EPITHELIAL SALIVARY TUMOURS IN SRI LANKA: A RETROSPECTIVE STUDY OF 713 CASES

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Introduction

Salivary tumours are relatively rare lesions and comprise of less than 3% of all neoplasms of the head and neck region (Eveson et al., 1985). Reports from different countries of the world have shown differences in the incidence and frequency of salivary tumours in both minor and major glands. Although there are many studies of large salivary tumour series in the past (Eveson et al., 1985; Main et al., 1976), relatively few studies have attempted to analyze salivary tumours in the recent past (Ma'aita et al., 1999). In addition, especially in Asia, studies of this nature are sparse.

The aim of this retrospective study was to evaluate the clinico-pathological data to determine the distribution of epithelial salivary tumours in Sri Lanka and to compare the present results with those from other countries.

Materials and methods

A total of 713 salivary tumours diagnosed at the Department of Oral Pathology at University of Peradeniya, during the period from 1990 to 2007 were reviewed. Microscopic slides of all cases were reviewed and the diagnosis was reconfirmed according to the 2005 WHO classification. Analysis was performed in order to identify the frequency of different benign and malignant salivary tumours in both major and minor glands. Age, gender, and site distribution were also determined for each salivary tumour type.

Results

Distribution of the 713 salivary tumours in major and minor salivary glands according to the histopathological type is indicated in Table 1. Out of the 713 epithelial salivary tumours, 356 (49.9%) were classified as benign and 357 (50.1%) as malignant, indicating a benign to malignant ratio of 1:1. The majority of both benign (29%, 210/713) and malignant tumours (39%, 276/713) occurred in the minor salivary glands. Fifteen percent (112/713) of benign and 7% (50/713) of malignant tumours were observed in the parotid gland, while 9% and less than 1% of all tumours respectively occurred in submandibular and sublingual glands. Among the minor salivary gland tumours, the palate was the most frequent location accounting for approximately 51% of the cases.

Females represented 53% of the affected patients, and certain tumours such as basal cell adenoma, pleomorphic adenoma, polymorphous low-grade adenocarcinoma, and mucoepidermoid carcinoma showed a female predominance while in contrast, tumours such as Warthin tumour and adenocarcinoma (NOS) showed a strong male predilection. In fact, Warthin tumour was seen only in males in the present study sample. The tumours affected more commonly adult patients with a peak incidence for benign tumours in 3rd to 6th decades (mean age 51 years) and for malignant tumours in 4th to 8th decades (mean age 52 years)(Table 2).

Pleomorphic adenoma was the commonest salivary tumour representing 38% of all tumours. However, no pleomorphic adenomas were diagnosed in the tongue and floor of the mouth. It showed a slight female predilection, indicating a male to female ratio of 0.8:1. Pleomorphic adenoma is also the commonest salivary tumour to occur in children and

adolescents accounting for 58% of tumours seen in this age group.

Mucoepidermoid carcinoma was the commonest malignant salivary tumour accounting for 22% of all tumours. It was also the second most common tumour to occur in children and adolescents representing 28% of tumours seen in this age group. Adenoid cystic carcinoma and polymorphous low-grade adenocarcino- mas accounted for 2nd and 3rd highest number of malignant tumours in the present study.

Discussion

In the present study 713, salivary tumours were reviewed and the results showed an almost equal frequency of benign and malignant tumours. However, most of the previously reported series on salivary tumours showed a predominance of benign over malignant tumours except for data from specialized cancer centers which show more malignant tumours representing up to 88% of all salivary tumours (Eveson et al., 1985; Main et al., 1976). The majority of salivary tumours were located in the minor salivary glands accounting for 68% of all salivary tumours. In contrast to the present findings, most of the previous studies indicated that parotid gland is the commonest site of occurrence for salivary tumours (Eveson et al., 1985; Main et al., 1976; Ma'aita et al., 1999).

Conclusion

From the results of the present study and the review of the literature, it is evident that salivary tumours in Sri Lanka are characterized by higher incidence of malignant tumours, especially in the minor salivary glands. In contrast to previous studies no striking age differences were observed between malignant and benign salivary tumours However, the present results confirm the fact that pleomorphic adenoma, mucoepidermoid carcinoma and the adenoid cystic carcinomas are the most commonly encountered salivary tumours in Sri Lanka.

References

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Table 1. Distribution of 713 epithelial salivary tumours

Benign tumours	Min-or	Submandi-bular	Paro-tid	Sublin-gual	Total		% benign or malign-ant
						% total	
Pleomorphic adenoma	179	24	70	1	274	38.4	77.0
Myoepithelioma	7	0	1	0	8	1.1	2.2
Basal cell adenoma	4	1	5	0	10	1.4	2.8
Warthin's tumour	0	2	27	0	29	4.1	8.1
Oncocytoma	1	2	1	0	4	0.6	1.1
Canalicular adenoma	2	0	0	0	2	0.3	0.6
Sebaceous adenoma	3	3	2	0	8	1.1	2.2
Intraductal papilloma	4	0	2	0	6	0.8	1.7
Papillary cyst adenoma	10	1	4	0	15	2.1	4.2
	210	33	112	1	356	49.9	
Malignant tumours							
Acinic cell carcinoma	12	2	4	0	18	2.5	5.0
Mucoepidermoid carcinoma	124	9	21	0	154	21.6	43.1
Adenoid cystic carcinoma	81	8	4	3	96	13.5	26.9
Polymorphus adeno carcinoma	27	1	2	0	30	4.2	8.4
Epithelial myoepithelial carcinoma	4	0	0	0	4	0.6	1.1
Basal cell adeno carcinoma	0	0	1	0	1	0.1	0.3
Sebaceous carcinoma	0	0	2	0	2	0.3	0.6
Papillary cyst adeno carcinoma	4	0	1	0	5	0.7	1.4
Oncocytic carcinoma	2	1	2	0	5	0.7	1.4
Salivary duct carcinoma	0	1	3	0	4	0.6	1.1
Adeno carcinoma(NOS)	7	2	4	0	13	1.8	3.6
Carcinoma ex pleomorphic adenoma	14	3	6	0	23	3.2	6.4
Undifferentiated carcinoma	1	1	0	0	2	0.3	0.6
	276	28	50	3	357	50.1	

Table 2.Mean age of occurrence of different salivary tumours

Benign tumours	M	F	Mean age
Canalicular adenoma	0	50	50
Myoepithelioma	53.8	48.7	51.9
Intraductal papilloma	36.2	42	37.2
Basal cell adenoma	63	47.4	49.1
Oncocytoma	68.5	63	65.8
Sebaceous adenoma	52	57.5	56.1
Papillary cyst adenoma	53.3	49	50.9
Pleomorphic adenoma	40.1	35.1	37.3
Warthin's tumour	60.6	0	60.6
Malignant tumours			
Basal cell adeno carcinoma	64	0	64
Polymorphus low grade adeno carcinoma	50.5	46.1	47.8
Sebaceous carcinoma	0	65	65
Oncocytic carcinoma	68	29.5	52.6
Papillary cyst adeno carcinoma	60	41.5	52.6
Carcinoma arising in pleomorphic adenoma	54.3	53.5	53.9
Acinic cell carcinoma	45.6	29.8	37.2
Adenoid cystic carcinoma	55.1	50.8	52.7
Mucoepidermoid carcinoma	52.3	39.8	44.6
Adeno carcinoma(NOS)	64.3	50.4	58.5
Epithelial myoepithelial carcinoma	30	38	34
Salivary duct carcinoma	73.7	48	67.3
Undifferentiated carcinoma	56	0	56