

Early Detection In Oral Potentially Malignant Disorders (OPMDs) With Oral Cancer Screening

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Abstract

This study sought to measure the baseline awareness of oral cancer in Myanmar and aimed to increase not only public awareness and knowledge of oral cancer but also to reduce oral cancer deaths and morbidity by early detection with oral screening with toluidine blue staining as well as oral brush biopsy. Methods: Baseline awareness was evaluated by self-administered questionnaires to individuals and suspicious oral lesions were assessed by oral cancer screening with toluidine blue staining along with oral brush biopsy. Results: A total of 542 subjects participated in the survey, about 349 subjects have tobacco habits including smoking and smokeless. Among the tobacco habitues, 25 of respondents were suffered from oral potentially malignant disorders (OPMD) and 14 out of 25 were male and 11 were female. All of them were prepared to seek proper treatment and follow up. Conclusion: Oral cancer screening for early detection and tobacco use cessation program are utmost important for control and prevention of oral cancer thereby reduction in mortality.

INTRODUCTION

The incidence of oral cancer is increasing in both developed and developing countries (Warnakulasuriya 2009). In Southeast Asia, oral squamous cell carcinomas (OSCCs) account for 40% of all cancers compared with approximately 2-4% in developed countries (Mehrotra et al.,

2006). Oral cancer is the 6th most common cancer globally and represents a group of conditions with a range of sites and a varied etiology. In Myanmar, oral cancer ranks 6th in male, 10th in females and contribute 3.5 % of whole cancer (Htun- Naing- Oo et al., 2011).

A significant proportion of oral cancers develop from premalignant lesions such as leukoplakia, erythroplakia and oral submucous fibrosis etc. WHO has identified prevention and early detection as major targets in the battle to control the oral cancer burden worldwide (Peterson, 2008). The most logical approach to decreasing morbidity and mortality associated with OSCCs is to increase detection of suspicious oral potentially malignant disorders (OPMDs) and early detection of OSCCs.

Targeted screening of high-risk individuals might be more effective than mass screening in facilitating early detection of oral cancers. Visual detection alone is not adequate to differentiate precancers and early oral cancers from benign lesions regardless of the expertise of the clinician. Adjunctive techniques that increase the ability to differentiate between benign abnormalities and dysplastic or malignant changes have been suggested during the last decade. These include the use of toluidine blue, oral brush biopsy, chemiluminescence and tissue autofluorescence (Fedele, 2009).

Toluidine blue (tolonium chloride) has been used in vital tissue staining to aid in detection of

mucosal abnormalities of cervix and oral cavity for more than forty years (Patton et al., 2008). Oral brush biopsy is a cytological method that utilizes a brush to obtain a complete trans-epithelial biopsy cell specimen. The use of combination of toluidine blue and oral brush biopsy has been attempted for early detection of oral cancer. The combination was found to be highly sensitive and moderately specific for oral cancers (Gupta et al., 2007).

Materials and Methods

422 households were selected from Ward 133 and 120 households were selected from Sit-Pin village according to sample size determination done by Department of Medical Research (Lower Myanmar). Oral examination team was comprised into 5 groups in which 13 dental surgeons including teaching staffs and post graduate candidates from Department of Oral Medicine, Yangon and 8 dental house surgeons.

Suspicious visible oral mucosal lesions from respondents with oral habits (i.e betel quid chewing, smoking, and alcohol drinking) were stained by toluidine blue (TB). Oral brush biopsy was done on TB positive lesions along with cytologic examination.

Materials for toluidine blue staining were needed 1% aqueous toluidine blue, 1% acetic acid and sterile cotton applicators. As for oral brush biopsy, interdental brushes, 95% ethyl alcohol and glass slides were used.

Results and Discussion

542 respondents were collected from Ward 133 and Sit-Pin village in East Dagon Township. In this project, 59.23% were female and 40.77 % were male. Most of respondents were females because males were manual workers and most of them were absent at the time of oral screening.

Out of 542 persons, only betel quid chewers were 284, though 394 were associated with oral habits including chewing, drinking and smoking. Among 284 betel quid chewers, 240 (85%) were added with tobacco such as 92, 100, signal, etc..

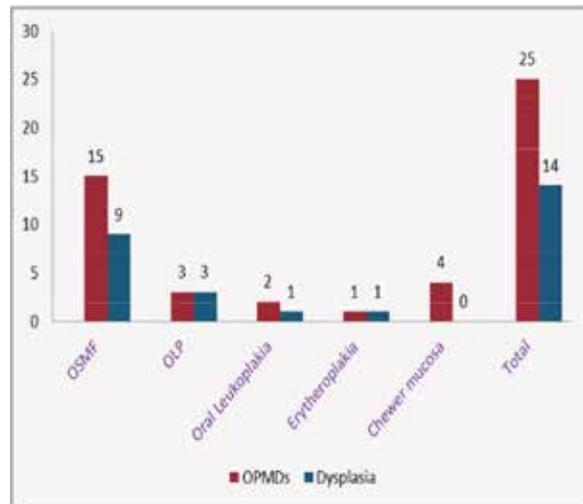


Figure-1. Among 25 OPMDs, oral submucous fibrosis, OSMF was found to be more common than other lesions

By the results from this township, oral submucous fibrosis was found to be more common than other lesions (Figure-1). 25 persons (4.6%) turned out to visible oral mucosal lesions (potentially malignant oral lesions, OPMDs) which tested positive for toluidine blue (TB) staining (Figure-2). Cytological results of oral brush biopsy shows 14 persons i.e. 8 males and 6 females were positive dysplastic smears. Although the results of dysplastic smear (Figure-3) pertained to 14 respondents, 4 persons were taken treatment.



Figure 2-Toluidine blue staining positive



Figure 3- Dysplastic Smear x400 magnification

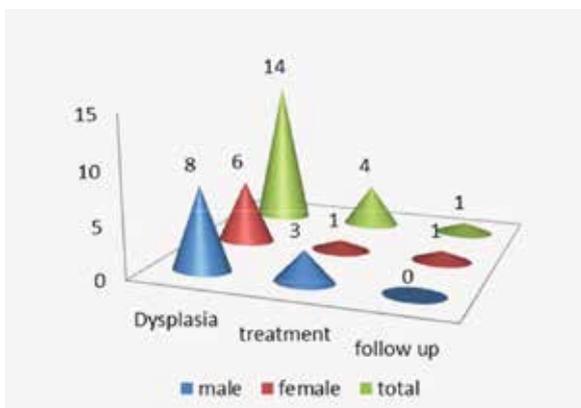


Figure 4- Outcome of management of dysplastic OPMDs

Out of 4, one respondent had attended to follow up for only one time (Figure-4). In spite of providing not only health education but also needful medications, there was recognized lack of willingness for regular treatment. It might be due to difficulties in communication, negligence and lack of awareness of oral cancer as well as socioeconomic burden.

Conclusion & Recommendation

Betel quid chewing was found to be a common habit in both men and women in the population. All persons of oral dysplastic smear were found to be associated with betel quid usage. Regular opportunistic screening by oral examination of betel quid chewers could achieve the improvement outcome to reduce the risk of oral cancer.

The high mortality rate in cancer is commonly attributed to the negligence in detection of the

disease at an early treatable stage. As the key role of dental surgeons, all should participate in early detection or screening and refer early to reduce the occurrence of malignant transformation. The ultimate goals are to increase awareness of oral cancer, to reduce both mortality and morbidity, and to improve patient's quality of life.

The association of betel quid use with the increase of precancerous conditions and oral cancerous lesions highlights the importance of early detection, oral health education as well as to put great effort on not only tobacco cessation but also betel quid cessation program.

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