

Prevalence Of Fissured Tongue Among Iraqi Patients Attending Dental Clinics at The College of Dentistry University of Baghdad

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Abstract

Background: Owing to the fact that fissured tongue etiopathogenesis is still unknown and the presence of a wide variety of predisposing factors that may contribute to its development most importantly its possible association with systemic diseases, thorough research is required to get more information about this condition.

Aim of the study: The aim of the study was to ascertain the prevalence, different patterns, and predisposing factors for the development of fissured tongue in the sample of the Iraqi population.

Patient and Method: The study was carried out by collecting data from Iraqi patients who were receiving routine dental care and examinations at the Hospital of the College of Dentistry at Bagdad University. Patients' data were collected and organized in a self-arranged case sheet. The tongues of the patients were examined to record the position and pattern of the fissures on the tongue.

Result: Based on the case sheets of the 125 patients involved in the research, 81 had a fissured tongue with age groups between 50 and 59 having the highest prevalence (88%). The single and superficial pattern (52%) and the dorsal surface of the tongue (82.7%) accounted for the highest prevalence of cases recorded. In terms of the predisposing factors, eating acidic and spicy food was the most prevalent reason (43.2%).

Conclusion: The results of the study indicate that the fissured tongue is common in the community. All age groups should receive comprehensive oral health treatment. This includes managing underlying systemic disorders by addressing modifiable risk factors and encouraging excellent oral hygiene practices, as well as taking preventative steps and scheduling routine dental examinations.

Keywords: Fissured tongue, superficial, Prevalence, Predisposing factors.

1. Introduction

The mirror of the mouth and overall health is said to be the tongue. The tongue can display signs of several systemic disorders. A deep, evident groove on the tongue's dorsum is indicative of a fissured tongue, which is a common tongue manifestation. The depth of tongue fissures varies and might be shallow or deep. Food can get trapped in a cracked tongue, which can also cause poor odor, localized inflammation, and a burning feeling on the tongue [1]. Although the exact cause is unknown, a polygenic mode of inheritance is hypothesized. Some predisposing factors including smoking, certain systemic disorders, medicines, foods, and beverages, are also linked to the condition [2]. The diagnosis is made by coincidence while doing the standard intraoral evaluation. Until debris becomes

trapped in the fissure, the fissured tongue is usually asymptomatic [3]. The best way to make a diagnosis is through a personal history and oral examination [4]. Ehsan et al recorded a classification of fissured tongues into single and superficial fissures, single and deep fissures, multiple and deep fissures, and multiple and diffuse fissures [5].

A fissured tongue is often more common in men than in women, and it increases with age in both sexes [6]. Although the dorsal part of the tongue is where this condition primarily manifests, it can also occur on the lateral and ventral surfaces [5]. Other than comfort, patients typically don't need treatment. Many symptomatic treatments have been attempted, such as anxiolytics, acetaminophen, antihistamines, and mouth rinses containing topical anesthetic. Dietary change and nutrition education were recommended. Additionally, to prevent food accumulation, the use of tongue scrapers after meals was advised [7]. The study's objectives are to determine the prevalence and various patterns of fissured tongue in a sample of the Iraqi population as well as the predisposing factors to its development.

2. Patients and Methods

The study was carried out at the hospital of the College of Dentistry/Baghdad University during the period from November/2023 to February/2024. The data collection occurred by direct interviews for history taking, and physical examination to gain data from 125 Iraqi patients who were coming to the hospital with different ages and all the patients were accessible at the hospital for regular checkups and dental treatment. The study involved gathering patient information and capturing intraoral photographs. We inquired about, age, gender, medications, smoking habits, systemic diseases, and consumption of spicy or acidic foods and beverages. This data was then organized in a self-arranged case sheet, as shown in Fig. 1.

Case sheet	
Prevalence of fissured tongue	
Number of case sheet ()	
1- Age : ()	
2- Gender: Male () Female ()	
3- Presence of fissured tongue: Yes () No ()	
4- Type of fissured tongue:	
1- Single and superficial fissure ()	
2- Multiple and superficial fissure (diffuse) ()	
3- Single and deep fissure ()	
4- multiple and deep fissure ()	
5- Location of fissured tongue	
1- Dorsal surface of the tongue	
2- Lateral surface of the tongue	
3- Dorsal and lateral surface of the tongue	
6- Predisposing factors	
1- Are you smoking : Yes () No ()	
2- Are you drinking any beverages: Yes () No ()	
3- Are you eating any acidic or spicy food: Yes () No ()	
4- Do you have any systemic or genetic disease : ()	

Fig. 1 Case sheet for data collection.

Following the explanation of the study and obtaining consent from all participants, the subjects were seated in the dental chair for examination. Using a mouth mirror and dental chair light for illumination, the study subjects were asked to open their mouths and extend their tongues as far as possible. The examination of the tongue was conducted with sterile gloves and sterile gauze. The clinical analysis of fissured tongue patterns was categorized into four types (Single and superficial fissure, Multiple and superficial fissure (diffuse), Single and deep fissure, and multiple and deep fissure), with the location of fissures on the tongue also being documented. Data analyzed achieved by using Statistical Package for Social Sciences (SPSS) version 25. The data was presented by number and percentage.

3. Results

Among the 125 people who were included in the study, 44 of them had normal tongues and 81 people had fissured tongues comprising 53(65%) males and 28 (35%) females. Fissured tongue was most commonly observed in the age groups of 50-59 years (88%) and over 60 years (87.5%), followed by 40-49 years (66%), and 20-29 years at (64%). The lowest percentages of fissured tongue were found in those under 15 years at (40%) and in the 30-39 age group at (25%), as shown in Table 1 and Fig. 2.

Table (1): Distribution of Fissured Tongues among Iraqi's Population according to age and gender

Patient with fissured tongue	Number N.	Percentage %
Age group		
Under 15 years	4	40%
20 - 29 years	45	64%
30 – 39 years	2	25%
40 – 49 years	8	66%
50 – 59 years	15	88%
Above 60 years	7	87.5%
Total	81	
Male	53	65%
Female	28	35%
Total	81	100%

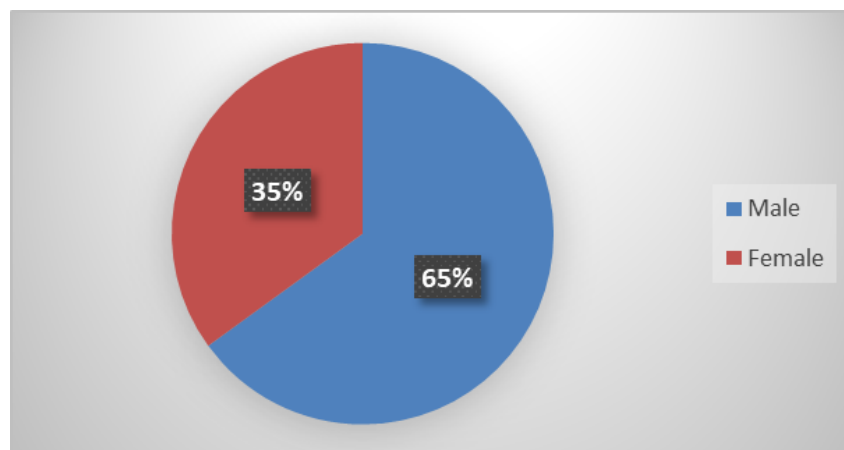


Fig. 2 Pie chart representing the association of gender and the fissured tongue.

As shown in Fig. 3, in terms of the fissured tongue patterns, the highest percentage was observed in the single and superficial fissure categories at 52%. In Fig. 4, followed by multiple and superficial at 25.90% as displayed in Fig. 5. The least common patterns were single and deep as shown in Fig. 6, and multiple and deep which shown in Fig. 7), with percentages of 13.50% and 8.60% respectively.

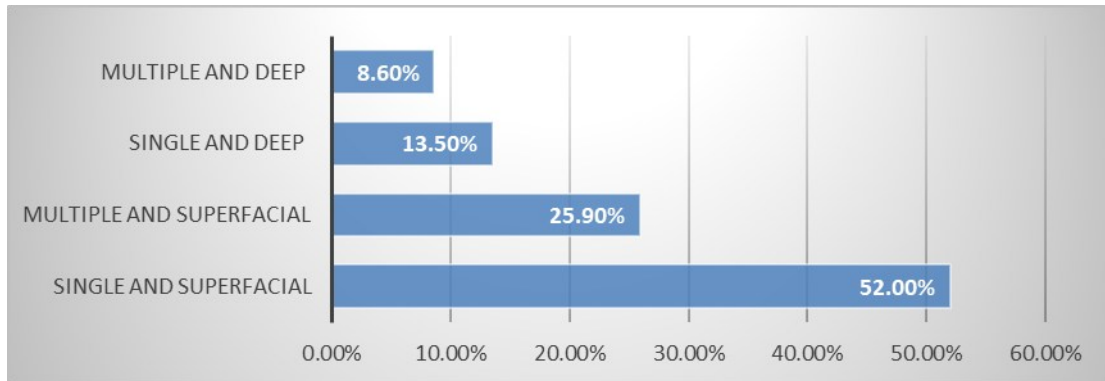


Fig. 3 Distribution of fissured tongue according to pattern



Fig. 4 Single and superficial fissured

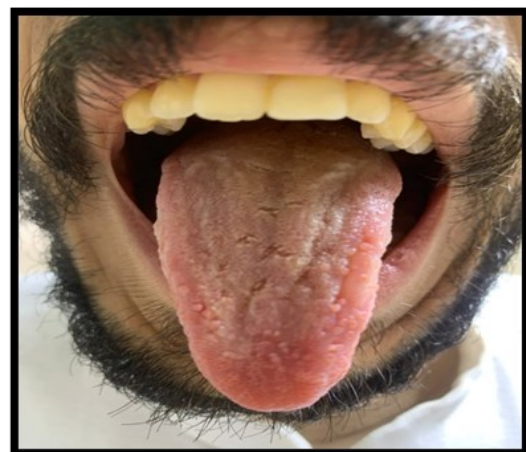


Fig. 5 Multiple and superficial fissured tongue



Fig. 6 Single and deep fissured tongue

Fig. 7 Multiple and deep fissured tongue

The majority of fissured tongue cases were found on the dorsal surface of the tongue, accounting for 82.7%. This was followed by the lateral surface of the tongue at 14.8%, and the least common location was on both the dorsal and lateral surfaces of the tongue at 2.5%, as illustrated in Fig. 8.

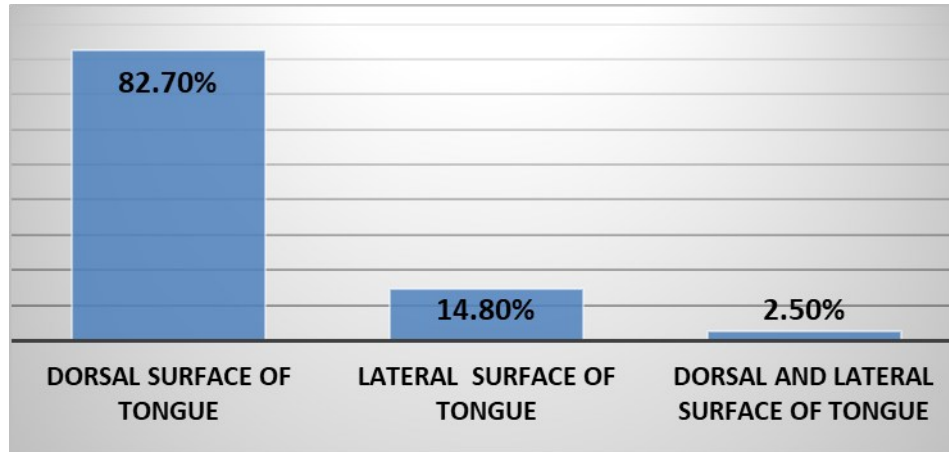


Fig. 8 Distribution of fissured tongue according to location

The predisposing factors of the fissured tongue the most common cause was found in acidic and spicy food at 43.2% followed by smoking at 33.3% and the least common causes were found in beverages and systemic diseases with 17.33% and 6.17% respectively (Figure 9).

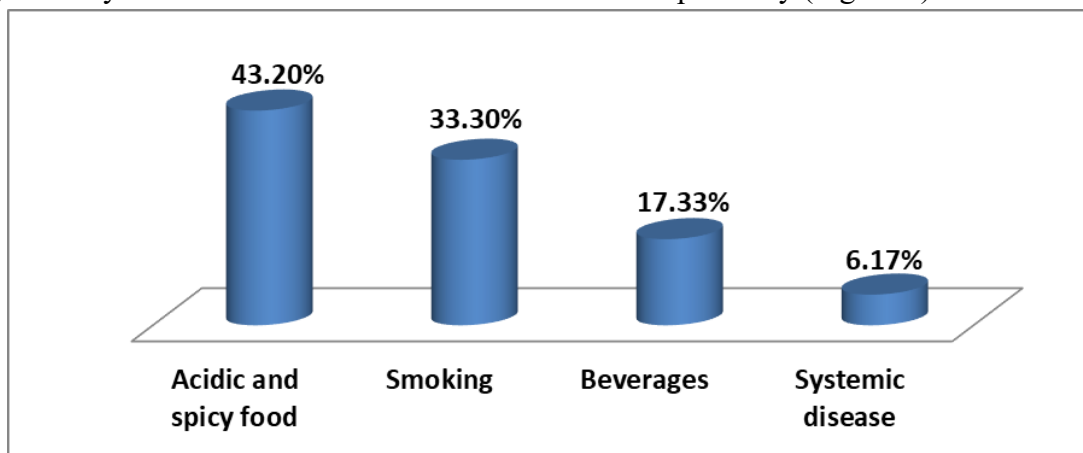


Fig. 9 Distribution of Predisposing factors among study participants

4. Discussion

According to the findings of this study, fissure tongue is more prevalent in men in comparison to women, the exact reasons are still anonymous. A combination of genetic and hormonal factors might be the reason. The prevalence of fissured tongues according to gender may be susceptible to differences in routine practices and environmental settings they are exposed to. For example, tobacco smoking, dietary habits, or some nutritional habits may be more common in men and influence the increased occurrence of fissured tongue [4]. Correspondingly, access to dental treatment and differences in oral hygiene observation might influence fissured tongue occurrence in different genders. Likewise, the awareness and apprehensions about oral health may differ between men and

women, which may influence their chances of being established with a fissured tongue or seeking medical help. Social factors that have an influence on oral health and healthcare usage can impact the distribution among genders [8].

According to the current study findings the fissured tongue was higher among older age groups, which may be related to different factors such as chronic irritation from tobacco consumption or abrasive nutrients and, bad oral hygiene [9]. Also, alteration in epithelial tissue due to aging may cause increased liability to fissuring. Moreover, with age, there are changes in salivary gland activity affecting saliva production, which may possibly increase the frequency of a fissured tongue. Also, elderly people are more likely to take numerous medications, because of different systemic diseases which can have detrimental effects on oral health [9]. According to the present study findings, the fissuring was more in the dorsal surface of the tongue in comparison to any other location, and this finding was in agreement with a previous study [5].

This can be explained by the large surface area of the dorsal surface compared to other areas of the oral cavity, and hence increased possibility for fissure development. In addition, the dorsal surface can be colonized by fungus and bacteria which represent the most numerous microbial communities. The damage and inflammation of tongue epithelium caused by overgrowth of pathogenic microbes can increase the possibility of fissuring. In comparison to deeper or multiple fissures, no or mild symptoms were seen in patients with superficial and single fissured tongues. Therefore, may be less likely to seek medical care, which might lead to not having relevant clinical implications or connections with underlying systemic diseases and underreporting of severe cases. Afterward, in comparison to other oral health problems that may have more serious consequences, healthcare specialists may not prioritize it when diagnosing or treating it [10]. And this agreed with the present study which found that the most prevalent pattern of fissured tongue was the single and superficial type. In the current study, eating acidic or spicy foods and smoking were the chief influencing reasons for fissured tongues.

Regarding the predisposing factors, acidic or spicy foods and smoking were the most relevant factors in comparison to other factors. Since, smoking and acidic and spicy food have a lot of detrimental effects, such as inflammation and irritation of the tongue's surface due to exposing it to irritants and carcinogens. Furthermore, smoking can cause xerostomia by reducing saliva secretion, which causes tongue irritation and fissuring. It can correspondingly impair healing and regeneration, because of reduced blood flow to the oral tissues, which can obstruct the healing of fissures and can exacerbate symptoms of a fissured tongue. People suffering from fissured tongue may be more sensitive to acidic or spicy food, leading to additional pain. Therefore, decreasing the eating of these types of food may help people with fissured tongues decrease their symptoms [2].

5. Conclusion

According to the results of this current study, men are more prone to fissured tongues in comparison to women. This can be caused by several environmental factors. Older people are more susceptible to fissured tongues, due to age-related alterations in the oral cavity, systemic diseases, in addition to limited access to dental care. It requires taking preventative steps, regularly visiting the dentist for checkups, addressing variable risk factors by managing underlying systemic illnesses, and maintaining good oral hygiene.

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