

Relationship between habits and precancerous lesions of the oral cavity – a clinicopathological study


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Introduction: Oral cancers account for 3% of total malignancies. A research was conducted to find the incidence, age, and sex distribution, clinical presentation, and the relationship between habits and various premalignant lesions of the oral cavity. **Methods:** It was a hospital-based observational and cross-sectional study, conducted in GSL Medical College, Rajamahendravaram from October 2015 to April 2017. Individuals aged ≥ 18 years, with leukoplakia, erythroplakia, blanched mucosa with or without fibrous bands and /or trismus suggestive of oral submucous fibrosis, bilateral whitish lesions with a reticular pattern suggestive of lichen planus, and ulcer against sharp tooth denture suggestive of traumatic dental ulcers were taken. Individuals with frank oral malignancy, those with terminal diseases, those who did not submit informed consent were not considered. **Results:** The majority of patients (33.33%) were aged between 51 – 60 years, belong (62.75%) to lower socioeconomic status. Leukoplakia (64.7%) was a common clinical presentation. Most (49.02%) of the study patients presented with a burning sensation. When addictions were considered, 86.27% of patients were smokers, 23.53% were addicted to alcohol. **Conclusion:** Leukoplakia was the commonest (64.71%) premalignant lesion, 51 – 60 years was the common age group. Premalignant lesions were most commonly seen among males, most of the study participants belong to low and middle socio-economic groups with a rural background. Diabetes mellitus was the most common comorbidity associated with premalignant lesions.

Keywords: Oral, Cancers, precancerous lesions, Habits, clinicopathological study

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Introduction

Oral cavity cancers account for approximately 3% of total malignancies and a significant health problem, worldwide [1,2]. The majority of oral malignancies occur as squamous cell carcinoma and despite remarkable advances in treatment modalities, the 5-year survival rate has not significantly improved over the past several decades, hovering at about 50% to 60% [3].

It is well accepted that many oral cancers (OCs) develop from premalignant lesions of the oral cavity [4,5]. A wide variety of conditions have been implicated in the development of OC, including leukoplakia, erythroplakia, oral lichen planus, oral submucous fibrosis, discoid lupus erythematosus, and hereditary disorders, such as dyskeratosis congenital and epidermolysisbullosa. The WHO classified these oral precancerous disorders into 2 general groups [6,7]. A precancerous lesion is a morphologically altered tissue in which oral cancer is likely to occur than its normal counterpart. A precancerous condition is a generalized state associated with a significantly increased risk of cancer.

Because of the incidence of precancerous conditions and lesions among the patient population attending ENT out Patient department with the diseases of the ear, nose, and throat, there is a need to follow these cases with the necessary clinical workup and histopathological examination. This may provide an opportunity to facilitate regular follow up of the patients with the early lesions and early initiation of definite treatment in established cases. Moreover, a study of the patient's environmental, social conditions, and personal habits is important for understanding the influence of these factors in the evolution of OC.

With this, the current research was conducted to find the incidence, age, and sex distribution, clinical presentation, and the relationship between habits and various premalignant lesions of the oral cavity.

Methods

Type of study: It was a hospital-based observational and cross-sectional study.

Study setting: This study was conducted in the department of ENT, GSL Medical College, Rajamahendravaram.

Study period: The study was conducted from October 2015 to April 2017.

Sample size: During the study period, the individuals with oral premalignant lesions, those who satisfied the study protocol were considered.

Inclusion criteria: The individuals aged ≥ 18 years, with the following condition were included in the study. White patch in the oral cavity suggestive of leukoplakia, red plaque in the oral cavity suggestive of erythroplakia, blanched mucosa with or without fibrous bands and /or trismus suggestive of oral submucous fibrosis, bilateral whitish lesions with a reticular pattern suggestive of lichen planus and ulcer against sharp tooth denture suggestive of traumatic dental ulcers

Exclusion criteria: Individuals with frank oral malignancy, those with terminal diseases, those who did not submit informed consent, and non-cooperative individuals were not considered.

Ethical approval: The study protocol was approved by the institutional ethical committee.

Those individuals visited the outpatient and or inpatient with various oral premalignant lesions such as leukoplakia, erythroplakia, erythroleukoplakia, oral submucous fibrosis, and lichen planus during the study period were taken up for study with the help of relevant history and thorough clinical examination.

Statistical analysis: Statistical analysis was performed using SPSS software version 20.0 and MS Excel-2007. Descriptive statistical data such as mean, standard deviation, and percentages were considered in this research.

Results

Table 1: Age-wise distribution of the study participants

Age	Number	Percentage
21-30	1	1.96
31-40	10	19.61
41-50	11	21.57
51-60	17	33.33
61-70	12	23.53
Total	51	100

In this study total, 51 members were recruited. The majority of patients (33.33%) were aged between 51-60 years, followed by 23.53% between 61-70 years, 21.57% between 41-50 years,

19.61% between 31-40 years, and 1.96% between 21-30 years. Age was ranged from 24 to 70 years (Table 1). Out of the 51 study participants, 33 (64.71%) were male and 18 (35.29%) were female. The male-female ratio of the study team was 1.83.

The majority of patients (62.75%) belong to lower socioeconomic status, 31.37% belong to middle and 5.88% belong to upper socioeconomic status (Table 2). Areas wise, 80.39% (41) of study members belonged to rural and the remaining were urban population.

Table-2: Socioeconomic status of the study participants.

Socioeconomic status	Number	Percentage
Lower	32	62.75
Middle	16	31.37
Upper	3	5.88
Total	51	100

Leukoplakia was seen in 33 (64.71%), erythroplakia in 10 (19.61%), erythroleukoplakia in 4 (7.84%), oral lichen planus in 3 (5.88%), and oral submucous fibrosis was diagnosed in 1 (1.96%). In this study group, leukoplakia is the most common lesion found followed by erythroplakia while oral submucous fibrosis is the least common (Table 3).

Table-3: Incidence of various premalignant lesions of the oral cavity among the study group.

Premalignant lesion	Number	Percentage
Leukoplakia	33	64.71%
Erythroplakia	10	19.61%
Erythroleukoplakia	4	7.84%
Oral lichen planus	3	5.88%
Oral submucous fibrosis	1	1.96%

In this study, 49.02% of patients presented with a burning sensation, 19.61% of patients presented with a white patch, 7.84% presented with a red patch, 3.92% presented with decreased mouth opening. 25.49% of the patients were presented with asymptomatic or other symptoms (Table 4). When food habits were considered, 31 patients (60.78%) consume spicy foods.

Table-4: Presenting complaints of patients in the study group.

Symptoms	Number	Percentage
Burning sensation	25	49
White patch	10	19.6
Red patch	4	7.8
Decreased mouth opening	2	3.9

Asymptomatic	13	25.4
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When addictions were considered, 86.27% of patients were smokers, 23.53% were addicted to alcohol, 19.61% were habituated to reverse smoking, 5.88% to gutkha, 1.96% to the pan. 9.8% of the study group was not having any habituations (Table 5). Fourteen (27.45%) members were diabetic and 17 (33.33%) were hypertensive.

Table-5: Habits and addictions in the study group.

Habits	Number	Percentage
Smoking	44	86.27
Reverse Smoking	10	19.61
Alcohol Intake	12	23.53
Gutkha	3	5.88
Paan	1	1.96
None	5	9.80

Among the study members, the hard palate was involved in 60.78%, buccal mucosa was involved in 41.18% patients, the floor of the mouth in 5.88%, tongue in 3.92%, soft palate and retromolar trigone in 1.96% each, respectively (Table 6).

Table-6: Sites of predilection among the study participants.

Area involved	Number	Percentage
Hard palate	31	60.78
Buccal mucosa	21	41.18
Floor of mouth	3	5.88
Tongue	2	3.92
Soft palate	1	1.96
Retromolar trigone	1	1.96

Discussion

OC is a serious and growing problem in many parts of the globe. Oral and pharyngeal cancer grouped forms the sixth most common cancer in the world [8]. OC is sometimes preceded by clinically visible lesions that are noncancerous, to begin with, and which have therefore been termed precancerous.

Tobacco has been considered as a major etiological factor in the development of oral potentially malignant disorders [9,10]. A variety of oral potentially malignant disorders have been reported in the literature with the consumption of tobacco.

In Asians, oral potentially malignant disorders are known to be associated with cigarette smoking, excess alcohol consumption, and areca quid chewing [11].

In this study, leukoplakia was seen maximum (64.71%), followed by erythroplakia (19.61%). Isaac van der Waal et al [12] also reported that leukoplakia is the most common potentially malignant disorder of the oral mucosa. The prevalence was approximately 1% while the annual malignant transformation ranges between 2 to 3%. Cessation of smoking habits may result in regression or even disappearance of the leukoplakia and diminish the risk of cancer development either at the site of the leukoplakia or elsewhere in the mouth or the upper aerodigestive tract. Sunil Vitthal Rao et al [13] mentioned that 68.41% of cases were leukoplakia followed by oral lichen planus (13.16%) oral submucous fibrosis (7.9%). According to Buoquot et al [14] leukoplakia is the most common cause. In another recent study by Anna Starzyńska et al [15] leukoplakia was reported in 79.69% of study members.

Age-wise, the majority (33.33%) of the study participants were aged 51-60 years followed by the 61-70 (, 23.53%) group. According to Sunil Vitthalrao Jagtap et al [13], 50-59 years is the common age group. Whereas common age was reported to be 50 – 70 years according to Anna Starzyńska et al [15], According to previous studies, cases with multiple oral premalignant lesions were more likely to be in the 45-54 year age group. In this study, the incidence is more in the age group of 51-60 years which correlates with the results of the above-mentioned studies [16].

In this study, 33 were males and 18 were females and gender was found to be significantly associated with the development of oral potentially malignant disorders with males being at higher risk to develop oral potentially malignant disorders. In another study, 65.79% were male and 34.21% were female patients, the ratio was 1.9 [17]. Male female ratio was mentioned to be 1.6 in Owais Gowhar et al [18], the risk of malignant transformation among male with chewing tobacco or smoking in some countries such as India, or older age and/or being a non-smoking female in other countries. Similar findings were reported by Prashant B. Patil et al [19].

The majority of patients (62.75%) study members belonged to lower socioeconomic status, followed by middle (31.37%) and upper (5.88%) socioeconomic status. According to Sandeep Kumar et al. [20] larger proportion of the study, population belonged to the lower class (40.5%) followed by the middle class (32.5%).

Hard palate involvement was seen in 60.78%, buccal mucosa involvement in 41.18%. According to Anna Starzyńska et al. [15], the most common site involved was buccal mucosa (52.2%). Whereas buccal mucosa involvement was 55.26% in a study by Sunil Vitthalrao Jagtap et al [13].

A correlative histopathological study was made of 6 patients with palatal carcinomata and 342 patients with palatal lesions (primarily leukoplakias) associated with reverse smoking by Fali S. Mehta et al [21], according to this study a very large number of palatal lesions, characterized by hyperkeratinization, were associated with the habit of reverse smoking, i.e. keeping the burning end inside the mouth.

In this study, 27.45% of patients were diabetic and 33.33% were hypertensive. According to the study by Sandeep Kumar et al [20] diabetic patients (24.6%) and underweight individuals (20.1%) showed a higher prevalence of oral potentially malignant disorders. Anna Starzyńska et al [15] did a study on oral premalignant lesions and concluded that most of the patients were 50-70 years and the most common coexisting disease was diabetes.

In this study, the cases with oral lichen planus were with normal habits except for one case with the habit of smoking. This correlates with the study by Vincent SD et al [22] on oral lichen planus in which no addictions were found in cases of oral lichen planus. Lichen planus seems to have an idiopathic or autoimmune etiology.

Limitations

Small sample size is the major limitation of this research.

Conclusion

In this study, leukoplakia was the commonest (64.71%) premalignant lesion, 51-60 years was the common age group. Premalignant lesions were most commonly seen among males, most of the study participants belong to low and middle socio-economic groups with a rural background.

What does the study add to the existing knowledge?

Diabetes mellitus was the most common comorbidity associated with premalignant lesions.

Author's contribution

Dr. Ajay Kumar Yadlapalli: Concept

Dr. B Krishna Santosh: Study design

Dr. Dwarampudi S K Reddy: Manuscript preparation

Dr. Panda Veeranjanyulu: Data analysis

Dr. Maraju Lakshmi Sneetha: Manuscript preparation

Dr. Pothula Priyanka: Data analysis

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