

## A Clinical Study on Tongue Lesions among Iraqi Dental Outpatients.

Sura Ali Fuoad\*

Department of Oral Medicine, College of Dentistry, Gulf Medical University, Ajman, UAE.

### Research Article

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#### \*For Correspondence

Department of Oral Medicine,  
College of Dentistry, Gulf  
Medical University, Ajman, UAE.

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The aim of this study was to assess the frequency of different tongue conditions and relate them to data obtained about symptoms, gender habits in Iraqi dental outpatients. A total of 130 subjects were included in this study, most of the diagnosis done on clinical bases unless conformation with other investigations is needed. Information about the age, gender, site of the lesion, associated symptoms and habits were obtained. Tongue lesions were found predominantly in subjects with age range from 20-59 years. Ulcers were the most common lesion found in 25% of subjects, the dorsal surface of the tongue was the common site. Tongue lesions had slightly higher female predilection mostly on the dorsal surface of the tongue. 39 subjects were smokers with age range form 20-59 years. Tongue lesions may affect both genders, in middle age, dorsal surface of the tongue is the commonest site, an efficient oral health program such as attention to cultural practices and the elimination of risk habits and may improve tongue hygiene.

### INTRODUCTION

Tongue is the most motile and accessible organ in the oral cavity. Tongue is a complex muscular organ covered by epithelium and performs many functions like swallowing, sucking, phonation and perception of sensations including thermal changes, taste, pain stimuli and general sensations and helps in jaws and orofacial structures development [1]. These functions can be affected by any change in the oral cavity environment or by any lesion that can affect the tongue itself, which have a great impact on patients in the terms of pain, discomfort, limitation of function [2].

The tongue can be involved with lesions similar to those in other parts of the oral cavity, or as an oral manifestation of systemic diseases, whoever there are lesions confined exclusively to the tongue such as fissuring, median rhomboid glossitis, Atrophy of the epithelium, hairy and geographic tongue [3].

The specific nature of the dorsal surface that include large number of specialized epithelial structures, the papillae and its modifications in the distribution and formation, where many of the specific lesions of the tongue arise. Moreover, the extreme mobility of the tongue and its rich supply of sensory nerve endings made the tongue particularly label to minor trauma and functional disability, subsequently results in damage being rapidly brought to the notice of the patient.

As the clinical appearance of tongue lesions have great variations, most of tongue lesions are of local etiology, in many instances, the clinical experience helps the gross assessment of disease prevalence [4]. The occurrence of different tongue lesions has been abundantly studied previously where it has been noticed that tongue can be targeted by a wide range of pathological conditions, the recognition of tongue lesions may be helpful in the early diagnosis of some systemic disorders, allergic or hormonal, It could be the first manifestation of the disorder [5,6].

A strong correlation between increasing age and tongue lesions was found by Avcu N, Kanli A in their study on 2690 subjects who were diagnosed as having tongue lesions with a prevalence of 44.2 and 62.0% for women and men, respectively [7].

It has been found that there is an association between habits and oral lesions. Hairy tongue was detected in 3.4% of the subjects with significantly higher prevalence in males ( $P < 0.0005$ ). A strong correlation was found between smoking and hairy tongue [7,8].

The aim of this study was to assess the frequency of different tongue conditions and to correlate those data with symptoms, gender habits in those Iraqi dental outpatients.

## MATERIALS AND METHODS

A prospective study was done on 130 outpatients, with age range from 6-83 years, whom referred to oral medicine clinic, in college of dentistry, Baghdad University during 2 years period, complaining particularly from discomfort or pain in the tongue.

During the subjects' interview, a record was done for demographic data; habits of the subject were also recorded to determine their impact on the tongue.

Every subject was subjected to a through clinical examination by standard methods of extra and intra examination of the orofacial structures and with concentration on the tongue. The clinical examination of the oral mucosa and tongue was performed according to World Health Organization (WHO) guidelines [9].

Prior to careful clinical examination of the tongue, a special oral lesion charts were filled. Diagnosis carried out on dental chair using mouth mirror, check retractor, and sterile goes. Biopsy and other investigations sometimes needed for confirmation of the clinical diagnosis. Site of the lesion was also recorded.

## RESULTS

### Sample profile

A total of 130 Iraqi subjects diagnosed as having tongue lesions as Ulcer, Neoplasm, Lingual Varicosities, Pyogenic granuloma, Polyps, Atrophy of papilla, Lichen planus, Leukolakia, Fissured tongue, Geographic tongue, participated in the present study. Their age ranged from 5-89 years, 69 (53.1%) female and 61(46.9%) male .Figure (1) shows gender distribution of the sample.

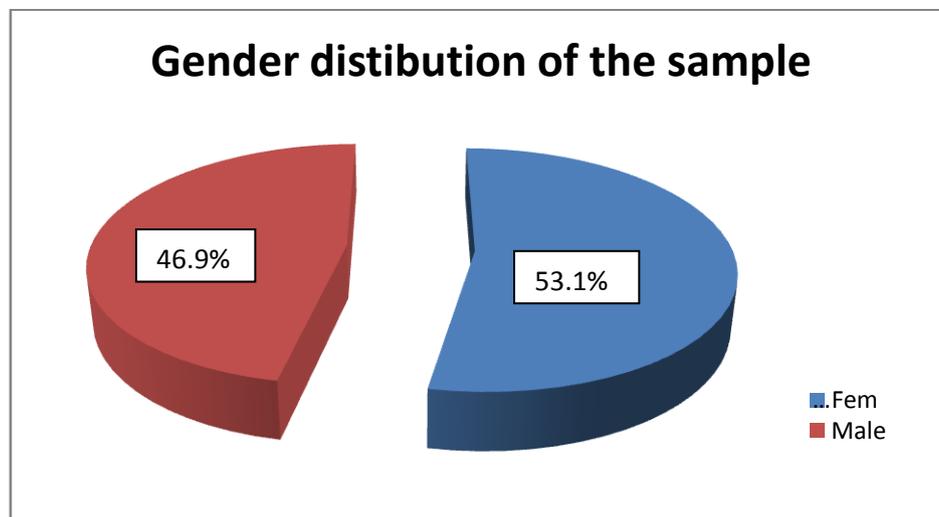


Figure 1: Gender distribution of the sample

### Distributions of tongue lesions

Table (1) displays the age distribution of the tongue lesions. Ulcers (mostly traumatic or aphthous) were the commonest lesion found in 24.6% of subjects with high frequency in age group ranging from 20-59 years. In regard of papilla atrophy, 14.6% of subjects were diagnosed as having atrophy of the papilla (second frequent finding) and they were in the same previous age group. On the other hand, Lingual varicosities and leukoplakia were diagnosed in older age groups. Polyps and pyogenic granuloma were found in younger age groups. (Figures 2, 3 & 4)

**Table 1: Age distribution of tongue lesions**

Age	ulcer	neoplasm	Lingual Varicosities	Pyogenic Granuloma	polyp	Atrophy of Papilla	Lichen planus	Leuko plaka	Fissure tongue	Geographic tongue
1-19	2	0	0	0	0	1	0	0	4	2
20-39	22	0	0	6	8	12	8	0	9	10
40-59	7	6	0	2	5	5	5	1	2	1
60-79	1	4	1	0	0	1	2	1	0	0
80-99	0	0	1	0	0	0	0	1	0	0
Total	32	10	2	8	13	19	15	3	15	13
%age	24.6%	7.7%	1.5%	6%	10%	14.6%	11.5%	2.3%	11.5%	10%

Note: statistical analysis cannot done (if the observed value <5 in the cell).



**Figure 2: Tongue ulceration**



**Figure 3: Atrophy of tongue papilla**



**Figure 4: Fissure tongue**

Males were commonly suffered from ulcers (n=18), 7 males from total 10 subjects, were diagnosed as having neoplasm's mostly squamous cell carcinoma mostly on ventral and lateral surfaces of the tongue. Fissured tongue and Lichen planus found more in females as shown in table (2).

**Table 2: Gender distribution of tongue lesions**

Gender	Ulcer	Neoplasm	Lingual Varicosities	Pyogenic granuloma	polyp	Atrophy of papilla	Lichen planus	leukolakia	Fissured tongue	Geographic tongue	Total
female	14	3	2	6	7	9	9	1	11	7	69
male	18	7	0	2	6	10	6	2	4	6	61
											130

In about 83 % of the subjects, lesions were confined to the tongue only.

Regarding the location of lesions on tongue surfaces, out of 130 subjects, 53 subjects had tongue lesions on the dorsal surfaces, affected with atrophy of papilla, fissuring and migrating glossitis (Geographic tongue) in order, followed by the lateral surfaces which were affected by ulcers (n=21). Both ventral surface and the tip of the tongue were affected equally, table (3).

**Table 3: Site distribution of tongue lesions.**

Type	dorsal	Ventral	Site Lateral Surface	tip	Total
Ulcers	2	3	21	6	32(24.6%)
Neoplasms	1	5	4	0	10(7.7%)
Lingual Varicosities	0	2	0	0	2(1.5%)
Pyogenic Granuloma	0	1	5	2	8(6%)
Polyp	0	0	7	6	13(10%)
Atrophy of Papilla	15	--	4	0	19(14.6%)
Lichen Planus	6	3	6	0	15(11.5%)
Leukoplakia	2	0	1	0	3(2.3%)
Fissures Tongue	14	-	1	0	15(11.5%)
Geographic Tongue	13	-	-	-	13(10%)
Total	53	14	49	14	

No association between Gender and Site of tongue lesions was found by using chi-square. P value >0.05 and hence the association is not significant (Table 4).

**Table 4: Gender\site: distribution of tongue lesions**

Gender	dorsal	Ventral	Site Lateral Surface	Tip	Total
Female	32	6	26	5	69
Male	21	6	23	9	61

In regards to habits, 39 subjects were smokers with tongue lesions, 5 were without. The smokers were 31 males and 8 females, their age range from 20-59 years, suffering from ulcers, neoplasm, leukoplakia and lichen planus. Table (5).

**Table 5: Tongue lesions and smoking.**

Tongue lesions	Smoker	Non smoker
Yes	39	91
No	5	-

In regards to subjects' complains, 95 subjects had symptoms range from pain, halitosis, speech interference, swallowing difficulties, mostly complaining from ulcer, atrophy of papilla and fissured tongue.

## DISCUSSION

The tongue is considered as a mirror reflects the general health status of the human body. Tongue disorders could result from local causes or as a manifestation of systemic disease.

Tongue diseases epidemiological studies, showed high frequency among mucosal lesions of the oral cavity with prevalence variations in different parts of the world that could be due to the differences in ethnic groups, age and gender of the studied samples and the use of different procedures, diagnostic criteria and methodology. Consequently, the prevalence found for each lesion varies among deferent research groups [8, 4].

It was found that only 3% of the subjects were aware of the presence of tongue disorders. On the other hand, 5% of the subjects had symptoms such as burning sensations, limitation in tongue function and discomfort [5], which could be explained by the relatively small sample size along two years of the study duration.

Oral ulceration including tongue ulceration especially traumatic ulcer was the commonest finding, because the tongue is moving frequently during speech and eating, moreover recurrent aphthous ulceration considered the second most common oral ulcerative lesion, both ulcers can occur in any age without gender predilection ,while leukoplakia, neoplasms, lingual varicosities commonly occur in old age.

Polyps and pyogenic granuloma, could be due to inflammation, poor oral hygiene or trauma are usually precipitating factors [11]. Atrophic glossitis reflects manifestation of underlying conditions as deficiencies of iron, riboflavin folic acid, vitamin B<sub>12</sub>, and niacin are common causes which often result in painful sensation in the tongue .Other etiologies include localized infection (e.g., Candida) systemic infection (e.g., syphilis), In older subjects, age changes could be the cause of the atrophy [12].

Dilated tortuous veins on ventral surface of the tongue also become more prominent with age. There is a great variation in the number of patterns of tongue fissures and considerable anatomical characteristics. The fissures may, however, play a part in pathological process by reasonable of their depth and the anaerobic condition existing.

Geographic tongue is a relatively commonly recurring condition in which loss of filiform papillae occurs over irregular areas of the tongue, of unknown etiology. Neoplasm and white lesions can occur in the tongue like any other part of the oral cavity [11].

In regard to neoplasm, 7 males from total 10 subjects, were diagnosed as having neoplasm's mostly squamous cell carcinoma all were heavy and longtime smokers, on the other hand Lichen planus found more in female at middle age with the involvement of other intraoral sites such gingiva and buccal mucosa which agree with Ingafou M et al and Seoane J et al studies [12,13].

Sujata. M. Byahatti & Mohammed. S. H found that nearly 93% of cases lesions were only found on the tongue, which is compatible to our study, about 83% of the subjects, lesions were confined to the tongue. In regards of tongue lesions location, 40.8% of the lesions involved the dorsum of the tongue, the lateral borders in 37.7% subjects, ventral surface and the tip of the 10.8% subjects, which is compatible with Sujata. M. Byahatti, Mohammed. S. H. study where 90% of subjects found on dorsum of the tongue, 7% on lateral side, 2% on posterior surface. This is simply due to the exposure of these two surfaces more than others to different kinds of irritations mechanical, chemical and also due to the previously maintained two reasons which are the extreme tongue movement and the special type of epithelial coating of the tongue.

Most of the smoker subjects were having tongue lesions - as ulcers, neoplasm, leukoplakia and lichen planus- were males with old age, most of them were with poor oral hygiene, and under stress.

## CONCLUSION

A wide range of lesions that can affect the tongue may have impact on patient's life. Tongue lesions may affect both genders, in middle age, ulceration followed by atrophy oh tongue papillae were the frequent findings, 83% of the findings were confined to the tongue, dorsal surface of the tongue is the commonest site, 70% subjects had symptoms. An efficient oral health program such as attention to cultural practices and the elimination of risk habits and may improve tongue hygiene.

It is the responsibility of the dentist in the general dental practice to identify and diagnose oral mucosal lesions that may reflect an oral manifestation underlying systemic disease that helps in its early diagnosis in preliminary phase. The broad background knowledge of the clinical presentation of different oral lesions can be lifesaving in some cases when early diagnosis and referral management of the patient is done at the right time.

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