

A Study on Clinicoetiopathogenesis of Oral Precancerous Lesion in Jharkhand

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ABSTRACT

Introduction: Oral cavity cancer accounts for approximately 4% of all malignancies and is a significant health problem worldwide. Prevalence rate ranges 1% to 5%. Oral cancer is most common malignancies in Southeast Asia and accounting for up to 30-40% of all malignancies in India. This study was to delineate the causative factor and increase the awareness of oral cancer and precancerous lesion among Jharkhand population.

Material and methods: The study group consisted of 50 subjects of both the sexes, with clinically suspicious premalignant lesions. Toluidine blue use as a mouth rinse or applied locally to sites of tissue changes with cotton-tipped applicators, used as for identifying lesions, accelerating decision to biopsy, and guiding biopsy site selection.

Results: Among the 50 subjects, 4% (02) were alcoholic, 8% (04) were alcoholic and chewing tobacco, 38% (19) were chewing pan masala/guthka, 8% (04) were habitual smokers, 20% (10) were chewing pan masala/guthka and smoking, 16% (08) were chewing tobacco and 6% (03) had no habits.

Conclusion: The study was conducted to determine the patterns of various types of habits pattern and to evaluate the possible correlation between an individual quid chewing habit and a particular oral mucosal lesion. Subjects who were using Betel/ Areca as one of the constituent of the quid showed predominantly OSMF, and leukoplakia was seen in all the subjects who were chewing tobacco as one of the ingredients of the quid.

Keywords: Clinicoetiopathogenesis, Oral Precancerous

INTRODUCTION

Oral cavity cancer accounts for approximately 4% of all malignancies and is a significant health problem worldwide.¹ Prevalence rate ranges between 1% to 5%.² Most of the patients are middle-aged or elderly men. Most commonly site involved are on the buccal mucosa, lower gingiva, tongue and floor of mouth, with the remaining cases distributed throughout the remainder of the oral cavity. India accounts for one third of the world's oral cancer and has a high rate of pre-malignant lesions.³

The World Health Organization classifies oral precancerous/potentially malignant disorders into 2 general groups, as follows.^{4,5}

- A precancerous lesion is “a morphologically altered tissue in which oral cancer is more likely to occur than its apparently normal counterpart.” The precancerous lesions include leukoplakia, erythroplakia, and the palatal lesions of reverse smokers.
- A precancerous condition is “a generalized state associated with significantly increased risk of cancer.” The precancerous conditions include submucous fibrosis, lichen planus, epidermolysis bullosa, and discoid lupus erythematosus.

Common Etiological Factors are Tobacco, Alcohol, Sun Exposure, Chronic Irritation, Human Papilloma virus (HPV) infection, Marijuana (potential risk factor among young adults) and Sharp tooth, excessive spices may also be an accelerating cause.

The present study was done with the objective to know the causative factor of oral cancer and precancerous lesion in Jharkhand population.

MATERIAL AND METHODS

The study group consisted of 50 subjects of both the sexes, with clinically suspicious premalignant lesions, who fulfilled the inclusion and exclusion criteria, presented in outdoor unit in the Department of ENT at Rajendra Institute of Medical Sciences, Ranchi (Jharkhand) for a period of one year. The subjects comfortably seated in the examination chair under artificial illumination using sterile gloves. The clinical examination was carried out and the relevant data were entered into the Performa. An informed consent was taken from each subject for carrying out the diagnostic procedure.

Toluidine blue use as a mouth rinse or applied locally to sites of tissue changes with cotton-tipped applicators, used as for identifying lesions, accelerating decision to biopsy, and guiding biopsy site selection.

Inclusion criteria

1. Young, Middle aged and the Elderly population were included in this study.
2. Both Men as well as Women were included.
3. People from other States settled in Jharkhand were also included in the study.
4. Employed/Unemployed/Students and various other categories of working people were included.
5. Diet habits like people taking fast food, Chinese foods etc were included in this study.

Exclusion criteria

1. Non-co-operatives individuals were excluded.
2. Individuals having any other oral mucosal lesions that may mimic those lesions occurring due to tobacco placement.

STATISTICAL ANALYSIS

The data was analyzed by using SPSS 20 software. The data is

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presented in percentages, rates and ratios. To find the association or difference between the attributes, Chi square test was used in the present study,

RESULTS

Age-Sex distribution: Among 05 subjects within the age group of 10 – 20 years, 100% (05) were males. Among 23 subjects within the age group of 20 – 30 years, 95.7% (22) males 4.3% (01) were females. Among 06 subjects within the age group of 30 – 40 years, 66.7% (04) were males and 33.3% (02) were females. Among 10 subjects within the age group 40 – 50 years, 80% (08) were males and 20% (02) were females and among 06 subjects within the age group > 50 years, 100% (06) were males (table-1).

Occupation: Among 50 subjects, 24% (12) were students, 20% (10) were labourer, 16% (08) were in service, 30% (15) were businessmen and 10% (05) were others (table-2).

Types of Habits: Among the 50 subjects, 4% (02) were alcoholic, 8% (04) were alcoholic and chewing tobacco, 38% (19) were chewing pan masala/guthka, 8% (04) were habitual smokers, 20% (10) were chewing pan masala/guthka and smoking, 16% (08) were chewing tobacco and 6% (03) had no habits (table-3).

Types of Lesions: Among the 50 subjects, 10% (05) subjects had leukoplakia, 4% (02) subjects had erythroleukoplakia, 52% (27) subjects had oral submucosal fibrosis, 16% (08) subjects had lichenoid reaction, 12% (06) subjects had chewer's mucosa and 4% (02) subjects had chemical burn lesions in their oral cavity (table-4).

Site of the Lesions: Among 50 subjects, 16% (08) lesions occurred at alveolus and gingiva, 44% (22) lesions occurred at buccal mucosa, 20% (10) lesions occurred at gingivobuccal sulcus, 8% (04) lesions occurred at lateral border of tongue and 12% (06) lesions occurred at retromolar regions of the mouth (table-5).

DISCUSSION

Age distribution: As per our observation (Table-1) the males are seen to be exposed to quid chewing habits at quite an early age hence the quid related oral diseases are also seen at an early age in males. Similar study conducted by Guptha PC et al⁶ reported that over 70% of the cases of OSF were less than 35 years of age in 3 recent case-control studies in Bhavnagar, Gujarat, Nagpur, Maharashtra and New Delhi and Ahmad MS et al⁷ in their study reported that in a total of 157 cases with quid chewing and oral lesions maximum number of cases were belonging to the age group of 21- 41 years.

Sex distribution: Analyzing the results of our study (Table-1), among 50 subjects with quid chewing habit with one or other quid related oromucosal lesion, males were seen to be affected more than females. The male to female ratio was 9:1. Ranganathan K et al⁸ in their Study reported that quid chewing habit and lesion was prevalent in both males and females. Out of 185 cases with habit and lesion 90.2% were males and 9.2% females with a male to female ratio of 9:1.

Occupation: In present study (Table-2), largest number of participants 54% were unskilled occupations like labourers,

Age Distribution	Sex		Total
	Male	Female	
10 – 20	05	00	05
20 – 30	22	01	23
30 – 40	04	02	06
40 – 50	08	02	10
>50	06	00	06
Total	45	05	50

Table-1: Age Sex Distribution

Occupation	No. of patients	Percentage
Students	12	24
Labourer	10	20
Service	08	16
Business	15	30
Others	05	10
Total	50	100

Table-2: Occupation of the Patients

Habits	No. of patients	Percentage
Alcohol	02	04
Alcohol and Tobacco	04	08
Pan Masala/Guthka	19	38
Smoking	04	08
Smoking and Pan Masala/Guthka	10	20
Tobacco	08	16
No Habits	03	06
Total	50	100

Table-3: Habits of the Patients

Lesion seen	No. of patients	Percentage
Leukoplakia	05	10
Erythroleukoplakia	02	04
OSMF	27	52
Lichenoid Reaction	08	16
Chewer's Mucosa	06	12
Chemical Burn	02	04
Total	50	100

Table-4: Types of Lesions

Sites in oral cavity	No. of cases	Percentage
Alveolus and Gingiva	08	16
Buccal Mucosa	22	44
Gingivo-buccal Sulcus	10	20
Lateral Border of Tongue	04	08
Retromolar	06	12
Total	50	100

Table-5: Site of the Lesions in Oral Cavity

daily wage earners, cleaners, maids, drivers, farmers etc. Similar finding was seen in the study conducted at Bangalore with the same unskilled professionals which is 60.2%. Most of these occupations require substantial amount of physical energy and high level of concentration in case of drivers with odd work timings. This can be stressful which in combination of peer pressure can lead to the initiation of deleterious oral habits.⁹

Habits: In our study (Table-3), out of total 50 patients, 8% patients were smokers, 38% were habituated to smokeless

tobacco in the form of pan/ guthka, 20% were both smokers and habituated to Pan/ guthka, 4% of patients were alcoholics, 8% were habituated to alcohol as well as tobacco smoking or chewing and 16% were habituated to chewing tobacco. Only 6% did not have any habit. Smoking and alcohol consumptions were seen only in males. None of the females were smokers or habituated to alcohol. Among 5 female patients, 1 case (20%) gave history of pan consumption and 2 cases (40%) gave history of chewing tobacco. 2 cases (40%) did not give history of habituation to paan chewing/smoking. In the study of Khandekar SP et al,⁴ 71.3% of patients were habituated to tobacco. 63.3% were habituated to tobacco in the form of cigarettes or beedis.

Habits v/s lesion: Among the various habits pattern in our study (Table-4) Leukoplakia, Erythroleukoplakia, OSMF, chewer's mucosa, lichenoid reaction and chemical burn were seen, but OSMF (52%) was predominately the major lesion associated with Pan Masala/ Guthka Chewing. OSMF can occur with the use of betel/Areca nuts without the use of tobacco in the quid. Hazarey VK et al¹⁰ conducted a cross sectional study among total of 1000 OSF cases from 266418 out patients of a hospital in Nagpur. They concluded that the male-to-female ratio of OSF was 4.9:1. Occurrence of OSF was at younger age group (<30 years) among men when compared with women. Exclusive areca nut chewing habit was significantly more prevalent in women, whereas significant increase for Gutkha (Areca quid with tobacco) and kharra / Mawa (crude combination of areca nut and tobacco) chewing was found in men when compared with women for OSF.

Site of the lesions: In our study (Table-5), amongst the premalignant lesions, Buccal mucosa (44%) was the commonest site involved, followed by Gingivo-buccal Sulcus (20%), Alveolus and Gingiva (16%), Retromolar region (12%) and lateral border of oral tongue (8%). According to Mishra M et al (2005) Buccal mucosa (52.26%)¹¹, Lee J J et al, (2006) Buccal mucosa (65.7%)¹² and Mishra V et al (2009) Buccal mucosa (55%).¹³

CONCLUSION

Majority of the subjects with various habits pattern and oromucosal lesions were Males and within the age group of 20-30 years. The majority have habit of chewing Processed Tobacco + Processed betel (Pan Masala/Guthka).

Lesions encountered in our study were Oral submucous fibrosis, Chewers Mucosa, Leukoplakia, Lichenoid reaction and Chemical burn. But Out of all the lesions encountered in our study, OSMF was seen in majority of the Subjects and they are using Areca nut/Betel as one of the constituent of the quid. Leukoplakia was seen in all the subjects who were chewing tobacco.

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