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***Case Report***

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# Pleomorphic adenoma: A case report

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## Abstract

Pleomorphic adenoma is a benign salivary gland neoplasm with its most common site of origin being the parotid gland, usually involving the superficial lobe of the parotid gland. Pleomorphic adenoma is a painless swelling which gradually increases in size if left untreated. It has a female predilection and occurs within the age range of 30-60 years. Surgical excision bears a risk of injury to the facial nerve as it enters the substance of the parotid gland and divides into its terminal branches. Here we report a case of a pleomorphic adenoma of right parotid gland presented by a 35 years old lady which was managed by surgical excision and have described the details of the vital structures which we came across.

**Keywords:** Pleomorphic adenoma, Salivary gland tumor, Parotid gland, Surgical excision.

**INTRODUCTION**

Pleomorphic adenoma is a benign salivary gland neoplasm. Amongst salivary gland tumors, pleomorphic adenoma constitutes up to two third [1]. It is regarded as the commonly occuring salivary gland tumor. It is also known as benign mixed tumor as it's histopathological features show a combination of ductal and myoepithelial elements. This entity affects any any age group but is most commonly seen in the 4th to 7th decade of life and has a female predilection [2]. Among the salivary gland tumor occurring in children, pleomorphic adenoma is the most common [3]. It usually has a typical clinical presentation of a slowly progressing painless swelling in the preauricular area without facial nerve involvement [4]. Pleomorphic adenomas are best treated by surgical resection with good safety margins and postoperative patient follow-up for at least 3-4 years [5].

This article reports a case of pleomorphic adenoma involving the right parotid gland which was surgically managed by parotidectomy of the superficial lobe while preserving the facial nerve.

**CASE REPORT**

A 35 years old lady reported to our department with a chief complaint of a slowly growing swelling without any symptom of pain on the right side of face since 4 months. The swelling, initially being small in size increased gradually with time to reach the size with which she had reported to us. She had no relevant medical, family or past dental history. On local extra-oral clinical examination, there was a marked facial asymmetry. An extra-oral, well-defined, solitary swelling was appreciated extending from the ala tragus line superiorly upto approximately 2 cm below the mandibular angle inferiorly, and from the vertical lateral canthal line anteriorly upto the mastoid process posteriorly measuring approximately 8*6 cm with everted ear lobe. Facial muscular movements were examined for facial nerve palsy which were normal. On palpation, the swelling was firm, non-fluctuant, non-tender and movable. Intraoral examination had no significant findings other than caries of the teeth. Based on the above clinical findings, we established a provisional diagnosis of pleomorphic adenoma. The other probable diagnosis such as Warthin's tumor or facial nerve neuroma could be the possible differential diagnosis.

Unfortunately, we could not carry out any radiographic investigation, but an Ultrasonograpic screening was done which revealed the presence of a hypoechoic ovoid mass with a lobulated contour and a heterogenous structure.

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A fine needle aspiration cytology (FNAC) of the mass was done wherein branching cellular clusters; of epithelial and myoepithelial cells were seen which suggested a diagnosis of pleomorphic adenoma. We further planned a surgical procedure for excision of the tumor mass. An informed consent was obtained and the patient was taken under general anaesthesia. Under all aseptic precautions, the usual painting and draping was carried out and incision line was marked. A modified Blair's incision was taken in the preauricular region and extending inferiorly through the skin and the platysma. Soft tissues were bluntly dissected in a retrograde manner in order to prevent injury to the peripheral branches of the facial nerves. After identifying the anterior branch of greater auricular nerve in the preauricular area, it was sacrificed (Figure 1). Further care was taken for identification of the main branch of the facial nerve which emerges from stylomastoid foramen. Approximately 1.5 to 2.8 cm below the external auditory meatus where it enters the parotid structure[6], the terminal branches of the facial nerve were separated from the superficial part of the parotid gland and it was dissected out in toto, well enclosed within its capsule (Figure 2).

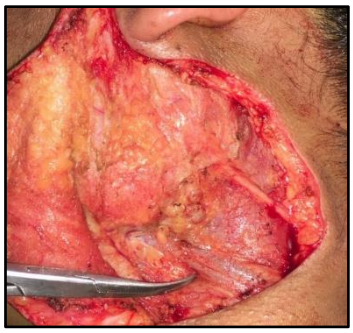

**Figure 1:** Anterior branch of Greater Auricular Nerve

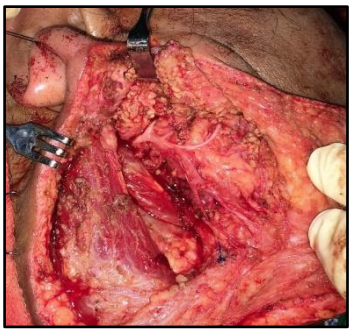

**Figure 2:** Terminal branches of facial nerve entering the substance of parotid gland via its posterior

The excised tumor mass was sent for histopathological evaluation. This excised tumor mass measured approximately 7*6*2.5 cms with irregular surface (Figure 3). Histopathological examination revealed the presence of tumor surrounded by a fibrous capsule. As appreciated in Figure 4, the tumor comprised of the epithelial component and stromal chandes. The epithelial components are seen to be arranged in the form of ducts, small cellular nests, cellular sheets and anastomosing cords. Ducts are lined by both luminal i.e. cuboidal/ flat cells and abluminal cells which are round, polygonal and spindle shaped. Lumen contains eosinophilic coagulum. Myoepithelial cell could be seen exhibiting both plasmacytoid and spindle shaped morphology. Foci of hyalinization, myxomatous appearance and foci of squamous cells could be noted in the stroma. All the findings along with the clinical correlation confirmed the diagnosis of Pleomorphic Adenoma involving the superficial lobe of parotid gland in the right side.

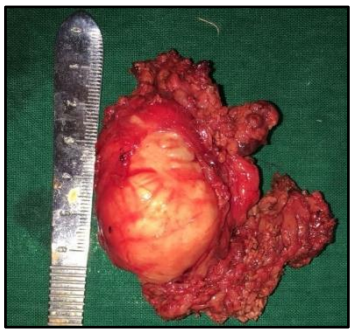

**Figure 3:** Excised specimen of superficial lobe

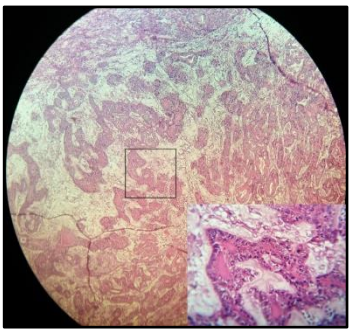

**Figure 4:** Histopathological examination. The area marked in square is further magnified and shown on the right side

**DISCUSSION**

The location and extent of the lesion indicated us to think about a parotid gland pathology as parotid gland is the most common salivary gland to be affected among all the major and minor salivary glands. Parotid tumors occupy 64% to 80% of all the salivary gland neoplasms [2]. Fortunately, a relatively low percentage of parotid tumors are malignant, ranging from 15% to 32%. Table 1 summarizes the different types of parotid neoplasm and its rate of occurrence by five different well-known surveys, the incidence of pleomorphic adenoma being the highest and that of basal cell adenoma being the lowest.

Pleomorphic adenoma, being the most common salivary gland tumor constitutes 45-74% cases of all the salivary gland neoplasms and 53-77% occurring in the parotid gland [7]. Warthin tumor following it ranges from 6-14% of the cases of salivary gland tumor of parotid gland. But Warthin's tumor occurs more commonly in elderly males having a history of smoking and the most common site of occurrence in the parotid region is the lower portion near the angle of mandible [8].

Pleomorphic adenomas involving the parotid gland occur mostly in the superficial lobe as with our case and only 10% of the cases involve the deep lobe of parotid gland beneath the facial nerve. An understanding of the anatomy and the extracranial course of facial nerve and its branches is very important to understand the involvement of parotid gland and to plan the further surgical treatment.

This entity is best treated by surgically excising the tumor mass. Untreated cases gradually enlarge in size and yet remain painless. As for those involving the superficial lobe, superficial parotidectomy while identifying and preserving the facial nerve is carried out. With adequate surgery, pleomorphic adenoma has an excellent prognosis with a cure rate of more than 95%.

A remarkable microscopic diversity can exist from one type of pleomorphic adenoma to the next, as well as in different areas of the same tumor as the name itself suggests. It is composed of a mixture of glandular epithelial and myoepithelial cells with a mesenchyme like background known as the stroma.

Pleomorphic adenoma has a low recurrence rate but depends upon the type of treatment done. Conservative approach of enucleation of this parotid gland tumor often causes incidence of recurrence due to multifocal seeding of the primary tumor beds. Such cases are difficult to manage. There are chances of recurrent tumors being malignant. However, the rate of this benign salivary gland tumor transforming into malignancy is small having a 3-5% possibility of all cases. Another complication that can arise from surgery in the region of the parotid gland is injury to one or more branches of the facial nerve which can cause transient/ complete paralysis of the facial expression muscles supplied by it. Hence, care should be taken while incision and dissection, to identify and preserve its branches while dissecting the gland. We had to sacrifice the greater auricular nerve which left the patient with loss of sensation in the preauricular area post-operatively. The anterior branch of the greater auricular nerve sends small branches into the substance of parotid gland and connects to facial nerve [9]. Other than this, the patient's follow up has shown no signs of recurrence or any other morbidities associated with the excision until now.

Pleomorphic adenoma involving the major salivary gland commonly occurs in the parotid gland. Being benign in nature, its proper diagnosis and careful surgical excision preserving the facial nerve will aid in adequate treatment with less chances of recurrence.

**Table 1:** The different types of parotid neoplasm and its rate of occurrence by five surveys

| | Ellis *et al.* (United States, 1991) | Eveson & Cawson (Great Britain, 1985) | Thackray & Lucas (Great Britain, 1974) | Eneroth (Sweden, 1971) | Foote & Frazell (United States, 1953) |
|---|---|---|---|---|---|
| Total number of cases | 8222 | 1756 | 651 | 2158 | 764 |
| **BENIGN TUMORS** | | | | | |
| Pleomorphic Adenoma | 53.0% | 63.3% | 72.0% | 76.8% | 58.5% |
| Warthin Tumor | 7.7% | 14.0% | 9.0% | 4.7% | 6.5% |
| Oncocytoma | 1.9% | 0.9% | 0.6% | 1.0% | 0.1% |
| Basal Cell Adenoma | 1.4% | - | - | - | - |
| Other Benign Tumors | 3.7% | 7.1% | 1.8% | - | 0.7% |
| **TOTAL** | **67.7%** | **85.3%** | **83.4%** | **82.5%** | **65.8%** |
| **MALIGNANT TUMORS** | | | | | |
| Mucoepidermoid Carcinoma | 9.6% | 1.5% | 2.3% | 4.1% | 11.8% |
| Acinic Cell Adenocarcinoma | 8.6% | 2.5% | 1.2% | 3.1% | 2.7% |
| Adenoid Cystic Carcinoma | 2.0% | 2.0% | 3.3% | 2.3% | 2.1% |
| Malignant Mixed Tumor | 2.5% | 3.2% | 4.1% | 1.5% | 6.0% |
| Squamous Cell Carcinoma | 2.1% | 1.1% | 1.0% | 0.3% | 3.4% |
| Other Malignant Tumors | 7.5% | 4.4% | 4.7% | 6.3% | 8.1% |
| **TOTAL** | **32.3%** | **14.7%** | **16.6%** | **17.5%** | **34.2%** |

**Acknowledgements**

None.

**Conflict of Interest**

None.

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