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| RESEARCH ARTICLE

Comparative Study of Epithelial Tumor Development in General Hospitals in Iraq

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| ABSTRACT

Epithelial tumor is the most common cancer in Iraq. The disease is frequently diagnosed in individuals who are more than 55 years old, both females and males. Epithelial tumors are composed of different subtypes of surface epithelial tumors. The tumor is called after the component that predominates; however, the tissue has to establish more than 10% of the whole tumor. To evaluate the clinical and pathological parameters of epithelial tumor among Iraqi patients from 2010 to 2020. This retrospective study analyzed the clinical and pathological parameters of (1330) patients who were diagnosed with epithelial tumors from 2010 to 2020 in Iraq. The studied parameters comprised demographic factors like gender, age, tumor sites, and governorates. The Iraqi patients were highly significant at 55 years of age and showed a greater tendency to present at a later stage. The most common epithelial tumors in the current study was squamous cell papilloma in the palate site, which showed the highest rate of occurrence that was more widespread among males for age among patients more than 55 years old. The significant differences in the clinical and tumor features of epithelial tumor among the Iraqi patients propose heterogeneity in the primary biology of the tumor, which is increased in Iraq by the problem of delayed diagnosis. The significant ethnic differences in epithelial tumor features recommend the rapid support of the national cancer control plan in Iraq as a main method for the administration of the disease.

| KEYWORDS

Epithelial tumor, metastatic tumors, malignancy, stroma, phenotype patterns.

| ARTICLE INFORMATION

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1. Introduction

In the most common of cases, in situ, epithelial tumor lesions do not grow into malignancy, even if they harbor several of the genetic differences obtained in invasive and metastatic cancers (Dotto, 2014). However, the alterations in tumor stroma are commonly observed as secondary to alterations in the epithelium; current evidence (Méndez-López, 2022) shows that they may play a major character in both cancer development stages and initiation (Cyprian, 2018). Tumors derived from epithelial tissue include the major category of neoplasms and comprise cancers of epithelial surfaces, like the respiratory, gastrointestinal, and urogenital tracts, and gland tumors (Roe, 2024). Given their varied origin, the cytomorphologic occurrence of these tumors can be extremely variable, though particular features are shared by most epithelial tumors (Jiménez-Heffernan, 2020). Epithelial tumors can be classified into two categories: Epithelial benign tumors like squamous cell papilloma (SCP) and epithelial malignant tumors like carcinoma of the lip (CL) (Silveira, 2024), carcinoma of the tongue (CT), carcinoma of the base of the oral cavity (CBOC), carcinoma of the buccal mucosa (CBM), adenoid cystic carcinoma (ACC) and cystic squamous cell carcinomas (CSCC) (Gamez, 2018). Squamous cell papilloma is the most tumors of epithelial benign tumors that happens mostly on the buccal mucosa, lips, and palate (Syrjänen, 2021). In epithelial malignant lesions, carcinoma of the lip appears chiefly on the lower lip; it typically happens in adult males (Kumari, 2022); it metastasizes to the submental and submandibular nodes rarely and is detected so well (Zdanowski, 2011). Moreover, in the beginning, there is a slight hardening of the lip, then after the split of epithelia, the realization of a crust, and below the crust, an ulcer shapes (Alhabbab, 2022). Carcinoma of the tongue is the most commonest malignant cancer of the

oral cavity; it metastasizes to the lymphatic nodes and the lungs (Irani, 2016); it happens at the base, at the border of the middle third of the tongue and tip, it develops quickly in depth, three times more general in males (Sheikh, 2021). Further, in the beginning, only hardening of the tongue, later ulcer, pain develops in cauliflower style and endophytic (Sivapathasundharam, 2020). Carcinoma of the base of the oral cavity is the most common (Ettinger, 2019). Hardened ulcer, frequently located laterally from the middle part of the base, it develops exophytically and endophytically, it regularly metastasizes contralaterally to the regional nodes (Gulati, 2024). Carcinoma of the buccal mucosa, it has features ulceration with hardened base that observed chiefly in the molar area and it often exophytic development (Fourie, 2016). Adenoid cystic carcinoma, it is more common on the soft palate that has the occurrence of an ulceration (Thorat, 2016). Cystic squamous cell carcinomas, it develops exophytically and endophytically, it habitually destroys the bone. In the maxilla, it can develop into the maxillary cavity (Barrett, 2020).

2. Materials and Methods

Around (1330) patients were recorded over 11 years (2010-2020) in ten teaching general hospitals. For the patients' records, information was collected on age, gender, site, and morphology. The age is divided into five groups under: 15 (15-24), (25-39), (40-59) and above 60. The anatomical site comprises the palate, buccal mucosa, lips, lower lip, the submandibular, middle third of the tongue, tip, base, lower lip, upper lip, inner cheek, soft palate, hard palate, tongue, lateral border, gingiva, and buccal surfaces. Tumors were located in two categories: epithelial benign tumors like squamous cell papilloma and epithelial malignant tumors like carcinoma of the lip, carcinoma of the tongue, carcinoma of the base of the oral cavity, carcinoma of the buccal mucosal, adenoid cystic carcinoma and cystic squamous cell carcinomas. The patients reported inadequate demographic details of patients and non-indicative biopsy was excluded from the examination. Descriptive analysis was done by using SPSS ver. 26.

3. Results

The data collection was collected from 1330 patients, as tumors recorded over 11 years (2010-2020), as shown in Table 1. It can be clearly revealed that the maximum value (953) with a percentage (70.3 %) of the epithelial tumor was in Baghdad.

Table 1: Distribution of epithelial tumor according to governorates.

	Governorates	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Baghdad	935	70.3	70.3	70.3
	Basrah	76	5.7	5.7	76.0
	Nasiriyah	61	4.6	4.6	80.6
	Babil	58	4.4	4.4	85.0
	Najaf	43	3.2	3.2	88.2
	Diwanyia	42	3.2	3.2	91.4
	Maysan	38	2.9	2.9	94.2
	Karballa	29	2.2	2.2	96.4
	Kut	28	2.1	2.1	98.5
	Muthanna	20	1.5	1.5	100.0
	Total	1330	100.0	100.0	

The average age was 54.67 years, with a standard deviation of (16.48) and an age range from (11 – 98) years. There were 671/1330 (50.5%) males and 659/1330 (49.5%) females. Male to female ratio is 1.02:1. The average age of patients with SCP was (50.76) yrs for benign epithelial tumor, and the average age of patients with CL was (57.07) yrs for Malignant epithelial tumor. There was no significant difference among age, gender, and epithelial tumors with respect to p-value>0.05 (see Table 2)

Table 2: Age and gender distribution of epithelial tumor.

Tumor	Epithelial benign tumor		Epithelial malignant tumor												P-value
	SCP		CL		CT		CBOC		CBM		ACC		CSCC		
Average age (yrs)	50.76		57.07		55.21		53.13		54.33		57.08		55.62		
Gender	F	%	F	%	F	%	F	%	F	%	F	%	F	%	0.735
Female	154	53.3	134	52.5	104	43.0	26	54.2	120	54.3	79	41.8	42	48.8	
Male	135	46.7	121	47.5	138	57.0	22	45.8	101	45.7	110	58.2	44	51.2	0.387
Total	289	100.0	255	100.0	242	100.0	48	100.0	221	100.0	189	100.0	86	100.0	
M: F	1:1.14		1:1.11		1.32:1		1.18:1		1:1.18		1.39:1		1:1.05		

Where F is the frequency and (%) is the percentage.

Base (143/148) was the most common site for epithelial benign tumor. SCP was most commonly diagnosed (289/1330), followed by CL (255/1330) and CBOC (48/1330), which was the minimum frequent of both benign and malignant epithelial tumor. The site and type of diagnosed epithelial tumor were significantly related (p-value < 0.05), as shown in Table 3.

Table 3: The distribution of epithelial tumor diagnosed with site.

	Morphology								
Site	SCP	CL	CT	CBOC	CBM	ACC	CSCC	Total	P-Value
Base	0	5	143	0	0	0	0	148	<0.05
Buccal mucosa	74	0	0	0	0	0	0	74	
Buccal surfaces	0	0	0	0	0	0	25	25	
Gingiva	0	0	0	0	0	0	36	36	
Hard palate	0	0	0	0	0	46	0	46	
Inner cheek	0	0	0	0	74	0	0	74	
Lateral border	0	0	0	0	141	0	0	141	
Lips	38	0	0	0	0	0	19	57	
Lower lip	0	177	1	0	0	0	0	178	
Middle of the tongue	0	0	56	0	0	0	0	56	
Middle of the base	0	0	0	48	0	0	0	48	
Palate	177	0	0	0	0	0	0	177	
Soft palate	0	0	0	0	0	143	0	143	
Submandibular	0	51	0	0	6	0	0	57	
Tip	0	0	42	0	0	0	0	42	
Tongue	0	0	0	0	0	0	6	6	
Upper lip	0	22	0	0	0	0	0	22	
Total	289	255	242	48	221	189	86	1330	

The relative frequency of age groups by gender is classified into five groups. The most affected age group (305) was in (60+) of males, as shown in Table 4.

Table 4: The relative frequency of age groups classes by gender.

		Age group					
		<15	(15-24)	(25-39)	(40-59)	60+	Total
Gender	Male	3	19	93	251	305	671
	Female	11	21	101	244	282	659
Total		14	40	194	495	587	1330

The most aged patients were observed from the 4th to 6th decade of life for both epithelial tumors. The most age group (56) patients were found in the age group (60+) of SCP for epithelial benign tumors and (69) patients in the age group (60+) of CL for epithelial malignant tumors (see Table 5).

Table 5: The relative frequency of morphology with respect to age group and gender.

			Age group					
Morphology			<15	(15-24)	(25-39)	(40-59)	60+	Total
Squamous cell papilloma	Gender	Male	1	5	24	49	56	135
		Female	4	15	34	51	50	154
	Total		5	20	58	100	106	289
Carcinoma of the lip	Gender	Male	0	2	15	35	69	121
		Female	1	2	16	53	62	134
	Total		1	4	31	88	131	255
Carcinoma of the tongue	Gender	Male	1	4	19	52	62	138
		Female	2	2	16	36	48	104
	Total		3	6	35	88	110	242
Carcinoma of the base of the oral cavity	Gender	Male	0	3	3	4	12	22
		Female	2	0	3	9	12	26
	Total		2	3	6	13	24	48
Carcinoma of the buccal mucosa	Gender	Male	1	2	15	43	40	101
		Female	1	1	18	51	49	120
	Total		2	3	33	94	89	221
Adenoid cystic carcinoma	Gender	Male	0	3	10	47	50	110
		Female	0	0	10	28	41	79
	Total		0	3	20	75	91	189
Cystic squamous cell carcinomas	Gender	Male	0	0	7	21	16	44
		Female	1	1	4	16	20	42
	Total		1	1	11	37	36	86

4. Discussion

The occurrence of epithelial tumors varied by region because of geographical location, different genetics, and methods that were diagnosed (Sarode, 2020). This study evaluated all epithelial tumors between 2010 and 2020. According to the results, 22% of all epithelial benign tumors appeared in different features of SCP, which was accepted by the study (Saad, 2020). Multiple studies have studied the frequency of epithelial tumors in clinical examination and reported a great percentage, about 52% (De-Jong, 2008).

The most common epithelial tumors in the current study was squamous cell papilloma in the palate site, which exhibited the maximum rate of incidence, which was more widespread among males, which was in line with the study (Ferreira, 2022).

This study clearly showed that males were most affected by epithelial tumors more frequently than females. This result was accepted by previous studies (Lopez-Beltran, 2009). However, there was not accepted with different results such as (Haupt, 2021). In the whole age group, epithelial tumors were shown more in males, excepting some age groups (60+) years of CBM and CSCC. In several studies where patients were assessed clinically, epithelial tumors were recorded less in female groups (Agaimy, 2022).

Palate and lower lip were the most frequent sites of SCP and CL, respectively, followed by the lateral border of CT. This result was accepted by the findings of the study (Luce, 2017). However, in several clinical studies, the upper lip of CL was the commonest impacted site, and a great frequency of tumors occurred in other sites (Biasoli, 2016).

5. Conclusion

The findings exhibited that around 78% of the whole epithelial tumors were epithelial malignant tumor. Squamous cell papilloma of epithelial benign tumors were the most common tumors with male tendency. While in epithelial malignant tumor, Carcinoma of the lip is a male tendency. Furthermore, the common site was the Palate and lower lip of SCP and CL, respectively, followed by the lateral border of CT. All these results display more attention via clinical examination, practically with respect to the fact that earlier analysis and treatment of epithelial tumors can importantly influence life quality in patients and health. The comparison between the current findings and other epidemiologic studies generates valuable information that can be beneficial for dental specialists.

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