

Clinico-Pathological Study of Salivary Gland Tumors at a Tertiary Care Teaching Hospital

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ABSTRACT

Background: Salivary gland lesions, especially the neoplastic lesions constitute a highly heterogeneous histopathologic group. Several studies have reported a significant difference in the global distribution of salivary gland tumors, but no formal study has been carried out in this part of the globe. The aims of the present study were to investigate clinicopathological aspects of Salivary gland tumors.

Material and Methods: All tumors from major and minor salivary glands were Clinical data concerning age, gender, and tumor locations were obtained. Microscopic slides of all cases were reviewed by pathologists and, if necessary, new sections were prepared and stained with hematoxylin and eosin. Histopathologic diagnosis were recorded in Microsoft excel sheet and were analyzed by SPSS software.

Results: Biopsies of a total of 64 salivary gland neoplasms were studied in the present study. Among these, 44 were benign while the remaining 20 were malignant in nature, with parotid being the commonest site for occurrence for both malignant and benign tumors. Parotid was followed by

submandibular gland and minor salivary glands with palate being involved the most.

Conclusion: Results presented herein were similar to previously published reports in other countries and other areas of India.


Keywords: Benign, Neoplasms, Biopsy.

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INTRODUCTION

All the tissues in the human body, perhaps the salivary glands have the most histologically heterogeneous group of tumors and the greatest diversity of morphologic features among their cells and tissue. This is the main reason that those interested in salivary gland pathology have been intrigued by the developmental and morphogenetic processes responsible for the unusual histologic characteristics of these tumors.¹

SGTs represent 3 to 6% of all tumors of the head and neck region, with an annual incidence throughout the world ranging from 0.05 to 2 cases per 100,000 individuals. Epidemiological data reveal different frequencies of SGTs in distinct ethnic groups and geographic locations, which makes it difficult to establish global estimates.²

Although studies provide valuable knowledge, some data are contradictory. Local records are a useful strategy for the analysis of the distribution and particular features of SGTs in a specific population and the establishment of appropriate treatment. The etiological agents of salivary gland cancers remain unclear.

Whilst most other head and neck cancers are strongly related to smoking and drinking, these do not play a role in the salivary glands. Some studies have found that a diet rich in vitamin C and low in cholesterol may be effective in preventing salivary gland cancer. The aim of present study was to describe demographic and clinicopathological aspects of SGTs diagnosed at our institute.

MATERIALS AND METHODS

The present study aimed at histopathologic assessment of salivary gland neoplasms. All the biopsies received in the department were recorded. A detailed history including age, sex, residence, occupation and the clinical symptomatology was taken. All biopsy specimens were fixed in 10% formol saline, then processed into paraffin-embedded sections and stained with hematoxylin and eosin. Special stains (e.g. for mucin) were occasionally employed. Histopathologic diagnosis were recorded in Microsoft excel sheet and were analyzed by SPSS software.

RESULTS

Sixty four salivary gland neoplasms were studied in the present study. Among these 44 (68.75%) were benign and 20 (31.25%) were malignant in nature. Their ages ranged from 15 to 63 years with mean age of patient with benign neoplasm being 48 years and malignant counterpart being 39 years. Study constituted of 16

males and 28 females in the benign salivary group and 12 females and 8 males in malignant salivary gland tumor group. Both groups showed Female preponderance was somewhat more marked among malignancies ($F>M = 1.5:1$), while benign tumors being ($F>M = 1.75:1$).

Table 1: Age and gender distribution

Salivary gland tumor	Parameter		No. of patients	Total
Benign salivary gland tumour	Age Group	Less than 20	6	44
		20-40	7	
		More than 40	31	
	Gender	Male	16	44
		Female	28	
Malignant salivary gland tumour	Age Group	Less than 20	4	20
		20-40	8	
		More than 40	8	
	Gender	Male	8	20
		Female	12	
Total salivary gland tumour	Age Group	Less than 20	10	64
		20-40	15	
		More than 40	39	
	Gender	Male	24	64
		Female	40	

Table 2: Overall prevalence of salivary gland tumour

Salivary gland tumor		Number	Percentage
Benign salivary gland tumor	Pleomorphic adenoma	24	37.5%
	Myoepithelioma	3	4.6%
	Warthins	8	12.5%
	Basal cell adenoma	5	7.8%
	others	4	6.25%
Malignant salivary gland tumor	Mucoepidermoid carcinoma	6	9.3%
	Adenoid cystic carcinoma	5	7.8%
	Acinic cell carcinoma	5	7.8%
	Polymorphous low grade adenocarcinoma	1	1.5%
	Carcinoma ex-pleomorphic adenoma	2	3.1%
	Others	1	1.5%
total		64	100%

DISCUSSION

In the present study, 64 patients were included whose biopsies of salivary gland suggestive of neoplasms were studied. Mean age of the patients with benign and malignant neoplasm was 48 and 39 years respectively which is close to 32.7 years for benign and 42.4 years for malignant tumors as reported by Narinder Singh et al.³ In Uganda and South Africa, salivary malignancies also peaked in the fifth decades, although their benign peak was slightly later (fourth decade) for benign tumors which is in accordance with our study.⁴ There were 28 males and 16 females in the benign salivary gland tumour group, while there were 8 males and 12 females among the malignant salivary gland tumour group. This was in accordance to Kusama et al. (1997)⁵ who found female preponderance in benign tumors. Neely MM et al. (1996)⁶ found

no significant difference in the sex distribution in benign tumors. Whereas Leishram et al.⁷ found males predominance then female. Malignant salivary gland tumors showed a predilection for females which was statistically significant. Our study showed that, 44 (68.75%) of our total SGT were benign while the remaining 20 (31.25%) were malignant in nature. Our results were in accordance Foote and Frazell⁸, and Thackray and Lucas⁹, where benign tumors accounted for 65.3% to 85.39%. In the present study, Pleomorphic adenoma, Basal cell adenoma and Warthin's tumour were the most common benign salivary gland neoplasms observed in the present study. Total frequency of occurrence of Pleomorphic adenoma, Basal cell adenoma and Warthin's tumour was 37.5%, 7.8% and 12.5% respectively.

It has also been found by various authors – Eveson and Cawson¹⁰, and Waldron et al.¹¹ and that pleomorphic adenoma was the most common benign minor salivary gland tumor, in which 73.5% cases were pleomorphic adenoma. Our study showed 54% of total salivary gland tumor to be pleomorphic adenoma. In the present study, adenoid cystic adenoma, mucoepidermoid carcinoma, acinic cell carcinoma, polymorphous low grade adenocarcinoma and carcinoma ex-pleomorphic adenoma were the most common malignant salivary gland neoplasms encountered in the present study. Frequency of occurrence of Adenoid cystic adenoma, mucoepidermoid carcinoma, acinic cell carcinoma, polymorphous low grade adenocarcinoma and carcinoma ex-pleomorphic adenoma was 7.8%, 9.3%, 7.8%, 1.5% and 3.1 % respectively.

In accordance with most other studies, mucoepidermoid carcinoma (MEC) was the most prevalent salivary malignancy constituting 30 % of all salivary tumors, which is much higher than the 10-15% documented in the Western literature. The relatively higher proportion of MEC in this and several African series has already been ascribed to the higher proportion of malignancies in African studies.⁴

CONCLUSION

Salivary gland tumour represents a group of morphological and histological diverse entities. In conclusion, the data and results presented herein were similar to previously published reports in other countries and other areas of India. However, some differences were observed, these differences can be attributed to racial factors, the pathology centers of sample collection, and the duration of the studies.

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