Original Research Article

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Oral premalignant lesions: a clinicopathological study

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ABSTRACT

Background: A significant number of oral cancer cases present initially with precursor lesions. If detected earlier in disease course it will reduce the morbidity and mortality. The objective of this study was to evaluate the clinical presentation and various histopathological types of premalignant lesions.

Methods: This is descriptive, observational, analytical type of study of five-year duration. The detail clinical presentation, relevant investigation and histopathological study on biopsy tissue stain with H and E was done and the data is analysed.

Results: During study period, 173 cases having oral lesions were observed. Among these 38 cases showed oral premalignant lesions. The most common age group affected was in between 50 to 59 years. The male predominance was noted. Male to female ratio was 1.9:1. The location of the lesions were buccal mucosa (55.26%), tongue (26.31%), gingiva (7.90%), alveolus (5.26%), lip (2.6%), retromolar area (2.63%) was noted. The common etiological factor observed was tobacco chewing. On histopathological features, cases were of leukoplakia 68.41%, oral lichen planus 13.16%, oral submucous fibrosis 7.90%, actinic cheilitis-7.9%, and oral erythroplakia 2.6%.

Conclusions: In this study, various oral premalignant lesions were observed. Their clinical and histopathological evaluation was done. Oral leukoplakia was most common lesion in the present study. Buccal mucosa was the most common site. Tobacco chewing habit was the common risk factor observed. Early detection of premalignant oral lesion is of utmost importance to prevent further morbidity as these lesions further progress to oral cancer.

Keywords: Histopathology, Oral cancer, Potentially malignant oral disorders

INTRODUCTION

In India, oral cancer is one of the leading cancer today. Its incidence is 12.6 per 1,00,000 population. The premalignant lesion is a disease or syndrome if left untreated have significantly increased risk to develop cancer.

However, in 2005 WHO workshop, it was decided to use the term "Potentially Malignant Disorders," on it conveys that not all disorders defined under this term may transform into cancer.³

Local oral examination, application of toluidine blue to suspected lesion, cytological study, and tissue biopsy are used to investigate these cases. Oral lesion biopsy is usually indicated to rule out causes of white patches. It also helps to determine the detailed histologic examination to grade the presence of any epithelial dysplasia. The sites of a leukoplakia lesion that are preferentially biopsied are the areas that show induration, redness, erosive or ulcerated areas. These areas are more likely to show any dysplasia than homogenous white areas.

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METHODS

This is descriptive, observational, analytical type of study of five-year duration from May 2010 to April 2015. During study period patient from Surgical OPD in our hospital having oral lesions were included. The cases of oral lesions were clinically suspected was studied as per WHO criteria for potentially malignant diseases. The classification of oral leukoplakia was done according to size of oral lesion, its clinical presentation and histopathological features. The detail clinical history was taken. The location of oral lesion, size, gross examination etc. were done. All relevant investigations were done. Biopsy were taken, detailed histopathological features were noted. The tissue sections were stained with H and E stain. The statistical data was analysed by using SPSS-10 version. The results were analysed.

RESULTS

According to the data collected, 173 patients having oral lesions visited the diagnostic center of our institute were included in the study. Among these 38 (21.96%) cases were of premalignant lesion and 135 (78.04%) were of oral cancers. The premalignant lesions were distributed as per age and sex of patients (Table 1), which showed most common age was in between 50-59 years. The mean age was 54.5 year. The earlier age in the present study was detected in a boy of 15 years who was addicted to tobacco and gutka use. The male:female ratio was 1.9:1. The various premalignant lesions (Table 2) of 38 cases, on histopathological features were leucoplakia 26 case (68.41%), oral lichen planus 5 cases (13.16%), oral submucous fibrosis 3 cases (7.90%), actinic cheilitis (squamous dysplasia related with immunodeficiency or oral hygiene) 3 case (7.90 %) and erythroplakia 1 case (2.63%). The leucoplakia was the commonest lesion (26 cases) 68.41% was observed in the present study. As for risk factors, patients reported being using tobacco, smokers, drinking alcohol, working under direct sunlight etc. were studied. The tobacco chewing was most common habit noted in our cases. The various habit of cases was given in (Table 3).

Table 1: Age and sex distribution of the oral premalignant cases.

Age groups	Number of cases		Total	Percentage
(years)	Male	Fen	nale	
10-19	1	0	1	02.63
20-29	1	1	2	05.26
30-39	4	2	6	15.82
40-49	4	1	5	13.15
50-59	8	4	12	31.57
60-69	4	3	7	18.42
>70	3	2	5	13.15
Total	25	13	38	100

Table 2: Histopathological patterns of pre-malignant lesions.

Type of lesion	Number of cases	Percentage
Leucoplakia	26	68.41
Oral lichen planus	05	13.16
Oral submucous fibrosis	03	7.90
Actinic cheilitis	03	7.90
Erythroplakia	01	2.63
Total	38	100

Table 3: Tobacco habits in oral pre-malignant cases.

Habit	Number o	Number of cases		Percentage	
Habit	Male	Female			
Only tobacco chewing	16	13	29	76.31	
Smoking, tobacco chewing	1	00	01	2.63	
Alcohol, tobacco chewing	5	00	05	13.15	
No addiction	3	00	03	7.91	
Total	25	13	38	100	

Table 4: Site wise distribution of oral pre-malignant cases.

Site	Number of cases	Percentage
Buccal mucosa	21	55.26
Tongue	10	26.31
Gingiva	03	07.90
Alveolus	02	05.26
Lip	01	02.63
Retromolar trigone	01	02.63
Total	38	100

The site wise distribution of oral premalignant lesions was shown in Table 4. The most common site was buccal mucosa 55.26%, followed by tongue, gingival, alveolus and lip.

Various grades of squamous epithelial dysplasia were done as per the WHO criteria. Grades of epithelial dysplasia observed in the present study were given in Table 5. The most common grade of squamous epithelial dysplasia was mild and noted in 16 cases (48.48%), moderate in 5 cases (15.15%) and severe in 12 cases (36.36%). All oral dysplasias were followed up regularly, even if the lesion has been completely excised. Also, whether the patient has stopped using tobacco products were observed.

Table 5: Grades of epithelial dysplasia observed in pre-malignant lesions.

Grades of epithelial dysplasia	Number of cases	Percentage
Mild	09	47.36
Moderate	03	15.78
Severe	07	36.86
Total	19	100

DISCUSSION

The oral premalignant disorders consist of a group of diseases were named in literature as precancer, intraepithelial neoplasia, premalignant lesions etc. To avoid confusion WHO in 2005 termed various lesions and conditions of the oral mucosa which may undergo malignant transformation are defined as "Potentially malignant disorders" (PMD). There are 5 most common lesions described as PMD are, leucoplakia, erythroplakia, oral submucous fibrosis, actinic cheilitis and oral lichen planus. Along with these other less common conditions like inherited diseases, xeroderma pigmentosa, immunodeficiency, Fanconi's anemia, chronic discoid lupus erythematosus have been described.⁴

In the present study the age distribution of oral premalignant cases was maximum in age group of 50-59 year (31.57%) with male predominance (male:female 1.7:1). The mean age of presentation was 54.5 year. The study by Mehrotra R et al, in 2006 showed maximum number of cases were in 6th decade.⁵ The male predominance was noted by Dietrich T, et al.⁶ Present study showed male predominance with 65.78% while in female 34.21%.

Leucoplakia defined by the WHO working group as keratotic white patch or plaque that cannot be scrubbed off and cannot be characterized clinically or pathologically as any other disease. The leucoplakia remains the most common premalignant lesion having prevalence of 2.6% globally.⁷ The striking variation is noted in different areas. In India, its prevalence is

maximum in Gujarat (11.7%) while 0.2% in Bihar.⁸ The various etiological factors implicated are tobacco, alcohol, chronic irritation, human papilloma virus infection, ultraviolet radiation, hot spicy foods etc.⁶⁻⁹ It has the strongest association with the use of tobacco in various forms like chewing tobacco (as in paan, paan masala, gutka, zarda), heavy smokers etc.¹⁰ There is risk factor leads to hyperplastic or dysplastic squamous epithelial lesions which progress to carcinoma in situ to invasive squamous cell carcinoma.

On clinical examination, various types of leucoplakia were described as homogenous and non-homogenous. They appear as flat, thin, nodular, proliferative verrucose types. Lesions are mostly unifocal but can be multifocal. These lesions can be found in any part of oral mucosa with most frequent site is buccal mucosa. 9,12 In the present study buccal mucosa was common site constituting 55.26% followed by tongue (26.31%), gingiva (7.90%), alveolus, lip etc. Various differential diagnosis for of oral lesions include chemical injury, oral hairy leucoplakia, leucoderma, smoker's palate, papillomas, lichenoid reaction, frictional lesions etc. In leucoplakia, the rate of malignant transformation ranges from 0.13% to 2.2% per year. 7,14

Oral lichen planus (OLP)

It is a chronic, autoimmune, inflammatory disease. Several etiological factors are responsible for it which includes genetic, drugs, infectious agents (mostly viral), material, autoimmune, stress, diabetes, immunodeficiency etc.¹⁵ It affects skin, oral mucosa, genitals, nails, scalp etc. Any part of oral mucosa may be affected but dorsum of tongue is most common site. Patient presents with symmetrical, bilateral lesion. Surface is white with fine white striations, "Wickham's Striae". Various forms like reticular, plaque, atrophic, papular, erosive, bullous were noted.¹⁶ For confirmatory diagnosis biopsy is required. On histopathology shows atrophy of surface epithelium, liquefactive degeneration of basal layer, subepithelial band of lymphocytic infiltration. Malignant transformation is usually noted in <1% of cases.¹⁷ In the present study 3 cases showed plaque lesion and 2 cases show reticular lesion. In the present study, no change of malignant transformation was noted.

Oral submucous fibrosis (OSF)

It is a chronic disorder characterized by fibrosis of the mucosa of the upper GIT. OSF is more commonly seen in south east Asia especially India where people having habit of Areca nut chewing with betal quid. ¹⁸ Other etiological agents like ingestion of chilies, genetic, immune, nutritional deficiency have been noted. Clinical manifestation is related to fibrosis of mucosa of cheek giving rise to trismus, difficulty in eating, burning sensation etc. Histological features of OSF are mucosal atrophy, pigmentation, granulation, fibrosis, chronic

inflammation, dysplasia and carcinoma. In India 0.2-1.2% of population is affected by OSF, with annual malignant transformation is about 0.5-7.6%. ¹⁹⁻²⁰ In the present study one patient had severe problem in mouth opening (<10mm) having extensive faucial, buccal and labial fibrotic bands. He was addicted to use gutka and tobacco chewing.

In the present study 3 cases related to actinic cheilitis having diffuse thickening of epithelium of lip with squamous hyperplasia, mild to moderate dysplasia, thickening of keratin layer. The etiology observed was related to ill-fitting denture, tobacco use, poor oral hygiene and exposure to solar radiation. It has been reported that malignant transformation has been reported in 1.4-36% of cases over 1 to 3 decades of period.²¹

We have one case of oral erythroplakia. Erythroplakia is red or erythematous patch of oral mucosa and is associated with higher rate to develop dysplasia, carcinoma in situ and invasive carcinoma than leucoplakia.²²

Diagnosis of premalignant status of oral lesions include clinical examination, topical application of toluidine blue on suspicious area and confirmation is done by biopsy of lesion. Evaluation of every lesion in oral cavity is essential. It is important to re-access on each follow up visit. First order of treatment must include stabilization of the mouth: treat for dryness, and fungal infection. Insist on the importance of good oral hygiene, and good nutrition. The various treatment modalities include removal of etiological agent, observation only, chemoprevention, medical treatment, CO₂ laser surgery, surgical excision etc.

CONCLUSION

Significant number of oral cancer cases present initially with precursor lesion. We observed various premalignant oral lesions in the present study which include leukoplakia, oral submucous fibrosis, lichen planus, actinic cheilitis and erythroplakia. Oral leukoplakia was most common lesion in the present study. Buccal mucosa was the most common site. Tobacco chewing habit was common risk factor observed. Early detection of premalignant oral lesion is of utmost importance to prevent further progress to oral cancer.

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institutional ethics committee

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