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Original Research Article.

Incidence of Tobacco Chewing Habit and Oral Mucosal Lesions in Patients Reporting to the Hospital: A Prospective Study

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ABSTRACT

Background: Tobacco is used in various forms like smoked or smokeless forms. Both carry risk of carcinoma. Consumption of tobacco or even exposure to tobacco smoke is a factor for multiple human carcinogens like lung cancer and cancers related to oral cavity, pharynx, pancreas, liver, and cervix. The aim of the present study is to determine the incidence of tobacco chewing habits amongst males and females and determine the incidence of oral precancerous and cancerous lesions.

Materials and Methods: The present prospective cross sectional study was conducted in the Department of Oral pathology, RKDF Dental College and hospital Bhopal, M.P. The study was conducted over a period of 1 year (April, 2015- May, 2016). All the males and females reporting to the OPD with the habit of using either smoked or smokeless tobacco were included in the study.Clinical examination was done to determine the type of cancerous or precancerous lesion. Biopsy was performed to confirm the histopathology of clinically visible lesions.All the data was arranges in a tabulated form and analysed using SPSS software. The results of the study were expressed as percentage of total value.

Results: In our study, males are predominant tobacco chewers (31.3%). There were 23.4% (n=96) males who were betel nut chewers. Bidi smoking was the third common habit involving 22.4% (n=92) subjects. 50% of the females chew tobacco. There were 7.8% (n=4) females who had a habit of betel nut chewing. There were 11 females who chew tobacco and pan.

Conclusion: In our study oral submucus fibrosis was seen in 28.1% cases. There were 6.9% cases of oral cancer. Leukoplakia was detected in 13.4% cases.

Keywords: Biopsy, Leukoplakia, Oral Cancer, Tobacco.

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INTRODUCTION

Usage of tobacco is one of the important risk factors for the causation of various oral mucosal precancerous and cancerous lesions.[1] Tobacco is used in various forms like smoked or smokeless forms. Both carry risk of carcinoma. Consumption of tobacco or even exposure to tobacco smoke is a factor for multiple human carcinogens like lung cancer and cancers related to oral cavity, pharynx, pancreas, liver, and cervix.[2] It is available in various commercial preparations like *pan masala*, *gutkha, chillum, khaini* in India and different parts of Asia. Chewing of tobacco and smoking have been identified as major risk factors for precancerous and cancerous lesions of oral cavity in India.[3]

Various studies have also shown that smoking and chewing of tobacco and betel quid have a synergistic effect in oral carcinogenesis and the persons with mixed habits belong to high-risk population.[4] Consumption of smokeless tobacco substantially increases the morbidity and mortality for oral cancers.[5] Oral cancer is the third most common type of cancers in India.[6] The prevalence of oral cancer is about 3% of malignancies in Western population and it accounts for 30% of all cancers in India; this difference can be due to variation in tobacco consumption habits.[7] Oral cancer is always preceded by precancerous lesions and conditions. Amongst precancerous lesions and conditions come leukoplakia and oral submucous fibrosis. Leukoplakia is defined as a white patch or plaque that cannot be clinically or pathologically characterised into any other disease. In 70% of the cases oral cancer is preceded by leukoplakia.[8] The aim of the present study is to determine the incidence of tobacco chewing habits amongst males and females and determine the incidence of oral precancerous and cancerous lesions.

MATERIALS AND METHODS

The present prospective cross sectional study was conducted in the Department of Oral pathology, RKDF Dental college and hospital Bhopal, M.P. The study was conducted over a period of

1 year (April, 2015- May, 2016). All the males and females reporting to the OPD with the habit of using either smoked or smokeless tobacco were included in the study. The patients who were above 18 years of age were included in this study. The study was approved by Institute's ethical board and a written informed consent was obtained from all in their vernacular language. Patients were made to fill a predesigned performa in which there was information regarding their demographic details, type and frequency of tobacco habit. Clinical examination was done to determine the type of cancerous or precancerous lesion. Biopsy was performed to confirm the histopathology of clinically visible lesions. Vital staining with toluidine blue was done to confirm the amount of dysplasia in the mucosal lesion.

All the data was arranges in a tabulated form and analysed using SPSS software. The results of the study were expressed as percentage of total value.

Table 1: Incidence of tobacco habit amongst males

HABIT	NUMBER	PERCENTAGE
Tobacco chewer	128	31.2
Cigarette smoker	47	11.5
Bidi smoker	92	22.4
Betel nut chewer	96	23.4
Pan chewer	0	0
Tobacco chewer and smoker	2	0.5
Pan and tobacco chewer	10	2.4
Pan and betel nut chewer	24	5.9
Tobacco, pan and betel nut chewer	11	2.7
Total	410	100

Table 2: Incidence of tobacco habit amongst females

HABIT	NUMBER	PERCENTAGE
Tobacco chewer	26	50
Cigarette smoker	0	0
Bidi smoker	0	0
Betel nut chewer	4	7.8
Pan chewer	0	0
Tobacco chewer and pan chewer	11	21.2
Pan, tobacco and betel nut chewer	2	3.8
Pan and betel nut chewer	9	17.4
Total	52	100

Table 3: Incidence of cancerous and precancerous lesions and conditions

MUCOSAL CONDITION	NUMBER	PERCENTAGE
Oral cancer	32	6.9
Leukoplakia	62	13.4
Oral submucous fibrosis	130	28.1
P value	>0.05	

RESULTS

In the present study a total of 462 subjects were enrolled, out of these 410 were males (88.7%) and 52 were females (11.3%). There was a significant difference ($p<0.05$) in male and female population who consumed tobacco. The mean age of the subjects was 36.43 +/- 6.04 years.

Table 1 illustrates the tobacco chewing habit amongst males. This shows that males are predominant tobacco chewers (31.3%). There were 23.4% (n=96) males who were betel nut chewers. Bidi smoking was the third common habit involving 22.4% (n=92) subjects. There were 5.9% males who chew both pan and betel nut. Only 11.5% (n=47) males who smoked cigarette. There were 11 males who chew tobacco, betel nut and pan. None of the male in our study was only pan chewer.

Table 2 illustrates the tobacco chewing habit amongst females. 50% of the females chew tobacco. There were 7.8% (n=4) females who had a habit of betel nut chewing. There were 11 females who chew tobacco and pan. 9 females had the habit of chewing betel nut as well as pan. There was no bidi or cigarette smoking female in this study. Only 2 females chew tobacco, betel nut and pan.

Table 3 shows the incidence of cancerous and precancerous lesions and conditions. Majority of cases were of oral submucous fibrosis. White tense bands were felt in 28.1% cases (n=130). There were 6.9% cases (n=32) of oral cancer. Leukoplakia was detected in 13.4% cases (n=62). There was no significant difference in the prevalence of oral cancer, leukoplakia and oral submucous fibrosis.

DISCUSSION

The incidence and prevalence of oral cancer is increasing worldwide. Smoking tobacco and cigarettes causes damage to DNA, hence increasing the risk of oral cancer. It also causes periodontal disease, alveolar bone loss, cleft lip and palate and hairy tongue.[9-11] Tobacco smoke is one of the most crucial risk factors for the occurrence oral mucosal lesions.[12] It is also

associated with oral leukoplakia, smoker's melanosis, frictional hyperkeratosis, nicotinic stomatitis, and squamous cell carcinoma.[10,13,14] In a study conducted Gönül et al.[15] oral mucosal lesions were most common smokers and alcoholic patients and they found coated tongue to be more prevalent among smokers and alcoholic patients. Another research done by Sujatha et al.[16] showed that oral leukoplakia was the most common occurrence among smokers. Saintrain et al.[17] in their study also came to the conclusion that oral mucosal lesions were common in smokers. In our study, majority of cases were of oral submucous fibrosis. White tense bands were felt in 28.1% cases (n=130). There were 6.9% cases (n=32) of oral cancer. Leukoplakia was detected in 13.4% cases (n=62). In our present study, males are predominant tobacco chewers (31.3%). There were 23.4% (n=96) males who were betel nut chewers. Bidi smoking was the third common habit involving 22.4% (n=92) subjects. There were 5.9% males who chew both pan and betel nut. Only 11.5% (n=47) males who smoked cigarette. There were 11 males who chew tobacco, betel nut and pan. None of the male in our study was only pan chewer. In a study by Vaishali et al[18] tobacco chewing was the most common habit amongst males which was followed by bidi smoking and cigarette smoking. In a study by Bhowate et al,[19] 66.3% of the population had a habit of betel quid chewing. In a study conducted by Patil et al,[20] there were 79.2% males and 20.7% females. In their study 26.8% of the population showed oral mucosal lesions. The prevalence of leukoplakia was 8.2%. The incidence in our study was higher than this. This difference could be due to difference in study population and type of tobacco chewing habit.

In our study, 50% of the females chew tobacco. There were 7.8% (n=4) females who had a habit of betel nut chewing. There were 11 females who chew tobacco and pan. 9 females had the habit of chewing betel nut as well as pan. There was no bidi or cigarette smoking female in this study. Only 2 females chew tobacco, betel nut and pan. In a study conducted by Vaishali et al[18] females were predominant tobacco chewers. There were 10 females who had a combination of habits like chewing pan, tobacco and betel nut. In a study conducted by Patil et al,[20] 11.1% females had the habit of consuming tobacco in any form. Cessation of tobacco usage forms a crucial part of reduction the mortality and morbidity associated with oral cancer. Frequent screening of the patients and educating them to disuse tobacco consumption acts a first step in control of oral cancer.

CONCLUSION

Tobacco consumption is hazardous to health in many ways. It is associated with carcinoma of upper respiratory and gastrointestinal tract. The most frequent being oral cancer. In our study oral submucous fibrosis was seen in 28.1% cases. There were 6.9% cases of oral cancer. Leukoplakia was detected in 13.4% cases.

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