A survey of the current approaches to diagnosis and management of oral premalignant lesions

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In 2006, approximately 31,000 new cases of oropharyngeal cancer were diagnosed in the United States and more than 7,400 people died of this disease.[1] Most oropharyngeal cancers are oral squamous cell carcinoma (OSCC). The overall five-year relative survival rate in the United States is approximately 57 percent,[1-4] and it has been shown that if the disease is less advanced at diagnosis, the five-year survival rate increases.[2,3] Furthermore, patients who receive a diagnosis at an earlier stage of the disease require less aggressive treatment and experience less morbidity and lower costs. Risk factors for developing OSCC are multifactorial and include tobacco use; chronic alcohol consumption; older age; having human papillomavirus infection, immunosuppression or nutritional deficiencies; and genetics.[4-7] Morbidity, mortality and incidence of OSCC may decrease if oral premalignant lesions (OPLs) are detected and effectively treated.

DISCLOSURE: Dr. Epstein is on the medical advisory board of Zila, Phoenix.

ABSTRACT

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Background. Early diagnosis of oral premalignant lesions (OPLs) and oral squamous cell carcinoma facilitates treatment with less aggressive approaches and results in a better prognosis. The authors conducted a study to identify current practices in the diagnosis and management of these oral lesions by oral medicine professionals.

Methods. The authors sent a questionnaire to 176 diplomates of the American Board of Oral Medicine and asked them to complete the questionnaires and return them by mail.

Results. The initial clinical approach taken by most of the responders included visual examination, elimination of possible local causes and two-week follow-up. Adjuvant clinical tests included toluidine blue, oral brush biopsy and exfoliative cytology. If there was no clinical improvement after two weeks, most responders recommended that a biopsy be performed. Induration, red component, nonhomogeneous surface and ulceration were characteristics of lesions that increased the responders' decisions to perform a biopsy. Lesion symptoms and location also contributed to their decisions to perform a biopsy. Follow-up more frequently than twice a year was recommended for red lesions, lesions with histologically confirmed dysplasia or both. Most clinicians recommend a biopsy during follow-up of an OPL whenever the lesion changes in appearance.

Conclusions. The findings of this survey may provide background for initial guidelines to be used by oral practitioners to diagnose and manage OPL. Clinicians' awareness of the complexity of OPL diagnosis and management is important, and referral to an experienced provider is recommended.

Key Words. Oral premalignant lesions; leukoplakia; erythroplakia; diagnosis; management.

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Unfortunately, the detection of early, localized OSCC has remained unchanged during the past three decades[4]; two-thirds of cases are diagnosed at advanced stages (Stages III and IV), even though OPL and OSCC are surface lesions that can be detected by visual inspection and palpation. Change in color (white or red), texture, size or contour; ulceration; or limited mobility of intraoral or perioral tissue may be a sign of OPL or OSCC. Although a comprehensive clinical head and neck and oral cancer examination requires less than 90 seconds to conduct,[8] it may not be performed routinely or as frequently as it should, and deviations from normal tissue may not be clinically obvious or symptomatic. The key to diagnosis is the early detection of mucosal changes that may represent disease and not variations of normal.

White and red lesions of the oral mucosa are the most common precancerous clinical lesions. Many oral cancers are preceded by clinically evident premalignant mucosal changes that give a warning of risk and present an opportunity for detection and preventive measures. Leukoplakia (clinically detected white lesions) occurs more frequently than does erythroplakia (clinically detected red lesions), but lesions with a red component are associated with a higher risk of dysplasia and cancer.[9]

The clinical approach to the detection, diagnosis and management of OPL may vary among health care providers, including oral health care professionals and medical care professionals, and evidenced-based guidelines do not exist. The introduction of new technology is increasing awareness of the need to identify oral cancer and OPLs.[10-19] OPL and the early stages of oral malignant disease are detected more commonly by dental care providers, while medical care providers identify more late-stage disease.[10,11] Providers with experience in oral health care may manage OPL better. We conducted a study to identify the current clinical steps taken to diagnose OPL and OSCC and the current approaches taken by experienced oral medicine professionals to manage these lesions.

MATERIAL AND METHODS

By means of consensus, we developed a questionnaire that included demographic information, questions about the first assessment of oral mucosal lesions and queries about the guiding principles for follow-up of OPL. The questionnaire included multiple-choice questions and closed-ended questions with five-point rating scales, which was pretested by eight faculty members in the College of Dentistry at the University of Illinois at Chicago. The university's institutional review board approved the project.

Using a 2004 membership list, we mailed the survey to all 176 diplomates of the American Board of Oral Medicine (ABOM) and asked them to complete the questionnaire and return it by mail. We sent two follow-up mailings to nonresponders at approximately two-month intervals.

We used statistical software (Stata Statistical Software, Version 8, College Station, Texas) to summarize the responses, and we collapsed responses obtained on five-point Likert scales into three levels: increase, decrease or no change in the variable assessed.

RESULTS

Sixty-five ABOM diplomates (36.9 percent) responded to the questionnaire. Eighty percent of the responders were men, with a mean age of 54.7 years. Thirty-nine responders (65 percent) defined leukoplakia as a white lesion that could not be characterized clinically as any other disease, but nine (13.8 percent) classified such a lesion as being at risk of becoming cancerous.

First assessment of mucosal lesions. The initial clinical approach used by 53 responders (81.5 percent) was visual examination, elimination of possible local causes of tissue irritation and a follow-up visit in two weeks (Figure). Thirty-three of those responders (62.3 percent) reported frequently using adjuvant clinical tests in their initial assessment of oral lesions. Of these responders, 19 (57.6 percent) used toluidine blue vital staining, 15 (45.5 percent) used brush biopsy (OralCDx, CDx Laboratories, Suffern, N.Y.), and seven (21.2 percent) used exfoliative cytology. One responder (3.0 percent) used other diagnostic tests such as Lugol's iodine or chemiluminescent light.

After a two-week follow-up of a lesion suspected to be leukoplakia, 47 of 53 responders (88.7 percent) said they would perform a biopsy if they noted no change in the lesion (Figure). Nineteen (40.4 percent) of those who said they would

ABBREVIATION KEY. ABOM: American Board of Oral Medicine. **FDA:** U.S. Food and Drug Administration. **OPL:** Oral premalignant lesion. **OSCC:** Oral squamous cell carcinoma. **WHO:** World Health Organization.