

LETTERS

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THE RIGHT CODE FOR THE CLASS I LESION

Dr. Philip Hudson should be commended for his excellent June JADA article, "Conservative Treatment of the Class I Lesion: A New Paradigm for Dentistry." As a member of the Cariology and Operative Dentistry Department at New York University College of Dentistry, I welcome and applaud any effort to bring the profession up to speed with what we are teaching our students.

One suggestion for a modification of the CDT-4 code would go a long way toward correcting many of the issues Dr. Hudson discusses. Code D2391 (one-surface posterior resin-based composite) explicitly states that it should be "used to restore a carious lesion into the dentin." The rationale for the requirement that the lesion extends into dentin can be questioned.

I suggest that if a bur was needed to remove the caries, then D2391 should be the proper code, regardless of the depth of the lesion. This would be consistent with what we are teaching our students, as it encourages them not to overprepare the teeth simply to get credit for

doing a Class I restoration.

This also would be consistent with Roberson and colleagues,¹ who state, "It is not necessary to extend the preparation in a pulpal direction if only a hard, dark line remains that cannot be penetrated by a sharp explorer, and the radiograph is negative for dentinal caries." This statement is made in the chapter on Class I cavity preparation, not in the sealant chapter. Lastly, and most importantly, this would be consistent with the best interests of our patients.

Another suggestion is to completely eliminate the term "preventive resin restoration," or PRR, from our vocabulary. If it is a preventive procedure, then it can't be a restoration, which implies repair of tooth structure already lost. A better term might be "conservative resin restoration," or CRR, defined as a Class I restoration utilizing a minimally invasive preparation. The D2391 code would be appropriate for this restoration.

One other point mentioned by Dr. Hudson deserves comment. He wrote that "insurance companies resist the philosophy of early intervention" because they are not health care providers, and they have no interest in what is best for our patients unless it can be shown to be cost-effective. They will continue to cover only what they have always covered for as long as possible, unless we can show them a better way. Only pressure from the ADA, through the establishment of reasonable CDT codes, can foster a change in the reimbursement pattern of the carriers.

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1. Roberson TM, Heymann H, Swift EJ, Sturdevant CM, eds. *Sturdevant's art & science of operative dentistry*. 4th ed. St. Louis: Mosby; 2002.

DENTISTRY AND OVERALL HEALTH

I read with interest Dr. Jeffcoat's August JADA editorial, "If We Don't Do It, Who Will? Dentistry Can't Shirk Medical Complexities." After having attended the ADA- and Colgate-sponsored symposium on diabetes and dentistry, I realize that, as a dental professional, I really did not know enough about treating patients with diabetes, and may have overlooked or even avoided treating such patients for fear or for lack of knowledge.

I think that the most important thing I gleaned from Dr. Jeffcoat's editorial is that we, as the dental profession, must take the first step. Medical professionals know little about the oral cavity, and we as dentists can certainly have an impact on our patients' overall health by learning more about their medical conditions. I personally have decided that I would like to become expert in terms of treatment of patients with diabetes.

As a continuing education junkie, I have always felt that the more knowledge I have, the better I can treat my patients. Most continuing education courses seem to focus on the technical and restorative aspect of care. I strongly believe that the medical profession would respect us more if we as den-

tists educated ourselves and our physician colleagues better on the nature of the relationship between dentistry and overall health. Medicine is not going to take the first step in our direction. It is up to us to charge ahead as a profession, and I agree with Dr. Jeffcoat's editorial wholeheartedly.

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CAUTIONS REGARDING COMPUTER IMAGING

Dr. Dov Almog and colleagues have provided an interesting pilot study of patients' responses to varied presentations of a treatment plan ("The Effect of Esthetic Consultation Methods on Acceptance of Diastema-Closure Treatment Plan: A Pilot Study," July JADA).

It should come as no surprise that the "winner" was the computer-imaging simulation. In a society as immersed as ours in the technology of movies, television and video games, a computerized morphing from space to no space between the central incisors should be expected to most effectively catch the attention and imagination of the average patient.

Two points regarding the article should be mentioned. The first is the ever-present danger of the implied warranty in projections of treatment. This is especially true with the computer-generated imaging techniques for esthetic procedures. If the patient agrees to proceed with treatment, and the result appears to differ from the computer prediction, the patient may feel that he or she has a valid complaint. Admittedly, the likelihood of this problem is minor in the present case, but the caution has been raised in the more

complex prediction of treatment results in orthognathic surgery.¹

The second point is a suggestion for the further studies encouraged by the authors. In Dr. Almog's study, the only treatment option presented was that of increasing the widths of the central incisors with restorative material. An astute patient might find the projected appearance of the treated teeth unacceptable when compared with the adjacent ones. Future investigations should include for patient consideration the additional presentation via imaging and diagnostic setup of the orthodontic option.

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1. Phillips C, Hill BJ, Cannac C. The influence of video imaging on patients' perceptions and expectations. *Angle Orthod* 1995;65:263-70.

Author's response:

Generally speaking, with the advent of digital cameras and imaging software, we can now simulate final treatment outcomes at a pretreatment stage. Patients' "before" images are graphically manipulated, visualizing the dentists' recommended treatment plans. The "before and after" images then are displayed on a computer screen and/or printed for the patients to take home and share with a friend or a family member.

This service can be utilized by every discipline in dentistry: general dentistry, periodontics, prosthodontics and orthodontics, and especially by those having an interest in esthetic dentistry (crown lengthening, laminates, crowns and bleaching, to name a few), regardless of case complexity.

As a prosthodontist myself and a user of digital imaging

since the early 1990s, I find this service serves primarily as a common diagnostic denominator, qualifying the treatment desires for the patient and dentist alike. Secondly, this service serves as a powerful marketing tool that appears to increase case acceptance during case presentations in the dental office, and facilitates communications with other clinicians and dental laboratories. For example, from my own experience, this is an excellent communication tool between the restoring dentist and the periodontist when it comes to anterior crown lengthening. The patient, restoring dentist and periodontist can all agree on the desired extent of the procedure, establishing an "azimuth" or a treatment goal.

As far as what kind of dental procedures can be simulated with digital imaging, the following is a list of the most common procedures used with this service:

- placing anterior laminate veneers or bonded composites;
- placing crowns and bridges (including implant-supported prostheses);
- replacing posterior inlays and onlays;
- removing stains or discolored restorations;
- bleaching;
- closing spaces (such as bonded composites, bridges, orthodontics and implants);
- straightening and/or recontouring teeth;
- crown lengthening and recontouring gingival margins.

Once a practitioner becomes proficient with the service, simulations become more and more realistic, conveying the clinician's capacity to reproduce (mimic) the simulation.

Additionally, and as indicated in our article, in a recent prospective clinical study, computer imaging simulation scored higher patient satisfaction marks than did conventional methods.¹

Other authors also suggest that, in more complex treatment plans, the dentist can convey a treatment concept to the patient more easily and realistically when using computer imaging simulation.²⁻⁴ Nevertheless, to the extent that a patient could conceive an “implied warranty in projections of treatment,” as suggested by Dr. Anderson, especially with more complex esthetically driven treatment procedures, I recommend the following:

- discussing this notion with the patient;
- stamping the simulated photo with a disclaimer like “actual treatment results may vary.”

Additionally, in the more complex treatment procedures, I strongly advocate supplementing the consultation with model wax-ups, preferably articulated. It allows a dentist to carry information from a two-dimensional computer simulation into a three-dimensional functional replica (a mock-up).

As far as Dr. Anderson’s second suggestion for the further studies, I share his opinion. In our article, we concluded that for better understanding of the correlation between consultation methodology, case acceptance, treatment outcome and patient satisfaction, we strongly encourage conducting more comprehensive investigations with larger study populations.

With respect to Dr. Anderson’s point regarding orthognathic imaging, these applications use cephalometric data points and very sophisticated al-

gorithms that predict posttreatment photographic facial outcomes, taking into consideration things such as growth of the patient, as well as surgical intervention and orthodontic tooth movements. This specific application was not part of our study.

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1. Papatotiriou OS, Nathanson D, Goldstein RE. Computer imaging versus conventional esthetic consultation: a prospective clinical study. *J Esthet Dent* 2000;12(2):72-7.

2. Ganz CH, Brisman SA, Tauro V. Computer video imaging: Computerization, communication, and creation. Chicago: QDT Yearbook; 1989:64-8.

3. Goldstein CE, Goldstein RE, Garber DA. Computer imaging: an aid to treatment planning. *J Calif Dent Assoc* 1991;19(3):47-51.

4. Grubb JE, Smith T, Sinclair P. Clinical and scientific applications/advances in video imaging. *Angle Orthod* 1996;66(6):407-16.

KEEPING TRACK OF NATURAL REMEDIES

I read with great interest Dr. Jeffcoat’s September editorial, “The Case of the Felonious Foxglove: The Dark Side of Natural Cures.” In it she gives a reasoned warning for natural remedies, and a recommendation for including questions regarding their use to be part of every medical history. However, this does not go far enough.

In the same way that we, as dentists, have made ourselves knowledgeable with the pharmacological actions of many drugs (minimally, through reference texts), we must also become knowledgeable in the modern use of natural remedies of all kinds.

A good place to start is a reference book, “Textbook of Natural Medicine.”¹ It not only is comprehensive, but it also is used as a textbook to educate naturopathic physicians—a li-

censed profession in more and more states.

Dr. Jeffcoat ended her editorial with the comment that “the allure of natural healing is just too strong to ignore.” Because this is true, we, as health care professionals, must educate ourselves beyond simply thinking (and saying), “All natural remedies are bad or potentially harmful.”

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1. Pizzorno JE, Murray MT, eds. Textbook of natural medicine. 2nd ed. New York: Churchill Livingstone; 1999.

TOOTHPASTE ABRASION

I appreciate Dr. John Grippo and colleagues’ organizing a complicated series of conditions, the common feature of which is noncarious loss of tooth structure (“Attrition, Abrasion, Corrosion and Abfraction Revisited: A New Perspective on Tooth Surface Lesions,” August JADA).

Although “dentifrice” was mentioned once in the table, “Etiology of Tooth Surface Lesions,” there was no specific mention of it in the body of the article. Perhaps added emphasis might be warranted for the effect of three-body abrasion occurring when toothpastes become involved.

When I question patients with excessive noncarious loss of enamel and dentin, they typically describe applying dentifrice to the brush with complete coverage of the bristles, sometimes using two layers, as compared with the amount like a “small pea” usually suggested. Abrasive(s) from toothpaste are harder than teeth and, microscopically, have coarse shapes. The more dentifrice that is available in the mouth, the more

rapidly abrasion will proceed.

I believe this three-body abrasion, in which the main culprit is excessive amounts of dentifrice, is a significant factor in loss of healthy tooth structure. Perhaps toothbrush abrasion might be better renamed "toothpaste abrasion."

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Authors' response: In publishing this article, it was our objective to set up a pathodynamic schema that would apply to tooth-surface lesions, both carious and noncarious. We wish to thank Dr. Cohen for his constructive comments on dentifrice abrasion. However, owing to editorial constraints imposed on the length of the article, it was not possible to expand on each mechanism involved in the formation of noncarious cervical lesions, referred to as NCCLs.

The etiologic role of toothbrush and dentifrice had been established by W.D. Miller's early experiments.¹ Surely, as Dr. Cohen points out, the quantity of toothpaste appears to be significant. However, one also must take into account the abrasive index of the particular dentifrice, frequency of brushing, intensity of brushing, method of brushing, reapplication of the dentifrice and/or other abrasives (such as pumice or scouring powder), bristle texture and design, as well as type of brush (for example, manual versus electric).

Numerous studies abound in the literature demonstrating that the dentifrice is more abrasive than the toothbrush per se; however, little attention has

been given to the additive and synergistic effects of other factors that coexist. This is complicated by modifying factors such as the presence, composition and amount of saliva, tooth surface remineralization, the composition of teeth, the presence of plaque and various food substances that may act as corrosive agents, as well as stress concentration in the cervical area.

Since various mechanisms may contribute to the formation of NCCLs, we are confronted with a complex multifactorial condition. The relative significance of each factor in the development of NCCLs remains to be elucidated.

It has been our aim that the schema not only facilitate diagnosis by the clinician, but also foster further research into this area of dentistry.

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1. Miller WD. Experiments and observations on the wasting of tooth tissue variously

designated as erosion, abrasion, chemical abrasion, denudation, etc. *Dent Cosmos* 1907;XLIX(1):1-23; XLIX(2):109-24; XLIX(3):225-47.

PSYCHOLOGY AND CHRONIC OROFACIAL PAIN

In their August JADA article, "Screening for Psychosocial Risk Factors in Patients With Chronic Orofacial Pain: Recent Advances," Drs. Judith Turner and Samuel Dworkin suggest screening patients with chronic orofacial pain for psychosocial risk factors. Chronic pain produces profound psychological effects, including depression. Psychological screening documents only chronic pain's effects and not its cause.

Research has demonstrated that psychological stress alone probably will not cause chronic facial pain. Instead, stress can aggravate orofacial pain in susceptible patients. For instance, research demonstrates that patients with a history of temporomandibular disorder, or TMD, were less likely to tolerate bite openings than were patients absent a TMD history.¹

Drs. Turner and Dworkin's literature review confirms the benefit of referral to psychotherapists to assist in chronic pain management. Psychopharmacological agents are particularly useful, although not specifically mentioned in the article. Chronic orofacial pain too often is misdiagnosed as idiopathic, although more extensive examination by specialists can reveal a treatable dental or medical etiology for pain elimination.²

The greatest benefit we can provide our patients remains a correct diagnosis of pain etiology. Pain-eliminating therapy should be our primary therapeutic goal. Psychological chronic pain management will be unnecessary if

pain causation can be eliminated.

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1. LeBell Y, Jansa T, Karri S, Niemi PM, Alamen P. Effects of artificial occlusal interferences depends on previous experience of temporomandibular disorders. *Acta Odont Scand* 2002;60(4):219-22.

2. Allerbring M, Halgerstam G. Chronic idiopathic orofacial pain: a long-term follow-up study. *Acta Odont Scand* 2004;62(2):66-9.

Authors' response: We agree with Dr. Zinman that psychological screening does not identify causes of chronic pain and that psychopharmacological agents can be quite helpful (for example, antidepressant medications for patients with major depression). We also agree that persistent orofacial pain

warrants assessment by a specialist, and correct diagnosis always should be the goal.

Unfortunately, many patients continue to suffer orofacial pain, despite thorough assessment and appropriate treatment by specialists. In the context of chronic pain, therapies focused solely on eliminating pain not only may fail, but also may carry risks. Both biomedical and psychosocial factors may contribute to ongoing pain, suffering and pain's interference with customary activities. Screening for psychosocial as well as biomedical contributors yields the potential to introduce interventions that may

improve the patient's quality of life and enhance the patient's response to dental therapies.

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