

# Significance of Premalignant Conditions and Other Factors Associated with Oral Malignancy

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## Abstract

**Introduction:** Oral cavity cancer is caused by various etiological factors and definite premalignant conditions are associated with it.

**Aim:** The aim of the study was to study the factors that play a significant role in the causation of oral cancer.

**Materials and Methods:** A prospective study on oral cancer conducted in the Department of General Surgery and Surgical Oncology, etc.

**Results:** In this study 162 patients were included, 100 were male, and 62 were female. Leukoplakia is associated with 33.95% ( $n = 55$ ) of patients; Quid chewing is the most prevalent habit both in male and female.

**Conclusions:** Around 69% of the 162 patients, premalignant lesions are associated with primary cancer lesions; apart from premalignant lesions, patient's habits such as quid chewing, smoking, and alcohol consumption have a strong association with oral malignancy.

**Key words:** Cancer cheek, Etiology, Oral premalignant conditions

## INTRODUCTION

Cancer of the oral cavity ranks among the 10 most common cancers in the world with marked geographical variation.<sup>1</sup> 2-6% of all cancers diagnosed in the US are oral cavity cancers which by themselves account for more than 30% of all head and neck cancers. In the US alone more than 30950 new cases of oral cavity cancer and 4000-8000 deaths are reported each year.<sup>2</sup>

Worldwide there is great variation in the incidence of oral cancer. In Western Europe and Australia, the incidence closely resembles that of the US. The highest rates of oral cavity cancers are to be found in France, India, Brazil, Central and Eastern Europe.<sup>3</sup> Cancer of the oral cavity

ranks among the 10 most common cancers in the world with marked geographical variation. Worldwide there is great variation in the incidence of oral cancer.<sup>4</sup>

## Aim

To ascertain the significance of premalignant conditions and other factors responsible for oral malignancy.

## MATERIALS AND METHODS

This prospective observational study of 162 patients was conducted at the Department of General Surgery in association with Department of Surgical Oncology, Department of Medical Oncology, and Department of Radiation Oncology, Government Rajaji Hospital, Madurai. Patients admitted with oral cancers were included in this study. Approval of the Ethical Committee of the Institution was obtained and informed written consent was obtained from every patient with oral cancer. Elaborate history recorded from every patient including present history, past history, and personal history giving more importance to personal history; thorough examination of the patient particularly the oral cavity was done and

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recorded properly. Investigations such as a biopsy to confirm the diagnosis. The results were tabulated, assessed and a conclusion obtained.

## RESULTS

The most common premalignant condition encountered in the study was leukoplakia 33.95% (55 cases). Around 30.86% (50 cases) in the study had no identifiable premalignant condition (Table 1).

The habit that was most prevalent among both males and females was quid chewing; seen in 47.53% (77 cases). In males quid chewing 15.43% (25 cases) followed by smoking combined with alcohol consumption 10.49% (17 cases) and quid chewing with smoking and alcohol, 7.41% (12 cases) were noted. In females, the most common habit was chewing quid seen in 32.10% (52 cases). Around 6.18% (10 cases) of females had no identifiable risk factors (Table 2).

Majority of the patients were overwhelmingly from a low socioeconomic (SE) stratum 99.38% (161 cases) (Table 3).

The maximum number of cases 19.75% (32 cases) studied in males was in the 51-60 age groups. In females, the maximum numbers of cases were seen in the 61-70 age group 12.35% (20 cases). Overall, in both males and females, the maximum number of cases was noted in the 6<sup>th</sup> and 7<sup>th</sup> decade 31.48 (51 cases) and 30.25 (49 cases), respectively (Table 4).

In our study out of the 162 patients, 55 were having dental caries, 33.95% were having dental caries, around 26% were having gingivitis, 9 patients had sharp tooth, and 4 with ill-fitting denture, whereas 52 patients do not have any association with dental factors (32%).

People with dental caries, plaques, inflammation of the gingivae appear to have a greater risk when compared to the general population. An ill-fitting denture could increase the risk of cancer of the tongue. Poor oral hygiene is often associated with tobacco and alcohol abuse. Oral microflora may act on ethanol and convert it to acetaldehyde a known carcinogen.

## DISCUSSION

Although there are many factors responsible for the causation of oral cancer, the premalignant conditions are the ones which represent the imminence of the disease. The most common premalignant condition encountered in the study was leukoplakia 33.95% (55 cases).<sup>5</sup> Around

**Table 1: Association of various premalignant lesions**

Premalignant conditions	Total (%)
Candidiasis	7 (4.32)
Erythroplakia	21 (12.96)
Submucosal fibrosis	14 (8.64)
Leukoplakia	55 (33.95)
Erythroleukoplakia	8 (4.95)
Submucosal fibrosis with erythroleukoplakia	6 (3.70)
No association	50 (30.86)

**Table 2: Distribution of patients based on their habits**

Habit*	Male (%)	Female (%)	Total (%)
BT	25 (15.43)	52 (32.10)	77 (47.53)
SA	17 (10.49)	-	17 (10.49)
BTSA	12 (7.41)	-	12 (7.41)
BTS	10 (6.17)	-	10 (6.17)
BTA	7 (4.32)	-	7 (4.32)
BS	7 (4.32)	-	7 (4.32)
BSA	6 (3.70)	-	6 (3.70)
BA	6 (3.70)	-	6 (3.70)
S	6 (3.70)	-	6 (3.70)
No risk	4 (2.48)	10 (6.18)	14 (8.66)

\*B: Betel nut, S: Smoking, T: Tobacco, A: Alcohol

**Table 3: Distribution of patients according to SE status**

SE status	N (%)
Low	161 (99.38)
Middle	1 (00.62)
Upper	-

SE: Socioeconomic

**Table 4: Distribution of patients according to age and sex**

Age	N (%)		
	Male	Female	Total
21-30	1 (0.62)	3 (1.85)	4 (2.47)
31-40	9 (5.56)	7 (4.32)	16 (9.88)
41-50	16 (9.88)	11 (6.79)	27 (16.67)
51-60	32 (19.75)	19 (11.73)	51 (31.48)
61-70	29 (17.90)	20 (12.35)	49 (30.25)
>71	13 (8.02)	2 (1.23)	15 (9.25)
Total	100 (61.73)	62 (38.27)	162 (100)

30.86% (50 cases) in the study had no identifiable premalignant condition, and 12.96% of patients were presenting with erythroplakia.<sup>6</sup> Submucosal fibrosis is one among the premalignant condition expressed by 8.64% of the patients.<sup>7</sup>

Quid chewing is the most prevalent habit among both men and women, smoking combined with alcohol

consumption 10.49% (17 cases) comes next in men.<sup>8</sup> Around 6.18% (10 cases) of females had no identifiable risk factors.

Except for one patient all the 161 patients come under the lower SE category which comprises 99.38%. Hence, low SE group is also significant factor associated with oral cancer.<sup>9</sup>

Overall, in both males and females, the maximum number of cases was noted in the 6<sup>th</sup> and 7<sup>th</sup> decade 31.48 (51 cases) and 30.25 (49 cases), respectively. Older age group is one another factor associated with oral cancer.<sup>10</sup>

Out of the 162 patients, 55 were having dental caries that is 33.95% were having dental caries,<sup>11</sup> around 26% were having gingivitis, 9 patients had sharp tooth,<sup>12</sup> and 4 with ill-fitting denture,<sup>13</sup> whereas 52 patients do not have any association with dental factors (32%). Among the dental/oral factors, caries tooth is the most common one.

## CONCLUSION

Around 69% of the 162 patients, premalignant lesions are associated with primary cancer lesions; apart from premalignant lesions, patient's habits such as quid chewing, smoking, and alcohol consumption have a strong association with oral malignancy. Low SE group and old age are also having a significant association with oral cancer. Dental factors such as dental caries and gingivitis also have

a link with the carcinoma of the oral cavity as per our study.

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