

Dental Expert Advocates Oral Cancer Screening

BY BRUCE JANCIN

ESTES PARK, COLO. — A brush biopsy kit is highly useful for doing oral cancer screening when patients balk at being cut in the mouth or a physician is uncomfortable doing cold-steel biopsies on oral lesions.

"This is a very effective tool you might want to have in your office. The sensitivity and specificity are both about 98%. It doesn't require local anesthesia. It's very simple to do, and an instruction sheet is included with each kit. The company faxes you the results in 3 days," John McDowell, D.D.S., said at a conference on internal medicine sponsored by the University of Colorado.

The OralCDx kits are marketed by OralCDx Laboratories Inc. They are available through the company (www.sopreventable.com or 877-712-7874) at about \$17 per kit. The test is widely covered by insurance as well as Medicare, according to Eric Hirsch, a spokesperson for OralCDx.

"Nobody in my family owns stock in the company, and I don't advocate the brush biopsy because when I see a sus-

picious lesion I cut. But I do have patients who don't want to be cut on," noted Dr. McDowell, professor and director of oral medicine and forensic sciences in the university's school of dentistry.

The brush biopsy does not provide specifics as to tissue type or location, so the report will state only whether atypical cells or malignant cells were present or not in the specimen. On the other hand, those aren't huge disadvantages because the brush biopsy is typically performed to check out a visually suspicious lesion, and it's well established that more than 90% of all oropharyngeal cancers are squamous cell carcinomas, he said.

Dr. McDowell made a plea for all primary care physicians to incorporate oral cancer screening into their routine practice. A thorough screening exam takes only 2-5 minutes, and it can be lifesaving. Oral cancer is the sixth most common type of cancer in the United States over-



A brush biopsy kit has high sensitivity and specificity and doesn't require local anesthesia.

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all, and among African American men it's number four.

Five-year survival after diagnosis is less than 60%, and the rate among African Americans is considerably lower. That's because oropharyngeal cancers are often diagnosed at an advanced stage. Although they generally start small and are slow growing, they are typically asymptomatic.

The classic oropharyngeal squamous cell carcinoma is a mixture of red and white in color and is hard, with depth to the lesion.

"The vast majority of these squamous cell carcinomas are visible clinically at an early stage, but they're only visible if you're looking for them. A few years ago the American Dental Association did a survey showing only about half of dentists do a regular oral cancer screening exam," Dr. McDowell continued.

The average age at diagnosis of oropharyngeal cancer is 65 years. Men outnumber women 2:1. "The vast majority of squamous cell carcinomas that I see, diagnose, and treat are in men who've been smoking and drinking throughout their lives," the dental researcher noted.

According to national Surveillance, Epidemiology, and End Results data, the most common site for oropharyngeal cancer is the tongue, accounting for 30% of cases.

"If you're not looking at the base of the tongue, you're doing your patients a disservice," Dr. McDowell said. "It only takes a couple seconds. Grab the tongue with a gauze pad, stick a tongue blade in, pull the cheek out to the side, and then look at the base of the tongue. That's where the great majority of cancers on the tongue occur." ■

Imaging Exposes Many to Worrisome Doses of Radiation

BY KERRI WACHTER

Medical imaging exposes a significant portion of patients to various doses of ionizing radiation, and in some cases, to substantial doses, potentially increasing the associated risk of cancer, according to findings of a retrospective cohort study.

The results are based on an analysis of 952,420 nonelderly adults who were enrolled in United Healthcare's database between Jan. 1, 2005, and Dec. 31, 2007, and living in Arizona, Dallas, Orlando, South Florida, or Wisconsin.

Roughly 70% of the study population underwent at least one imaging exam during the 3-year study period, "resulting in mean effective doses that almost doubled what would be expected from natural sources alone," wrote Dr. Reza Fazel, assistant professor of cardiology at Emory University, Atlanta, and her coinvestigators.

Most patients received less than 3 millisievert (mSv) per year—considered low exposure—but a sizable minority of patients who received moderate, high, or very high radiation doses, they wrote.

CPT codes for imaging procedures involving radiation were used to identify claims from hospitals, outpatient facilities, and physicians' offices. They excluded procedures in which radiation was specifically delivered for therapeutic purposes, such as high-dose radiation for cancer.

Estimates of typical effective doses from published literature were used to approximate radiation exposure for each imaging procedure. The effective dose is an inexact measure of the overall detrimental biologic effect from radiation exposure.

Patients were stratified by gender and age: 18-34, 35-39, 40-44, 45-49, 50-54, 55-59, and 60-64; 52% were women. The researchers calculated effective doses for the population overall and for each age-based and sex-based group and categorized them by dose: low (no more than 3 mSv/year, the background level of radiation from natural sources in the United States), moderate (3-20 mSv/year, the upper annual limit for oc-

cupational exposure for at-risk workers, averaged over 5 years), high (20-50 mSv/year, the upper annual limit for occupational exposure for at-risk workers in any given year, and very high (greater than 50 mSv/year).

A total of 3,442,111 imaging procedures associated with 655,613 patients were identified in the 3-year period. The average number of procedures per person per year was 1.2 and median number was 0.7/person per year. The mean effective dose was 2.4 mSv/person per year with a median effective dose of 0.1 mSv/year.

The proportion of patients undergoing at least one procedure during the study period increased with age—from 50% in those aged 18-34 years to 86% in those aged 60-64 years. A total of 79% of women underwent at least one procedure during the study period, compared with 60% for men (N. Engl. J. Med. 2009;361:849-57).

Moderate doses occurred at an annual rate of 199 per 1,000 patients. High and very high doses occurred at annual rates of 19 and 2 per 1,000 patients, respectively. Each rate "rose with advancing age," noted Dr. Fazel.

"Generalization of our findings to the United States suggests that these procedures lead to cumulative effective doses that exceed 20 mSv per year in approximately 4 million Americans," the researchers wrote.

Myocardial perfusion imaging accounted for almost a quarter of the total effective dose (22%). CT of the abdomen, pelvis, and chest accounted for 38% of the total effective dose.

"CT and nuclear imaging accounted for 21% of the total number of procedures and 71.4% of the total effective dose," the researchers reported. By anatomical site, chest procedures accounted for 45% of the total effective dose. Lastly, the bulk of the total effective dose—82%—was delivered in outpatient settings, primarily physicians' offices.

The findings are concerning, particularly for patients who undergo several imaging tests in a short period of time, Dr. Michael S. Lauer wrote in an accompanying editorial (N. Engl. J. Med. 2009;361:841-3).

"Irradiation represents a direct danger imposed by a physician's decision to refer a patient for imaging.

Though the danger may be small, it is cumulative and hence of particular relevance to the small but substantial minority of patients, who . . . undergo clusters of tests," he said.

Despite the cumulative risk associated with radiation exposure, it's generally not something that is discussed with patients undergoing an imaging procedure, noted Dr. Lauer, who is director of the prevention and population sciences division of the National Heart, Lung, and Blood Institute in Bethesda, Md.

Dr. Fazel reported that she has no relevant conflicts of interest, though several of her coauthors reported significant relationships with pharmaceutical and medical imaging companies. Dr. Lauer reported that he has no relevant conflicts of interest. ■

NIH's Clinical Center to Track Radiation Exposure

The National Institutes of Health will require new CT and PET equipment purchased by the agency's clinical center to routinely record the patient's radiation dose in their hospital-based electronic medical record.

"The [NIH] Clinical Center's approach is an important first step in making it possible to more easily document and track information about a patient's exposure to radiation," Dr. John I. Gallin, director of the center, said in a statement.

The risks associated with exposure to low doses of radiation from medical imaging tests are unknown. The ability to track a person's radiation exposure will help researchers evaluate the health risks of these procedures. The center plans to work with its vendors to develop software tools to extract the type of examination, the date, and the radiation dose for uploading to an EHR.