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RESEARCH ARTICLE

CLINICOPATHOLOGICAL STUDY OF SALIVARY GLAND TUMOURS

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ABSTRACT

This study on salivary gland tumors was undertaken for a period of one year with particular reference to age ,sex, site and histological types. Tumors were analysed according to the age, sex, site and histological type .Principal site was the parotid (73.2%).Pleomorphic adenoma(83.3%) formed the largest group of tumors.Benign tumors were common in 4th and 5th decades where as malignant tumors were more common in 6th decades.Lump was the commonest presentation and was present in 100% cases. The features of rapid growth, fixity, hard constistency and associated facial paralysis or hypoglossal nerve paralysis were indicative of malignancy.

INTRODUCTION

Tumours of salivary glands are relatively uncommon and represents less than 2% of all head and neck neoplasms[6]. The major salivary glands are parotid, submandibular and sublingual glands. Minor salivary glands are found throughout the submucosa of upper aerodigestive tract with the highest density found within the palate. 85% of the salivary gland neoplasms arise within the parotid gland[6]. The majority of these neoplasms are benign, with the most common veriety being pleomorphic adenoma[6]. In contrast, approximately 50% of tumours arising in the submandibular and sublingual glands are malignant[6]. Tumours arising from minor salivary gland tissue carry even higher risk for malignancy (75%) (Ariel *et al.,* 1954). For a number of reasons salivary gland tumours pose special problems for both surgeon and their patient. First, there is little to distinguish a benign tumour from their malignant counterpart. The diagnosis is often only made after resection and at that stage the surgeon may wish that a more extensive procedure had been undertaken. Second, preoperative tissue diagnosis by FNAC can be difficult and often inconclusive. Open biopsy at any site other than palate is contra-indicated lest seeding should develop subsequently. Third, the anatomical relationship of the tumour to the facial nerve in the parotid gland is nearly always intimate and fear of facial nerve damage can't be ruled out. This study is a retrospective study done by selecting the patients admitted to the indoor of dept. Of ENT, VSS MEDICAL COLLEGE, BURLA from 01-01-2012 to 31-12-2012. This work will throw some light on the incidence, clinical features, pathology and diagnosis of parotid neoplasms.

MATERIAL AND METHODS

The study was carried out from 1-1-2012 to 31-12-2012 in Dept. Of ENT,VSS MEDICAL COLLEGE,BURLA. The work includes all cases of tumours of both major and minor salivary glands admitted to the ENT indoor. Such cases when referred from surgical specialities are also included in this work. Total 45 cases were taken for study and their case record were evaluated. Cytological study and histopathological study were done in every case. All above reports were evaluated.

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Observations

INCIDENCE - Incidence of salivary gland tumours reported to our department is 2.4% and 14.4% of all all head and neck tumours. 80% of all salivary tumours are benign.

Incidence of salivary gland tumours

Total cases	Total head and neck tumours	No of salivary tumours		No of benign cases	No of malignant cases
		Cases admitted to ENT indoor	Cases referred from other Dept		
1445	243	35	10	36	09

Age and sex distribution

Age group	Male		Female		No of cases
	No	%	No	%	
0-10yr	1	2.2%	0	0	1(2.2%)
11-20yr	0	0	0	0	0
21-30yr	2	4.4%	1	2.2%	3(6.6%)
31-40yr	9	20%	5	11.1%	14(31.1%)
41-50yr	10	22%	8	17.8%	18(39.8%)
51-60yr	4	8.9%	3	6.7%	7(15.6%)
>60yr	0	0	2	4.4%	2(4.4%)
Total	26		19		45

Sex incidence shows a slightly higher frequency in males. Majority cases have been reported between 4th and 5th decade.

Age and sex distribution of both benign and malignant tumours

AGE GROUP	BENIGN(N=36)		MALIGNANT(N=9)		TOTAL CASES(%)
	MALE (%)	FEMALE (%)	MALE (%)	FEMALE (%)	
0-10YR	1(2.2%)	0	0	0	1(2.2%)
11-20YR	0	0	0	0	0
21-30YR	2(4.4%)	1(2.2%)	0	0	3(6.6%)
31-40YR	9(20%)	5(11.1%)	0	0	14(31.1%)
41-50YR	10(22%)	8(17.8%)	0	0	18(39.8%)
51-60YR	0	0	4 (8.9%)	3(6.7%)	7(15.6%)
>60YR	0	0	0	2(4.4%)	2(4.4%)

Clinical Features

CLINICAL FEATURES	TOTAL NO CASES	BENIGN					MALIGNANT				
		PAROTID	SUBMANDIBULAR	PALATE	TONGUE	CHEEK	PAROTID	SUBMANDIBULAR	PALATE	TONGUE	CHEEK
1. LUMP	45										
A. SOFT TO FIRM	39	32	2	2				1			2
B. HARD	6						1		3	2	
2. SITE	45	32	2	2			1	1	3	2	2
3. GROWTH PATTERN											
A. SLOW	36	32	2	2							
B. RAPID	8							1	3	2	2
C. SUDDEN	1						1				
4. PAIN	15	5	1				1	1	3	2	2
5. MUSCLE SPASM	6	3					1				2
6. FACIAL PALSY	2						1	1			
7. TRISMUS	4	2					1	1			
8. FIXITY	9						1	1	3	2	2
9. TENDERNESS	9						1	1	3	2	2
10. CERVICAL LYMPH NODE	2						1				1
11. HYPOGLOSSAL PARALYSIS	1									1	

Mostly the tumours present as slow growing lump. The features of rapid growth, fixity, hard constistency & associated facial paralysis or hypoglossal nerve paralysis were taken as sign of malignancy. However pain, muscle spasm were also found in few benign growth like pleomorphic adenoma

Types of lesion according to site

TYPES OF TUMOURS	TOTAL NO CASES	MAJOR			MINOR	
		PAROTID	SUBMANDIBULAR	PALATE	TONGUE	CHEEK
BENIGN	36(80%)	32(71%)	2(4.5%)	2(4.5%)	0	0
MALIGNANT	9(20%)	1(2.2%)	1(2.2%)	3(6.6%)	2(4.4%)	2(4.4%)
TOTAL	45(100%)	33(73.2%)	5(11.1%)	3(6.6%)	2(4.4%)	2(4.4%)

Benign tumours were frequently encountered in parotid(71%) followed by submandibular (4.5%) and palate(4.5%). Among the malignant tumours(20%), minor salivary gland affection were seen frequently in palate, tongue & cheek. Parotid & submandibular glands are less affected.

Histopathology of benign and malignant tumours

BENIGN(N=36)	NO OF CASES (%)	PAROTID (%)	SUBMANDIBULAR (%)	PALATE (%)	TONGUE (%)	CHEEK (%)
Pleomorphic Adenoma	30(83.3%)	26 (72.2%)	2(5.6%)	2(5.6%)	0	0
Adenolymphoma	5 (13.8%)	5(13.8%)	0	0	0	0
Haemangioma	1(2.7%)	1(2.7%)	0	0	0	0
TOTAL	36 (100%)	32 (88.9%)	2(5.6%)	2(5.6%)	0	0
MALIGNANT (N=9)						
Mucoepidermoid CA	4 (44.4%)	0	0	2(22.2%)	0	2(22.2%)
Adenocystic CA	3(33.3%)	0	0	1(11.1%)	2(22.2%)	0
Adeno CA	1(11.1%)	0	1(11.1%)	0	0	0
Undifferentiated CA	1(11.1%)	1(11.1%)	0	0	0	0
TOTAL	9(100%)	1(11.1%)	1(11.1%)	3 (33.3%)	2(22.2%)	2(22.2%)

Pleomorphic adenoma is the commonest tumour of benign. Mucoepidermoid carcinoma & Adenoid cystic carcinoma are common malignant tumours.

Incidence of cervical lymph node metastasis

MALIGNANT TUMOURS (N=9)	SITE	METASTASIS	PERCENTAGE
Mucoepidermoid CA	CHEEK	1	11.1%
Undifferentiated CA	PAROTID	1	11.1%
TOTAL		2	22.2%

Characteristics of facial palsy in parotid carcinoma

TYPES OF TUMOUR	SITE	TYPES OF FACIAL PALSY	
		TOTAL	PARTIAL
Undifferentiated CA	Parotid	1	
Adeno CA	Submandibular		1

1 case of complete paralysis found in parotid gland and 1 case of partial paralysis found in submandibular gland carcinoma.

Correlation between histological and cytological diagnosis

Histologically diagnosed	Total cases	Cytologically diagnosed	
		+ve result	-ve result
Benign	36(80%)	28(77.8%)	8(22.2%)
Malignant	9(20%)	6(66.7%)	3(33.3%)

Cytological findings show the accuracy in benign tumours is 77.8% and that of malignant tumour is 66.7%.

DISCUSSION

Head and neck tumours are commonly encountered in otolaryngological practice. During the period from 1st january'2012 to

31st december'2012, 45 cases of salivary gland tumours were encountered, out of which 35 cases had been admitted to ENT indoor and rest 10 cases were referred from other surgical specialities. This amounts to be 2.4% of all admissions which reflects the rarity of such neoplasms which is comparable to study by davices *et al*., (1964) who have noted these tumours to be 3%. Among all major salivary glands, parotid is the commonest site of tumour occurrence (73.2%) which is comparable to the data produced by Vineet Gupta *et al*., who recorded it to be 62% (2012) and Shafkat Ahmed *et al*., who recorded it to be 70% (2002). Benign tumours are found to be 80% of all tumours and malignant to be 20%. In major groups 22.2% of all malignant tumours are encountered whereas in minor groups 77.8% of all malignant tumours are seen. This is compatible to Toroya *et al*., (1970) who recorded 83% of benign tumours , spiro *et al*., (1975) who recorded 70-80% parotid tumours are benign and 20-30% are malignant and Sungur N. *et al*., (2002) who recorded 83% benign and 17% malignant. The average age is 35-45 yrs for benign tumours and 55yrs for malignant tumours. Similar observations have been reported by Spiro *et al*., (1975), Dunn *et al*., (1976) who found the average age group of 40-45 years for benign and 50-57 yrs for malignant tumours. Francisco Carlos *et al*., (2010) found the benign tumours at a mean age of 41.2 and malignant tumours at a mean age of 55.6.

Several authors have reported a female preponderance for salivary tumours as Ariel *et al*., (1954), Dunn *et al*., (1976) noted 66% of all benign neoplasms in the females, whereas male predominance was observed by Toroya *et al*., (1970), Woods *et al*., (1977), Shafkat *et al*., (2002), Vineet Gupta *et al*., (2012). In this series the incidence is more among males than females. Pain and facial paralysis when present, malignancy should be suspected. In this series pain was elicited only in 16.6% of benign cases probably due to muscle spasm. In all cases of malignant disease, pain is a common feature. Beahrs *et al*., (1960), Dunn *et al*., (1976) and Woods *et al*., (1977) reported pain in 2-10% of benign tumours and 25-33% of all malignancies. In this study 22.2% of malignant tumours show cervical lymphnode metastasis. The incidence of cervical metastasis as reported by Spiro *et al*., (1975) is in range of 23-33%. Pleomorphic adenomas are commonest tumours of parotid gland as observed by all authors. In this series it constitute 72.2% in parotid and 11.1% in submadibular region.

Conclusion

Tumours of major salivary glands are mostly bnign while malignant tumours are commonly encountered in minor salivary glands. Parotid gland is the most common gland to be affected and pleomorphic adenoma is the commonest salivary gland tumour Benign tumours mostly occur in 4th and 5th decade where as malignant tumours are seen in 6th decade of life.

Males are affected slightly more than females. Painless lump is the common complain in benign tumours while pain and facial palsy suggests malignancy.

Abbreviations

CA-CARCINOMA

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