Scholars Journal of Applied Medical Sciences (SJAMS) **ISSN 2320-6691 (Online)**
Sch. J. App. Med. Sci., 2014; 2(3C):1088-1090 **ISSN 2347-954X (Print)**

(An International Publisher for Academic and Scientific Resources)
www.saspublishers.com DOI: 10.36347/sjams.2014.v02i03.043

Research Article

Spectrum of Major Salivary Gland Tumours: Clinicopathologic Study

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Abstract: Neoplastic lesions of the salivary glands present an interesting subject matter because of their great histologic diversification. The complex features exhibited by many of these neoplasms has aroused considerable speculations concerning their histogenesis, and till date continues to hold the interest of clinicians and pathologists. A total of 75 cases of major salivary gland neoplasms were studied. In each patient, age and sex, clinical history, presenting symptoms and their duration were recorded. A thorough general and physical examination was carried out and the details recorded in a proforma. Post surgical specimens were studied in detail to know the histomorphological patterns. The peak incidence of the tumors was in the third to fourth decade (26.7%), with a slight female preponderance. Parotid gland was the most commonly affected (80%). Localized swelling was the commonest symptom (100%) followed by pain. Benign tumours (83.7%) overnumbered the malignant ones, with pleomorphic adenoma being the commonest. Major salivary gland neoplasms unlike other sites present with non – specific symptoms. Histological examination, helps not only in establishing the diagnosis but also in the categorizing and grading of these tumours.
Keywords: salivary glands, pleomorphic adenoma, neoplasms, incidence

INTRODUCTION

Major salivary glands include the parotid, submandibular and the sublingual glands. Tumours of the major salivary glands, are of diverse histology and present to the outpatient department with non specific symptoms. We studied the spectrum of tumours encountered over a two year old period, covering aspects of clinical presentation, age distribution and histopathological diagnosis of the tumors after surgical resection.

MATERIALS AND METHODS

The present study was conducted at the Department of Pathology, Kempegowda Institute of Medical Sciences Hospital and Research Centre over a period of one and a half years.

Patients presenting to the surgical OPD with complaints related to the major salivary glands were included in the study. In each patient, age and sex, clinical history, presenting symptoms and their duration were recorded. A thorough general and physical examination was carried out and the details recorded in a proforma.

Patients with inflammatory and non- neoplastic diseases were excluded from the study. Histopathological correlation was made in cases where the surgically resected specimens were available. The routine Haematoxylin and eosin stains were used to stain the sections, with the use of special stains wherever necessary. The classification of tumours was done according to the recent 4th edition of WHO international classification of tumours.

RESULTS

The peak age incidence of salivary gland tumors in the present study was found to be in the 3rd and 4th decades of life (Fig. 1), with a slight female preponderance (Table 1). The peak age incidence of the tumours was during the 3rd to 4th decade of life.

Of the major salivary glands, parotid was the most commonly affected, followed by submandibular and sublingual glands.

All the 75 patients in the present study presented with a complaint of swelling in the region of the major salivary glands. A small percentage of the cases (21.3%) also presenting with pain associated with the

swelling. Histopathological co-relation was available in 56 cases and the diagnoses were as follows (Table-3).

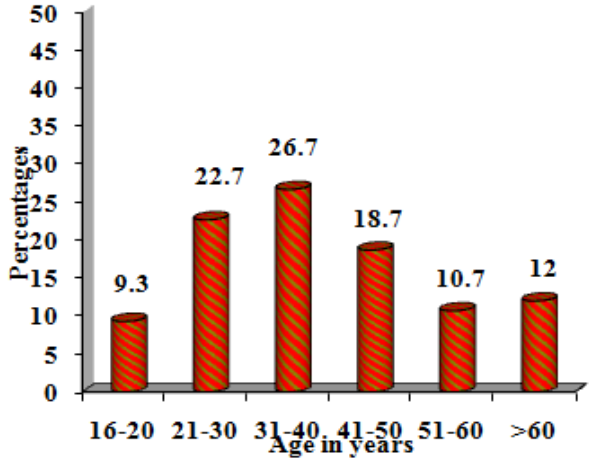

Fig. 1: Age distribution of salivary gland tumours

Table 1: Gender distribution of salivary gland tumours

Gender	Number	%
Male	33	44.0
Female	42	56.0
Total	75	100.0

Table 2: Site distribution of salivary gland tumours

Site	Number	%	95%CI
Parotid gland	50	80.0	69.59-87.49
Submandibular gland	14	18.7	11.46-28.93
Sublingual gland	1	1.3	0.02-7.17
Total	75	100.0	-

Table 3: Histopathological diagnosis of the tumours

Histopathological diagnosis	Number	%	95% CI
Benign	44	78.6	66.18-87.29
Pleomorphic adenoma	33	60.7	47.83-72.42
Warthin's tumour	10	16.1	8.69-27.81
Oncocytoma	1	1.8	0.03-9.45
Malignant	12	21.4	12.71-33.82
Adenoid cystic carcinoma	5	8.9	3.87-19.26
Mucoepidermoid carcinoma	7	12.5	6.19-23.63
Total	56	100.0	-

Table 5: Comparitive analysis of site distribution of major salivary gland tumours

Sl. No.	Series	Parotid	Submandibular	Sublingual
1.	Fernandes GC *et al*. [1]	52.04%	44.71%	0.81%
2.	Das K. Dilip *et al*. [2]	65.63%	33.59%	0.78%
3.	Ersoz Canan *et al*. [3]	75.54%	24.46%	0.00%
4.	Everson *et al*. [4]	72.90%	10.7%	0.3%
5.	Present study	80.00%	18.7%	1.3%

DISCUSSION

In the present study the annual incidence of the major salivary gland tumours was found to be 18.8 per year. This correlates with the study conducted by Fernandez GC and Pandit AA [1].

Majority of the major salivary gland neoplasms arise in the parotid gland. In the present study, also the majority of the tumours are arising in the parotid gland (80%), which co-relates well with the above mentioned studies.

The percentage of the submandibular salivary gland tumors is next to that of the parotid. As seen in the table in the present study also the submandibular gland is the second common site of the major salivary gland neoplasms (18.7%).

The percentage of tumors in the sublingual glands has been reported as 0.81% by Fernandes GC *et al*. [1] and the present study records a percentage of 1.3% which is almost nearer to the other studies. Majority of the major salivary gland tumors present during the 3rd to 4th decade [5-7], similar to the findings in our study. The oldest patient in our study was 78 years.

Majority of the salivary gland neoplasms present as asymptomatic, slowly growing masses. Ahrnad Shafkhat *et al*. [8**]** who studied 100 cases of salivary gland tumours, found 99% of them to present with asymptomatic masses. In the present study, we had 100% of the patients presenting with swellings in the region of the salivary glands. The swelling was also associated with pain in 21% of the cases. Of the tumors associated with pain, 14.4% were malignant and 6.6% were benign. The findings of our study are almost near to the study conducted by Nagarkar M. Nitin *et al*. [9].

Pleomorphic adenoma was the commonest benign tumour involving the parotid gland as seen in all the above studies. In the present study also, pleomorphic adenoma accounted for a majority of the benign neoplasms of the parotid gland (60.7%) which is almost nearer to the study conducted by Eglis Cornvens *et al*. [10] (60.2%).

Warthin's tumour was the second commonest benign tumour occurring in the parotid gland as observed in the present study (16.1%), which is nearest to Das Dilip *et al*. [2]. It was the only tumour associated with a strong smoking history.

Mucoepidermoid carcinoma was the commonest malignant tumour occurring in the parotid gland as reported in a majority of the studies in Table 5. The present study also records mucoepidermoid carcinoma as the commonest malignant parotid tumour (12.5%) which is nearest to the observations of Shoemann BJ *et al*. [11] and Achalkar [12].

CONCLUSION

The annual incidence of major salivary gland neoplasms has been found in our study to be 18.8 per year, with parotid gland being the most commonly affected. Warthin's tumour is the only tumour which shows a positive correlation with smoking history. The presentation is often that of a painless mass , which comes to the clinicians attentions only after substantial growth or when associated with pain. Histopathological examination, is the mainstay for diagnosis and categorization of these group of tumours.

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