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# Pleomorphic adenoma of parotid gland in a 19-years-old male – A case report.

Dental Science

**Dr. Geeta Singh** Associate Professor , Department of Oral and Maxillofacial Surgery, King George's Medical University, Lucknow, Uttar Pradesh , India.

**Dr. Hari Ram** Professor , Department of Oral and Maxillofacial Surgery, King George's Medical University, Lucknow, Uttar Pradesh , India.

**Dr. Dichen Palmo Bhutia** Senior Resident, Department of Oral and Maxillofacial Surgery, King George's Medical University, Lucknow, Uttar Pradesh , India.

**Dr. Suresh Babu** Professor, Department of Pathology, , King George's Medical University, Lucknow, Uttar Pradesh, India

**Dr.Rubin S. John** Junior Resident, Department of Oral and Maxillofacial Surgery, King George's Medical University, Lucknow, Uttar Pradesh, India.

## ABSTRACT

**Background:** Pleomorphic adenoma accounts for the common benign salivary gland neoplasm characterised by neoplastic proliferation of parenchymatous glandular cells along with myoepithelial components. It predominantly affects the superficial lobe of the parotid gland and is most prevalent among the females of 3rd to 5th decade.

**Case Details:** The paper reports a case of pleomorphic adenoma of left parotid gland in a 19 yrs old male who underwent superficial parotidectomy along with excision of the tumour.

**Conclusion:** Pleomorphic adenoma can show variable histomorphological features. Early diagnosis and surgical intervention coupled with radiographs and histological report is advocated taking into account to preserve the facial nerve branches.

## KEYWORDS:

Benign Tumour, Parotid Galnd, Parotidectomy, Pleomorphic adenoma and Salivary Gland

**Introduction:**

Pleomorphic adenoma (PA) is the most common salivary gland tumour and constitutes about two-third of all mixed tumour of salivary gland[1]. It predominantly affect the parotid gland(85%) followed by minor salivary gland(10%) and the submandibular glands(5%)[2]. Gender predilection shows that females are more commonly affected than males(2:1).The pleomorphic nature of the tumour can be attributed to its cellular origin i.e. epithelial and connective tissue. Majority of the cases involves only the superficial lobe of the parotid gland. However, rare incidences are seen involving the deep lobe and the parapharyngeal space as well.[4]. PA of minor salivary gland of palate ,lip ,cheek, tongue and the floor of the mouth are also reported[3]. Wide excision with good safety margins render a successful treatment[6,7] ,keeping in account to preserve the branches of facial nerve .

**Case report.**

A 19 yrs old male patient reported to our Out patient Department with a chief complaint of painless, slow growing, swelling on the left side of face since 3 years(Fig: 1). Initially he appreciated the swellings as a small nodular growth which started progressing in size gradually to attain the present size. Contrast enhanced computed tomography (CECT) revealed a large ,well-encapsulated, heterogeneously enhancing soft tissue attenuation lesion measuring approx 4.4 x4 x3 cms, over the left parotid region. The mass was seen to involve only the superficial lobe of the gland(Fig. 2 and 3).

Extra-oral examination revealed a marked facial asymmetry with a well-defined, ovoid , solid swelling measuring approximately about 4.5 x 4.5 cm on the left side. Superolaterally the swelling extended from the level of tragus of the left ear to the angle of the mandible and anteroposterior extent was from mid body region upto the posterior border of the mandible. The left earlobe was slightly everted. Overlying skin at the centre of the swelling was mildly depigmented ,gloosy and hairless(Fig .1). All the Facial nerve functions were intact. Palpatory findings revealed firm, non-tender and warm swelling. It was fixed to the underlying structure while the overlying skin was free. Intra-oral examination was unremarkable.

FNAC report was suggestive of PA of the left parotid gland .The patient underwent superficial parotidtectomy under general anaesthesia after obtaining a written consent. Modified Blair approach was employed to approach the tumour .The peripheral nerve facial nerve branches were identified and preserved. A careful dissection allowed complete separation of the superficial lobe from the underlying deep lobe and the facial nerve( Fig. 4 , 5), after which it was later excised along with the tumour in toto( Fig.6). The excised mass was 4.5 x 3.5 x3.5 cms in dimensions. Histopathology revealed a well capsulated, highly cellular mass with interspersed epithelial cells and myoepithelial cells containing eosinophilic cytoplasm. Presence of mucoid material between the tumour cells imparted a myxomatous background. Chrondroid and ductal areas along with fat were also seen. Perineural invasion was not evident . The characteristic features of chondromyxoid foci and glandulodductal differentiation confirmed the diagnosis as PA of the left parotid gland(Fig. 7)

**Discussion:**

PA are generally asympomatic masses that are discovered incidentally. It has a glandular origin in the head and neck region that can measure upto 2-6 cms in majority of cases[6]. However, larger tumours may be seen as a single, multi-nodular mass causing gross facial deformity along with facial nerve weakness to certain degree and can weigh from several grams to 8 kilograms.[8, 9]. However, overall Facial nerve involvement is infrequent [7,]which was so in our case too. Deeper lobe involvement may manifest signs like retro-tonsillar and parapharyngeal masses.[10]

The exact etiology is obsure ,however, studies suggest its strong association with Simain Virus 40(SV 40) and exposure to

radiation.[5]

Most commonly, PA is reported to involve right parotid gland as compared to the left and is found in 3rd to 5th decade of life with strong female predilection[11]. However, in our case the patient was 19 years old male with involvement of the left parotid gland.

Imaging modalities such as CT and MRI are essential aid in diagnosis.MRI is considered better because of its soft tissue delineation and demarcation[4]. In our case contrast enhanced CT was performed ,the findings of which suggested of a large well-defined heterogenous lesion located on in the superficial lobe of the left parotid gland. Ultrasound imaging helps to differentiate cystic from solid tumours along with assessment of intra or extra-capsular origin of the lesion.[12, 13]

FNAC as a diagnostic tool are usually performed after the imaging procedures and can aid in ruling out a vascular lesion and guiding the surgeons to use appropriate approach.[12,13,14] In our case FNAC reported loosely cohesive sheets and clusters of epithelial cells with stromal fragments embedding myoepithelial cells in the background of chondromyxoid matrix.

As pleomorphic adenoma exhibit variable number of cytomorphometric and architectural diversity , it may be mis-diagnosed with other tumours of salivary gland like myoepithelioma, adenoid cystic carcinoma, mucoepidermoid carcinoma, and basal cell adenoma.

Though being a variant of PA, myoepithelioma shows no chrondomyxoid and chondroid foci, which in the other hand is the hallmark feature of PA[16]. Adenoid cystic carcinoma shows epithelial and myoepithelial differentiation in three forms: cibriform, tubular and solid.(ref) . additionally, perineural invasion and infiltrative tendency are the salient features of adenoid cystic carcinoma.[17] .In Mucoepidermoid carcinoma , the intermediary cells lacks the ability to produce myxochondrial stroma and shows comparatively lesser degree of squamous differentiation and keratinisation as compared to PA.[18].Basal cell adenoma or monomorphic adenoma , a variant of PA, shows uniform basaloid epithelial pattern and hence can be easily differentiated from PA.[18,20]

Histological features in our case showed a well –capsulated cellular mass of sheets and islands of epithelial cells and round myoepithelial cells, along with myxomatous background and ductal architecture .All of these features were clearly suggestive of PA.[6,7,9]

Aggressiveness ,extent of tumour mass and its relation with facial nerve are the major governing factors in deciding the treatment of choice of PA .Enucleation, enucleoresection and superficial or total parotidectomy with preservation of the facial nerve forms the mainstay of surgical management of PA.[19] Recurrence is rare in total parotidectomy compared to enucleation and superficial parotidectomy. The rapture of capsule(pseudo capsule) and subsequent spillage of tumour cells during excision are attributable to recurrences of the tumour. Range of malignant transformation of the tumour is 1.9-23.3%[20] . Factors like advanced age, massive tumour size , long duration of tumour , occurrence in submandibular gland adds concern for its malignant transformation.[20]

**Conclusion**:

Pleomorphic adenoma can show variable histomorphological features. Early diagnosis and surgical intervention coupled with radiographs and histological report is advocated taking into account to preserve the facial nerve branches. A Regular follow-up period upto 3-5 years is necessary to look for any recurrences or malignant changes

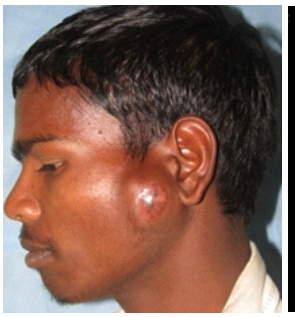

Figure 1

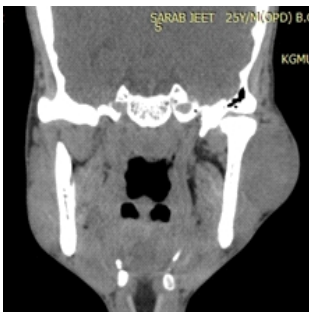

Figure 2

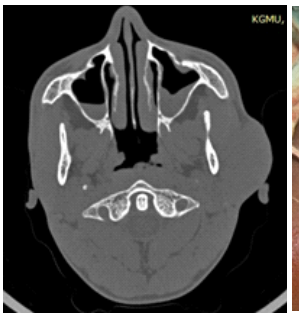

Figure 3

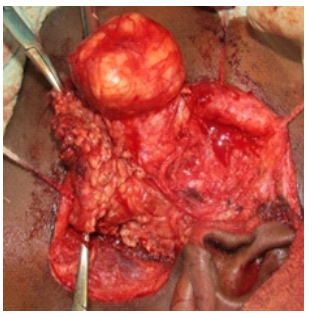

Figure 4

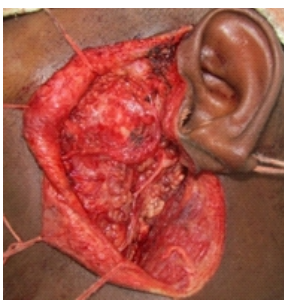

Figure 5

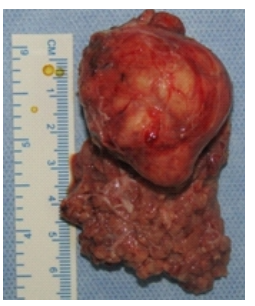

Figure 6

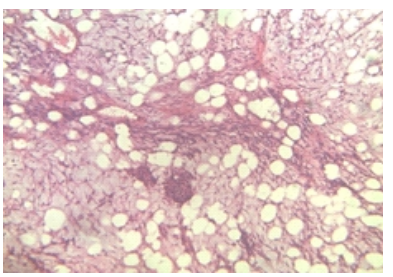

Figure 7

**Legends Of figures:**

Figure 1: clinical photograph showing swelling in relation to left parotid

Figure 2: Coronal CT section showing well encapsulated mass of left parotid gland

Figure 3: Axial CT section showing tumour mass of left parotid gland

Figure 4: Intraoperative photograph showing separation of the tumour mass from the underlying facial nerve branches.

Figure 5: Intraoperative photograph showing intact branches of the facial nerve after tumour removal

Figure 6: Gross specimen of the tumour mass along with the superficial lobe of parotid gland.

Figure 7: H&E stained (10x) slide showing epithelial sheets and cords with chondro-myxoid stroma

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