

Original Research Article

Clinicopathological study and management of salivary gland neoplasms in a tertiary care hospital

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ABSTRACT

Background: Salivary gland neoplasms are rare and constitute 3 to 4% of head and neck neoplasms. Majority of them are benign and a small percentage of them constitute malignant tumors. A careful clinical examination and judicious investigations help us to plan for an optimal surgical management. The aim of the study was to study clinico-epidemiological pattern, histological subtypes, management & postoperative complications of salivary gland neoplasms.

Methods: This retrospective study was conducted on 52 patients admitted into the surgical wards of DR. PSIMS and RF during the period between November 2017 and October 2020. All the patients were followed up until one year (October 2021) after surgery.

Results: Data of 52 cases of salivary gland neoplasms were recorded, of which 20 were male and 32 were female, and the median age group was 41 to 50 years. Majority of the patients (47) presented with swelling in the parotid region of 1 to 2 years duration. 44 patients were diagnosed with pleomorphic adenoma of the parotid gland and 43 of them underwent superficial parotidectomy.

Conclusions: The parotid gland is the most commonly involved gland with the majority of the cases being pleomorphic adenoma. Superficial parotidectomy was the most common surgery done with a minimal complication rate.

Keywords: Salivary gland neoplasms, Pleomorphic adenoma, Superficial parotidectomy

INTRODUCTION

Salivary gland neoplasms are rare and collectively represent a diverse and heterogeneous group of neoplasms with complex clinicopathologic characteristics and distinct biological behavior. The global annual incidence of salivary gland neoplasms varies from 0.4 to 13.5 cases per 100,000 population, and the frequency of malignant neoplasms ranges from 0.4 to 2.6 cases per 100,000 population.¹ Benign salivary gland neoplasms are estimated to present 5-7 times more frequently than malignant tumors and the majority (>96 %) of the benign

tumors constitute pleomorphic adenoma. Parotid gland neoplasms account for the majority of the cases, followed in decreasing order of frequency by submandibular gland neoplasms, minor salivary gland neoplasms, and sublingual gland neoplasms.² Early diagnosis offers a good prognosis and better long-term survival rates. Very few studies were done on salivary gland neoplasms concerning the geographical area under study, which showed evidence of risk factors like chewing betel quid with or without associated tobacco chewing, which demands a study of salivary gland neoplasms in this region.

METHODS

This is a retrospective study conducted on 52 patients with swelling in the region of distribution of major and minor salivary glands, admitted into the surgical wards of DR. Pinnamaneni Siddhartha Institute of Medical Sciences and Research Foundation during the period between November 2017 and October 2020. Ethical clearance was obtained before beginning of the study from the Ethical Clearance Committee. Demographic data, diagnosis and intraoperative findings were collected from case sheet records. Histopathological findings were retrieved from operative notes and histopathology reports. All the patients were followed up until one year after surgery. Data was analyzed using IBM Statistical package for social sciences (SPSS) version 21.

Inclusion criteria

All the patients with swellings of Salivary glands, both major and minor.

Exclusion criteria

All patients with: thyroid swellings, cervical Lymphadenopathy, branchial cyst, diverticula, cystic Hygroma, infectious neck swellings (Parotid abscess, Ludwig's Angina).

RESULTS

Fifty-two patients with Salivary gland neoplasms were studied over a period of 3 years in Dr. PSIMS and RF.

Table 1: Age incidence.

Age group	Number of patients	Percentage
0-10	0	0
11-20	1	1.9
21-30	2	3.8
31-40	12	23.2
41-50	34	65.5
51-60	2	3.8
61-70	1	1.9

Table 2: Sex distribution.

Gender	Cases	Percentage
Male	20	38.4
Female	32	61.6

Table 3: Presenting complaints.

Complaint	Cases	Percentage
Swelling	45	86.53
Swelling & pain	7	13.46

Table 4: Duration from the onset of swelling and the first presentation.

Time period	Cases	Percentage
Less than 6months	10	19.23
6months to 1year	2	3.8
1-2years	30	57.7
2-3 years	7	13.5
3-4 years	2	3.9
Greater than 4 years	1	1.9

Table 5: Salivary gland involved.

Salivary gland	Cases	Percentage
Left parotid gland	34	65.4
Right parotid gland	12	23.1
Submandibular gland	5	9.7
Minor salivary gland	1	1.92

Table 6: Risk factor attributable.

Risk factors	Cases	Percentage
Smoking	20	38.5
Alcohol	20	38.5
Betel quid chewing	14	26.9
Tobacco chewing	6	11.6

Table 7: Histopathological diagnosis.

Histological subtype	Cases	Percentage
Pleomorphic adenoma of the parotid gland	44	86.53
Warthin's tumor of the parotid gland	1	1.92
Basal cell adenoma of the parotid gland	1	1.92
Pleomorphic adenoma of Submandibular gland	4	7.69
Mucoepidermoid Carcinoma of parotid gland	1	1.92
Adenocystic carcinoma of Submandibular gland	1	1.92

Table 8: Surgery performed on the patient.

Surgery performed	Cases	Percentage
Superficial parotidectomy	45	86.53
Total conservative parotidectomy	1	1.92
Total parotidectomy + neck dissection	1	1.92
Submandibular gland excision	4	7.69
Submandibular gland excision + neck dissection	1	1.92

In this study, the most frequent age group affected was found to be the 5th decade. The mean age affected was 42.11 ± 7.77 (Table 1). The incidence of Salivary gland neoplasms is more in the female population (Table 2). In our study, 45 patients (86.53%) presented with only swelling of the involved gland, and in 7 patients (13.46%), the swelling was associated with pain (Table 3). Most of the cases presenting to the hospital had a duration of less than one year (Table 4). The Parotid gland was the most common gland to be involved in the present Study, constituting 90.38% of the cases (Table 5). In the present study, 20 patients (38.46%) were habituated to smoking cigarettes, 20 patients (38.46%) were habituated to alcohol consumption are associated with benign salivary gland neoplasms (Table 6). The incidence of pleomorphic adenoma of the parotid gland is 86.53 percent (44 cases) (Table 7) out of which, 43 patients underwent superficial parotidectomy and 1 patient underwent total conservative parotidectomy (Table 8). Of the 52 patients in this study, 8 cases developed one or more complications which included surgical site infection/ hematoma, sialocele, temporary/ permanent facial nerve palsy, and frey's syndrome (Table 9).

Table 9: Post-operative complications.

Complications	Cases	Percentage
Surgical site infection/ Hematoma	2	3.84
Temporary Facial nerve paralysis	2	3.84
Permanent facial nerve palsy	1	1.92
Temporary facial nerve palsy + Sialocele	1	1.92
Frey's Syndrome	1	1.92
Surgical site infection+ sialocele	1	1.92
Total	8	15.36

DISCUSSION

The present study was conducted with the aims of assessing age, sex distribution, clinical features, gland involved, risk factors, histological subtypes, surgery performed, and postoperative complications of 52 cases of salivary gland tumors admitted to Dr. PSIMS and RF. In this study, the most frequent age group affected was found to be the 5th decade (41-50 years), followed by the 4th decade (31-40 years). This result was comparable to the study conducted by Nezar et al from Syria and Kumar et al from Kerala and Karnataka.⁸ The incidence of salivary gland neoplasms is more in the female population and the female to male ratio overall is 2:1. It is consistent with the studies of Nezar et al (2020) from Syria; Galdirs et al.⁶ In our study, 45 patients (86.53%) presented with only swelling of the involved gland, and in 7 patients (13.46%), the swelling was associated with pain which is similar to the results of the study conducted by Angelica et al from

Brazil, Jimsha et al.^{7,9} The duration of the presenting symptoms ranged from 3 months to 4 years. Most of the cases presenting to the hospital had a duration of less than one year. The longest period was four years. The parotid gland was the most common gland to be involved in the present study, constituting 90.38% of the cases. The results of this study agree with the study conducted by Venkatesh et al 27 from Karnataka; Nezar et al.⁵ In the present study, 20 patients (38.46%) were habituated to smoking cigarettes, 20 patients (38.46%) were habituated to alcohol consumption are associated with benign salivary gland neoplasms and the results are supported by the study conducted by so young Leim et al.¹¹ In this study, the incidence of pleomorphic adenoma of the parotid gland is 86.53 percent (44 cases) out of which, 43 patients underwent superficial parotidectomy and 1 patient underwent total conservative parotidectomy. These results were supported by the study conducted by Nezar et al from Syria.⁵ The malignant to benign tumors ratio in this study is 0.04: 1, with more benign tumors. There was a similar observation with benign tumors exceeding that of malignant tumors in a study conducted by Aneesha et al; Venkatesh et al.¹⁰ Of the 52 patients in this study, 8 cases developed one or more complications which included surgical site infection/ hematoma, sialocele, temporary/ permanent facial nerve palsy, and frey's syndrome. These results were comparable with that of the study conducted by Ahmet et al.¹²

The limitations of the present study are that it is a retrospective study and single-center study with a limited sample size (n=52) and there is a need to study a larger group of patients for a better understanding of this disease entity.

CONCLUSION

This study is a single institutional experience of 52 salivary gland neoplasms. The parotid gland is the most commonly affected gland among the salivary glands and the common attributable risk factors are tobacco and alcohol. Comprehensive use of imaging techniques, FNAC, and histopathological examination will improve diagnostic accuracy. Pleomorphic adenoma is the most common neoplasm of the parotid gland and superficial parotidectomy is the most common surgery done, with a complication rate comparable to world literature.

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Ethical approval: The study was approved by the Institutional Ethics Committee

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