

Original Research Article

Spectrum of salivary gland tumors - A five year study

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Abstract

Introduction: Salivary gland tumors are common neoplasms of head and neck region. These tumors are complex and exhibit great clinicopathological variation which may show racial and geographical differences.

Aim: The aim of the present study was to analyze the relative incidence, clinical presentation and the spectrum of neoplasms in the salivary glands at our institute which is a tertiary referral hospital in south India.

Material and methods: A retrospective and prospective study of all salivary gland tumors which were received in the department of Pathology for histopathological examination at our institute during a 5 year period from March 2010 to February 2015 was done. The clinical data like age, sex and site of the tumor were recorded. Grossly representative bits from the tumor were processed, sections made, stained with H& E and examined microscopically. Data of 53cases recorded during the 5yr period was analyzed.

Results: 53 cases were studied during the 5 year period. Of them 40 cases were benign neoplasms and 13 cases were malignant. The commonest site of presentation of benign tumors was the parotid gland whereas malignant tumors occurred more commonly in the minor salivary glands. Pleomorphic adenoma was the commonest benign neoplasm. Adenoid cystic carcinoma was the most common malignant neoplasm. Most of the benign tumors occurred in 4th decade while the malignant tumors were more common in the 6th decade.

Conclusion: Benign tumors are more common than malignant tumors. The majority of benign tumors occurred in the major salivary glands whereas the minor salivary glands harbor malignant neoplasms.

Key words

Pleomorphic adenoma, Adenoid cystic carcinoma, Salivary gland tumors.

Introduction

Salivary gland neoplasms are common tumors. They occur in 1 in 100,000 individuals comprising 3% of all head and neck neoplasms [1]. The mean age of patients with salivary gland tumours is 45 years with a peak in 6th and 7th decades of life [2, 3]. Benign Salivary gland tumours occur more frequently in females whereas malignant tumors occur in males [4, 5]. Parotid gland is the most frequent site comprising about 70% of all salivary gland tumors [4-6]. 80% of parotid gland tumors are benign, most common being pleomorphic adenoma followed by warthin's tumor [4]. The most common salivary gland malignancy is the mucoepidermoid carcinoma which involves mostly the parotid gland followed by the minor, submandibular and sub lingual glands [5-7]. Adenoid cystic carcinoma is the second most frequent malignancy involving the salivary glands. The main symptom in these patients is a mass in the gland followed by pain, facial palsy and skin ulcers.

Materials and methods

The present histomorphological study of the salivary glands was a retrospective and prospective study done over a period of 5 years from March 2010 to March 2015. The material of the study comprised of 53 specimens of salivary gland tumors received in the histopathology department of Gandhi hospital. These specimens were subjected to the routine processing and paraffin embedding. The sections were stained with routine H and E and examined. The relevant patient data such as age, sex, location of the tumor and histopathological diagnosis were taken from the laboratory records.

Results

In the present study during five year duration, from March 2010 to March 2015, out of 5515

tumors involving various organs, 53 were salivary gland tumors.

The age of the study group ranged between 17-80 years. Majority of benign tumors were seen in 4th decade while the malignant tumors were more common in the 6th decade. The sex ratio of the benign tumours M: F was 6:7 whereas that of the malignant tumors was 1:3. The site distribution of the salivary gland tumors showed 43 cases (81.2%) in parotid gland, 6 cases (11.3%) in submandibular gland and 4 cases (7.5%) in the minor salivary glands. The tumor size ranged between 20 cm being the largest and smallest measuring 2 cm. Out of the 53 cases, benign tumors comprised 40 cases (75.47%) and malignant tumors 13 cases (24.52%). The commonest benign tumor in our study was pleomorphic adenoma, comprising of 33 cases (62.26%) followed by 3 cases (5.64%) of Schwannoma, 2 cases (3.76%) of myoepithelioma and 1 case (1.88%) each of Warthins tumor and monomorphic adenoma.

The commonest malignant tumor in our study was Adenoid cystic carcinoma comprising of 5 cases (9.4%) followed by 3 cases (5.64%) of carcinoma- ex-pleomorphic adenoma, 3 cases (5.64%) of polymorphous low grade adenocarcinoma and 2 cases (3.76%) of mucoepidermoid carcinoma. In our study, the most common site for benign tumors was the parotid gland whereas the malignant tumors were common in minor salivary glands (**Table – 1 to 3**).

Discussion

Salivary gland tumors are relatively uncommon lesions [8]. In the present study during five year duration, out of 5515 tumors involving various organs, 53 were salivary gland tumors accounting for 0.96% of all neoplasms. These cases were evaluated and compared with similar studies in the literature. The peak incidence of

benign tumours is seen in the 4th decade which is similar to the other studies in the Asian subcontinent [12, 15]. The peak incidence of malignant tumors is seen in the 6th decade which is similar to the other studies in the literature [13, 16].

Table - 1: Sex and histopathological distribution of salivary gland tumors.

Tumor	No. of cases	%	M	F
Benign	40	75.47%		
Pleomorphic adenoma	33	62.26%	14	19
Monomorphic adenoma	1	1.88%		1
Warthin's	1	1.88%	1	
Schwannoma	3	5.64%	3	2
Myoepithelioma	2	3.76%	2	2
Malignant	13	24.52%		
MECA	2	3.76%	1	1
ACC	5	9.4%	1	4
PLGA	3	5.64%		3
Ca-ex PA	3	5.64%	1	2

Table - 2: Age distribution of salivary gland tumors.

Tumors	11-20	21-30	31-40	41-50	51-60	61-70	71-80	Above 80
Pleomorphic adenoma	1	11	14	4	1	2		
warthin		1						
Monomorphic adenoma		1						
Schwannoma		1	1		1			
Myoepithelioma				1		1		
MECA				2				
ACC		1	1			1	1	
PLGA	1				3			
Caex PA			1		1		1	

Table - 3: Site distribution of tumors.

Salivary gland	No. of Benign tumors	No. of Malignant tumors	Total
Parotid	35	8	43 (81.2%)
submandibular	4	2	6 (11.3%)
Minor salivary glands	1	3	4 (7.5%)

The sex ratio of the benign tumours M: F was 6:7 whereas that of the malignant tumors was 1:3. From the various studies done on salivary gland tumours worldwide it seems that benign tumors occur more commonly in females, but malignant

entities have a propensity to involve male patients [11]. This finding is not consistent in the present study because of the lesser sample size when compared to the other studies.

According to our study, the most common salivary gland involved is the parotid gland. The predominance of parotid tumours relative to other salivary gland tumors is similar to the various other studies in literature [9-11].

Most of the tumours of major salivary glands are benign and the tumours of minor salivary glands are malignant. There was an inverse relation between the size of salivary glands and the rate of malignancy except for carcinoma ex pleomorphic adenoma where the tumour size and duration was more and the malignancy occurred in major salivary glands [11].

In our study, the most common malignant tumour was adenoid cystic carcinoma followed by carcinoma ex pleomorphic adenoma and polymorphous low grade adenocarcinoma. Adenoid cystic carcinoma being the most common malignant salivary gland tumour is consistent with other studies in the world [12-14].

Conclusion

Benign tumors are more common than malignant tumors. The majority of benign tumors occurred in the major salivary glands whereas the minor salivary glands harbor malignant neoplasms.

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