
RESEARCH ARTICLE

Overview of Biopsied Tongue Lesions Patients of General Hospitals in Iraq

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ABSTRACT

The tongue lesions have been globally considered a pointer of common health for millennia. The aim is to identify the incidence and distribution of tongue biopsied lesions in Iraq. A cross-sectional analysis study examined 1335 oral biopsy records between 2008 and 2020 conducted in different Iraqi governorates. The study was analyzed with respect to governorates, gender, age, morphology, and tumor type. The incidence of tongue lesions was reported as a percentage, and the data was analyzed using descriptive analysis. The total number of oral biopsy was 1336, with an occurrence peak of 52.54% in the age group from seven to ninety-two years old and the ratio male to female (1.01:1). There included (251) biopsy (18.80) of benign lesions and (1284) biopsy (81.20%) of malignant lesions. The lateral border of the tongue was the most general site of biopsy. The results showed that fibroma was the most common benign morphology, while squamous cell carcinoma was the most common malignant morphology.

KEYWORDS

Tongue lesions, Biopsy, Lateral border, Fibroma, Squamous cell carcinoma.

ARTICLE INFORMATION

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1. Introduction

The tongue is defined as a muscular organ that exists in the mouth of most vertebrates, and it manipulates food for mastication and is used in the process of swallowing (Madjova, 2017). This organ is significant in the digestive organism and is the chief organ of taste in the gustatory organism (Cheled-Shoval, 2015). Oral lesions are classified into four sets, including ulcerations, pigmentations, exophytic lesions, and red-white lesions (Mortazavi, 2019). In comparison with reports regarding periodontal diseases and epidemiological or dental caries research, oral lesions are still poor. Some lesions are non-neoplastic, including soft and hard tissues.

Tongue lesions are a widespread range comprising hamartomas, benign proliferations like fibroma, or true tumors such as granular cell tumors, as well as malignancies like squamous cell carcinoma (Bilodeau, 2021). The clear identification of a tongue lesion is well-known through histopathologic biopsy, showing that it has a relationship with the patient's major complaint of pain, medical history of dental, and proper clinical oral investigation (Sivaraman, 2021). Clinical difference identifies are principally updated with respect to the occurrence of lesions of the tongue for every site. A huge sense of urgency to distinguish lesions of the tongue to introduce a good automated identification of clinical features of patients (Marchevsky, 2017).

Some history of epidemiology research on the incidence of lesions of the tongue was achieved in Iran, India, Turkey, Jordan, etc. (Alaeddini, 2014) (Shamloo, 2016). The existence of lesions of the tongue is different with respect to inheritances and conservational features in different physical areas (Shamloo, 2016). Iraq is located in West Asia, and it has multiple cultural areas. Little epidemiological records on lesions of the tongue were achieved in Iraq. A high incidence of oral cancer among tongue biopsies was revealed in (Mushatat, 2018) and (Fuoad, 2021).

Thereby, the study aimed to detect the incidence and frequency of tongue lesions in Iraq from 2008 to 2020.

2. Martial and methods

A retrospective study (1335) of oral biopsy records between 2008 and 2020 was collected from the archives of different governorates of Iraq, and it was approved by the Department of Oral and Maxillo-Facial Pathology, University of Karbala. The demographic data of the patients and biopsied tongue lesions were recorded. Age, gender, the exact location of the lesion, and the final identification were reported. Moreover, they excluded some parameters, such as lacking definitive histopathological identification patients.

The particular positions of tongue lesions were divided into tip, dorsal, lateral borders, and ventral. The whole defects were characterized into two sets comprising benign and malignant tumors.

2.1 Statistical analysis

All the data must be converted into a computerized database format. These databases were examined for errors using data-cleaning techniques. Different detailed clinical data was recovered from the respective departmental records, and expert statistical advice was used for statistical analyses such as SPSS ver. 26.

3. Results

The data collection was collected from 1335 patients, as biopsied tongue lesions that were reported over 13 years (2008-2020), as shown in Table 1. It can be obviously shown that the highest value (155) (11.6 %) of biopsy was in 2015.

Table 1:- The frequency of biopsied tongue lesions with respect to years.

	Year	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	2008	67	5.0	5.0	5.0
	2009	74	5.5	5.5	10.6
	2010	104	7.8	7.8	18.4
	2011	73	5.5	5.5	23.8
	2012	112	8.4	8.4	32.2
	2013	94	7.0	7.0	39.3
	2014	133	10.0	10.0	49.2
	2015	155	11.6	11.6	60.8
	2016	125	9.4	9.4	70.2
	2017	141	10.6	10.6	80.7
	2018	127	9.5	9.5	90.3
	2019	85	6.4	6.4	96.6
	2020	45	3.4	3.4	100.0
	Total	1335	100.0	100.0	

The age patients range was 7–92 years, the mean was (51.54%) years, and the prevalence peak of 40–60 years (42.38%). The smallest age patient was a 7-year-old female with mucoepidermoid carcinoma, and the largest was a 92-year-old male with Squamous cell carcinoma.

The most general biopsied tongue lesions were trended to malignancy behavior like squamous cell carcinoma, as shown in Figure 1.

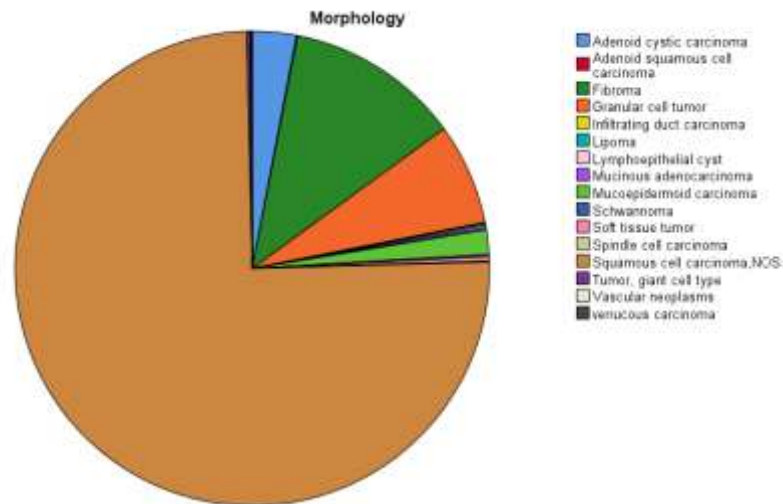


Figure 1. Pie chart of biopsied tongue lesions according to morphology.

Fibroma in Tip site (62) patients was the most frequent morphology in benign lesions, and the ratio of male to female was 1.04:1. Granular cell tumor were the second most common benign lesions (46) in lateral border site, and the ratio of male to female was 1:1.19. While squamous cell carcinoma in the lateral border site (796) was the most frequent morphology in malignant lesions, and the ratio male to female was 1.05:1, Adenoid cystic carcinoma in the lateral border site (16) was the second most frequent malignant lesions, and the ratio of male to female was 1:1.66. (16)

Table 2: The distribution of morphology lesions with respect to site and gender.

Morphology	Site					Gender M:F
	Base	Dorsal surface	Lateral border	Tip	Ventral surface	
Adenoid cystic carcinoma	12	7	16	2	3	1:1.66
Adenoid squamous cell carcinoma	0	0	1	0	0	1:0
Fibroma	5	26	57	62	9	1.04:1
Granular cell tumor	0	13	46	26	7	1:1.19
Infiltrating duct carcinoma	0	0	1	0	0	0:1
Lipoma	0	0	2	0	0	0:1
Lymphoepithelial cyst	1	0	0	0	1	1:1
Mucinous adenocarcinoma	1	0	1	0	0	1:1
Mucoepidermoid carcinoma	5	2	9	1	5	1:1.2
Schwannoma	0	0	1	0	1	1:1
Soft tissue tumor	1	0	0	3	0	1:1.5
Spindle cell carcinoma	0	0	1	0	0	0:1
Squamous cell carcinoma, NOS	130	18	796	11	47	1.05:1
Tumor, giant cell type	2	0	0	1	0	2:1
Vascular neoplasms	1	0	0	0	0	1:0
Verrucous carcinoma	0	0	1	0	0	0:1
Total	158	66	932	106	73	1.01:1

The relative frequency of age groups by gender is classified into five groups. The most affected age group (278) was in (≥ 60) of males, as shown in Table 3.

Table 3. The relative frequency of age group categories by gender.

Age groups	Male	Female	Total
<15`	26	23	49
$\geq 15-25$	25	23	48
$\geq 25-40$	94	100	194
$\geq 40-60$	247	246	493
≥ 60	278	273	551
Total	670	665	1335

The relative frequency of fifth sites of biopsied lesions tongue according to gender is summarized in Table 4. The highest frequent site (471) was affected in the lateral border of females, while the minimum frequent site (31) was in the dorsal surface of males.

Table 4:- The distribution of fifth sites according to gender.

		Site					Total
		Base	Dorsal surface	Lateral border	Tip	Ventral surface	
Gender	Male	81	31	461	58	39	670
	Female	77	35	471	48	34	665
Total		158	66	932	106	73	1335

The relative distribution of the fifth site of biopsied tongue lesions according to behavior (benign and malignant) is summarized in Table 5. The highest frequency (827) of malignant was found in the lateral border site, and the lowest frequency (9) occurred in benign in the base site.

Table 5:- The distribution of the fifth site was according to Behavior (benign and malignant).

		Site					Total
		Base	Dorsal surface	Lateral border	Tip	Ventral surface	
Behavior	Benign	9	39	105	79	19	251
	Malignant	149	27	827	27	54	1084
Total		158	66	932	106	73	1335

4. Discussion

The incidence of tongue irregularities has changed in different countries due to geographical position, genetics, methodology, etc (Sarode, 2020). It assessed the whole biopsy tongue lesions from 2008 to 2020. 6.9% of all oral lesions appeared in different tongue features. Different countries' cases rate was recorded, such as Iranians (3.7%) and (30%) in Malaysia (Farhangian, 2020). This is attributed to variation culture, physical features, study design, identifying conditions, collecting sample size, particular behaviors in specific countries, and variance in the socioeconomic level of the sampling population study (Wu, 2023). Several studies have investigated the incidence of biopsy lesions of the tongue with respect to clinical investigation and recorded a great percentage of oral lesions of the tongue, approximately 52% (Bewley, 2017). It could be shown that specific recurrent oral lesions, like fissured tongue, hairy tongue, etc., are identified with respect to clinical investigation without taking any biopsy (Farhangian, 2020). Though the assessment of biopsied tongue lesions indicates perfect information, those that were detected without taking a biopsy are excluded (Epstein, 2012).

The most general biopsied tongue lesion was squamous cell carcinoma in the lateral border site, which displayed the maximum frequency of incidence, and it was found to be more spread for males.

This study obviously observed that males were most impacted by biopsied tongue lesions more frequently than females. These results were in agreement with previous studies (Napier, 2008). Nevertheless, there was no acceptance of different results (Warnakulasuriya, 2016). For age, biopsied lesions of the tongue were observed in males, excluding the age group (25-40) years. Several studies were conducted clinically, and biopsied tongue lesions were recorded in males (Lasasi, 2017).

The lateral border was the most common frequent site of tongue biopsy, followed by the base. These results go hand in hand with previous studies (Costa, 2012) and (Ramdass, 2015). Common benign and malignant tongue lesions appear on the lateral border

(Okubo, 2017). Nonetheless, in several clinical studies, the dorsal surface of the tongue was the most impacted site, and a great number of lesions occurred in other sites. They recorded some lesions, such as hairy and fissured tongues (Abdulraheem, 2015).

5. Conclusion

77% of the whole oral lesions were malignant tongue lesions. Fibroma of benign tongue lesions were the most common biopsied lesions, and it was found to be a tendency in males. For malignant tongue lesions, squamous cell carcinoma was also found to be a tendency in males. The lateral border was the most frequent site affected, and it was followed by the base for tongue biopsies. These results display more attention via clinical investigation, practically according to the first analysis, and treatment of oral malignancy can meaningfully impact the quality of life of patients and their health. Comparing the current findings with other epidemiologic research produces valuable information in order to be beneficial for dental specialists.

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