial or a myoepithelial cell.[3]

Three components contribute the core of the tumour: mesenchymal, myoepithelial cell, and epithelial components.[3] The determination of all three of these elements forms the basis for the notion of PA recognition.[3] The histological manifestation of pleomorphic adenoma demonstrates a loose fibrous

stroma with a varying pattern of epithelium, described as myxoid, chondroid, or mucoid. The cytoplasm of polygonal myoepithelial cells is pale and eosinophilic. During microscopic identification, pleomorphic adenoma can be confirmed with certainty.[7]

The case report is a series of three cases of pleomorphic adenoma of different region of head and neck with clinical presentations treated surgically. Case series also comprises of brief review of literature.

**Case 1:** Is a case of pleomorphic adenoma of parotid gland treated with superficial parotidectomy and facial nerve preservation.

**Case 2:** Is a case of pleomorphic adenoma of palate treated with complete surgical enucleation of the tumour.

**Case 3:** Is a case of pleomorphic adenoma of floor of mouth involving the minor salivary glands treated with complete excision of tumour.

## Presentation of Cases

### Case 1: Pleomorphic Adenoma of Parotid Gland.

A 35 year old male patient residing in Noida came to the department of oral & maxillofacial surgery, with the chief complaint of pain and swelling in right side cheek region from past two years. Pain was mild in nature, aggravates on having food and relieves on taking medications. The diagnosis of the lesion was made using magnetic resonance imaging scan. Pleomorphic adenomas are steadily spreading, usually distinguished and mobile tumour present in the superficial parotid lobe in 80% to 87% of the cases and out of all of them approximately 80% of the cases of pleomorphic adenomas are present in the superficial lobe.[1,2] During treatment procedure, mostly pleomorphic adenomas are smaller than 4 cm in size.[1] In a case series of 280 cases, it was seen that only 6% of cases were larger than 4 cm in size.[3] The treatment that was done on the patient was

superficial parotidectomy with a main stay goal of preserving the facial nerve. (Fig.1)

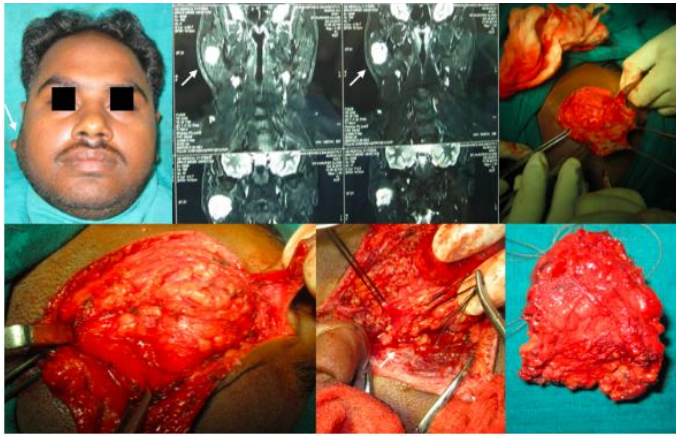


Figure 1: Pleomorphic adenoma of parotid gland on right side, treated with superficial parotidectomy.

### Case 2: Pleomorphic Adenoma of Palate.

A 40 year old female patient residing in Bulandshehar came to the department of oral & maxillofacial surgery, with the chief complaint of pain and swelling in the palate region from past one and a half year. Pain was mild in nature, aggravates on having food and relieves on taking medications. Diagnosis for the patient was made with the help of CT scan and biopsy report. Treatment that was done on the patient was the complete surgical removal of the tumour. (Fig.2)

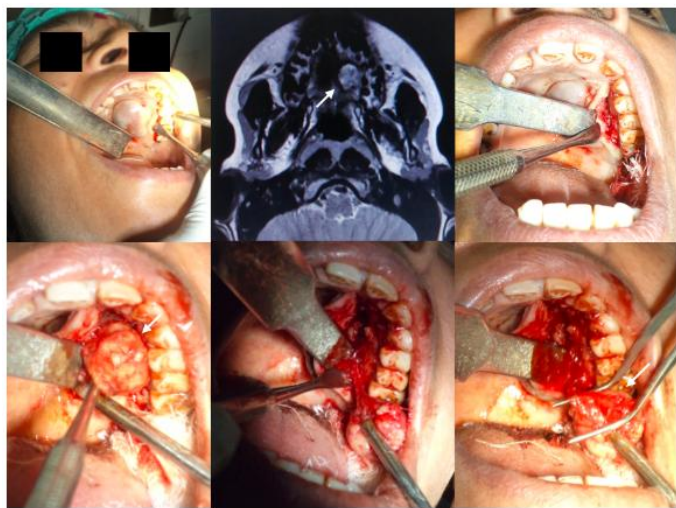


Figure 2: Pleomorphic adenoma of palate, treated with complete surgical removal of the tumour.

### Case 3: Pleomorphic Adenoma of Floor of Mouth.

A 37 year old female patient residing in Delhi came to the department of oral & maxillofacial surgery, with the chief complaint of pain and swelling in floor of mouth from past three and a half years. Pain was aggressive in nature and aggravates on having meals and relieves on taking medicines. Diagnosis for the patient was made with help of CT scan reports. Treatment that was done on the patient was the complete surgical resection of tumour. (Fig.3)

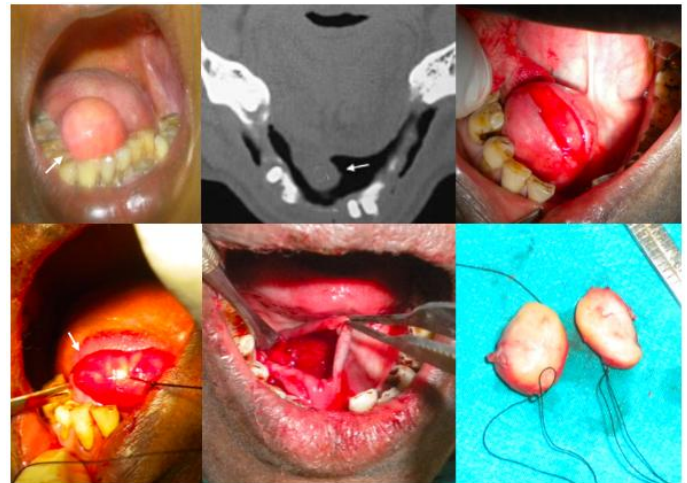


Figure 3: Pleomorphic adenoma of floor of mouth, treatment done was complete surgical resection of tumour.

### Discussion

Pleomorphic adenomas usually affect individuals in their 30s to 60s who are youthful to middle- aged.[5] As per literature, our all three cases also lies in the same age groups. The literature reports suggest a preference for women, whereas in our case series, two out of three patients were female patients.[10] The parotid gland, found in the superficial lobe, which is the primary site of occurrence.[1] It appears as a swelling on the mandibular ramus in front of the ear. In the lateral pharyngeal wall or soft palate, fewer lesions grow in a medial direction between the ascending ramus and the stylomandibular ligament. When it initially forms, it looks like an uneven,

solid nodule. If the cystic degeneration is shallow and does not exhibit any fixation, it can be palpated in those areas.[3,4] The palate is the primary site of pleomorphic adenoma in the minor salivary glands, followed by the upper lips and buccal mucosa.[11] It usually does not trigger any kind of discomfort or impact the facial nerves. In the absence of early intervention, PA can develop to absurd proportions. A small percentage of cases could grow into malignancies.

The mass appears unevenly ovoid in cut section, with well-defined borders; it may be partially encapsulated or remain un-encapsulated.[4,5] The consistency could be mucoid, rubbery, or mushy with infarction and bleeding patches scattered throughout.[2,4] Computed tomography (CT) and magnetic resonance imaging (MRI) serve to confirm the malignancy.[7] The most effective delineation, precise tumour margin, and tumour position in relation to the surrounding tissues are all demonstrated by MRI, which is the advised method of screening.[12] FNAB, or fine-needle aspiration biopsy, is utilised, nevertheless, to distinguish benign lesions from malignant ones. Despite being encapsulated, these tumours have been removed with sufficient margins to encompass the surrounding normal tissues. This is due to the fact that pseudopod displays tiny expansions into the surrounding tissues as a result of false capsule dehiscences. Because of this, incisional biopsy is avoided to keep tumour cells from spilling out.[5]

The most popular method of treatment is surgical excision.[5,6] Only a single case report presented[7] utilised enucleation to treat PA. When PA arises in the parotid gland's superficial lobe, a superficial parotidectomy is carried out to preserve facial nerve functioning.[3,4] When tumours affect the deep lobe, a total parotidectomy is performed.[5] As per the literature review, our case series also includes the patient with

pleomorphic adenoma of parotid gland for which the treatment was same as per the literatures, that is the superficial parotidectomy with a main stay goal of preserving facial nerve functioning. Treatment for pleomorphic adenoma in small salivary glands involves broad local excision of the affected bone or periosteum.[5] Also, for other two cases, the pleomorphic adenoma of palate and floor of mouth, the treatment which was done is same as reported in previous literature support, that is, the complete surgical removal of the tumour mass.

Since enucleation can result in a high rate of local recurrence, it is not the treatment of choice. Pleomorphic adenoma has a good prognosis with a 95% cure rate.[9] Treatment with radiation isn't advised since the tumour is radio-resistant. [3, 5, 6]

### **Conclusion**

Benign salivary gland neoplasms such as pleomorphic adenomas have the capacity to grow to large sizes. An early diagnosis is crucial. The ultimate part of treatment is complete removal of the tumour. In the case of pleomorphic adenoma in the parotid gland, the facial nerve needs to be preserved. A prolonged follow-up must be done to look for recurrence even after removal.

Pleomorphic adenomas are head and neck tumours that, according to research, are misdiagnosed more than half the time, resulting in overly aggressive treatment. Given the possibility of tumour recurrence, meticulous examinations and long-term monitoring are required.

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