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Original Research Article

A clinical study of the incidence of salivary gland tumors in a tertiary care teaching hospital

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ABSTRACT

Background: The salivary gland system of the upper aero digestive tract plays a critical role in the functions of digestion, respiration, communication, and overall homeostasis. The Salivary gland swellings can be broadly classified into inflammatory, non-inflammatory and neoplastic swellings like calculi, benign tumours such has pleomorphic adenoma, oncocytoma, Warthin's tumour, malignant tumors which include-adenocarcinoma, adenoid cystic carcinoma, undifferentiated carcinoma.
Methods: The present cross-sectional study was conducted at the Department of general surgery, Sri Siddhartha Medical College over a period of 2 years from August 2016 to July 2018. All major salivary gland neoplastic swellings confirmed by FNAC were included in this study.
Results: In our study 23 patients had major salivary gland tumours out of that 19 patients had parotid and 4 had submandibular major salivary gland tumour. In our study out 23 cases of salivary tumours 19 cases were benign and 4 cases were malignant, out of 19 cases of parotid tumours, 15 (78.94%) cases were seen in superficial lobe and 4 (21.06%) were in deep lobe, out of 23 salivary gland tumours, 19 (82.6%) cases were pleomorphic adenoma 3(13.05%) cases were mucoepidermoid carcinoma and one case (4.35%) was acinic cell carcinoma.
Conclusions: Parotid gland was the most common site of origin of both benign and malignant tumours, Pleomorphic adenoma was the most common benign salivary gland tumour and mucoepidermoid carcinoma was the most frequent malignant neoplasm.

Keywords: Mucoepidermoid carcinoma, Pleomorphic adenoma, Salivary gland tumours

INTRODUCTION

The salivary gland system of the upper aero digestive tract plays a critical role in the functions of digestion, respiration, communication, and overall homeostasis the salivary glands have the most histologically heterogeneous group of tumours and the greatest diversity of morphologic features among their cells and tissues. Although the salivary, sweat, apocrine, and mammary glands all have similar phylogeny and cellular phenotypes, many lesions are unique to the salivary glands[1]. Salivary gland swellings can be broadly classified into inflammatory, non-inflammatory and neoplastic swellings like calculi, benign tumours such has pleomorphic adenoma, oncocytoma, Warthin's tumour, malignant tumors which include- adenocarcinoma, adenoid cystic carcinoma, undifferentiated carcinoma. Connective tissue diseases like, haemangioma, lymphangioma, neurofibroma, and other auto immune diseases like Sjogerns syndrome, Mikulicz disease etc. salivary gland tumors exhibit a wide variety of behaviour and widely diversified histology. In this part of the world,

the problem of these tumors is more troublesome in management because of their late presentation, poor economic condition and lack of awareness of health among the general population. Salivary gland tumors are rare, comprising approximately 3% to 10% of the neoplasm of the head and neck region.[1,2] The global incidence of these tumours is 0.4-13.5 per 100,000 person's annually.[3-5] Approximately 80% of the salivary gland tumours are found in the parotid gland and 10 to 15% in the submandibular gland.[6] Around 80% parotid tumors and 50% of submandibular tumours are benign.[7,8] Thackray (1968) offered a useful formula for expressing the incidence rate of these tumours in different anatomical regions. "For every 100 parotid tumours there will be 10 in submandibular glands, 20 in the minor salivary glands, and one in the sublingual glands".

The aim of this study was to recognize the incidence of various salivary gland tumours.

METHODS

The present Cross-sectional study was conducted at the Department of General surgery, Sri Siddhartha Medical College over a period of 2 years from August 2016 to July 2018. During this period, we found 23 cases of major salivary gland tumours.

Inclusion criteria: All neoplastic swellings confirmed by FNAC were included.

Exclusion criteria: Autoimmune, inflammatory, granulomatous swelling involving Major salivary glands and neoplasm involving minor salivary glands were excluded from this study.

In the above study institutional ethical committee approval has been taken. The Information about age, gender and tumour location was obtained from each clinical record. Statistical analysis was done to estimate the incidence of the occurrence of salivary tumors in the region of Tumkur, by using SPSS statistics analysis.

RESULTS

In our study 23 patients had major salivary gland tumours out of that 19 patients had parotid and 4 had submandibular major salivary gland tumour. Highest incidence of tumors were found in 3rd decade of life and next common age incidence has been noted in 2nd decade (Table 1). Men were more prone to develop both benign and malignant parotid tumour than that of women (Table 2), the most common presentation was swelling (100 %). Facial nerve paralysis was found in 1 patient in parotid gland malignancy, and in our study out 23 cases of salivary tumours 19 cases were benign and 4 cases were malignant (Table 3), out of 19 cases of parotid tumours, 15 (78.94%) cases were seen in superficial lobe and 4 (21.06%) were in deep lobe, out of 23 salivary gland tumours, 19 (82.6%) cases were pleomorphic adenoma 3(13.05%) cases were mucoepidermoid carcinoma and one case (4.35%) was acinic cell carcinoma.

Table 1: Distribution of study subjects based on age.

Age in years	No. of patients	Percentage (%)
0-10	0	00.00
11-20	1	04.34
21-30	9	39.14
31-40	8	34.80
41-50	3	13.04
51-60	1	04.34
61-70	1	04.34
Total	23	100.0

Table 2: Distribution of study subjects based on gender.

Sex	No. of patients	Percentage (%)
Male	12	52.17
Female	11	47.83

Table 3: Incidence of various salivary glands tumours.

Lesion	No. of cases	Percentage (%)
Pleomorphic adenoma	19	82.60
Mucoepidermoid carcinoma	3	13.05
Acinic cell carcinoma	1	04.35
Total	23	100.0

DISCUSSION

Salivary gland tumours comprise a morphologically diverse group of rare tumours. Their multifaceted clinical presentation, varied morphologic configuration and relatively unpredictable prognosis attract significant medical interest. The main complaint of patients with parotid gland tumours is swelling in the parotid region and below the ear lobe. In our study all patients had presented with swelling, Salivary gland tumours most often present as painless enlarging mass. Most are located in parotid glands and most are benign. In both the major and minor salivary glands, the commonest type of benign tumour is pleomorphic adenoma. In this study, 82.60% patients had parotid neoplasm and 17.40% had submandibular neoplasm. Among the parotid neoplasm, 15 cases were benign and 4 cases were malignant. In the majority of the studies (Table 4), pleomorphic adenoma was the most common benign salivary gland tumour encountered in parotid and submandibular glands.[9-15] Similar findings were observed in the present study where pleomorphic adenoma was the most common benign salivary gland tumour at all location. Out of total 19 pleomorphic adenomas in our study, majority occurred in the parotid gland (15 cases) followed by submandibular gland (4 cases). Mucoepidermoid carcinoma was the most common malignant salivary

gland tumour of parotid constituting 3 cases and 1 case was acinic cell carcinoma out of 4 malignant salivary gland tumours in the present series. Mucoepidermoid carcinoma was reported to be the most common malignant salivary gland tumour of parotid by Wahiduzzaman et al and Rao TB et al.[9,13]

Table 4: Comparison of incidence of salivary gland tumours.

Series	Total no. of cases	Benign (%)	Malignant (%)
Wahiduzzaman et al[9]	50	72	28
Aggarwal et al[10]	74	59.46	40.54
Arya et al[11]	279	70.30	29.7
Rajdeo et al[12]	100	77	33
Rao et al[13]	30	68	14
Shashikala et al[14]	50	78	22
Leelamma et al[15]	180	80.6	19.4
Present study	23	82.60	17.40

Surgery is the main modality of treatment for salivary gland tumours. In the case of parotid gland tumours, superficial parotidectomy with facial nerve dissection and preservation is the standard diagnostic procedure. This operation is also therapeutic in cases of benign or small malignant tumours limited to the superficial lobe of the gland. If the tumour involves the deep lobe of the parotid gland, a total parotidectomy is the procedure of choice to achieve adequate tumour clearance. In our study, 15 patients underwent superficial parotidectomy, 3 patients of parotid malignancy underwent total parotidectomy. Complete excision of the gland is the adequate treatment for submandibular gland tumours if the lesion is small, limited to the gland parenchyma, and also of benign or low grade malignant nature. In our study, all patients with submandibular gland tumours underwent excision of the tumour. The complications of patients undergoing parotid surgery include damage to the facial nerve, bleeding, hematoma, seroma, sialocele, flap necrosis, fistula of the salivary gland, infection and Frey's syndrome. In our study two patients had facial nerve palsy, one had marginal mandibular nerve injury and 5 patients had surgical wound infection.

CONCLUSION

Salivary gland tumours is a subject of considerable interest as these are not very rare, have varied histology and characteristic clinical features. Parotid gland was the most common site of origin of both benign and malignant tumours, Pleomorphic adenoma was the most common benign salivary gland tumour and mucoepidermoid carcinoma was the most frequent malignant neoplasm. The benign tumour generally manifests no pain or other distressing symptoms for which patients do not care for it and hence they present late to the concerned specialist, it is recommended that increased community awareness of early referral of parotid mass is necessary, as surgical treatment in the form of superficial parotidectomy which is the ideal procedure for such lumps. Surgery performed by experienced surgeon with a special interest in parotid surgery carries minimal morbidity and Surgery forms the main treatment in the management of salivary gland tumours since it serves both diagnostic and therapeutic purposes, the overall relative frequency of salivary gland tumours in this series correlates with that reported in most of the literature.

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