Original Article

Prevalence of Tongue (Diseases/ Disorders/Lesions) among Adult Population Visiting Out-Patient Clinic in Central Punjab

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ABSTRACT

Objective: To find the prevalence of various commonly occurring tongue anomalies like geographic tongue, median rhomboid glossitis, hairy tongue and fissured tongue in the patients visiting out-patient clinic in central Punjab.
Study Design: Prospective Observational Study.
Place and Duration of Study: This study was conducted at the Diagnostics and Oral Medicine Department of Islam dental college, Sialkot from October 2020 to July 2021 for a period of 12 months to measure the relative frequency of various tongue anomalies in adult population of central Punjab.
Materials and Methods: 600 patients were examined in this study with an age range of 25-35 years. The examination was conducted in a quiet, comfortable and relaxed environment with the help of mouth mirror, natural light and gauze. The result was analyzed by using chi-square test in SPSS.
Results: The prevalence of all tongue anomalies was 24.3% (4.8% geographic tongue, 1.75% median rhomboid glossitis, 0.8% hairy tongue, 11.8% Fissured tongue).
Conclusion: The results of this study are near to some previous studies while contradict to some other studies as well. This study has shown the tongue anomalies are slightly more in males although the statistical difference is not significant. Moreover, it has also showed that age is not related to tongue anomalies.
Key Words: Tongue, Median rhomboid glossitis, Fissured Tongue, Geographic tongue, hairy tongue

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INTRODUCTION

Tongue is one of the most important organs present inside the oral cavity performing different functions like speech, mastication, taste sensation, breathing etc. It is continuously exposed to various physical, chemical or mechanical insults making it vulnerable to various pathological conditions. Moreover, it may be involved in various abnormalities that some are developmental, genetic and environmental[1, 2].

Many conditions are included under the term of tongue anomalies. Some of these conditions have little clinical significance and considered as morphological variations in the tongue while others have some serious clinical manifestations and are found to be developmental or congenital[3]. Tongue anomalies are also accompanied with various clinical syndromes affecting oro-facial region of the body e.g, Melkerson-Rosentheal Syndrome, Orofacial granulomatosis etc.[4, 5] Local and systemic disorders also produce distress in the tongue causing various pathological conditions like coated tongue, crenated tongue, bald tongue etc.[6,7] The purpose of this study is to found the prevalence of various commonly occurring tongue anomalies like geographic tongue, median rhomboid glossitis, hairy tongue and fissured tongue in the patients visiting out-patient clinic in central Punjab.

Median Rhomboid glossitis: It is characterized by rhomboidal shape depapillated patch on the dorsum of the tongue in the midline[8]. The affected area is devoid of filliform or other papillae. It is found associated with Candida albicans infection and it is a matter of debate as well with significant studies favoring the association with fungal infection[9,10].

Geographic Tongue: It is also known as benign migratory glossitis or erythema migrans. It is an asymptomatic condition clinically characterized by patch depappilation on the dorsum of the tongue surrounded by papillated areas in a map like fashion, hence causing the name as geographic tongue[11,12].

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Fissured Tongue: It is also known as plicated or scrotal tongue and characterized by increase in number, size and depth of fissured located on the dorsum of the tongue[13]. It normally affects generally less than 10% of the population and has genetic predisposition[14].The frequency of tongue fissuring has been found more in mentally retarded children, a fact that favor its prevalence more in children with Trisomy 21[15].

Hairy Tongue: Among all the four types of papillae the maximum is shared by filliform papillae. The keratinized surfaces of filliform papillae undergo con/tinuous desquamation as of friction of tongue with food, palate and teeth and replaced by new cells[16]. But if the mobility of the tongue got reduced due to any reason, it will make filliform papillae to grow uncontrolled producing hair like appearance on the tongue causing hairy tongue. These elongated filliform papillae also gather various stains of food, tobacco etc leaving discoloration in the midline regions giving esthetic concerns to the patient[17].

MATERIALS AND METHODS

600 patients were selected with randomized sampling having an age range of 25-35 years. Among them 300 were males and 300 were females .Patients with an age up to 29 year were placed in one group and 30 to 35 years were placed in another group. Examination was carried out in a comfortable environment using mouth mirror, light and gauze. The results were analyzed with chi-square test in SPSS.

Inclusion Criteria: Patients otherwise healthy having no other oral diseases or lesions, with an age range of 25-35 years of either gender, no signs of any malignancy and haven't received any other treatment before were included in the study.

Exclusion Criteria: Patients having age less than 25 years, having any systemic illness, malignancy, mental retardation and have got any previous therapies were excluded from the studies.

RESULTS

The total prevalence of tongue anomalies in 600 patients (300 males and 300 females) was 24.3% (146). In our study population the tongue anomalies were more prevalent in females (23.3%) as compared to males (22.6%) though the statistical difference was not significant as shown in Table 1.

Tongue anomalies were found more in patients group having age range of 30 to 35 years with prevalence of 55.47% (81) as compared to the other group having an age range of 25 to 29 years i.e., 44.52% (65) as shown in figure 1.

Among tongue lesions, geographic tongue was observed 7.4% among our subjects with a slight predilection toward female but the statistical difference is non-significant.

Fissured tongue was found 12.4% of our subjects and was equally distributed in males as well as females. Median rhomboid glossitis was found only in 2.6% of our population.

Hairy tongue was found in 1.8% in our subjects and was equally distributed among males and females.

Table No.1: Prevalence of tongue anomalies according to gender

Anomalies	Gender	
	Male (n%)	Female (n%)
Geographic Tongue	22 (7.3)	23 (7.6)
Median Rhomboid glossitis	8 (2.6)	8 (2.6)
Fissured Tongue	37 (12.4)	37 (12.4)
Hairy Tongue	5 (1.8)	5 (1.8)

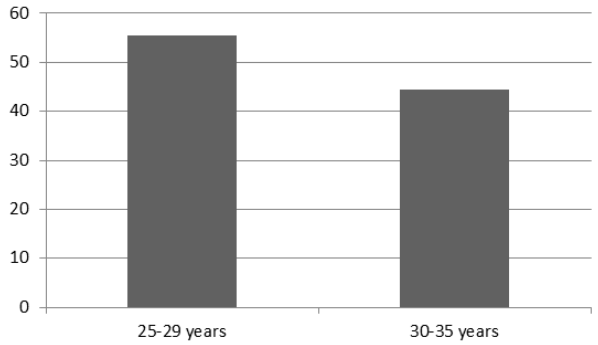

Figure No.1: Prevalence of tongue anomalies according to age distribution

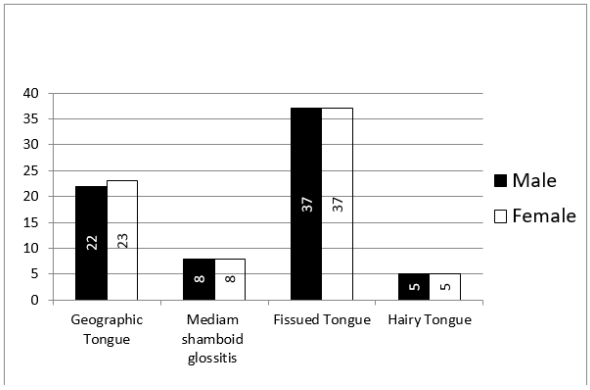

Figure No.2: Prevalence of tongue anomalies according to age distribution

DISCUSSION

The prevalence of geographic tongue in our population was 7.4% which has slight more predilections in the female gender that is in correspondence with the studied of Voros et al[11]. The etiology of geographic tongue has still remained a matter of debate as similar lesions are also found in various skin disorders that are immunological in nature[19]. An immunological reaction

is considered to be responsible for producing that inflammatory infiltrate. Similar cellular infiltrates are also found in allergic type as well. No genetic predisposition has been observed in this condition.

In our study, fissured tongue was found to be 12.4% of the population which is in conjunction to the findings of Rabii et al[12]. The prevalence of tongue fissuring has been found increasing with age and that may be associated with advancing age, salivary hyposalivation, drug usage, Vit. B deficiency and Candida infection according to Feil et al.[20]

The prevelance of median rhomboid glossitis in our population was 2.6% which was near to the prevalence found in American population as published in Barket's oral medicine[23]. But this is significantly higher than what found by Rabii et al. (0.4%).

Hairy tongue was found 1.8% in our population which was found near to the prevalence in Gurvits et al[15].

A lot of data have been gathered and analyzed by various investigators throughout the world with varying prevalence rates of various morphological variations of tongue. The published data vary considerably may be due to different diagnostic criteria used in different races and different age groups.[21-23]

CONCLUSION

Dentist and other oral healthcare workers need to know about the prevalence and management of various tongue disorders, anomalies and lesions of both developmental and acquired origin. As most of these conditions which are affecting the tongue is benign requiring no specific treatment. Patients should be educated about these tongue conditions and advised to brush there tongue along with teeth for better oral hygiene. Very few studies have been carried out in Pakistan regarding the prevalence of tongue disorders, lesions and diseases and hence further studies with larger population should be carried out to determine the prevalence of tongue disorders and factors responsible for producing these conditions.

Author's Contribution:

Concept & Design of Study:	Muhammad Adeel
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Revisiting Critically:	Muhammad Adeel, Muhammad Osman Masood
Final Approval of version:	Muhammad Adeel

Conflict of Interest: The study has no conflict of interest to declare by any author.

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