ABSTRACT

Oral white lesions are not uncommon and a significant number of patients are asymptomatic. The purpose of this study was to determine the pattern and presentation of oral white lesions in patients reporting at oral and maxillofacial surgery department of AFID. World Health Organization (WHO) guidelines for oral mucosal examination were used to record data of 100 patients who presented with oral white lesions. Biopsies were performed in lesions whose definitive diagnosis was deemed difficult purely on the basis of history and clinical examination. The mean age was 38±13 years with 57(57%) males. Forty two (42%) patients were asymptomatic. The most frequent site was buccal mucosa (64%) and more than half of these lesions appeared white (57%) while others were yellowish white (18%), grey white (15%) and with areas of redness within the lesion (10%). Among habits, smoking was most common. The most common lesion was lichen planus (28%) followed by frictional keratosis (15%) and oral submucous fibrosis (13%). Other rare lesions were geographic tongue, mucosal burns, candidiasis. As some of these lesions are premalignant, it is imperative for the dental and medical professionals to familiarize with their pattern and presentation to effect early diagnosis and management.

Key words: White lesions, premalignant lesions, Lichen planus

INTRODUCTION

Standard oral health enables an individual to eat, speak or socialize without an active disease, discomfort or embarrassment and contributes to general well-being.¹ A change in normal color of oral mucosa from pink to white constitutes one of the most frequently encountered oral abnormalities. White appearing lesions of the oral mucosa obtain their characteristic appearance from the scattering of light through an altered mucosal surface which may be due to thickened layer of keratin, epithelial hyperplasia, and intracellular edema or reduced vascularity. A cause may or may not be identifiable. In certain conditions a relationship between an event or agent and white lesion may be evident.² Since some of the premalignant and malignant lesions of oral cavity appear white, failure to recognize these lesions at an early stage can be a serious lapse on the part of a clinician.³

Oral white lesions were formerly called Leukoplakia. The term leukoplakia is now restricted to white lesions of unknown cause and is a diagnosis by exclusion. Most white lesions are innocuous keratosis caused by cheek biting, friction or tobacco use, but other conditions must be excluded usually by biopsy.⁴
There are a multitude of pathologic white lesions with variable etiology and significant effect on oral mucosa. These may include hereditary conditions such as leukodema and white sponge nevus, reactive lesions such as frictional keratosis, white lesion associated with smokeless tobacco or with unknown etiology such as idiopathic leukoplakia, geographic tongue and lichen planus. Many non epithelial lesions also present as white-yellow lesion e.g. submucous fibrosis, fordyce’s granules and candidiasis.

The principal method for assessing mucosal changes starts with recognition of risk factors. Clinical examination for oral premalignant lesions should include a thorough intraoral and extraoral examination including head and neck and cervical lymph nodes. A thorough oral mucosal examination should include recording of site, size, borders, color and surface characteristics of any lesion so that future changes can be appreciated.

Several adjuncts to visual examination, especially application of toluidine blue, Lugol’s iodine, acetic acid wash, Vizilite tool using chemiluminescent illumination and exfoliative cytology may aid in early recognition of lesions and guide towards selection of a biopsy site. Use of toluidine blue (ora test) is most useful, because of accuracy, low cost, quickness, simplicity, and noninvasive nature.

Some of these white lesions may be premalignant and their appropriate management depends upon early and accurate diagnosis. Oral premalignant lesions include leukoplakia, erythroplakia, dysplastic leukoplakia, dysplastic lichenoid lesion, oral submucous fibrosis, and lichen planus. Oral premalignant lesions have shown a rate of progression of up to 17% within a mean period of 7 years after diagnosis. The highest transformation rate is seen in those lesions with clinically irregular or heterogeneous erythroplakia and dysplastic changes.

The purpose of this study was to determine the pattern and presentation of oral white lesions in patients reporting at oral and maxillofacial surgery department of AFID. Past studies have shown that patients with oral ulcerations or white lesions had more frequent delay in diagnosis or referral than those with pain and swelling. This study will help clinicians in picking the premalignant and malignant lesions at an early stage.

**METHODOLOGY**

This study was carried out in outpatient department of oral and maxillofacial surgery department, Armed Forces Institute of Dentistry Rawalpindi over a period of one year (Feb 2008 to Feb 2009). A total of 100 patients diagnosed with oral white lesions were included in the study. Patients were included irrespective of any age group or gender. Lesions were established on the basis of clinical and/or histopathological examination. Patients with proved malignant lesions on histopathological examination were excluded from the study. A detailed history was obtained and a thorough clinical examination according to WHO guidelines for oral mucosal examination was carried out to look for the site, exact color, texture, symmetry, margins, presence or absence of pain/tenderness, oral habits and oral hygiene. Oral examination was performed with the use of mouth mirror, explorer and cotton swabs. Cotton swabs were used to remove debris and to see whether white lesion can be wiped off. These lesions were correlated with the patient’s systemic disease if any. Necessary investigations were ordered where required to confirm the clinical findings. Incisional or excisional biopsies were performed only for those lesions which we were not able to diagnose on the basis of history and clinical examination alone.

**RESULTS**

The study included 100 patients with white lesions. Age of patients ranged from 9 to 70 years with mean age being 38±13 years. The most common age group in this study was 21-30 years accounting for 32 (32%) patients and the second being 31-40 years accounting for 26 (26%) patients.

Out of the sample, 57(57%) were male and 43(43%) were female with a male to female ratio approximately 1.3:1. Forty two (42%) patients were asymptomatic, rest 58(58%) presented with complaints like pain, burning, itching and trismus (Table 1). Out of these 58 patients, 20(34%) were suffering from pain and burning sensations, only pain in 19(33%), only burning sensation in 10(17%), trismus in 7(12%) and combined burning and itching in 2(3%) patients.

From whole sample, 38 (38%) patients had a unilateral lesion either on right or left side of the oral
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lowed by tongue which constituted lesions in 27(27%) patients. Gingival and retromolar area lesions were found in 20(20%) patients each (Fig 1).

Morphologically, 57(57%) lesions appeared white, 18(18%) appeared yellowish white, 15(15%) appeared grey white and 10(10%) appeared white with areas of red. 94(94%) lesions could not be wiped off and 67(67%) lesions were symmetrical. Ulceration of mucosa was observed in 33(33%) lesions.

Cervical lymphadenopathy was seen only in 3(3%) patients. Associated skin lesions were found in 6(6%) patients. 34(34%) patients felt tenderness on palpation of the lesions. 21(21%) had broken teeth mostly due to caries and sharp edges of teeth found in 19(19%) of the patients.

History of habits revealed that 72(72%) patients were non-smokers and 28(28%) were smokers. All smokers were male and 27(96%) were cigarette smokers, majority being in 21-30 years age group. 5(5%) used pan, 5(5%) used spices and 4(4%) were snuff users. 3(3%) patients were habitual betel nut chewers.

Fair oral hygiene was found in 57 (57%) patients whereas 24(24%) had good and 19(19%) had poor oral hygiene. Only 15(15%) patients required biopsy for making a definitive diagnosis.

In this study most common oral white lesion was the lichen planus, diagnosed in 28 (28%) patients followed by frictional keratosis (15%) and oral submucous fibrosis (13%). Remaining oral white lesions and occurrence of symptoms are summarized in table 1.

Out of total 28 cases of lichen planus, majority i.e 12(43%) belonged to 41-50 years age group. In submucous fibrosis, majority i.e 6(46%) patients belonged to 21-30 years age group. 4(14%) patients of lichen planus were smokers whereas 1(4%) each was snuff or spice user. Out of total 13 cases of submucous fibrosis, 7(54%) were habitual betal nut chewers and 3(23%) used both pan and betal nut.

DISCUSSION

Majority of patients in this study presented with symptomatic lesions and only a few were incidental
findings. It was noted that the white lesions were more common in males which was comparable to the observation of Mathew et al 2008.11 Highest number of patients (32%) belonged to 21-30 years age group, this result is not similar to the other studies (Shulman et al, 2004)12 who have reported that people aged 70 years and older have twice the odds of having the lesion as do those aged from 17-29 years. Splieth et al 200713 have also reported higher prevalence in older age groups (40-81 years) but their studies were epidemiological and samples were much larger than this study.

Most of the patients with symptoms were females and the most common presenting complaint was either pain alone or pain with burning sensations. Most symptomatic patients were found to be suffering from Lichen planus (82%). This observation was similar to that of Drore 2002.14

It was noted that 67% of the patients were aware of their lesions and 33% were absolutely unaware. 25% of those who were aware had their lesions for more than 1 year. Out of these some patients with premalignant conditions like lichen planus(10%), smokeless tobacco associated lesion(1%) and submucous fibrosis (1%) were also found to have their lesions for more than 1 year. Associated skin lesions were noted in patients of lichen planus only.

In our study, 54 (54%) patients had bilateral lesions and buccal mucosa was the most frequently affected site (64%) followed by tongue (27%), whereas Shulman et al 200412 reported hard palate as most frequently affected site (25.9%) followed by gingiva (20.4%) and tongue (14.2%). Most of these lesions appeared white with a smooth texture and symmetrical shape.

Smoking did not seem to be a significant contributory factor which was different from the studies of Shulman et al 200412 who indicated a strong relationship of smoking with incidence of oral lesions.

In our study lichen planus (28%) was found to be the most frequent white lesion. As lichen planus is known to be a premalignant condition, its common occurrence in a population group highlights the importance of getting more and more familiar with its different patterns so that these lesions are picked up early in their course and appropriate management is instituted. The frequency of lichen planus in present study seems to be quite high from reported figures in different epidemiological studies where it was found to be quite low [Mumcu et al 200515 (0.5%) and Vallejo et al 200216 (3.2%)] but in fact, those studies were epidemiological and included all types of mucosal lesions and not only the white lesions. In our study, the findings of female predominance and buccal mucosa as the most favored site were similar to the findings of Issac et al 200317 and Mathew et al 2008.11 The most prevalent age group of this lesion (41-60 years) was also supported by Mathew et al 2008.11 The symptomatic presentation of this lesion in most of the study subjects (82%) was supported by the study of Issac et al 2003.17

Oral submucous fibrosis (13%) was found to be the next most frequently occurring known premalignant lesion. Most patients were in their 2nd and 3rd decade of life due to increase in the habits of pan and betel nut chewing in this age group. The results of this study shows that chronic irritation caused by pan and betel nut chewing, tobacco and other habits like excessive use of chilies/spices can lead to fibrotic changes in oral mucosa. The posterior third of oral cavity (both buccal mucosa and retromolar area) was predominantly affected, which is similar to the observations made by Hazarey et al 2007.18 Betal nut chewing was most frequently associated oral habit in these patients.

Hairy tongue was seen in 3% of patients in our study and cigarette smoking was a considerable associated risk factor. This observation was similar to the observations of Mumcu et al 2005.15 Geographic tongue was observed in 9% patients which was higher than those noted by Mumcu et al.200515 (1%).

Fordyce’s granules were observed in 9% subjects which was higher than that observed by Mathew et al 200811 (6.5%). Buccal mucosa was found to be the most favored site in this study which was similar to the observation of Mathew et al 2008.11 Frictional keratosis was found in 15% patients which was higher than that of Mathew et al 2008 (8%). Leukoplakia was observed in 1% patients which was less than those mentioned in studies of Mathew et al 200811 (2.2%). Nicotine stomatitis was found in 4% patients which was comparable to the observation of Mathew et al 200811 (4.4%).
CONCLUSION

Oral white lesions are not uncommon and a significant number of patients are asymptomatic. As some of these lesions are premalignant, it is imperative for the dental and medical professionals to familiarize with their pattern and presentation to effect early diagnosis and management.

REFERENCES