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‘A Parotid gland pleomorphic adenoma: A case study.’

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Abstract: Introduction - Pleomorphic adenoma is the most common type of benign tumor which occur in major and minor salivary glands. It is mesenchymal, myoepithelial and duct reserve cell origin. 80% of the Pleomorphic adenoma are located in Parotid gland. Pleomorphic adenoma when occur in parotid gland, commonly it involves superficial lobe or superficial and deep lobe together. It occurs as a slow growing tumor which gradually increases in size without involvement of facial nerve. **Method** – A 40-year female patient having Pleomorphic adenoma of right parotid gland with size 40mm x 33mm x 25mm involving superficial lobe was planned for surgical resection (Superficial parotidectomy) which is the first line of treatment. In this case study Superficial Parotidectomy was done as this operation brings down recurrence rate to minimum. **Result**- A Pleomorphic adenoma of right parotid gland involving superficial lobe was successfully treated by surgical procedure without damaging facial nerve and any complications. No recurrence was noted during the follow up upto 6 months after surgery. **Conclusion** – Pleomorphic adenomas should be managed carefully as they have tendency of recurrence and malignant transformation. For better prognosis and least chances of recurrence, diagnosis should be done properly and surgery should be done with meticulous precaution by preservation of facial nerve.

Keywords- Pleomorphic adenoma, Salivary gland tumor, Parotid gland, parotidectomy.

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INTRODUCTION:**Introduction-**

Pleomorphic adenoma is the most common type of benign tumor which occur in major and minor salivary glands¹. This tumor usually occurs in major Salivary glands but it can also occur in salivary glands of the palate, upper lip and buccal mucosa². Mostly pleomorphic adenoma is located in the parotid gland (80%), 10% in submandibular salivary gland and 0.5% in sublingual salivary gland. It is mesenchymal, myoepithelial and duct reserve cell origin³. This is more common in female as compare to male in the ratio of 3:1. It can occur in any age group but it is found more commonly in 4th and 5th decade. It usually occurs unilaterally⁴. Though this tumor is benign, yet malignant transformation may occur in approximately 3 % to 5% of cases⁵.

Pleomorphic adenoma when occur in parotid gland, commonly it involves superficial lobe or superficial and deep lobe together⁶. Pleomorphic adenoma occurs as a slow growing tumor which gradually increases in size without involvement of facial nerve even if tumor is huge one⁷. Wide local excision with good safety margins is the best treatment for pleomorphic adenoma with follow up for at least 3-4 years⁸.

Here we represent a case of pleomorphic adenoma involving the superficial lobe of right parotid gland which was surgically managed by parotidectomy of superficial lobe preserving the facial nerve.

Case report-

A 40-year healthy female was reported to *shalyatnatra* OPD of our institute with a chief

complaint of slow growing, painless swelling below and behind rt ear since last 4 years. The swelling was initially small in size which gradually increased with time to attains the size with which she has reported to our OPD. There was no history of any systemic fever, raised local temperature or any discharge from the swelling site. Patient was known case of diabetic mellitus since past 4 years and was taking antidiabetic medications regularly having good control on blood sugar level. She did not have any other relevant medical, family and past dental history. Extra oral clinical examination revealed marked facial asymmetry. On examination eye movements appeared normal. Examination of facial muscular movement were done for facial nerve palsy which were normal. On palpation, swelling was non tender, firm, non-fluctuant and non-movable. There were no significant findings on intra oral examination. Based on above clinical findings, a provisional diagnosis of pleomorphic adenoma was taken into consideration. The other possible diagnosis such as Warthin's tumor, facial nerve neuroma was considered as the most probable differential diagnosis.

Computerized tomography scan was done which revealed a well-defined mildly enhancing lobulated soft tissue lesion approximately 40mm x33mm x25mm involving superficial lobe of right parotid gland. No extension into deep lobe seen. No adjacent bony erosion noted. s/o Benign Parotid neoplastic etiology, possibility of pleomorphic adenoma. Fine needle aspiration cytology (FNAC) from right parotid

gland tumor was done which showed cytological features of benign salivary gland tumor. Suggestive of pleomorphic adenoma. Further planning was done for surgical procedure for excision of the superior lobe of the right parotid gland along with tumor mass. After performing all necessary investigations and obtaining informed consent of the patient and relatives, patient was taken under general anesthesia. By taking all aseptic precautions, painting, draping and isolation of the operative field was done. Incision line was marked and Modified Blair's incision was taken in the preauricular region. Layer wise dissection was done through platysma muscle and superficial musculoaponeurotic layer. Facial nerve was identified and traced forward along the branches. Dissection was done bluntly in order to prevent injury to the peripheral branches of facial nerve. Separation of nerves from parotid gland was done and tumor was dissected out well enclosed within its capsule after separation from the facial nerve and the masseter muscle and Superficial parotidectomy done. After achieving hemostasis drain was kept in cavity and layer wise closure of the wound was done. Good antibiotic coverage was given along with other supportive

medications. Injection Dexamethasone 8mg twice a day was given to patient to avoid non hemorrhagic facial paralysis. Excised tumor was 6x5x4 cm in size with irregular surface having grey white to gray brown colour with yellowish soft tissue mass.

Tumor Sample was sent for histopathological examination which showed salivary gland tissue along with adipose tissue, a well circumscribed tumor mass with fibrous capsule. Tumor composed of epithelial cell arranged in tubular and clusters within a chondro-myxoid stroma. Epithelial cells showed moderate eosinophilic cytoplasm and central to eccentrically placed nuclei giving a plasmacytoid appearance. Myxoid stroma showed stellate cells without pleomorphism. All findings and clinical features confirmed the diagnosis of Pleomorphic adenoma involving superficial lobe of right sided parotid gland.

Drain was removed after its secretions got decreased. Periodic follow up of the patient was taken.



Pre-operative



Incision marking



Intra operative - 1



Intra operative -2



Excised Tumor



Post operative day 20

Discussion:

About 80% of the salivary gland neoplasm occur in parotid gland. From these 80% are benign in nature of which 80% are pleomorphic adenoma and 80% occur in superficial lobe.

Fifteen percent of the salivary tumor occurs in submandibular salivary gland from which 50% are benign. 95% of these are pleomorphic adenoma. 10% of the salivary neoplasm are in the minor salivary glands in palate, lips,

cheeks, etc. Of these only 10% are benign. Though parotid tumors are common, their malignancy rate is only 20%. Submandibular tumors are uncommon but 50% of them are malignant. 90% of the minor salivary gland tumors are malignant. Though sublingual salivary gland tumors are very rare, almost all of them are malignant. Incidence of malignancy in salivary glands is inversely proportional to size of the glands i.e., it is 15%

in parotid gland, 50% in submandibular gland and 85% in sublingual gland⁹.

Pleomorphic adenoma is the most common benign Salivary gland neoplasm. It is also known as mixed tumor as it has dual origin from epithelial and myoepithelial elements¹⁰.Grossly it contains cartilages, cystic space, solid tissue¹¹. These tumors are slow growing and may remain unrecognized and asymptomatic that the patient does not seek treatment. These tumors may attain significant size over a period of years and some of them may mislead by having short histories constituting rapid development^{12,13}.

In the treatment of the pleomorphic adenoma surgical resection is the first line of treatment. Incisional biopsy cannot be done as biopsy of parotid carries a risk of damage to the facial nerve. If Enucleation is done it will be followed by recurrence in as many as 50% of the cases due to extension of tumor outside as pseudopods across the capsule. Excision of these tumor with a cuff of surrounding normal tissue carries a risk of injury to one or more branches of the facial nerve. Superficial parotidectomy is the treatment of choice. This operation brings down recurrence rate to minimum, as also assures against injury to any branch of the facial nerve¹⁴. If only superficial lobe is involved then superficial parotidectomy is done wherein parotid superficial to facial nerve is removed. Total conservative parotidectomy is done by retaining facial nerve if both lobes are involved¹⁵. If tumor is simple pleomorphic adenoma there is no requirement of further treatment, only regular follow up is needed.

Post operative complication of this surgery are due to relationship of the facial nerve to the parotid gland. Facial paresis, Frey's syndrome are most common complications. Frey's syndrome was more common after total parotidectomy compare to superficial one^{16,17}.

In the present case study patient was thoroughly followed up for a period of 5 months and no sign of recurrence as well as no complications were observed.

Conclusion - Pleomorphic adenoma are benign salivary gland tumor which most commonly involve parotid gland. It should be treated surgically by using suitable method. Pleomorphic adenomas should be managed carefully as they have tendency of recurrence and malignant transformation. For better prognosis and least chances of recurrence diagnosis should be done properly and surgery should be done cautiously by preservation of facial nerve.

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