Original Article

HISTOPATHOLOGICAL AUDIT OF SALIVARY GLAND NEOPLASMS

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ABSTRACT:

BACKGROUND:

Salivary gland neoplasms are uncommon but important presentation to general surgeons.

OBJECTIVE:

To analyze the relative frequency and distribution of Salivary gland neoplasms in our division.

SETTING:

Department of surgery and pathology, Peoples Medical University hospital and GMMMC hospital Sukkur.

STUDY DESIGN:

Descriptive (case series)

SUBJECTS AND METHODS:

A total of 40 patients registered for salivary gland tumors from oct 2008 to 0ct 2013 were included in the study. A thorough history, clinical examination, routine haematological and biochemical studies were done in all patients. FNAC was done in all cases. All patients were subjected to surgical intervention on standard rules. Each resected specimen was sent for histopathology. Information about age, gender and tumor location was obtained from clinical record and frequency of different neoplasms was studied from histopathological report. All data was collected on especially designed proforma. Data analysis was done using spss version 17.

RESULTS:

A total of 40 patients were registered for salivary gland neoplasms. 28 patients (70%) had parotid lesions, 10 patients (25%) had submandibular gland involvement and 2 patients (5%) had minor salivary gland tumors. Patients were between 15 – 80 years of age(mean age =34.7 years).24 patients(60%) were male and 16 (40%) were female,with male to female ratio of 1.5:1.32 . 22 (80%) had benign lesions and 8 patients (20%) had malignant lesions. Pleomorphic adenoma was the most common benign tumor affecting the parotid gland. Adenocarcinoma represented as the most prevelant parotid malignancy. Benign neoplasms occurred in third and fourth decades of life.and malignant neoplasms were diagnosed in sixth and seventh decades of life.

CONCLUSION:

Salivary gland neoplasms are uncommon but they have occasioned much interest and debate because of broad histological spectrum .The data presented in this study is corroborated with most of the studied literature worldwide.

KEYWORDS:

Salivary tumors, Parotid tumors, Pleomorphic adenoma, Adenocarcinoma.

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INTRODUCTION:

Salivary glands are the sites of origin for a wide variety of neoplasms. Salivary gland neoplasms represent the most complex and diverse group of tumors corresponding to approximately 3% of all head neck tumors[1].these tumors are relatively uncommon with an estimated annual incidence of 0.5 to 1.2 cases per 100,000 inhabitants per year[2,3]. Salivary gland neoplasms occur 80% in Parotid gland, 15% in Submandibular gland and remaining 5% in sublingual and minor salivary glands[4]. Benign tumors makeup about 80% of Parotid, 50% of submandibular and less than 40% of sublingual and minor salivary gland tumors[5]. Diagnosis and management of salivary neoplasms are complicated by their relative infrequency, the limited amount of pre treatment information available and varied behavior seen with the different pathological lesions. FNAC is useful in preoperative assessment of salivary tumors and surgical planning. Its diagnostic accuracy is 80%[6]. There are few epidemiological studies of large series of benign and malignant salivary gland tumors in pakistan. The goal of this study was to analyze the frequency and distribution of of benign and malignant salivary gland neoplasms scrutinized under histopathological reports to contribute to the discussion about the best way for their diagnosis by pathologists and correct interpretation by the surgeon.

MATERIALS & METHODS:

This descriptive study was conducted in the department of surgery and pathology at Peoples Medical university hospital and GMMM college hospital Sukkur. A total of 40 patients registered for salivary gland tumors from oct 2008 to 0ct 2013 were included in the study. A thorough history, clinical examination, routine haematological and biochemical studies were done in all patients. FNAC was done in all cases, further radiological imaging in form of CT scan of head and neck was done in case of malignant lesion. All patients were subjected to surgical intervention on standard rules. Superficial parotidectomy was done in benign parotid tumors and total parotidectomy in parotid malignancy. Entire gland excision was performed in lesions involving submandibular gland. Minor salivary gland neoplasms were treated by a wide local excision of the lesion with normal cuff of contagious tissue. Each resected specimen was sent for histopathology. Information about age, gender and tumor location was obtained from clinical record and frequency of different neoplasms was studied from histopathological report. All data was collected on especially designed proforma. Data analysis was done using spss version 17.

RESULTS:

Age ranged from 15 to 80 years with mean age of 34.7 years. 24 patients (60%) were male and 16(40%) were female with male to female ratio of 1.5:1(Table.01) Out of 40 patients of salivary gland neoplasms,28 patients(70%) had parotid lesions,10 patients(25%) had submandibular involvement and 2 patients (5%) had minor salivary gland tumors. 32 patients (80%) had benign lesion and 8 patients(20%) had malignant tumor. Different histopathological varieties of salivary tumors and their distribution is shown in(table: 02). Pleomorphic adenoma was the most common benign tumor and adenocarcinoma was the most prevalent malignancy.

Table .01. Gender distribution

MALE	FEMALE
24 (60%)	16 (40%)
M:F = 1.5:1	

Histopathology	Parotid gland	Submandibular gland	Minor salivaryglands
BENIGN (80%)	**52.2% (n=21)**	**25% (n=10)**	**2.5% (n=1)**
1.Pleomorphic adenoma	**42.5%(17)**	**25%(10)**	**2.5%(1)**
2.Warthin's tumor	**7.5%(3)**		
3.Mucous retention cyst	**2.5%(1)**		
MALIGNANT (20%)	**87% (7)**	**0**	**1 (2.5%)**
1.Adenocarcinoma	**7.5%(3)**	**0**	**1**
2.Mucoepidermoid carcinoma	**2.5%(1)**		
3.Acinic cell Ca.	**2.5%(1)**		
4.Salivary duct Ca.	**2.5%(1)**		
5.Metastatic	**2.5%(1)**		

DISCUSSION:

The disease of salivary glands is as old as mankind and since is posing a very treacherous dismal conflict to clinicians. Neoplastic pathology of salivary glands is a difficult and challenging goal. The great deal of experience under rigorous research exhibited inference that every pre-auricular or infra auricular solid mass should be considered a neoplasm until proven otherwise. No single feature or group of features leads to a clinical diagnosis of specific tumor type[7]. Etiological factors for salivary gland neoplasms are not well understood.

Considering important aspect of our study, Salivary gland tumors occur at any age but peak incidence as reported in our study is in the third decade of life for benign and sixth decade for malignant lesions. This is supported by two other studies[8,9]. Relative to gender, generally both benign and malignant tumors in a large series show a slight preponderance of females over males, but for practical purposes, the distribution between two sexes is essentially equal as reported in our region[10].

A clear understanding of natural history of salivary gland tumors is essential for management protocol. The basic approach to a salivary gland neoplasm is operative. Prior to 1950s, enucleation or local excision was the most common and acceptable extirpative surgical procedure for benign tumors but the recurrence rates were exceedingly high[11]. There are only a few reports reviewed for salivary gland neoplasms worldwide [7,8,9,11,12]

This study showed that benign salivary tumors were more prevelant (80%) which is consistent with several other studies[8,9]. However one study carried by Fakhry et al suggests that malignant parotid lesions are more prevelant than benign[13]. Among benign group and on overall pleomorphic adenoma was the most common benign tumor. This agrees with other studies [14-20]. Parotid gland was the main site affected by pleomorphic adenoma followed by submandibular and minor salivary glands. Warthin's tumor (7.5%) was the second most common benign pathology in our series that is similar to other studies [16,18,21]. Warthin's tumor affected parotid gland mainly but none were found in submandibular and minor salivary glands.

Malignant neoplasms of salivary glands summed 8 cases (20%) among which adenocarcinoma were in majority i.e.4 cases(10%). These findings are contradictory to other studies which report mucoepidermoid carcinoma as the most frequent salivary malignancy [16,17,18,20,22], which may be due to differences in ethnicity, geographic location, gender prevalence, work place exposure to certain radioactive substances(silica-dust) and diet low in vegetables and high in animal fat.

CONCLUSION:

The results of the data presented in this study are very similar to those of other research studies. More research is however needed on specific salivary neoplasms in Pakistan and preferentially on regional basis. We realize a need for standardization and improved reporting by both the surgeon and pathologist and the criteria includes type, size and grade of primary tumor, the pattern of invasion and proximity of carcinoma to resection margins, lymph node status and the presence of extra nodal spread. These features provide sufficiently accurate pathological information for the patient to be given a prognosis, to identify good surgical practice and comparison of patients in clinical trials.

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