

Study of Oral Mucosal Changes among Tobacco Users

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Abstract

Oral cancer is a global health problem and the prevalence is high in South and Southeast Asian countries. In Myanmar, it ranks as the 6th most common cancer. Asian distinct cultural practices such as smokeless and smoking tobacco are the important risk factors to oral cancer. The aim is to study the oral mucosal changes by oral cancer screening among tobacco users. This study was collaborated with Shwe Yaung Hnin Si Cancer Foundation in various regions from November 2014 to October 2016. A total of 794 cases were examined along with collecting their demographic characteristics and tobacco habits. Among all participants, 315 cases (44%) used to have tobacco habits. The most common habit was betel-quid chewing, accounting for about 65.8%. Out of 315 cases, 91 cases (28.8%) had expressed the oral mucosal changes such as chewer's mucosa, premalignant lesions and conditions and oral cancer, comprising 75.8%, 19.8% and 4.4% respectively. Toluidine blue staining and oral brush biopsy were performed in those patients with suspicious oral lesions.

The commonest age group of oral changes was 41-50 years (mean age = 49). Male and female ratio was 0.8:1. Buccal mucosa was the commonest site (about 95.7%) followed by gingiva and palate.

Introduction

Oral cancer is defined as the squamous cell carcinoma of lip, oral cavity and pharynx [1]. Because of its increasing rate of occurrence and mortality, it becomes a globally life threatening disease. It ranks as 11th most common cancer in males and 17th most common cancer in females [2]. In Myanmar, oral cancer ranks 6th in male, 10th in females and contribute 3.5% of whole cancer. Asian distinct cultural practices such as smokeless and smoking tobacco are the important risk factors to oral cancer [3]. The aim is to study the oral mucosal changes by oral cancer screening among tobacco users.

Material and method

This study was collaborated with ShweYaung Hnin Si Cancer Foundation from November 2014 to October 2016. SYHS cancer foundation

is one of Myanmar's leading non-profit cancer organizations with the purpose to improve awareness and early detection of cancer. In various regions such as Bogalay, Than Phyu Zayat, Mawlamyine, Pha-an, Bago, MyitKyir, Hleikku, Than Lyin and Shwe Pyi Thar, oral cancer screening were done along with collecting the demographic characteristics and tobacco habits. In those participants with tobacco habits, toluidine blue (TB) vital staining test was used to determine whether there was any area of dysplasia. Materials for TB staining were 1% aqueous toluidine blue, 1% acetic acid and sterile cotton applicators. Firstly, the lesions were applied with 1% acetic acid and waited for 20 seconds. Then toluidine blue 1% was applied for further 20 seconds. Finally the 1% acetic acid was used to remove stain. Dark blue staining was recorded as positive and the lesions with no stain as negative. On patients with TB positive results, oral brush biopsy and excisional biopsy were done along with histopathological examination. For the oral brush biopsy, interdental brushes were used.

Results and discussion

The burden of cancer continues to increase largely because of the aging and growth of the world population alongside an increasing adoption of cancer-causing behaviors, particularly tobacco smoking and smokeless tobacco [4]. Oral cancer rate have increased approximately 15% from mid 1970s until 2004

and the occurrence increase with age and more rapid after age 50 [5]. Oral cancer most commonly involves the tongue and also occurs on the floor of the mouth, cheek lining, gingiva, lips or palate [6, 7]. In this study, among a total of 794 cases, 315 cases (44%) used to have tobacco habits and the most common habit was betel-quid chewing, about 65.7% (Fig: 1). Out of 315 cases, 91 cases (28.8%) had expressed the oral mucosal changes such as chewer's mucosa, premalignant lesions and conditions and oral cancer, comprising 75.8%, 19.8% and 4.4% respectively (Fig: 2). Buccal mucosa was the commonest site (about 95.7%) followed by gingiva and palate (Fig: 3). Most of participants revealed the various amount of betel quid and that their habitual habit was holding the quid in the buccal sulcus. The commonest age group of oral changes was after 50 years (mean age = 49) (Fig: 4). Male and female ratio was 0.8:1. The patients with susceptible lesions responded to toluidine blue staining as 26 cases of positive, 15 cases of pale positive and 2 cases of negative results. Among the positive results, 25 cases performed oral brush biopsy (18 cases) as well as excisional biopsy (7 cases) showing dysplasia, oral pharyngeal carcinoma, squamous cell carcinoma and malignant growth.

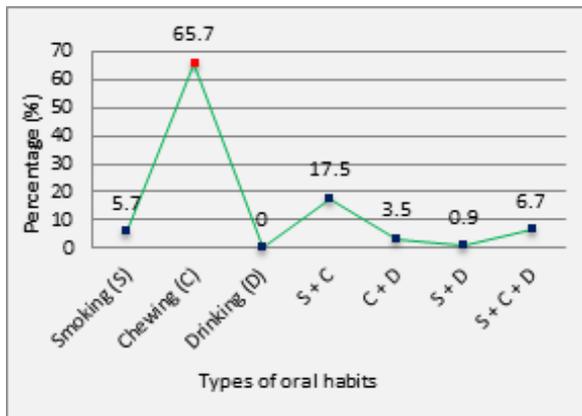


Figure 1: Percentage of types of oral habits

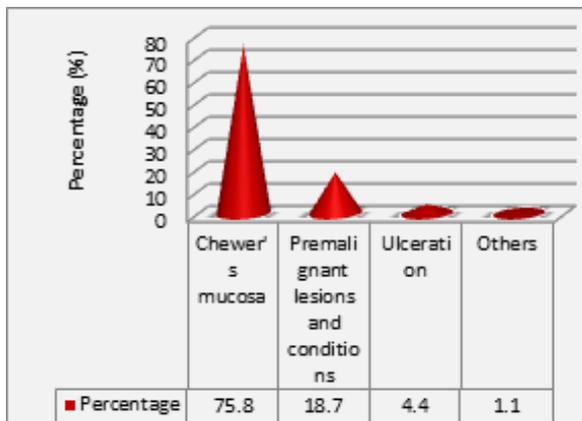


Figure 2: Percentage of types of oral lesions

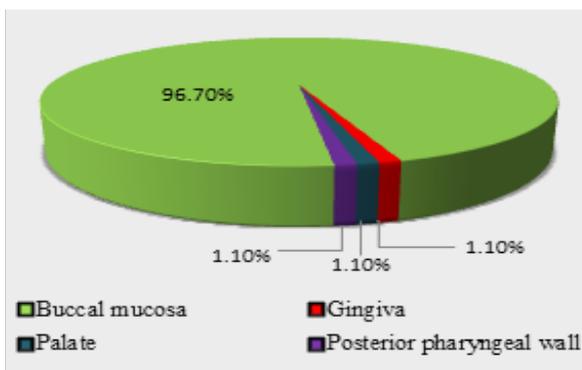


Figure 3: Percentage of site distribution of oral lesions

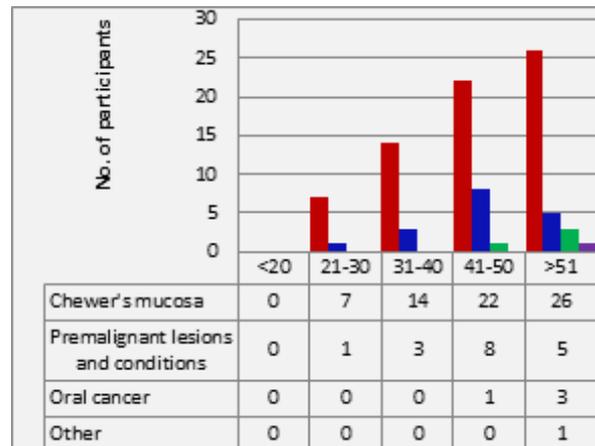


Figure 4: Percentage of age distribution oral cancer lesions

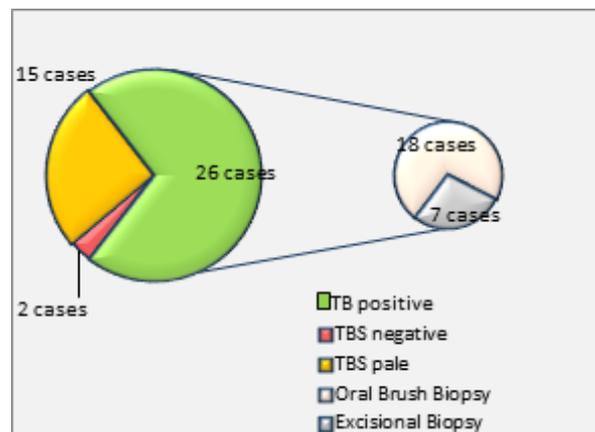


Figure 5: Toluidine blue staining

Conclusion

Almost 30% of tobacco users showed the oral lesions and mostly at buccal mucosa due to their habitual pattern. Hence, tobacco is an important risk factor. Lack of knowledge, low socioeconomic status and poor nutrition can contribute to the risk. In addition, viral infections and poor oral hygiene are other important risk factors. Therefore, it is important to encourage oral health promotion and controlling oral cancer by means of health education, controlling tobacco use and oral cancer screening for early detection.

References

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