Adjunctive Diagnostic Techniques for Oral and Oropharyngeal Cancer Discovery

Michaell A. Huber, DDS

KEYWORDS

• Squamous cell carcinoma • Conventional oral examination • Biopsy
• Adjunctive aids

KEY POINTS

- The most important prognostic factor in predicting the outcome of oral and oropharyngeal cancer (OPC) is the stage at diagnosis.
- The accomplishment of the conventional oral examination consists of a disciplined visual and tactile assessment of accessible head and neck structures.
- Any suspicious or equivocal lesion should be referred for further assessment or undergo biopsy; innocuous lesions should be reevaluated within 4 weeks and referred for further assessment.
- Evidence supporting the use of adjunctive devices to improve the general practitioner's ability to screen for and identify OPCs and oral premalignant lesions remains low.

INTRODUCTION

For 2017, an estimated 49,670 individuals (35,720 men and 13,950 women) were diagnosed with oral and oropharyngeal cancer (OPC) in the United States.[1] The most important prognostic factor in predicting the outcome of OPC is the stage at which it is diagnosed.[2–6] The growth rates for OPC vary dramatically, with tumor volume doubling times ranging from 26 to 256 days, with a mean of about 3 months.[7,8] It has been clearly demonstrated that the discovery of OPC by the oral health care provider (OHP) during the accomplishment of a non–symptom-driven oral examination is associated with an earlier stage diagnosis and improved patient outcomes, when compared with the discovery of OPC by a physician performing a symptom-driven examination.[9] Unfortunately, only 30% of patients diagnosed with OPC in 2017 presented with localized disease.[1] Although the overall 5-year survival rates for OPC have gradually improved from 52.8% to 66.2% over the last 4 decades,[10] the

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Department of Comprehensive Dentistry, UT Health San Antonio School of Dentistry, 7703 Floyd Curl Drive (Mail Code 7919), San Antonio, TX 78229, USA
E-mail address: huberm@uthscsa.edu

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OHP's success in identifying OPCs at an early stage remains a challenge. The purpose of this article is to discuss the current standard for identifying OPCs and the current status of novel adjunctive approaches being marketed to the dental profession.

DELAYS IN DISCOVERY OF ORAL AND OROPHARYNGEAL CANCER

In addressing the delay in the discovery of OPC, 2 distinct categories that have been traditionally discussed are patient delay and professional delay.[5,6,11] Patient delay is the time delay between the patient's first awareness of a change and his or her presentation to a health care provider. The parameters of professional delay are variable and represent the time delay between the first presentation to the health care provider and a specific endpoint (eg, biopsy, referral to a specialist, initiation of therapy).[5,6]

Patient delay represents the single most important factor underlying the delayed discovery of OPC.[5] In a retrospective study of 646 patients over a 19-year period, Friedrich[12] reported the most commonly noted signs and symptoms driving the patient to seek evaluation were localized swelling (n = 327), pain (n = 200), and mucosal changes (n = 167). The percentages for those who sought medical care for localized swelling, pain, or mucosal changes within 1 month were 46.4%, 43.0%, 41.4%, respectively. More problematic was finding that 15.2% of those with a localized swelling, 16.0% of those in pain, and 17.4% of those with a mucosal change waited more than 6 months before seeking medical care. Peacock and associates[13] prospectively studied a cohort of 50 patients with oral cancer and determined the mean time gap between the first symptom and the initial visit to a health care professional was 105 days (range, 0–730).

To date, there is no clear consensus to adequately explain the issue of patient delay.[14,15] Proposed reasons include patient psychosocial factors, health-related behaviors, socioeconomic status, education level, and health care access or availability.[5,15,16] Regardless of the ambiguity as to why, it is well-known that the public's interaction with the oral health care profession is low. In a recent Gallup report of interviews conducted during 2008 (n = 354,645) and 2013 (n = 178,072), only 64.7% of participants reported visiting a dentist within the past year.[17] Furthermore, patients at increased risk for OPC (eg, age >40 years, male gender, alcohol drinkers, tobacco smokers, low fruit and vegetable intake) are more likely to avoid routine dental care.[18] Clearly, concerted efforts to improve public awareness of OPC and the importance of early diagnosis are essential to addressing the issue of patient delay.[11,12,16,19] In this regard, the oral health care professional has a professional obligation to lead the conversation with his or her patient regarding the risk factors, signs, and symptoms of OPC.

The most relevant form of professional delay is the time from first encounter with the health care system to the initiation of definitive treatment. Ideally, any patient with an oral potentially malignant lesion (OPML) is afforded a prompt diagnosis and initiation of therapy. In the aforementioned study by Peacock and colleagues,[13] the mean professional delay from initial encounter to initiation of treatment was 101 days. Using an ideal goal of 30 days from first visit to the specialist to initiation of definitive treatment, Brouha et al[20] determined that the goal was met for only 41% of 134 patients with OPC.[20] Thus, although most patients diagnosed with cancer desire to initiate therapy immediately, many experience significant delays.[20,21]

CURRENT STANDARD FOR IDENTIFYING AND DIAGNOSING ORAL AND OROPHARYNGEAL CANCER

In daily practice, when the oral health care professional examines a patient, the clinician looks for any abnormality, not just OPC.[22] OPC screening does not exist as