FACULTY PERSPECTIVE

Oral Cancer Screening

By Faizan Alawi, DDS
Associate Professor of Pathology
Director, Penn Oral Pathology Services

In the United States, 2012 will yield over 26,000 new diagnoses of oral cancer.[1] In addition, over 5,200 deaths will be attributed to these cancers. Overall, the five-year survival rate is approximately 60%. However, if oral cancers are diagnosed and treated early, they are eminently curable and the survival rate exceeds 80%. Thus, our responsibility and efforts as dental practitioners should be primarily focused on early detection and prevention.

The vast majority of oral cancers arise from premalignant lesions (epithelial dysplasia). A persistent red mucosal patch (erythroplakia) is an ominous sign warranting of a surgical biopsy for histologic diagnosis. Most erythroplakias show at least some microscopic evidence of epithelial dysplasia and/or cancer. In contrast, a persistent white patch (leukoplakia) is more likely to be clinically, histologically, and biologically benign. Yet, up to 18% of oral leukoplakias are either malignant or dysplastic and will eventually become malignant.[2] Indeed, the clinical appearance of a premalignant or cancerous lesion may mimic that of a traumatic hyperkeratosis and other common benign and reactive conditions. They may also lurk within the mucosa and be completely invisible to the naked eye. Therein lies the crux of a significant diagnostic dilemma that we face as clinicians. How do we know if, when, and what to biopsy? How can we predict which lesions are at risk for malignant transformation? Will routine oral cancer screenings on all our patients help reduce the incidence of this deadly disease? These important questions can only be answered through rigorous research and they have caught the attention and

Faizan Alawi, DDS

financial support of the National Institutes of Health. Recently, industry has also jumped into the fray.

With direct-to-consumer advertising, patient awareness has increased and you may be fielding questions about or requests for an evaluation using a specific oral cancer screening device (see table). All patient exams should include a comprehensive history and a systematic visual and tactile examination of the head, neck, and oral soft tissues. Most of these commercial devices were designed to further assist the dental practitioner in either identifying early tissue changes that may be cancerous, to assess the biological significance of a mucosal lesion, or to explore morphological and biochemical tissue alterations that cannot be observed by normal, incandescent light.[2-4] However, a recent study commissioned by the American Dental Association Council on Scientific Affairs and the Centers for Disease Control concluded that these adjunctive aids may not significantly improve the detection and diagnosis of potentially malignant lesions beyond that of conventional clinical and histologic examination, and that the current level of scientific evidence was insufficient to support recommending the routine usage of any of these devices.[4]

With continued technological advancements, independent research, and the development of patient-tailored molecular-based approaches, we may eventually have efficient, cost-effective, and validated diagnostic tools at our disposal. Until then, clinical vigilance and increased patient education about the risks for oral cancer are the only ways we can prevent these cancers from developing or progressing to more advanced stages. Suspicious or persistent oral lesions should be biopsied and submitted to a pathology laboratory for microscopic examination. The combination of clinical surveillance with histological examination remains the current gold standard for oral cancer and precancer diagnosis.

1. American Cancer Society. *www.cancer.org/Research/CancerFactsFigures/index*
2. Lingen MW et al. Oral Oncol 2008;44:10-22
3. Poh C et al. Periodontol 2000 2011;57:73-88
4. Rethman et al. J Am Dent Assoc 2010;141:509-20

Oral cancer screening devices

- DOE Dental Oral Exam System® *(DentLight, Plano, TX)*
- Identafi® Oral Cancer Screening Device *(DentalEZ Group, Malvern, PA)*
- Microlux/DL® *(AdDent Inc., Danbury, CT)*
- Oral CDx BrushTest® *(Oral CDx, Suffern, NY)*
- Orascoptic DK® *(Sybron Dental, Orange, CA)*
- VELscope® VX *(LED Dental, Inc. Burnaby, BC, Canada)*
- ViziLite® Plus with TBlue® *(Zila, Fort Collins, CO)*