

Study on prevalence of pathologic tongue lesions in patients of Tehran capital city of Iran, during a twenty years period

Shamloo N¹, Motazedian HR^{2*}, Lotfi A³

Dept. of Pathology, School of Dentistry, Shahid Beheshti Medical Sciences University, Iran

* Corresponding Author:

Email: h.motazedian@yahoo.com

Abstract

Background & Objective: Tongue is an important structure in the mouth with various functions including mastication, deglutition, phonetic articulation, and tasting. Occurrence of tongue lesions is very important as this organ determines the oral health and general condition of the patient and reflects the presence of systemic diseases. This study aimed to evaluate the frequency of pathologic tongue lesions in patients who were referred to the pathology department of dentistry school of Shahid Beheshti university of Medical Sciences during 1992-2013.

Method: This research was performed as a cross sectional descriptive study on the files of patients who were referred to the pathology department of dentistry school of Shahid Beheshti university of Medical Sciences. Variables of age, sex, lesion location, and histopathologic diagnosis were evaluated. Chi-square test was used for the statistical analysis of the data.

Results: Out of a total of 6011 files, 211 cases of tongue lesions were identified. Lesions were more observed in females, more frequently noticed in the lateral side of the tongue, and 40-60 years old patients were the most affected age group. Squamous cell carcinoma was the most frequent pathology.

Interpretation & Conclusion: According to the results of this study, it seems that malignant lesions in the patients over 40 years of age were frequent. Awareness about the disease helps to better control and diagnosis of the disease.

Keywords: Frequency, Pathologic lesions, Tongue, Malignant, SCC.

Introduction

Tongue is an important muscular structure in the oral cavity which has various functions including feeding during infancy, swallowing, talking, and perception of different senses such as tastes, temperature variations, pain stimuli, and helping in jaw development.⁽¹⁾ These functions can be influenced by changes in oral cavity environment, and severe thermal, mechanical, and microbial alterations.⁽²⁾ Base on the report of the National Health and Nutrition Examination Survey (NHANES III), out of 17,235 people in the United States, 27.9% had oral lesions, 15.5% of which were located in the tongue. This finding reveals the high prevalence of tongue pathologies.⁽³⁾

During recent decades, prevalence and mortality of tongue carcinomas have increased specially among young males living in Europe and the United States.^(4,5) In a study by Neville et al. the 5-year survival in patients with tongue carcinomas was estimated 27% in African Americans and 47% among white men.⁽⁶⁾

Since these lesions are often painless, patients will be ignorant of their disease and will not present for diagnosis and treatment until they have advanced stages of the disease. Therefore, evaluation of the prevalence of malignant tongue lesions, educating the patients through dentists, and regular oral cancer screening examinations will have great importance in early detection of the disease and its successful treatment. The purpose of our study was to assess the prevalence of different tongue lesions in Iran since very few studies have addressed this issue in the past.

Materials and Methods

We evaluated the records of patients who were referred to the pathology department of Dentistry School of Shahid Beheshti University of Medical Sciences, Tehran, Iran during 1992 to 2013. All tongue pathologies were categorized based on age and sex of the patient, date of admission, location of the lesions, and the pathologic diagnosis. Each biopsy was separately viewed and diagnosed by two expert specialists who were blind to each other's report.

The statistical analysis chi-square test was performed with SPSS software, version 19.0, for windows.

Results

Out of all the recorded pathologies, 211 cases of tongue lesions were identified which consisted of 43 different diagnoses. Considering the difficulties with statistical analysis of such number of lesions, and the fact that some groups consisted of very few patients, we decided to further categorize the lesions into 5 groups.

As mentioned in table 1, the 5 categories were as follows: 1- cancerous, pre-cancerous lesions (49.76%) 2- benign lesions (9%), 3- tumor like lesions (21.3%), 4- Mucocutaneous lesions (7.6%), and 5- inflammations and ulcers (12.3%) as shown in (Table 1).

Table 1: Various tongue lesions on the basis of histopathology of patients who were referred to Pathology Department of Shahid Beheshti Medical Sciences University, Iran according to Referred year

| Referred year | Diagnosis | | | | | Total | |
|---------------|-----------|--------------------------|------------------|--------------------|---------------|-------|--------|
| | Benign L. | Cancerous, Pre-cancerous | Mucocutaneous L. | Inflammation ulcer | Tumor Like L. | | |
| 71-80 | N | 2 | 15 | 3 | 6 | 14 | 40 |
| | % | 0.9% | 7.1% | 1.4% | 2.8% | 6.6% | 19.0% |
| 81-91 | N | 17 | 90 | 13 | 20 | 31 | 171 |
| | % | 8.1% | 42.7% | 6.2% | 9.5% | 14.7% | 81.0% |
| Total | N | 19 | 105 | 16 | 26 | 45 | 211 |
| | % | 9.0% | 49.8% | 7.6% | 12.3% | 21.3% | 100.0% |

The average age of the patients was 48 years including a 3-year-old girl with hyperplasia as the youngest, and a 91-year-old lady with SCC as the oldest patients. Women were more frequently affected by tongue lesions (53.6% vs 46.4%), but the relationship was not statistically significant. The most frequently affected age group were 40-60 year-old patients (45.07%) (Table 2).

Table 2: Histopathology of various tongue lesions of patients who were referred to Pathology Dept. of Shahid Beheshti Medical Sciences University, Iran according to Sex

| Sex | Diagnosis | | | | | Total | |
|-------|-----------|--------------------------|------------------|--------------------|---------------|-------|--------|
| | Benign L. | Cancerous, Pre-cancerous | Mucocutaneous L. | Inflammation ulcer | Tumor Like L. | | |
| M | N | 10 | 48 | 5 | 13 | 22 | 98 |
| | % | 4.7% | 22.7% | 2.4% | 6.2% | 10.4% | 46.4% |
| F | N | 9 | 57 | 11 | 13 | 23 | 113 |
| | % | 4.3% | 27.0% | 5.2% | 6.2% | 10.9% | 53.6% |
| Total | N | 19 | 105 | 16 | 26 | 45 | 211 |
| | % | 9.0% | 49.8% | 7.6% | 12.3% | 21.3% | 100.0% |

Malignant and premalignant lesions were the most prevalent pathologies (105 cases, 49.76%). In which squamous cell carcinoma (SCC) were the most prevalent pathology with 52 cases (49.52%) and Hyperplastic lesions with 32 cases (30.47%) stood in 2nd place. They were in the same place in overall of all lesions respectively. Fifty three cases were malignant, they were more frequent in men (54.80%), and more often localized in the lateral border of the tongue (53.83%).

There were 45 cases with tumor like lesions with irritation fibroma (19 cases, 42.22%), pyogenic

granuloma (18 cases, 40%), granuloma (7 cases), and peripheral giant-cell granuloma (5 cases) presenting as the most prevalent pathologies respectively. There was also a patient with focal mucinosis. In this category, lesions were most frequently observed in men (66%), and in 40-60 years old age group (19 cases, 42.22%). A statistically significant relationship was observed between age and this group of pathologies (P value <0.05) (Table 3).

We also noticed the case of a 46 years old man with schwannoma at the tip of the tongue.

Table 3: Histopathology of Various tongue lesions of patients who were referred to Pathology Department of Shahid Beheshti Medical Sciences University, Iran according to Age

| Age | Diagnosis | | | | | Total | |
|-------|-----------|--------------------------|------------------|--------------------|---------------|-------|--------|
| | Benign L. | Cancerous, Pre-cancerous | Mucocutaneous L. | Inflammation ulcer | Tumor Like L. | | |
| 0-20 | N | 0 | 2 | 0 | 3 | 3 | 8 |
| | % | 0.0% | 1.0% | 0.0% | 1.5% | 1.5% | 3.9% |
| 21-40 | N | 6 | 21 | 7 | 4 | 14 | 52 |
| | % | 2.9% | 10.2% | 3.4% | 2.0% | 6.8% | 25.4% |
| 41-60 | N | 10 | 47 | 7 | 13 | 19 | 96 |
| | % | 4.9% | 22.9% | 3.4% | 6.3% | 9.3% | 46.8% |
| >60 | N | 3 | 34 | 2 | 4 | 6 | 49 |
| | % | 1.5% | 16.6% | 1.0% | 2.0% | 2.9% | 23.9% |
| Total | N | 19 | 104 | 16 | 24 | 42 | 205 |
| | % | 9.3% | 50.7% | 7.8% | 11.7% | 20.5% | 100.0% |

Discussion

Most of the studies on tongue lesions have focused on, and been limited to clinical diagnosis,^(7,8,15) and histopathologic investigations have been very limited. This means mostly lesions which can be clinically diagnosed such as hairy, coated, and geographic tongues have been taken into consideration.^(8,11)

Prevalence of oral lesions has differed in the epidemiologic studies of different countries, the probable reason being distinctive population variations (such as age, sex, and race) and different assessment modalities and methods.⁽⁹⁾ There are limited studies with this regard in Iran,^(7,8,12) and,⁽¹³⁾ so we decided to evaluate the prevalence of histopathologically proven tongue lesions in a 20-year time span.

The studies by Costa et al on 760 cases,⁽⁹⁾ and by Kumari et al⁽¹⁰⁾ on 121 patients, both in a 5-year period are the closest studies to ours. The important point about the latter study which lacks in our research is considering the initial presenting sign and symptoms in the patients. Such evaluation was not possible in our

study since we were only evaluating the biopsies sent from the treatment centers. In their study, lesions were mostly painless, and most patients presented with growth and induration of tongue (27.2%) followed by ulcer (21.4%) and dysphagia (12.3%). In the study by Costa et al,⁽⁹⁾ only the two variables of age and sex were taken into consideration.

Out of 211 cases, SCC was the most frequent pathology (24.6%) in our study which is consistent with the study by Kumari et al.⁽¹⁰⁾ This finding however, differs from the study by Costa et al⁽⁹⁾ in which this pathology was in second place after fibrous hyperplasia. However both studies revealed a high prevalence of the disease.

The mean age of patients with tongue lesion in our study was 48 years old. Frequencies of lesions were more in women than men. Despite the similarity of this finding in our study with some previous researches,^(13,14) other studies have found the lesions to be more prevalent in men.^(9,16-17)

We found the lesions were mostly observed in the 40-60 years old age group, which is in agreement with the study of Kumari et al⁽¹⁰⁾ In the study conducted in Hungary, the prevalence of these pathologies in patients over 60 years of age was 45%.⁽¹⁶⁾ Also in the study by Costa et al⁽⁹⁾ the average age of patients involved was 45 years, all of which imply that these lesions are more frequently observed in older individuals.

Overall, the malignant and pre-malignant lesions group consisted of the largest group of patients. Males in the age group of 40-60 years were the most frequently affected sex. This relationship was statistically significant (P value <0.05), as was the relationship between SCC and this group of patients. These findings are in agreement with the study of Kumari et al.⁽¹⁰⁾

Conclusion

Considering the prevalence of malignant lesions in the patients over 40 years of age, a tongue lesion in a male patient of this age group, especially with risk factors such as tobacco smoking and alcohol consumption warrants further evaluation by health care providers.

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