

Original Research Article

Salivary gland tumours: a retrospective study at a tertiary care centre in South India

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ABSTRACT

Background: Salivary gland tumors are morphologically and histologically diverse group of lesions and their frequency varies in several parts of the world. Better understanding of these tumours will help in assessing the behaviour and outcomes of lesions of this region. The aim of this study was to analyse the characteristics of different tumours occurring in the salivary gland in a tertiary care centre in South India.

Methods: A retrospective study was conducted of salivary gland tumors diagnosed from the year 2015 to 2020. Patient age and gender, tumor site and frequency, histopathological diagnosis were evaluated and analysed.

Results: A total of 36 salivary gland tumor cases was identified, 30 (87.3%) of which were classified as benign and 6 (12.7%) as malignant. Most tumors occurred in the parotid gland (81.3%). Pleomorphic adenoma was the most common tumor in 23 patients (63.8%), followed by warthins tumour. The tumors occurred more often in women than men.

Conclusion: The results of the present study reinforce prevalence of salivary gland tumours. The parotid gland is the most common location and pleomorphic adenoma are the most frequent lesions. The malignant tumors also can occur in these glands and good clinical suspicion is necessary

Keywords: Salivary gland tumours, Histology of salivary gland, South India

INTRODUCTION

Salivary glands are exocrine glands that are distributed in the oral and oropharynx mucosa. They play a major role in producing, modifying and secretion of major components of salivary secretions helping in mastication and digestion of consumed food.¹ Numerous pathologic entities affect the salivary glands ranging from cystic, inflammatory and neoplastic conditions. Tumours of salivary gland constitute for about 5 to 6 % of all tumours of head and neck region.² Benign lesions of these glands are seen around 4th to 5th decade of life while malignancies in these glands are relatively uncommon compared to benign ones and are seen later around 6th decade of life.³ Management of these lesions becomes challenging with the varies

histopathological presentations, thus understanding them helps in aiding in appropriate management.^{4,5,6} This study aimed at analysing the clinical and histological characteristics of various salivary gland tumours. Hence, a retrospective analysis of salivary gland tumours managed in a tertiary care center in South India is presented.

METHODS

This study was conducted as a retrospective cross-sectional study in the Department of ENT, Head and Neck surgery at Sri Ramachandra Medical College and Research Institute, a tertiary care center in South India. All patient with salivary gland swelling who underwent surgery from May 2015 to May 2020 were included in the study after

approval of institutional ethics committee. The demographic details, clinical descriptions were analysed from the medical records available. All patients with salivary gland swelling confirmed with ultrasound and Fine needle aspiration and those who underwent excision were included in the study. Non-neoplastic causes on FNAC were excluded. Incidence of occurrence of the tumours were separated based on the gland involved, age of the patient, histopathological classification as benign or malignant. The distribution and frequency of the same are recorded. All data were tabulated and statistically analysed (Table 1).

RESULTS

A total of 36 patients were included in the study on the basis of clinical and pathological records. Out of 36 patients studied 24 were females and 12 were males with a ratio of 2:1. Age distribution of the studied cases showed that the most common affected age group amongst females

was 41 to 50 years whereas amongst male most common affected age group was found to be 51-60 years (Table 1). The difference in mean age of females and males were statistically significant (>0.05).

The overall mean age of the patients was found to be 49.45 years. The frequency of distribution of tumours based on involved salivary gland showed that the parotid gland was the commonest involved (81.3%) followed by submandibular gland (16.7%) and sublingual/minor salivary glands (2%) (Table 1). The pathological distributions were benign in 87.3% and malignant in 12.7%.

Among the benign lesions, Pleomorphic adenoma was the commonest tumour reported followed by Warthin's tumour and myoepithelioma. Out of the malignant lesions analysed, mucoepidermoid carcinoma was found to be the commonest followed by adenoid cystic carcinoma, clear cell carcinoma (Table 1).

Table 1: Comprehensive analysis of Salivary gland tumours.

Tumors	Total	Gender		Mean age	Gland involved*
		Male	Female		
Benign- 30					
Pleomorphic adenoma	23	13	10	41.8	P-18, SM-5
Warthin tumour	4	3	1	33.7	P-4
Myoepithelioma	2	2	0	58.8	P-1, SM-1
Oncocytoma	1	0	1	49	P-1
Malignant- 6					
Adenoid cystic carcinoma	1	0	1	17	O-1
Mucoepidermoid carcinoma	3	2	1	57	P-3
Clear cell carcinoma	1	0	1	39	P-1
Acinic cell carcinoma	1	0	1	47	P-1

*P-parotid, SM-submandibular, O-others

DISCUSSION

About 5-6% of all head and neck tumours originate from one or the other salivary gland.^{7,8} Its incidence has been reported to be 5-6 per 100000 individuals in United States. These neoplasms are more likely to occur in relatively old age (6th decade), benign salivary gland tumors usually occur relatively earlier (4-5th decade).⁸⁻¹⁰ Benign salivary gland neoplasms are more common in females whereas malignant tumours show equal distribution amongst males as well as females. The most common salivary glands to be involved in neoplastic pathology include parotid gland followed by submandibular gland and sublingual gland.^{9,10} Almost 80% salivary gland neoplasms arise in parotid gland followed by submandibular gland (10-15%) and sublingual and minor salivary glands which is in concurrence with the results obtained in this study.¹⁰ Salivary gland tumours have been uniformly reported to be more common in females as compared to males.¹¹

Torabinia et al conducted an epidemiological study of 229 medical records of patients with salivary gland neoplasms for 10 years duration. The authors found that salivary gland neoplasms were more common in females. In this study, 48.8% of affected patients were male (112) and 51.2% were female (117).¹² Similar male preponderance was reported by Jaafari-Ashkavandi et al and Lee et al.¹³ The mean age of the studied cases in our study was found to be 47.06 years. Araya et al conducted a retrospective review of salivary gland tumors diagnosed over a period of 10 years. study sample consisted of 279 salivary gland tumours.¹⁴

Prevalence and incidence rates per 100.000 persons were 15.4 and 2.51, respectively. Most of the neoplasms corresponded to benign tumors. The most affected gland was the parotid gland. Pleomorphic adenoma was the most common benign tumor and mucoepidermoid carcinoma was the most common malignant tumor (7.2%). The mean age for benign and malignant tumors in this study was found to be 53.3±19.09 and 60.9±26.6 years respectively

which is a higher age than the study population analysed in our study.

Bobati et al conducted a retrospective study of salivary gland neoplasms where out of data of 59 cases, 43 (69.16%) cases were classified as benign tumors and 16 (22.39%) cases as malignant tumors.¹⁴ Male to female ratio (M/F) and the mean age of patients were 1:1.8 and 43 years, respectively. Pleomorphic adenoma (60.71%) and adenoid cystic carcinoma (14.94%) were the most common benign and malignant neoplasms. Pleomorphic adenoma was found to be most common salivary gland tumor in the studies conducted by Zarbo et al as in this study.^{15,16}

In our study, the most common malignant tumor in the affected cases was found to be mucoepidermoid carcinoma. Mucoepidermoid carcinoma has been reported to be the most common malignant salivary gland tumors by many authors. It is reported to be the most common salivary gland malignancy, accounting for approximately 30% to 35% of all malignant neoplasms of the major as well as minor salivary glands. In this regard our findings were found to be similar to the findings of the study conducted by Sathish Babu et al.¹⁷

In our study, one case of adenoid cystic carcinoma of the palate, one case of clear cell carcinoma was found which are rare to be occurring at these sites which is in concurrence with available literature. The limitations of the study were its retrospective analysis, many of the patients were lost to follow up with no data on recurrence rates.

CONCLUSION

The results of the present study reinforces prevalence of salivary gland tumours. The parotid gland is the most common location and pleomorphic adenoma are the most frequent lesions. The malignant tumors also can occur in these glands and good clinical suspicion is necessary.

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