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Incidence of smoker's palate in younger patients with smoking habits

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ABSTRACT

Smoker's palate is also known as nicotine stomatitis palatini. It is an asymptomatic lesion in heavy pipe and cigarette smoking people, especially people who do reverse smoking. The palate may appear as white with raised red dots in the centre of the papule. This represents the opening of the minor salivary glands, which becomes inflamed due to chronic heat produced during smoking. There were many studies about the incidence and prevalence of smoker's palate in the elderly population. The study aimed to assess the incidence of smoker's palate in younger patients with smoking habits. This is a retrospective study. The sample size was 1000 patients. Data of patients visiting Saveetha dental college between the age group of 18 to 30 years with a smoking habit was collected. Excel tabulation was done. SPSS results were obtained. Out of 1000 patients, 581 patients had smoking habits with a percentage of 58.1%. Out of 581 patients, 21 patients had smokers palate with a percentage of 3.60%. The incidence rate was 36.14 per 1000 per year. The present study shows a slightly rising incidence in smokers palate.

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INTRODUCTION

Smoker's palate is an asymptomatic lesion and is rarely associated with itching and burning sensation. It is usually associated with cigar, Heavy pipe and reverses smoking. The cause of smoker's palate is due to the heat released from the tobacco products and the chemicals in tobacco which may act as irritants (Santos and Katz, 2009; Venugopal and Maheswari, 2016; Chaitanya *et al.*, 2017). The palate may appear as white with raised red dots in the centre of papules or nodules. The opening of the minor salivary gland becomes inflamed due to chronic heat produced during smoking. Like smoker's palate, there are many other lesions which affect the oral mucosa. Oral mucosa is an effective barrier and is commonly affected by lesions. There are three grades in the smoker's palate. The grading was given by Greenburg et al. (Greenberg and Reed, 2003). Grade one is mild and consists of red dots like openings on blanched areas. Grade 2 is moderate and is characterised by well-defined elevation with central umbilication. Grade 3 is severe and is marked by Papules of 5 mm or more with umbilication of 2 to 3 mm. Grade 1 is commonly seen, while grade 3 is very rare. Smoking is a peculiar custom in some groups with low socioeconomic sta-

tus. Tobacco use includes both smoking and non-smoking forms which are more common in India. It can cause a wide spectrum of oral mucosal alteration (Jindal *et al.*, 2006; Misra *et al.*, 2015). The most prevalent oral lesions are as follows: smoker's palate, smoker's melanosis and leukoplakia (Ding *et al.*, 2008; Warnakulasuriya, 2009; Suragimath *et al.*, 2015). Tobacco smoking is one of the most common causes of mortality and morbidity in developed and developing countries. Tobacco smoking and cigarettes cause DNA damage and increase the risk of oral cancer. Smoking is an important risk factor for oral diseases such as oral cancer, periodontal disease, cleft lip, cleft palate, alveolar bone loss and black hairy tongue (Muthukrishnan *et al.*, 2016; Muthukrishnan and Kumar, 2017). This research was needed because this condition is prone to malignancy as it is considered as one of the potentially malignant disorders and the dental practitioners should not neglect this. They should be educating the patient regarding this condition. Previously our team had conducted numerous case studies (Choudhury *et al.*, 2015; Dharman and Muthukrishnan, 2016) and systematic reviews (Venugopal and Maheswari, 2016; Chaitanya *et al.*, 2017, 2018; Maheswari *et al.*, 2018) and questionnaire-based studies (Subashri and Maheshwari, 2016; Warnakulasuriya and Muthukrishnan, 2018) and international validation study (Steele *et al.*, 2015) and radiographic studies (Rohini and Kumar, 2017; Patil *et al.*, 2018; Subha and Arvind, 2019) over the past five years. Now we are focussing on epidemiological surveys. The idea for this study stemmed from the current interest in our community. There were many studies about the incidence and prevalence of smoker's palate in the elderly population (Fleishman *et al.*, 1985; Nayak *et al.*, 2017) so this study was done to assess the incidence of smoker's palate in younger patients between the age group of 18 to 30 years with smoking habits.

MATERIALS AND METHODS

This was a retrospective study. The study setting was a university setting. Sample Size was 1000 patients. Ethical approval was obtained from the institutional ethical committee (SDC/SIHEC/2020/DIASDATA/0619-0320). Cross verification was done by photographs. Sampling method was by using convenience sampling. Data of patients visiting the dental institution between the age group of 18 to 30 years with smoking habits was obtained by reviewing all case records. All patients diagnosed with nicotine stomatitis were included for the study and those patients having nicotine stomatitis with other palatal lesions were excluded from the study. Data was entered in an organised manner. Excel tabulation was done and SPSS importing was also done. Incomplete data were excluded from the study.

RESULTS AND DISCUSSION

In this study, the incidence rate was found to be 36.14 per 1000 per year. Figure 1 showed that out of 1000 patients, 581 patients had smoking habits. Percentage of patients with smoking habit was 58.1%. In the study done by Neufeud et al. (Neufeld *et al.*, 2005), the sample size was 10,000 patients and the percentage of patients with smoking habits was 15.02%. And it was very low when compared to our study. In the study done by Smit et al. (Singla and Verma, 2016) comparing the prevalence in beedi versus cigarette smokers, 33% of patients had a smoking habit. The sample size was 650 patients and the study included only male patients. The X-axis denotes the total number of patients (grey bar) and patients with smoking habits (dark blue bar). Y-axis denotes the number of patients. It is seen that 58.1% of the patients have a smoking habit.

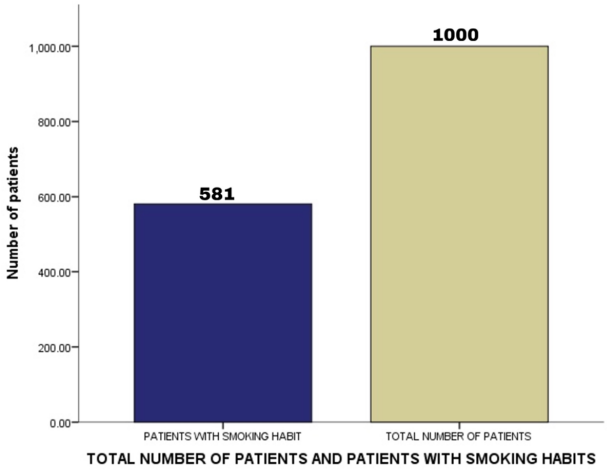

Figure 1: Shows the percentage of patients with smoking habits.

Figure 2 showed that out of 581 patients, 21 patients had smoker's palate. Percentage of patients with smoker's palate was 3.60%. In the study done by Shyam et al. (Behura *et al.*, 2015), smoker's melanosis was the frequently seen lesion in smokers. The study included 450 patients above the age of 15 years with smoking habits. In our study, we included patients in the age group of 18 to 30 years with smoking habits. In the study done by Smit et al. (Singla and Verma, 2016), 90.7% of smokers who used to smoke five times a day for at least five years had smokers palate. They also mentioned that beedi smokers were found to have more incidence

of smoker's palate than cigarette smokers. The X-axis denotes the total number of patients with smoking habits and patients with smoker's palate. Y-axis denotes the number of patients. It is seen that out of 581 patients with smoking habits, 21 have smokers palate, which is 3.6%.

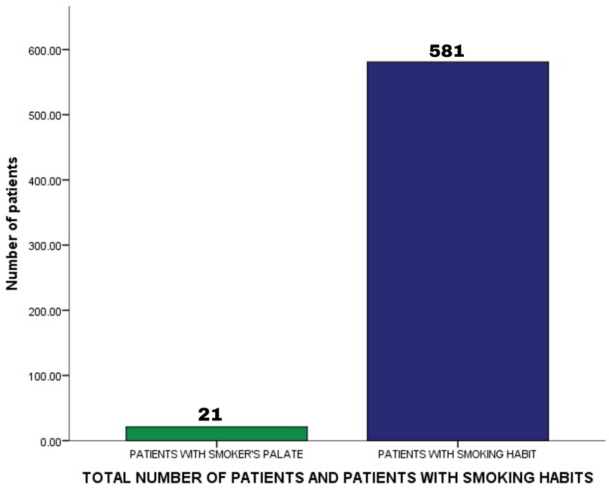

Figure 2: Shows the presence of smoker's palate (green bar) in patients with smoking habits (dark blue bar).

Figure 3 depicts the comparison of age groups of patients with smoking habits. Chi square analysis was done to see the association between age and smoking habits and the p value was found to be 0.845, which was statistically not significant. Study by Mathew et al. (Sholapurkar *et al.*, 2008) included 1190 patients in the age range of 20-80 years from a particular population. The study showed that the age group of 30 to 50 years were seen more with smoking habits while in our study, the smoking habit was seen more in the age group of 27 to 30 years.

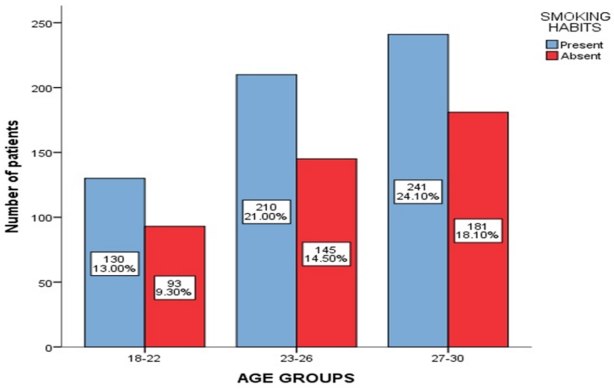

Figure 3: The association of age group of patients with presence (blue bar) and absence (red bar) of smoking habits.

The variation in the results were due to different age distributions of the samples. Chi square analysis was done for finding an association between age groups and smoking habits and p value is 0.845 and is > 0.05 (statistically not significant). Yet, the figure shows that the smoking habit was seen more in the age group of 27 to 30 years.

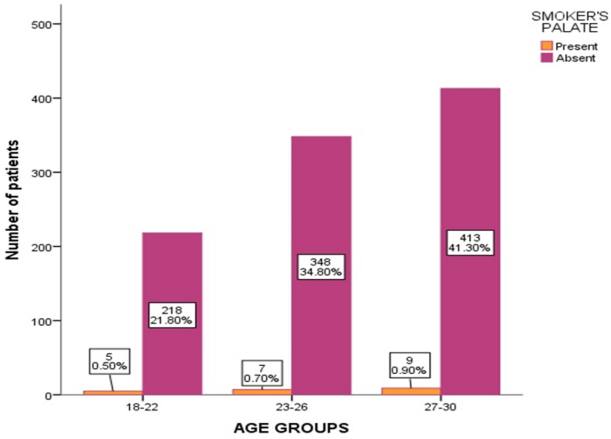

Figure 4: The association of age group of patients with presence (orange bar) and absence (pink) of smokers palate.

Figure 4 depicts the comparison of the age group of patients with smokers palate. Chi square analysis was done to compare the age groups of patients and smokers palate. The p value was found to be 0.974 and is not statistically significant. In the study by Kamala.et.al (Kamala *et al.*, 2019), 1730 patients were interviewed and screened for tobacco habits. The most commonly affected age group was 26 to 45 years while in our study smoker's palate was seen more in the age group of 27 to 30 years. The variation in the results were due to different age distributions of the samples. The limitation of the study was a smaller sample size, so it could not be generalised to the entire population. Future scope of the study can include a prospective study design. It can be done with larger sample size and also by considering other factors like habit history of the patients. Chi square analysis was done for finding an association between age groups and smoker's palate and p value is 0.974 and is > 0.05 (statistically not significant). Yet, the chart shows that the smoker's palate was seen more in the age group of 27 to 30 years.

CONCLUSION

The present study shows a slightly rising incidence in smoker's palate. Smoker's palate is one of the potentially malignant disorders and a less dangerous lesion when compared with other potentially malignant disorders. Nevertheless, more tobacco awareness and other measures should be undertaken in order to reduce the number of rising lesions

of smoker's palate in young patients as the lesion also has the propensity to transform into a malignancy.

Conflict of Interest

The authors declare that they have no conflict of interest for this study.

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