ABSTRACT

Background. The clinical oral examination (COE) is the criterion standard for the initial detection of oral lesions that harbor dysplasia or oral squamous cell carcinoma (OSCC) at an early stage when they are most treatable. The authors conducted a systematic review to assess the effectiveness of the COE in predicting histologic diagnosis of dysplasia or OSCC.

Methods. The authors conducted automated searches of PubMed, Web of Knowledge, and the Cochrane Library from 1966 through 2010 for randomized controlled trials and observational studies that included the terms "oral mucosal lesion screening" and "oral lesions." They determined the quality (sensitivity, specificity, positive predictive value, negative predictive value and diagnostic odds ratio) of selected studies by using the Quality Assessment of Diagnostic Accuracy Studies tool.

Results. The overall diagnostic odds ratio was 6.1 (95% confidence interval, 2.1–17.6); therefore, the COE was considered to have poor overall performance as a diagnostic method for predicting dysplasia and OSCC.

Clinical Implications. On the basis of the available literature, the authors determined that a COE of mucosal lesions generally is not predictive of histologic diagnosis. The fact that OSCCs often are diagnosed at an advanced stage of disease indicates the need for improving the COE and for developing adjuncts to help detect and diagnose oral mucosal lesions.

KEY WORDS Oral cancer; precancerous conditions; mouth diseases; mouth neoplasms; oral diagnosis.

clinical impressions can affect whether and when steps are taken to make a diagnosis. Therefore, lesion detection and clinical impressions are important in diagnosing oral dysplastic lesions and OSCC. We conducted a systematic review to evaluate how effective the COE is in predicting a diagnosis of oral dysplasia or OSCC in mucosal lesions submitted for biopsy.

METHODS

Because we conducted a review of articles in which clinically detected oral mucosal lesions had been subjected to tissue biopsy and diagnosed histologically, we included screening and observational studies, as well as randomized controlled trials, that met our inclusion criteria. We included only studies in which investigators had biopsied the lesions and made a histologic diagnosis; in which patients sought care at either primary care medical or dental practices or in which they were referred to a clinic because they had an oral mucosal disease or after they received cancer therapy at a cancer treatment center; and in which all patients had either primary oral mucosal lesions or recurrent second oral malignancies not limited by stage or grade.

The steps we followed when conducting our meta-analysis were formulation of the problem to be addressed, collection and analysis of the data, and reporting of the results. We established a detailed research protocol to define the objectives, the hypotheses to be tested, the subgroups of interest, and the proposed methods and criteria used to identify and select relevant studies and extract and analyze information a priori.

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E-Cigarettes:

What's Known, What's Unknown

K. Vendrell Rankin, DDS

Considerable debate surrounds the marketing, use, and safety of the electronic cigarette, which is also referred to as an electronic nicotine delivery device, e-cigarettes, personal vaporizers, PV, or "vapes." The e-cigarette is a battery-powered device resembling a cigarette. It contains a microcircuit (1), which is activated when a person draws on the mouthpiece (2), like taking a puff of a cigarette. With each puff a small amount of the solution (nicotine plus humectant) contained in a cartridge (3) produces a vapor creating a visible mist without smoke or flame (Figure 1).   When an individual uses an e-cigarette, it is referred to as "vaping" rather than smoking.

The device was launched and patented by a Beijing-based company, Ruyan Group (Holdings) Ltd, China in 2004 (1). The e-cigarette was introduced into the U.S. market in 2007 (2). Since the advent of the original device, multiple adaptations of the device have been marketed. The 1-piece e-cigarette is a disposable unit. It contains a pre-charged battery that cannot be recharged, and a nicotine cartridge that cannot be refilled (Figure 2). The 2-piece e-cigarette kit contains a rechargeable battery and a nicotine cartridge with built-in atomizer. The 2-piece design provides a fresh atomizer with every cartridge. The 3-piece design contains a rechargeable battery, an atomizer and a separate replaceable nicotine cartridge. The cartridge of the 3-piece device can be refilled with a bottled liquid referred to as "e-liquid" or "juice" (Figure 1). The liquid is available in different nicotine strengths and a variety of flavors. The cartridge of the 3-piece unit can be removed and 3-5 drops of the liquid dropped directly on the atomizer. This practice is referred to as "dripping." This practice yields several puffs with a higher concentration of nicotine. The devices are also available in multiple sizes. The pen style is 5 to 6 inches in length and is the original model. The super-mini is 4 to 5 inches long and most similar to a traditional cigarette (Figure 2). The micro unit is 2 to 4 inches in length. The technology is also available in products that resemble a cigar or pipe.

ABSTRACT

Use and awareness of the e-cigarette, also referred to in the literature as an Electronic Nicotine Delivery Device, has dramatically increased since its introduction to the U.S. market in 2007. The regulatory power of the Food and Drug Administration over these devices is restricted to their classification as a tobacco product, as the manufacturers do not claim a therapeutic effect, as is the case with nicotine replacement therapy. The use, safety, chemical content and efficacy of the device for smoking cessation is the subject of considerable debate in the scientific community and poses a challenge to clinicians whose patients have elected to use e-cigarettes as a replacement for (or in addition to) cigarettes, to reduce the number of cigarettes they smoke, or for smoking cessation.

CLINICAL EPIDEMIOLOGY

Although relatively rare in comparison to breast, lung, or prostate carcinoma, the incidence and mortality figures for oral cancer are higher than cervical cancer and malignant melanoma. Approximately 10.5 adults per 100,000 adults in the U.S. will develop oral cancer over their lifetime. As with most types of cancer, oral cancer rates increase with age. The increase becomes more rapid after age 50 and peaks between ages 60 and 70. The ratio of cases seen in males versus females is approximately 2:1 and has remained static since the 1950s. Rates are higher for Hispanic and black males than for white males.

These statistics provide guidance, but do not suggest that individuals who fall outside these generalizations not receive the same attention.

Overall, 60% of patients with oral cancer survive for 5 years and survival rates have steadily improved since 1975. However, rates remain significantly lower for African American males. The 5-year relative survival rate varies widely by stage at the time of diagnosis, from roughly 82% for patients diagnosed in localized stages and 52% for patients with regional lymph node involvement to approximately 25% for patients with distant metastasis. Unfortunately, oral and pharyngeal cancer is diagnosed at a localized stage in only one-third of patients

in the U.S. Survival rates are also dependent on the site of the lesion. A large percentage of lesions occur on the lip, but mortality rates for cancer of the lip are low, owing to the increased likelihood of early detection. As a general rule, the likelihood of detection decreases as we consider sites farther back in the oral cavity and pharynx, and the stage at diagnosis grows later. Concomitantly, mortality rates rise and survival rates fall.

In contrast to the decrease in oral cancer in the U.S. overall, the incidence of cancer at the base of tongue and tonsillar cancers has increased. The increase seems to be more pronounced in young adults. Researchers attribute this

ABSTRACT

The efficacy of clinical examination in detecting intraoral malignances has recently been called into question, as it does not accurately predict the histological diagnosis. A brief reexamination of one study provides some insights into what this means to the clinician. Making a diagnosis on the basis of a clinical examination may result in a false-positive finding and unnecessary treatment. However, a more significant concern would be a false-negative finding, in which disease is present but not detected and therefore not treated.

The most effective preventive strategy is to help patients reduce or eliminate dangerous habits, and to remain alert for signs of potentially malignant or early-stage lesions, and perform routine visual and tactile examinations of all patients.

A working knowledge of the clinical epidemiology of oral cancer, familiarity with the risk factors, signs and symptoms, together with continued vigilance in the form of regular, systematic and thorough clinical examination remains the most basic means of ensuring early detection of oral cancer and providing the best care possible.

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CASE 1

A 55-year-old African American female patient of record in University of Texas Health Science Center at San Antonio Dental School (UTHSCSA) Hygiene clinic was referred to the Oral Medicine clinic for the evaluation of a newly noted "ulcer in her mouth." The patient acknowledged having a "strange feeling" in the area prior to being told about the lesion, but reported no paresthesia in the lower lip, tongue, or floor of the mouth and no tenderness or pain associated with the ulcer. Her medical history was significant for seasonal allergies, mixed connective tissue disease and hypertension. Her current medications included mycophenolate, hydroxychloroquine, pantoprazole, atenolol, hydrochlorothiazide, loratadine, vitamin C, vitamin D, and multivitamins. Her family history was significant for bladder cancer, hypertension, and stroke. The patient denied recreational drug exposure, but acknowledged smoking about 2 packs of cigarettes per week since the age of 19 and consuming about 2 beers per week.

The extraoral examination was within normal limits, and there was no lymphadenopathy or limitation to opening. Intraorally, a 9x5 mm oblong ulcer was noted in the area of the left retromolar/palatoglossal arch (Figure 1). The ulcer had a necrotic center with indurated margins. The color of the surrounding mucosa was normal but increased surface vascularity was noted on the medial aspect of the lesion. The differential diagnosis included squamous cell carcinoma, salivary gland tumor, deep fungal infection or granuloma. The patient consented to an immediate biopsy. The pathology report revealed an adenocarcinoma not otherwise specified and the patient was recommended for referral to head and neck surgery, but she opted to seek follow-up care through her primary health care physician.

CASE 2

A 54-year-old Caucasian male presented to the UTHSCSA dental emergency clinic with a complaint of, "Something is wrong with me, and I'm not sure if it is medical or dental." His past medical history was essentially non-contributory with occasional reflux, and he reported having impetigo 2 weeks earlier that was successfully treated with a course of Augmentin. His family history was non-contributory and he denied tobacco or alcohol use but admitted to occasional cannabis use. He was now experiencing persistent dizziness and lightheadedness on standing, chills, cough, sleep deprivation, and

ABSTRACT

The early identification and treatment of cancer of the head and neck, including oropharyngeal cancer (OPC), is associated with an improved survival rate. Specific efforts to promote screening to improve the early detection of OPC have come under scrutiny, largely due to the low prevalence of the disease. However, screening the patient for OPC does not occur as an isolated event in contemporary practice, but as an integral component of the hard and soft tissue examination to determine the totality of the patient's oral health. Three patient vignettes are presented to demonstrate that, regardless the outcome of the debate over OPC screening, the oral health care professional who performs a thorough examination of the head and neck is often in the best position to discover early cancer affecting the head and neck.

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