

## Audit on Parotid Tumors in a Tertiary Care Hospital

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### ABSTRACT

**Introduction:** Salivary gland tumors have different clinical presentation, different appearance and above all are relatively uncommon in the general population; however in tertiary care center, they present regularly.

**Methods:** A retrospective study was done, including all the patients who had presented to our department East Surgical ward of Mayo hospital, in Lahore during 7 years period from October 2006 to July 2013 with parotid pathology.

**Results:** There were 114 cases with parotid gland disorder. Pleomorphic adenoma (74.6%) and mucoepidermoid carcinoma (7.9%) were the most common benign and malignant neoplasms. Male to female ratio (M/F) and the mean age of patients were 1.15:1 and 37.36 respectively.

**Conclusion:** Female predominance is found in our study both for benign and malignant disorder. Mean age for malignancy was 39 years which shows involvement of younger generation. These findings should help surgeons and pathologists for more accurate diagnosis, management and treatment

**Keywords:** Parotid tumours, audit, pleomorphic adenoma, neoplasms

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### INTRODUCTION

Salivary gland tumors have different clinical presentation, different appearance and above all are relatively uncommon in the general population, however in tertiary care center, they present regularly. They constitute 3% to 4% of all head and neck neoplasms<sup>1,2</sup>. This condition is important as it is directly related to the nerve it encompasses and the appearance of the person. Other than that it has different clinical course and pathology. The cause of the pathology is not understood clearly with little probable etiology, they are smoking, vitamin A deficiency, ionizing radiation, chemotherapy and sunlight<sup>3,4</sup>. The salivary gland tumor has variable pathology and variable incidence, differing in different countries and even within the different ethnicity and races. We have tried to extract and present the presentation and the treatment done for parotid pathology in our set up.

### MATERIALS AND METHODS

A retrospective study was done, including all the patients who had presented to our department East Surgical ward of Mayo hospital, in Lahore during 7 years period from October 2006 to July 2013 with parotid pathology. The patients included were more than 12 years old. We surveyed all cases regarding patient's age and gender as well as site of

involvement and final histopathological diagnosis according to the patient's medical records. Data were analyzed using SPSS 15 software. Patients were reviewed with respect to presentation, investigation and treatment.

### RESULTS

There were 114 cases with parotid gland disorder. With following number of cases, there were 53(46.5%) male and 61 (53.5%) female (M/F 1.15:1). The age range was from 14-66 years with mean age of 37.36 years. Out of all parotid pathology, 100(87.7%) were benign and 14(12.3%) were malignant. Pleomorphic adenoma was the most common tumor comprising 85(74.6 %) of all parotid tumor followed by mucoepidermoid carcinoma 9(7.9%) and Warthin's tumor 8(7%). Of all 100 (87.7%) benign cases 47 were males and 53 females (M/F 1:1.12). The mean age of patients was 37.08. Pleomorphic adenoma and Warthin's tumor were the first and the second most common benign tumor, respectively. There were 103(90.4%) cases with primary presentation and 11(9.6%) cases with recurrent presentation. Out of this 8 cases were benign and 3 were malignant.

There were 14(12.3%) malignant cases. Out of this 6 were males and 8 were females with M/F ratio of 1: 1.33. The mean age for malignancy was 39.42 years. There was Mucoepidermoid carcinoma with 9 (7.9%) cases and Adenolymphoma with 2(1.8%) cases, Acinic cell carcinoma with 1(0.9%) case, carcinoma expleomorphic adenoma with 1(0.9%) case,

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Lymphoma with 1(0.9%) case. There was 1 case with sialolithiasis and 1 case with chronic nonspecific inflammation. Benign to malignant ratio was 7:1. There was 1 case with bilateral pleomorphic adenoma, multiple malignant cases with ulceration and discharge through the swelling.

More than half of the patients had superficial parotidectomy 70(61.4%); total parotidectomy was done in 40(35.1%) patients with careful dissection and identification of the facial nerve branches. Malignant and parotid swelling with deep lobe

involvement had total parotidectomy. 3 patients had block neck dissection according to the level of lymph node involved, 1 total parotidectomy with classical block neck dissection, 1 total parotidectomy with Modified block neck dissection and 1 patient had total parotidectomy with supraomohyoid block neck dissection. 1 patient refused for the surgery. All the 3 block neck dissection case had Permanent facial nerve palsy as it was sacrificed due to tumor involvement.

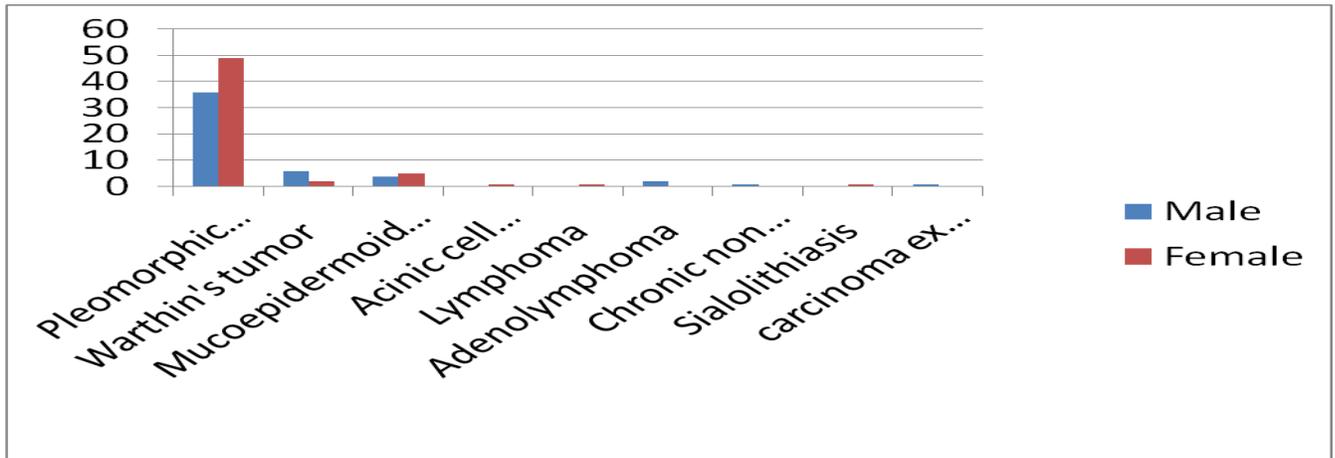


Chart 1: Gender wise distribution of parotid pathology.

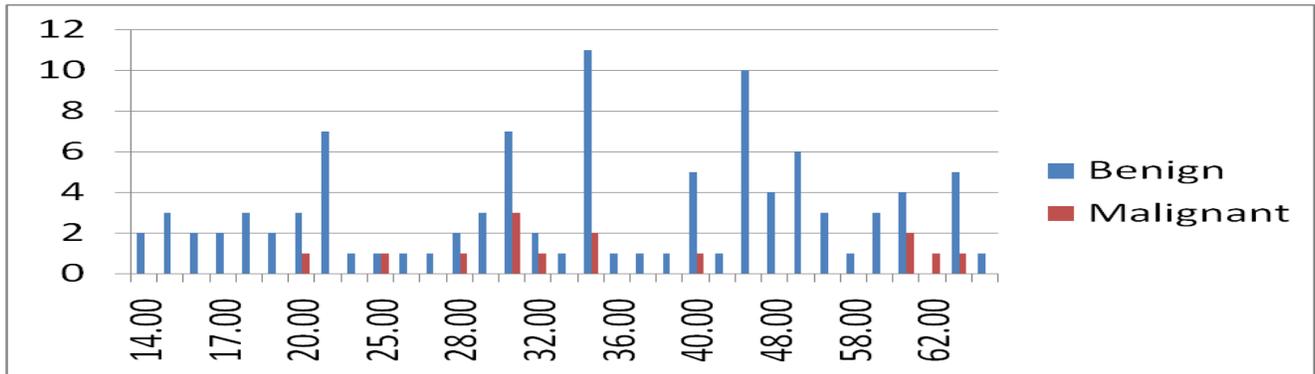


Chart 2: Age wise Distribution of Neoplasm.

Table 1: Comparison of Incidence of different parotid pathology with rest of the world.

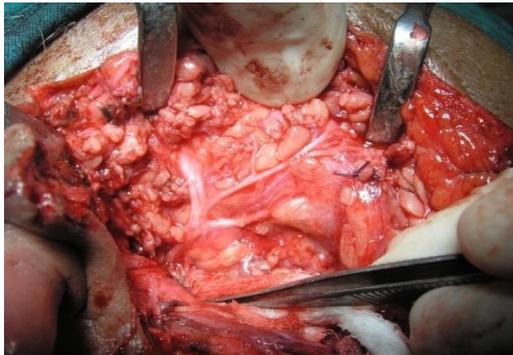
Diagnosis	Frequency	In East surgery ward	In rest of the world
Pleomorphic adenoma	85	74.6%	59%
Mucoepidermoid carcinoma	9	7.9%	7.9%
Warthin's tumor	8	7.0%	7.3%
Acinic cell carcinoma	1	0.9%	3.5%
Carcinoma ex pleomorphic adenoma	1	0.9%	4.4%



Pic. 1: Bilateral pleomorphic adenoma



Pic. 5: Post Flap rotation and wound closure



Pic.2: Facial nerve trunk and its branch



Pic. 6: Post operative follow up



Pic.3:Recurrent mucoepidermod carcinoma with LN metastasis



Pic. 4: Classical Block Neck Dissection with total parotidectomy

## DISCUSSION

The salivary gland neoplasm's are complex with variable outcome. The incidence of parotid tumors is relatively low in comparison with other head and neck lesions. The vast majority of the salivary gland neoplasm's, 70% are located in the parotid gland. The incidence rate of benign parotid neoplasm's is 75% and malignant lesions constitute the rest 25%<sup>5</sup>. Our study has female predominance with the ratio of M/F 1.15:1. This data is not in accordance with studies conducted in other part of world<sup>6, 7, 8</sup>.

The mean age of patients in benign neoplasms was 37.36 years. This result is similar to the other studies worldwide. Pleomorphic adenoma is the most common Benign parotid lesion with an incidence of 59% and Mucoepidermoid carcinoma is the most common malignant parotid lesion 7.9%. As, similar to the present study, all researchers from other parts of world have noticed that Pleomorphic adenoma stands for 40.4-89.9% of all salivary gland tumor<sup>9,10,11,12</sup>. Warthin's tumor was the second common benign tumor denoting 7%. Other studies in Denmark and Pennsylvania reported a high incidence of Warthin's tumor; however some populations such as Africans were affected rarely<sup>12</sup>.

We had mucoepidermoid carcinoma as the commonest malignant parotid disorder which is consistent with studies conducted in Brazil, Libya and China. Again our study has female predominance of malignant pathology which is not in accordance to the most of studies conducted worldwide. However little study on salivary gland shows female being affected more<sup>13,14,15</sup>. The reason for female predominance in our setup is not understood yet and is the topic to find out.

The preservation of the facial nerve function during parotid surgery has been shown that is influenced by the pathology, the stage, the surgical method used, and the experience of the surgeon. In case of malignant disease, the operation of choice is total parotidectomy with preservation of the facial nerve if it is free from macroscopic neoplastic infiltration. However it should be dissected when preoperative nerve dysfunction exist. Preserving the facial aesthetics plays a substantial role in patient functionality and quality of life and should always be considered since radiation therapy has good results for the control of microscopic residual disease. The patient with metastatic lymph nodes ipsilateral neck dissection should be done followed by radiation therapy. In our setup multimodality treatment was involved for huge malignant carcinoma which required extensive dissection. Plastic surgeons were involved for flap coverage of wound and later on were referred to oncology department for radiotherapy.

## CONCLUSION

Parotid surgery is complex as the treatment differs with the pathology and also has many possible complications. Facial nerve should be preserved whenever possible. The mean age for malignant disease was around 39 years involving younger age group and female was predominant. Therefore possibility of malignancy should be considered in younger generation as well as in female. In this series, we hope to provide a local baseline for subsequent reviews of parotid surgery.

*I am convinced that in the whole realm of clinical surgery there is not a condition that approaches mixed parotid tumors for misconception. Worse still, while it is yet small and encapsulated, malignant cells, previously locked up by nature, are let loose by surgical interference ( a revolting term of bygone physicians, which in this instance may be used to some purpose).*

**Hamilton Bailey 1947**

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