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PREVALENCE OF MAJOR SALIVARY GLAND TUMORS AT ALMOUASAT UNIVERSITY HOSPITAL

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ABSTRACT

Objective: this study aimed to study the prevalence and incidence of Salivary gland tumors. **Materials and Methods:** This is a retrospective study of salivary gland tumors diagnosed between 1/1/2014 to 30/7/2018 from AlMouasat University Hospital records. **Results:** This study consisted of 72 cases. Most of them were benign tumors 79.2%. Parotid gland was the most affected. Pleomorphic adenoma 43.1% and squamous cell carcinoma metastasis 6.9% were the most common benign and malignant tumors, respectively. **Conclusion:** Salivary gland neoplasms are not common. Most common gland in which tumors rise is the parotid gland. Pleomorphic adenoma and squamous cell carcinoma metastasis were the most common benign and malignant tumors, respectively.

KEYWORDS: Salivary, Pleomorphic, Parotid gland.

INTRODUCTION

Salivary gland neoplasms (SGNs) composes a diverse group of tumors. This diversity makes the diagnosis and management of these tumors quite troublesome for the surgeon or the pathologist.[1]

SGNs are not common and their incidence is between 0.4-13.5 cases per 100,000 population.[2] Malignant SGNs accounts for 3-6% of all head and neck cancers and composes around 0.5% of all malignances. Hence, salivary gland malignances are rare.

The main challenge in these tumors is that their histopathology is the most complex of any organ or tissue.[3] Benign SGNs are more common in clinical practice with 5-7 more times than their malignant counterparts.

Parotid and submandibular glands are the most affected glands, respectively. Most of SGNs are benign tumors.

Up to our knowledge, this study is the first of its type in Syria.

MATERIALS AND METHODS

This study was a retrospective study of the records of the patients who reviewed AlMouasat University Hospital with salivary gland tumors.

We studied the demographic variables of these tumors, such as age and gender. We studies the prevalence of different types of tumors and their correlation with age and gender.

This study included all cases from 1/1/2014 to 30/7/2018. Only the authors to ensure the privacy collected all the data to ensure the privacy and all the names and personal information were blinded. Statistical analysis was done using SPSS 25.0.

RESULTS

Table 1: Demographic variables of our study and the distribution of tumors in the glands.

Variable		Frequency	Percent	Total
Age	0-10 year	1	1.4	72(100%)
	11-20 year	3	4.2	
	21-30 year	9	12.5	
	31-40 year	13	18.1	
	41-50 year	17	23.6	
	51-60 year	11	15.3	
	61-70 year	10	13.9	
	71-80 year	7	9.7	
	81-90 year	1	1.4	
Gender	Male	29	40.3	72(100%)
	Female	43	59.7	
Gland	Parotid	67	93.1	72(100%)
	Submandibular	5	6.9	

Table 2: Types of tumors in our study.

		N	%
Malignancy	Benign	57	79.2
	Malignant	15	20.8
	Total	72	100.0

Table 3: Distribution of tumors in our study.

			N	%	% of all sample
Tumor types	**Benign**	Warthin's Tumor	21	36.8	29.2
		Myoepitheioma	1	1.8	1.4
		Oncocytoma	4	7.0	5.6
		Pleomorphic adenoma (PA)	31	54.4	43.1
		Total	57	100.0	-
	Malignant	Mucoepidermoid Carcinoma (MEC)	4	26.7	5.6
		Adenoid Cystic Carcinoma (ACC)	4	26.7	5.6
		Myoepithelial Carcinoma	1	6.7	1.4
		Clear Cell Adenocarcinoma	1	6.7	1.4
		Squamous Cell Carcinoma Metastasis	5	33.3	6.9
		Total	15	100.0	100.0

Table 4: Distribution of all tumors in correlation to gender.

						Chi-Square test	
			Gender		Total	Chi-Square	p-value
			Male	Female			
Type	**Warthin's Tumor**	**Count**	15	6	21	18.655	0.000*
		% of Total	20.8%	8.3%	29.2%		
	Myoepitheioma	**Count**	0	1	1		
		% of Total	0.0%	1.4%	1.4%		
	Oncocytoma	**Count**	3	1	4		
		% of Total	4.2%	1.4%	5.6%		
	Pleomorphic Adenoma	**Count**	5	26	31		
		% of Total	6.9%	36.1%	43.1%		
	Mucoepidermoid Carcinoma	**Count**	2	2	4	1.667	0.797
		% of Total	2.8%	2.8%	5.6%		
	Adenoid Cystic Carcinoma	**Count**	2	2	4		
		% of Total	2.8%	2.8%	5.6%		
	Myoepithelial Carcinoma	**Count**	0	1	1		
		% of Total	0.0%	1.4%	1.4%		
	Clear Cell Adenocarcinoma	**Count**	0	1	1		
		% of Total	0.0%	1.4%	1.4%		
	Squamous Cell Carcinoma Metastasis	**Count**	2	3	5		
		% of Total	2.8%	4.2%	6.9%		
Total		**Count**	29	43	72		
		% of Total	40.3%	59.7%	100.0%		

The correlation between malignant tumors and age was not statistically significant (p >0.05) so their results were not shown.

Table 5: Distribution of all tumors in correlation to age.

								Chi-Square test	
			Type				Total	Chi-Square	p-value
			Warthin Tumor	Myoepitheioma	Oncocytoma	PA			
Age	0-10 year	Count	0	0	1	0	1	42.534	0.004*
		% of Total	0.0%	0.0%	1.8%	0.0%	1.8%		
	11-20 year	Count	0	0	0	2	2		
		% of Total	0.0%	0.0%	0.0%	3.5%	3.5%		
	21-30 year	Count	1	0	0	8	9		
		% of Total	1.8%	0.0%	0.0%	14.0%	15.8%		
	31-40 year	Count	0	1	1	8	10		
		% of Total	0.0%	1.8%	1.8%	14.0%	17.5%		
	41-50 year	Count	6	0	0	9	15		
		% of Total	10.5%	0.0%	0.0%	15.8%	26.3%		
	51-60 year	Count	7	0	1	2	10		
		% of Total	12.3%	0.0%	1.8%	3.5%	17.5%		
	61-70 year	Count	4	0	1	2	7		
		% of Total	7.0%	0.0%	1.8%	3.5%	12.3%		
	71-80 year	Count	3	0	0	0	3		
		% of Total	5.3%	0.0%	0.0%	0.0%	5.3%		
Total		Count	21	1	4	31	57		
		% of Total	36.8%	1.8%	7.0%	54.4%	100.0%		

DISCUSSION

SGNs as a whole are more common in females according to the WHO (World Health Organization) and other articles.[4,5] However, some studies states that these tumors has a men predominance.[3,6,7,8] In our study, we had 72 patients of which 43 of them were females (59.7%) and 29 were males (40.3%). (Table 1).

Similar studies shows that the prevalence of benign and malignant was 70.3% and 29.7%, respectively. Chili study. Moreover, a Brazilian study showed a prevalence of 74.8% benign and 25.2%. (5, 6). In our study, the results were similar to literature; we had 79.2% benign and 20.8% malignant. (Table 2).

Two similar studies[5,10] showed that the most common gland for salivary neoplasms was the parotid gland. In our study, the neoplasm benign or malignant were found either in the parotid gland (most common, 93.1%), and in the submandibular gland (6.9%). (Table 1).

The most common benign tumor in our study was pleomorphic adenoma followed by Warthin tumor, while the most common malignant tumor was squamous cell carcinoma metastasis compared to similar studies[10] in which the mucoepidermoid carcinoma was the most common. (Table 3).

Most of the pleomorphic adenomas were found in females, which is concordant to similar studies.[5,10,11] Warthin tumor was predominant in males, which has been stated in other literature.[5-6, 9,11] Squamous cell carcinomas metastasis were more common in females in our study; however, we could not find any studies that discuss the gender predominance of malignant salivary gland tumors. (Table 4).

The average age of presentation of SGNs was 53.3 years in a similar study.[10] In our study, there was a statistical correlation between the age and benign tumor types ($p<0.05$). The peak incidence was 41-50 years old. The two most prevalent benign tumors Pleomorphic adenoma and Warthin tumor was most common between 41-50 years old and 51-60 years old, respectively. It should be noted that the risk of salivary gland cancer increases with age.[12] We did not find a statistical correlation between the age and malignant tumor types ($p>0.05$). Nevertheless, the most common malignant tumor Squamous cell carcinoma metastasis was most common between 61-70 years old. It should be noted that 8 out of 15 cases of malignances was in patients between 61-90 years old. (Table 5).

CONCLUSION

Salivary gland tumors are uncommon neoplasms that usually arise in the parotid gland showing some predilection for females. Benign tumors are by far more common than malignant tumors. Pleomorphic adenoma and squamous cell carcinoma metastasis were the most common benign and malignant tumors reported in this series, respectively.

Compliance with Ethical Standards

Funding: This study was not funded by any institution.

Conflict of Interest: The authors of this study have no conflict of interests regarding the publication of this article.

Ethical approval: The names and personal details of the participants were blinded to ensure privacy.

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