

# LETTERS

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## ELECTROSURGERY

In Dr. Gordon Christensen's July JADA observations, "Soft-Tissue Cutting With Laser Versus Electrosurgery" (JADA 2008;139[7]:981-984), he states that "electrosurgery is a controlled, precise application of heat." However, this is a misstatement that might confuse clinicians and patients alike.

Electrocautery, such as the System B Heat Source (SybronEndo, Orange, Calif.) or Touch n' Heat (SybronEndo) units, do use a heated electrode tip. However, in contrast, radio-surgery is the application of high, radiofrequency energy by

way of the electrode tip. When activated, this radiofrequency energy causes volatilization of the water molecules, not unlike a microwave oven, and thus volatilization of tissue cells surrounding the tip. Heat is merely a byproduct of the volatilization process. Thus there is a need to "rest" between short application strokes when using monopolar electrosurgery, in order for the body's circulatory system to dissipate the heat.

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**Author's response:** The area of electrosurgery/electrocautery is highly confusing in all areas of medicine. A full discussion of the topic could require an entire book. This article was meant only to compare electrosurgery with diode laser. The bottom line is that both work, and that the soft-tissue uses overlap significantly.

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## JOINING THE HEALTH CARE DISCUSSION

In their thorough and thoughtful August JADA guest editorial, "Paying Attention to Our Health Care System and Workforce: Time to Join a National Discussion" (JADA 2008;139[8]:1024-1028), Drs. David Sarrett and Cathy Bradley call for dentistry to participate in national health care policy deliberations.

Dentists have mixed feelings about this. Take, for example, some of the issues at stake with the cost of care. On the one hand, we fret over troubling sta-

tistics. Health care costs reportedly are rising twice as fast as inflation.<sup>1</sup> From 2001 to 2006, health insurance premiums jumped 73 percent.<sup>2</sup> As both doctors and patients, we realize that actuarial insurance leads to third-party manipulations, including, as one observer charged, "administrative dreadnoughts devoted largely to vetoing treatments, sloughing off sick or potentially sick clients, and scheming to stick someone else with the bill."<sup>3</sup> Health professions surely must become more integrated to offer better, more comprehensive, more efficient care.

On the other hand, practicing dentists are probably grateful that dentistry was not included in Medicare, the 43-year-old model of U.S. redistributive social insurance, whose medical providers are increasingly opting out in anger and frustration. Dentists who have experienced Medicaid or one of its state equivalents—welfare programs rather than insurance—may fear in a universal health care system a similar avalanche of decreased fees, increased paperwork, bureaucracy, confusion, budget cuts of just the sort Drs. Sarrett and Bradley describe in California, and rationing.

Health insurance is not the same thing as health care, but costs and control are conflated concerns. Indeed, controlling costs comes at the cost of control. We may consider the determinative focus to be what treatment is appropriate, but a string of other questions inevitably comes attached: What will treatment cost, who will decide what gets done, who will treat and who will pay? The "more comprehensive and coordinated continuum of providers"

the authors propose necessarily means sharing control, which creates an environment fraught with complexity, unintended consequences and the potential for declining doctor incomes, the fallout of which in medicine has probably sent not only medical students into non–primary-care specialties but premed students fleeing to dental school.

Participation also brings a risk of humiliation. Dentistry may be welcomed into a comprehensive health system in the soft moonlight of theory, and then (regardless of the newest research linking periodontal problems to heart disease) written off in the harsh fiscal sunshine as too expensive relative to its perceived importance.

A Daily Telegraph (London) reporter writes that British dentistry has so suffered in the National Health Service (NHS): “In Britain today, you can stuff yourself on deep-fried Mars bars, drink 20 pints a night, inject yourself with heroin, smoke 60 cigarettes a day or decide to change your sex—and the NHS has an obligation to treat you. ... But if you have bad teeth, forget it.”<sup>4</sup>

Certainly, dentistry can be proud of the example it has set in such areas as prevention and patient behavior modification. But as we “increase our linkages,” I worry that dentistry will absorb the troubles of other disciplines more than I trust that dentistry will successfully export its achievements. Perhaps involvement in national health care discussions is the correct move for dentistry, and avoiding our rightful place in the process the less principled, less courageous stance, but it’s hard to suppress the self-protective impulse to duck.

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**Author’s response:** I am pleased that Dr. Curtis has expressed a similar opinion to ours when he writes, “Health professions surely must become more integrated to offer better, more comprehensive, more efficient care.” He further acknowledges the position that dentistry has set some good examples as a profession that promotes prevention. Dr. Curtis also entertains the notion that perhaps dentistry should be involved in national health care policy discussions. These are all points on which we are in agreement.

His concern, and that of many other dentists, is how involvement may affect the status of dentistry in the larger picture of health care and the effect on the income of dentists. I also share concern about these two issues. However, I would argue that these are reasons to be involved rather than to remain on the sidelines.

An important point to consider is the strength that resides in the fact that the American Dental Association is regarded as a single voice for our profession. The voices for the medical profession, to the contrary, are dominated by various specialty

organizations, and the American Medical Association is not a single representative for medical doctors. I believe the risk of “humiliation” is far less than the potential for dentistry to shine.

Dr. Curtis is correct that it will take courage to join a national health care discussion. However, to do otherwise and not “suppress the self-protective impulse to duck” would not be in the best interest of patients or the profession. Not being involved in a discussion relevant to your profession is entrusting the profession to others. Isolation is not an effective strategy. Change is inevitable, and we will be well-served having a hand in those changes. To quote Gen. Eric Shinseki, 34th Chief of Staff of the United States Army, “If you dislike change, you’re going to dislike irrelevance even more.”<sup>1</sup>

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**CANCER SCREENING**

Facilitating clinicians in performing oral cancer screening examinations should be encouraged to identify occult, or further affirm the presence of potentially premalignant, dysplasias. Although specialists who see small precancerous lesions on a regular basis may object to the use of adjunctive screening technologies, it is my opinion based on my clinical experience, personal research and

discussions with my colleagues, that they are valuable screening and decision-making tools for the majority of dental professionals when used appropriately in conjunction with a conventional examination.

Some of the facts about adjunctive screening tools may not have been clear in the July JADA article, "Adjunctive Techniques for Oral Cancer Examination and Lesion Diagnosis: A Systematic Review of the Literature," by Dr. Lauren Patton and colleagues (JADA 2008;139[7]:896-905). For example, none of the tools mentioned is reported to be diagnostic; according to manufacturers' statements, they are only screening adjuncts. Diagnosis can only be made via histological examination of a surgical biopsy specimen.

There should be a distinction made between visual screening systems and brush testing, which involves tissue sampling. The Vizilite (Zila Pharmaceuticals, Phoenix), the Microlux DL (AdDent, Danbury, Conn.) and the Orascope DK (Orascope, a Kerr Company, Middleton, Wis.) all use tissue reflectance with the assistance of an acetic acid rinse. All of these systems are indicated for amplifying the visualization of white or mixed lesions by reflectance of light off the superficial mucosal layers.

The VELscope (LED Dental, White Rock, British Columbia, Canada) uses no prerinse and is based on direct tissue fluorescence, which uses the metabolic properties of tissue growth to assist in identifying irregular tissue metabolism. According to the article, "tissue fluorescence in the oral cavity is variable and is affected by structural

changes, metabolic activity, the presence of hemoglobin in the tissue, vessel dilatation ... ." However, the statement becomes obscure: "... and, possibly, inflammation."

If it is affected by the presence of hemoglobin and vessel dilation, then that is inflammation. The VELscope will identify localized inflammation, but discopic blanching,<sup>1</sup> a technique described on the VELscope training DVD, can be effective if done properly in differentiating inflammatory lesions from persistent lesions that may be premalignant.

To the best of my knowledge, the variability of tissue appearance has not been defined for acetowhite lesions detected with the Vizilite or with the VELscope to date. That expectation probably is as unrealistic as is quantifying the variation of healthy tissues under incandescent light inspection.

In my own experience, toloum chloride is difficult to procure for routine clinical use, is technique-sensitive and has questionable repeatability for the same lesion in the same person. However, I know that a commercially prepared toloum chloride solution is available only as part of the Vizilite Plus system. Interestingly, a recent publication gave an example photographically in which toloum chloride failed to identify the full extent of dysplastic tissue compared with the extended margin identified by direct tissue fluorescence,<sup>2</sup> which makes me question its predictability as a screening tool.

Physical examination in good lighting has been defended as the preliminary level of screening. Adjunctive visual screening technologies are available as a

secondary level of screening for enhancing the clinician's screening skills. Brush biopsy (Oral CDx; Oral CDx Laboratories, Suffern, N.Y.) may be a tertiary screening level, used for patient education and for supporting the use of surgical biopsies, as could liquid-based brush cytology, a viable alternative<sup>3</sup> that was not discussed in this article. Only surgical biopsy will yield a definitive diagnosis.

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2. Williams PM, Poh CF, Hovan AJ, Ng S, Rosin MP. Evaluation of a suspicious oral mucosal lesion. *J Can Dent Assoc* 2008;74(3): 275-280.
3. Mehrotra RG, Gupta A, Singh M, Ibrahim R. Application of cytology and molecular biology in diagnosing premalignant or malignant oral lesions. *Molecular Cancer* 2006;5:11. Published online March 23, 2006. "www.molecular-cancer.com/content/pdf/1476-4598-5-11.pdf". Accessed Sept. 9, 2008.

**Authors' response:** We thank Dr. Huff for his interest in and commitment to early detection of oral premalignant and malignant lesions (OPMLs) in his practice and community. Dr. Huff has found the use of several of these adjunctive techniques in conjunction with conventional examination to be of perceived value in his practice. This personal experience follows Ismail and colleagues,<sup>1</sup> who stated that "in developing appropriate treatment plans, dentists should combine the patient's treatment needs and preferences with the best available scientific evidence, in conjunction with the dentist's clinical expertise."

Systematic reviews have become the cornerstone of evidence-based dentistry. They are a method for summarizing empiric research data and guid-

ing practice and further research directions. Such systematic reviews, when well-conducted and transparent,<sup>2</sup> can provide guidance of greater impact than individual studies, opinion pieces and case reports.

Interested readers are encouraged to review the search strategy, quality rating scale and data tables related to this systematic review that were published online as supplemental data at "http://jada.ada.org/cgi/content/full/139/7/896/DC1" owing to print space limitations. Our goal was to provide dentists with a rigorous approach to summarizing the evidence on the performance of the adjuncts to oral cancer examination available on the U.S. market, in order to inform their decision-making process on the use of these adjuncts based on the best evidence to date.

The devices reviewed are "cleared" through the U.S. Food and Drug Administration's devices branch; Dr. Huff is correct in stating they are not diagnostic tests, but are adjunctive techniques promoted to improve the clinician's ability to detect OPMLs. Our review required that all lesions identified upon examination with or without use of the adjunct be assessed by the gold standard of tissue biopsy. Our inclusion criteria were aimed at identifying the most rigorously conducted studies with defined endpoints, thus limiting the number of studies that could be included.

We agree that visualization technologies and brush sampling are to be used as adjunctive tools, to guide the need for biopsy, and do not replace biopsy. We found no studies in the

literature to support any conclusion about the use of the VELscope as an oral cancer screening adjunct in general dental practice. As Dr. Huff emphasized, precise mechanisms for loss of fluorescence are variable and application of diascopy to help the clinician identify the nature of lesions with loss of fluorescence should be objectively explored in future clinical studies using this adjunct.

Medical-grade toluidine blue is available as a part of the ViziLite Plus with TBlue system. The ViziLite is not available as a stand-alone device. As stated, toluidine blue is the best-documented adjunctive technique studied in high-risk populations in mucosal disease clinics. It is uncertain whether the differential ability of toluidine blue and autofluorescence to delineate lesion margins has an impact on their relative accuracy as examination adjuncts, although there are implications for surgical treatment approaches.

We believe adjunctive techniques will continue to be developed with additional clinical studies in high-risk and general-patient populations, and they may evolve with the advent of molecular markers to improve the identification of mucosal lesions at risk for malignancy and to potentially predict patients who are at an elevated risk of developing malignant disease.

Currently, toluidine blue has been shown in a cross-sectional and in a longitudinal study to predict lesions with molecular changes and to characterize premalignant lesions at increased risk of progressing to cancer.

We agree that definitive histopathologic diagnosis based on tissue biopsy remains the gold standard, although new and improved therapies for oral premalignant lesions are needed to have an impact on the progression of premalignant to malignant disease, and to advance early-stage cancer to definitive therapy.

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