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APRIL 2013

Part One

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Joel M. Laudenbach, DMD

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Journal

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CDA JOURNAL, VOL 41, Nº4

What Did You Google and What Did You Do?

KERRY K. CARNEY, DDS, CDE

When setting up a new office, there comes a time when you must select or create all the forms you will need for administrative and clinical procedures. It can take several tries to get your forms the way you want them. As dentists, we strive to be current on the information we request on our medical history form. Some management software programs provide off-the-shelf versions of necessary forms but for many dentists, a universal form can never be quite as good as one they have customized.

In dental school, we learned "never treat a stranger." A complete picture is essential before we examine, diagnose and treat an individual. How many times do we review a medical history that looks noncontributing only to ask one probing question and receive substantive, supplemental information? The patient did not deem this additional information important enough to merit noting in his/her medical history. However, for the dentist, it is relevant and necessary for the diagnosis of disease and dispensing of care.

Psychology plays a large part in the everyday practice of dentistry. There are times when communication becomes labored: mutual misunderstanding and misinterpretation overwhelm effective communication. Some days, I feel the need to check my office sign and make sure it does not say "General Dentistry for Extraterrestrials." That is the simplest explanation for the difficulties I have understanding some folks.

Sometimes I contemplate including a diagram of the solar system on the patient intake form and requesting patients indicate their home planet. On occasion, I

Some days, I feel the need to check my office sign and make sure it does not say "General Dentistry for Extraterrestrials."

even grow suspicious of my own friends' origins. A while ago, I asked a friend how her physical checkup had gone and if her concerns about her rash had been addressed. She told me the topic never came up. I asked if she had mentioned it to the physician and her response was, "He is the doctor. He should be able to figure it out!" That was when I started to suspect she might only be a "visitor" here.

Communication should be a simple thing to accomplish, but it seems like hard work to me. In order to understand the patient's present health status, we have to know more than his or her medical history. We have to understand "what brings that patient to us."

The patient may have been conveyed to our office on a vehicle of fear, mistrust, pain, denial, curiosity or any number of motivators. Once engaged in the examination process, mutual trust and a mutual goal of achieving or maintaining health should propel and facilitate the transfer of relevant information.

My friend was operating under the assumption that she did not need to divulge information about her health status and chief concerns because her physician should be omniscient or telepathic. Those are powers few of us have. To make up for that deficiency, we try our best to use the review of the medical history as an opportunity to glean all the information we can.

Over the last few years, I have found my communication problems can be rooted in having too much information rather than not enough. Now, I find I can facilitate the communication by simply asking, "What did you Google and what have you done?"

The Internet has been an integral part of modern life since the mid 90s. It has allowed free access to vast amounts of information. Google was incorporated in 1998 and had its initial public offering in 2004. Google improved the search function of the Web so significantly that "Google" rapidly became a commonly used verb.

Now the Google search is the first resource for general or specific inquires, including oral health questions. Though it is great for settling arguments about who played what role in a certain movie, or correcting the misheard lyrics of a song, there are some inherent problems with searching the Internet for answers based in science.

Relying on Internet searches, we can come up against what could be labeled the "Family Feud" version on science. For those not familiar with it, "Family Feud" is a TV game show that has been around in one form or another since 1976. The point of the show is to guess, not the correct answer to a question, but rather, to guess the most popular answer to the question.

Sometimes, in Family Feud fashion, Internet search results seem more responsive to the popularity of information over the truth of information. Joran Lanier, an influential computer scientist and virtual reality guru, has discussed this feature of Web-based information in terms of a "hive mind." In the simplest form of his premise, "the number of hits" can out weigh "veracity."

This impacts our practice on a daily basis.

A patient comes in with a complaint of an odd growth on her tongue. Normally, I would record the symptoms, document the objective findings, analyze and formulate a differential diagnosis and plan for treatment.

By asking, "What did you Google and what have you done?" I can assess very quickly the most important symptoms to the patient and what kind of alternative practices she may have embraced.

In this case, the patient had already decided that the diagnosis, based on googling "growth on tongue" was Candida. When I asked what she had done, I found out she was altering her diet. She had read that the overgrowth of Candida was the result of her system being "out of balance." She was following "natural" recommendations that were popular online.

She remembered that Candida had been the cause of the thrush her children had experienced many years ago. The children's thrush occurred before the era of Google. For her children, she had to rely on her physician's analysis, diagnosis and treatment plan. She had treated them with an antifungal medication.

She was coming to me to confirm her Google search was correct. She had doubts because her dietary remedy did not seem to be working. I concurred that she was probably experiencing a Candida overgrowth. After reminding her how effective the antifungal medication had been in the past, she agreed to try it this time for herself.

The Internet can enrich our lives, but we dare not shirk the responsibility to vet the information we get there.

The ADA has introduced a symptom checker among the public offerings available through its website: mouthhealthy.org. It does not take the place of a consultation with a dentist. It reinforces the need to work with the dentist to achieve oral health. It is science based and can improve a patient's ability to understand and participate in the communication necessary to achieve the mutual goal of patient oral health. You might want to let your patients know about this peer-reviewed resource. It is a lot better than the Family Feud versions.

Disclosure: the author was a paid consultant for the ADA in the development of the MouthHealthy Symptom Checker.

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Opposing Comments

Dr. Pogrel compared his recent article in the October 2012 *Journal*, "Permanent Nerve Damage From Inferior Alveolar Nerve Blocks: A Current Update," to his previous article, "Permanent Nerve Damage From Inferior Alveolar Nerve Blocks — An Update to Include Articaine."[1] In both articles, he demonstrates internal bias in that the data for lidocaine, articaine and prilocaine does not support the author's abstract and discussion sections.

The author failed to note that the product insert demonstrates more than 11 paresthesias in 882 patient treatments with Septocaine and that the Food and Drug Administration added the following to the end of the adverse events section of the product insert in September 2005: *"Persistent paresthesias of the lips, tongue and oral tissues have been reported with use of articaine hydrochloride, with slow, incomplete or no recovery. These post-marketing events have been reported chiefly following nerve blocks in the mandible and have involved the trigeminal nerve and its branches."*

A critical review of the data the author presents in the article demonstrates that permanent paresthesias in the data correlate best with percent concentration and usage patterns: 2 percent lidocaine with one-half times the expected occurrences, 2 percent and 3 percent mepivacaine with two times the expected occurrences, 4 percent prilocaine with three times the expected occurrences and 4 percent articaine with the expected occurrence rate (twice that of lidocaine).

The author's explanation for the drop in the number of patients he reported with permanent paresthesias between this and a previous article fails to take into account the more obvious reason. He reports that he saw 19 patients per year in 2003 through 2005 and seven patients per year in 2006 through 2011, and believes this to be due to dentists not referring patients to him because of publicity that there was no treatment available for the condition. However, the more obvious reason might be the warnings of paresthesias following the use of 4 percent articaine with mandibular block injections.

The author's first reference, *Nerve Injuries Following Nerve Blocking In The Pterygomandibular Space* by Ehrenfeld M, Cornelius CP, et al.,[2] is a perspective study and has a high degree of scientific validity. That study reported seven permanent paresthesias with 506 mandibular block injections with articaine[3] local anesthetic. The Haas and Lennon article[4] was discounted though it reported findings that span a 21-year period in the province of Ontario, Canada, as well as an article on the adverse events reported to the FDA[5] where 4 percent prilocaine and 4 percent articaine were associated with 7.3 and 3.6 times more paresthesias, respectively.

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Dr. Dower is former associate professor of Restorative Dentistry and director of the Local Anesthesia curriculum at University of the Pacific, Arthur A. Dugoni School of Dentistry in San Francisco.

Disclosure: Dr. Dower has been an expert witness for patients due to paresthesias from articaine local anesthetic.

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Cheating One and All

BY DAVID W. CHAMBERS, PHD

There is a double standard in cheating. Taking advantage of others in a small group is not okay; the same deception in a crowd is just sharp business. It is not about friends or strangers. It is not about getting caught. The driving factor is whether you think your dubious behavior will make a difference to specific individuals.

The economists were first to notice that we behave differently in a group and in a crowd. The issue is called "price taking." Imagine a situation where there are only three buyers and three sellers in the market. Power companies and the states to which they sell power

CONTINUES ON 237

Genome Sequence Reported for Oral Probiotic

Scientists recently mapped the genome for BLIS (bacteriocin-like inhibitory substance) K12, a specific strain of *Streptococcus salivarius* (*S. salivarius*) that secretes powerful antimicrobial molecules, according to a study in the *Journal of Bacteriology*.

S. salivarius is an isolate from the saliva of a healthy child and is used as an oral probiotic that is reported to be a colonizer of the oral mucosa of infants and adults, to be effective against halitosis, and to downregulate the innate immune responses of human epithelial cells, authors wrote.

"The high-quality draft genome sequence of this probiotic S. salivarius strain will contribute to our understanding of the role of this species in the oropharyngeal ecology of human health," authors concluded.

For more information, see the study, "Genome Sequence of the Lantibiotic Bacteriocin Producer Streptococcus salivarius Strain K12," in the *Journal of Bacteriology*, November 2012, vol. 194, no. 21 pp 5959-5960.

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Some Health Benefits of Berries May Not Make It Past Your Mouth

Research suggests compounds responsible for the rich hues in colorful fruits, like berries, promote health. However, authors of a new study warn the potential benefits of anthocyanin compounds in berries may not make it past the mouth.

To test which health-promoting substances in berries are likely to survive and be produced in the mouth, researchers of the study, from the Ohio State University, measured the extent of anthocyanin pigment degradation when exposed to saliva.

Researchers of the study, published in the journal Food Chemistry, exposed extracts of anthocyanin pigments from blueberries, chokeberries, black raspberries, red grapes and strawberries to the saliva collected from 14 people. They found two families of anthocyanins were consistently broken down when exposed to saliva: delphinidin and petunidin, and four other families were more stable: cyanidin, pelargonidin, peonidin and malvidin, according to a news release from the university. Additionally, oral microflora contributed to the degradation of all anthocyanins, authors noted.

"Our observations suggest that the bacteria within one's oral cavity are a primary mediator of pigment metabolism. The bacteria are converting compounds that are present in the foods into metabolites," Mark Failla, professor of human nutrition at Ohio State, said in the news release. "One area of great interest is whether the health-promoting benefits associated with eating anthocyanin-rich fruits like berries are provided by the pigment itself, the natural combinations of the pigments in the fruit or the metabolites produced by bacteria in the mouth and other regions of the gastrointestinal tract."

For more information, see research-news.osu.edu/archive/saliva.htm or see the study in *Food Chemistry*, Volume 135, Issue 2, pp 738–747.

Study: More U.S. Dentists Utilizing Electronic Recordkeeping

A growing number of U.S. dentists are opting to utilize electronic dental records in their practices, according to a study published in the *Journal of the American Dental Association*.

Authors of the study conducted a Web-based survey to determine what clinical data practitioners keep on their computers regarding patients and found, of respondents, 73.8 percent of U.S. solo practitioners and 78.7 percent of group practitioners used a computer to manage some patient information. Additionally, 14.3 percent and 15.9 percent, respectively, managed all patient information on a computer.

"U.S. practitioners stored appointments, treatment plans, completed treatment and images electronically most frequently, and the periodontal charting, diagnosis, medical history, progress notes and the chief complaint least frequently," authors noted.

Results of the study indicate a trend toward increased use of electronic dental records in the U.S. is continuing, and the rising rate of dentists utilizing electronic dental records may offer increased opportunities for reusing electronic data for quality improvement and research, authors concluded.

For more information, see the study in the *Journal of the American Dental Association*, January 1, 2013 vol. 144 no. 1 49-58.

Americans More Fearful of Tooth Loss Than Flu, Root Canal

More Americans are fearful of losing a permanent tooth than getting the flu or a root canal, according to a survey conducted this year by the American Association of Endodontists.

"Despite an especially bad flu season that has taxed hospital emergency rooms and led to public health emergencies, more survey respondents hoped to avoid losing a permanent tooth (74 percent) than getting the flu (73 percent)," the AAE said in a news release, adding that outdated concerns about root canal treatment may have been an underlying factor.

Seventy percent of survey respondents said they want to avoid root canals and 60 percent said they were more anxious about a root canal than a pulled tooth or a dental implant.

The AAE conducted the survey in January in preparation for Root Canal Awareness, a national effort that took place in March and which is intended to increase awareness of endodontists, dispel myths surrounding root canal treatment and teach the public that root canals are nothing to be afraid of.

For more information, see aae.org/AAE_News_Room/Press_Releases/Americans_Fear_Losing_Teeth_More_Than_Getting_Flu_or_Root_Canal.aspx.

CHEATING, CONTINUED FROM 235

would be an example, or arms dealers, or perhaps a handful of dentists in a community where there is a large plant or a school district contract. Under such circumstances, the decision of any party will have a noticeable effect on the reaction of others.

Now consider exactly the same set of actors placed among thousands of others. The willingness of one individual to pay a few dollars more or less will not change the price at which goods and services are offered. We become "price takers" rather than "price makers." As soon as we recognize that our behavior no longer affects the rules of the game, we play to maximize our own self-interests.

Our rationalization is that it costs others something to look for cheats and to prosecute them. Most people calculate the cost others will have to pay to keep the game clean and add that to what they think they are entitled to. After all, the extra helping from the common pool of resources is so small, it will not be missed and it is being spread across so many. Almost all immoral behavior is committed by people who consider themselves to be ethical. They just do not cheat near home.

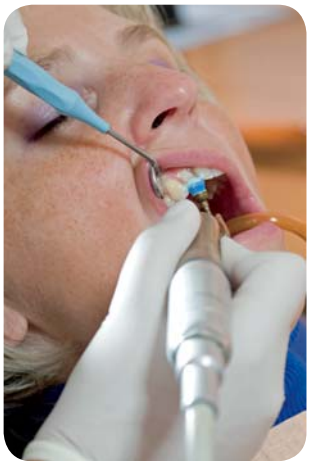
Dentists will work with patients on an individual basis to get a fair fee, but they also have habits or even policies that push the upper limit on insurance claims. There will be discussions among the staff about safety procedures, but not with government regulators. Dentists are more likely to balance what they give and what they expect at the component society level than at the national level of organized dentistry.

Every charitable appeal knows that you cannot raise money by showing the statistics, no matter how compelling they may be. Three starving kids with big eyes will get the job done though. This principle is even part of the fabric of our American legal system. An action can only be brought if it can be demonstrated that named individuals have been damaged, and even a class-action suit required specific people to step forward on behalf of others.

The nub:

1. Ethical standards tend to be higher in small groups than in crowds.
2. Anything that makes us or others anonymous erodes ethics.
3. Social media and corporate practices are expected to diminish ethics in dentistry.

David W. Chambers, PhD, is professor of dental education, Arthur A. Dugoni School of Dentistry, San Francisco, and editor of the *Journal of the American College of Dentists*.



Calcium-containing Bleaching Gel and Effectiveness, Tooth Sensitivity

Results of a recent study show that a calcium-containing 35 percent hydrogen peroxide gel can reduce tooth sensitivity during in-office teeth whitening.

Published in the *Journal of the American Dental Association*, the new study evaluated tooth sensitivity and the bleaching effectiveness associated with the use of calcium-containing in-office tooth whitening gel.

In the randomized clinical trial, with 40 caries-free participants 18 years or older, researchers used a 35 percent calcium-free hydrogen peroxide gel for one group and a 35 percent calcium-containing hydrogen peroxide gel for the other. According to the study, researchers performed two bleaching sessions with a one-week interval between sessions and registered the color at baseline and after the first and second bleaching sessions by using a shade guide. The authors also measured the participants' perception of tooth sensitivity on a scale from 0 (none) to 4 (severe).

While both groups showed comparable, significant tooth color enhancement, 80 percent of participants in the calcium-free group reported experiencing sensitivity while only 40 percent of participants from the calcium-free group experienced tooth sensitivity.

"It is likely that the addition of calcium gluconate and the stable and high pH of the calcium-containing product were responsible for the reduced sensitivity reported by participants receiving this bleaching agent in our study," authors concluded.

For more information, see the study in the *Journal of the American Dental Association* December 1, 2012 vol. 143 no. 12 e81-e87.

Tooth Root Formation Requires Beta-catenin Molecule

A recent study evaluating molecular mechanisms that control tooth root formation has found indication of a cell-autonomous requirement for Wnt/β-catenin signaling in the dental mesenchyme for root formation, according to a news release from the International and American Associations for Dental Research.

In the study, authors show that ß-catenin, a protein, is strongly expressed in the cells that develop tooth dentin — called odontoblasts — and is required for root formation. Researchers found that tissue-specific inactivation of ß-catenin in developing odontoblasts produced molars without roots and with abnormally thin incisors.

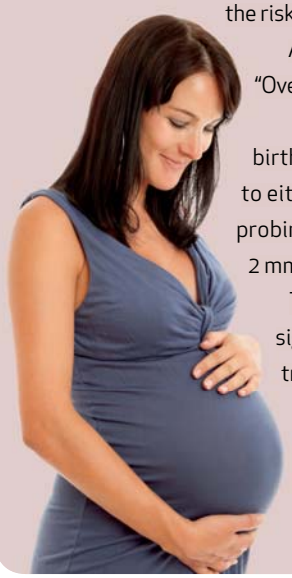
Authors noted that "at the beginning of root formation in the mutant molars, the cervical loop epithelium extended apically to form Hertwig's epithelial root sheath (HERS), but root odontoblast differentiation was disrupted and followed by the loss of some HERS inner layer cells. However, the outer layer of the HERS extended without the root, and the mutant molars finally erupted. The periodontal tissues extensively invaded the dental pulp."

"The striking tooth phenotypes in this study shed light on how Wnt signaling regulates odontoblast fate and root development," said *JDR* Associate Editor Joy Richman in a news release.

For more information, see the study, titled "ß-catenin Is Required in Odontoblasts for Tooth Root Formation," published online Jan. 23, 2013, in the IADR/AADR *Journal of Dental Research*.

Scaling, Root Planing to Reduce High Risks of Preterm Birth

An updated systematic review and meta-analysis showed scaling and root planing to be effective in lowering the risk for pregnant women with periodontitis who are at high risk for preterm birth.



After abstract review, 12 studies were identified and 11 included in the main meta-analysis. "Overall quality and design of included studies were fair or good," the study noted.

Selection criteria included randomized controlled trials that reported preterm-birth risk (less than 37 weeks) outcomes; compared scaling and root planing treatment to either placebo or no treatment in pregnant patients with periodontitis; and had a probing depth greater than 4 mm or clinical attachment loss of more than 2 mm for at least one site, authors wrote.

The authors' review, published in the *Journal of Periodontology*, indicated statistically significant effect in reducing risk of preterm birth with scaling and root planning treatment in pregnant women with periodontitis for groups with high risks of preterm birth only. However, authors added, "future research should attempt to confirm these findings and further define groups in which risk reduction may be effective."

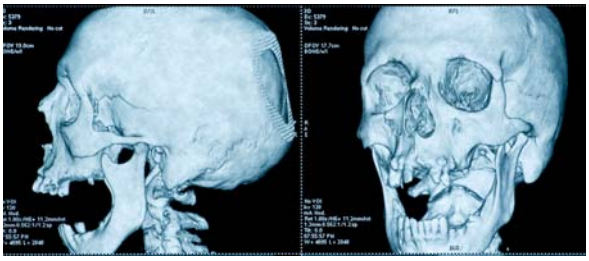
For more information, see the study in the *Journal of Periodontology* December 2012, Vol. 83, No. 12, Pages 1508-1519.

Accuracy of Technology for Placing Implants Tested Against Cadaver Measurements

Implant dentistry has become a common procedure, but the placement of the implants is crucial. Thorough preoperative planning of implant treatment is necessary for a successful treatment outcome.

Authors of a new study, published in the *Journal of Oral Implantology,* set out to evaluate the accuracy of cone beam computerized tomography (CBCT) and a 3-D stereolithographic (STL) model in identifying and measuring the anterior loop length (ANLL) of the mental nerve. Injury to the anterior loop of the mental nerve can cause sensory disturbance, most notably numbness or altered sensory perception.

Because of conflicting reports on length and location of the mental nerve, a variety of methods have been used to detect and measure the anterior loop, and, according to a news release from the journal, it has been determined that panoramic and periapical radiographs do not provide information about the loop that is reliable enough for clinicians to use in placing implants.



The study evaluated the accuracy of CBCT and STL in identifying and measuring the anterior loop of the mental nerve on 12 human cadavers. The CBCT was found to be accurate and reliable; however, the STL was found to significantly both overestimate and underestimate the anterior loop. Thus, according to the news release, the authors make the following recommendations:

- CBCT should be a prerequisite in identifying and measuring the anterior loop of the mental nerve for implant surgery.
- A fixed distance from the mental foramen (the point in the jaw where the nerve passes through) should not be used as a safety guideline; rather, the anterior loop itself should be located.
- A safety distance of at least 2 mm from the anterior-most portion of the loop should be observed in implant placement.
- The STL model should be used with caution; at this time, the model has not been shown to be highly accurate in estimating the anterior loop.

For more information, see the study in the *Journal of Oral Implantology*, Vol. 38, No. 6, 2012.

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"… animals that had gum inflammation and got infected had more viral variants causing infection and they also showed augmented systemic inflammation after infection."

LUIS GIAVEDONI, PHD

Study: Gingivitis Found to Worsen Infection in Animal Model of AIDS

Scientists from the Texas Biomedical Research Institute have found that moderate gum disease in an animal model exposed to an AIDS-like virus had more viral variants causing infection and greater inflammation, according to a news release from the institute.

Authors say both of these features have potential negative implications in long-term disease progression, including other kinds of infections, and first author Luis Giavedoni, PhD, said the public health message from the study is that even mild inflammation in the mouth needs to be controlled because it can lead to more serious consequences.

The researchers induced moderate gum inflammation in one group of monkeys with a second group without gum inflammation serving as a control. After exposing both groups of macaques to infectious SIV, a monkey virus similar to AIDS, in the mouth, they did not observe differences in the rate of infection, indicating the moderate gum disease did not increase the chances of getting infected with the AIDS virus.

"After infection with the simian AIDS virus, the generalized acute inflammation induced by the virus was exacerbated in the animals with gingivitis, indicating that even mild localized inflammation can lead to a more severe systemic inflammation," Giavedoni said in the news release.

"However, we did observe that the animals that had gum inflammation and got infected had more viral variants causing infection and they also showed augmented systemic inflammation after infection; both of these findings may negatively affect the progression of the viral infection," Giavedoni added.

For more information, see the study in the February 2013 issue of the *Journal of Virology*.

UPCOMING MEETINGS

2013

April 7–13	U.S. Dental Tennis Association, TOPS'L Resort, Destin, Fla., 800-445-2524 or dentaltennis.org
April 11–13	*CDA Presents The Art and Science of Dentistry, Anaheim*, 800-CDA-SMILE (232-7645) or cdapresents.com
April 25–28	CSPD/WSPD Annual Meeting & Scientific Session, Rancho Mirage, Calif., cspd.org
July 18–20	ADA 27th New Dentist Conference, Denver, Colo., 312-440-3524 or newdentist@ada.org
Aug. 15–17	*CDA Presents The Art and Science of Dentistry*, San Francisco, 800-CDA-SMILE (232-7645) or cdapresents.com
Oct. 31–Nov. 5	154th ADA Annual Session, New Orleans, ada.org/session
Nov. 3–9	U.S. Dental Tennis Association, Big Island, Hawaii, 800-445-2524 or dentaltennis.org
Nov. 10–13	National Primary Oral Health Conference, Denver, Colo., nnoha.org/conference/npohc.html

To have an event included on this list of nonprofit association continuing education meetings, please email Courtney Grant at courtney.grant@cda.org.

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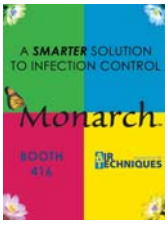
	Company/Product Website	Product Description	Booth
	**GumChucks at OralWise Inc.** **GumChucks®** **gumchucks.com**	GumChucks® is an innovative new flossing system. Resembling miniature nunchucks, they feature disposable tips equipped with a ¾-inch piece of floss. GumChucks can be used in the recommended "C" shape, something flossers can't do, providing superior control and leverage while fingers stay out of the mouth.	**2452**
	**ProSites** **ProSites Mobile Website Solution** **prosites.com**	Reach on-the-go patients with a new ProSites mobile website. With user-friendly navigation and prominent click-to-call and click-to-map icons, patients can find and contact your practice, instantly. Plus, add unlimited pages, showcase services and play videos right from the mobile site. The mobile revolution is here—is your practice ready?	**610, 1469**
	**Air Techniques** **Monarch™** **airtechniques.com**	Air Techniques proudly introduces Monarch™, an innovative and highly effective line of infection control products designed specifically for the dental practice. The Monarch™ line of infection control products for surfaces, instruments, skin, hands and equipment is designed to exceed practitioner's expectations in terms of staff and patient safety, effectiveness and efficiency. This philosophy is truly emphasized in Monarch's™ tagline: Stronger, Safer, Smarter.™ • Stronger: Monarch™ products are extremely effective and feature the fastest clinically relevant kill times. • Safer: Formulations are nontoxic and gentle on skin, eyes and mucous membranes. And they are free of carcinogens and hormone disrupters. • Smarter: One-step disinfection saves time and innovative packaging designs reduce plastic container waste. Anti-corrosive formulas protect lines, operatory and utility equipment.	**316, 416**
	**Philips Sonicare** **Philips Sonicare FlexCare Platinum** **philipsoralhealthcare.com**	Proven to remove up to 6x more plaque between teeth,* Philips Sonicare's new InterCare brush head has unique bristles for advanced interproximal plaque removal and superior gum care. An intuitive pressure sensor and nine brushing experiences offer personalized care and interactive guidance to help patients brush correctly. *Than a manual toothbrush.	**2234**

Cool Products

	Company/Product Website	Product Description	Booth
	**Colgate** **PreviDent® 5000 Booster Plus** **colgate professional.com**	New Colgate PreviDent® 5000 Booster Plus Delivers Unsurpassed Remineralization[1] New Colgate® PreviDent® 5000 Booster Plus contains 1.1% sodium fluoride (5,000 ppm), FluoriGard™† technology and Tricalcium phosphate. The new formula is shown to provide: • Better remineralization after 10 days§[1] • Unsurpassed remineralization after 20 days‡[1] Full Prescribing Information at colgateprofessional.com. References: 1. Data on file; Colgate-Palmolive, 2012. In vitro pH cycling model after 10 and 20 days. † Optimized fluoride delivery system. § Statistically better when compared to ClinPro™ 5000, MI Paste Plus™ topical creme, and PreviDent® 5000 Booster ‡ Comparison vs PreviDent® 5000 Booster. MI Paste Plus™ topical creme, and PreviDent® 5000 Booster	**1316**
	**Carestream Dental** **CS Solutions** **carestreamdental.com/solutions**	CS Solutions creates a new reality for restorative dentistry: one-visit, chairside restorations. Consisting of an intraoral scanner, restoration design software, a milling machine and a Web portal for sharing and managing restoration cases between dentists and laboratories, practices can choose between a comprehensive approach or stand-alone solutions.	**502**
	**Orascoptic** **XV1** **orascoptic.com/xv1**	XV1 is the world's first wireless loupe and headlight in one. This innovation seamlessly combines Orascoptic's award-winning loupes with its award-winning headlight—featuring a lightweight and completely cableless design. By removing the heavy and bulky beltpacks of past headlights, XV1 was ergonomically designed for comfort, function and style. • The world's first and only wireless loupe + headlight in one. • All electronics are completely contained within the custom frame. • No more cables to get tangled on chairs, doorknobs or drawers.	**1206**
	**Sunstar** **GUM® EasyThread™ Floss** **gumbrand.com**	Frustrated with your current threader floss? Now there's GUM® EasyThread™ Floss — created for easier plaque removal in hard-to-reach places. Double-ended threader sections are designed with the ideal stiffness to easily navigate around braces, bridges and implants without irritating the gums. This product features "puffy" floss with "plaque-grabbing" fibers for increased surface contact and a more thorough clean. Innovative, hygienic packaging reduces tangles and waste. Available in patient sample packs as well as a rewindable dispenser for in-office use. • Innovative, hygienic dispenser eliminates tangles and waste. • Dual-ended threader sections that maximize cleaning with one strand. • Available in 50-use office dispensers and five-strand envelopes for patient in home trial.	**1134**

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Exhibitors

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Exhibitors

Exhibitors

Schedule-at-a-glance

Thursday, April 11, 2013

■ Anaheim Convention Center ■ Hilton
> Continued Course *Repeated Course

Thursday Exhibit Hall Hours
9:30 a.m.—5:30 p.m.

Required Courses — Ticket Required

- **CDPA** *Thomason,* ACC Ballroom C/D
- **Infection Control** *Canham,* ACC Ballroom C/D

The Spot — Debuting the Smart Dentist Series, Free Lectures in the Educational Theater

- **Dental Benefits** *Thomason*
- **Dental Benefits** *Cheesebrough*
- **Dental Benefits** *Fornelli*
- **Insurance** *Dougan*
- **Peer Review** *Kozak*

Workshops — Ticket Required

- **Laser Dentistry *** *Coluzzi,* ACC Exhibit Hall D
- **Dental Assistant Program – Extended Function** *Kroll,* ACC 213 D
- **Pediatric Dentistry *** *Psaltis,* ACC 213 C
- **Risk Management *** *Sahota, Sillis,* Hilton California A
- **Esthetic Dentistry** *Willhite,* ACC 213 A
- **Laser Dentistry *** *Coluzzi,* ACC Exhibit Hall D
- **Dental Assistant Program – Extended Function** *Kroll,* ACC 213 D
- **Pediatric Dentistry *** *Psaltis,* ACC 213 C
- **Risk Management *** *Sahota, Sillis,* Hilton California A
- **Prosthodontics/Removable** *Sharifi,* ACC 213 B
- **Esthetic Dentistry** *Willhite,* ACC 213 A

New International Symposia of Dental Learning

- **Restorative Dentistry** *Minami,* ACC 209 A/B
- **Restorative Dentistry** *Minami,* ACC 209 A/B

Express Lectures — Speakers New to the Podium

- **Anesthesia/ Sedation** *Harden, Jr.,* ACC 205 A/B
- **Periodontics** *Honigman,* ACC 206 A/B
- **Restorative Dentistry** *Ibsen,* ACC 207 A/B
- **Practice Management** *Rasner,* ACC 205 A/B
- **Laser Dentistry** *Pang,* ACC 206 A/B
- **Restorative Dentistry** *Anderson,* ACC 207 A/B
- **Sleep Apnea/ Snoring** *Thompson,* ACC 205 A/B
- **Periodontics** *Tilt,* ACC 206 A/B
- **Forensic Dentistry** *Riley-Burns,* ACC 207 A/B
- **Financial Planning** *Mangelson,* ACC 205 A/B

Lectures

- **Oral Surgery *** *Alonge,* ACC 303 A/B
- **Corporate Forum - Colgate** *Rethman,* ACC 204 C
- **Prosthodontics/Removable** *Sharifi,* ACC Ballroom B
- **Compromised Patients** *Glick,* ACC 303 C/D
- **Oral Surgery *** *Alonge,* ACC 303 A/B
- **Compromised Patients** *Glick,* ACC 303 C/D

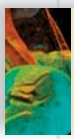


Exhibit Hall Grand Opening
9:30 a.m.

7 AM 8 AM 9 AM 10 AM 11 AM Noon 1 PM 2 PM 3 PM 4 PM 5 PM 6 PM

Schedule-at-a-glance

Lectures (continued)

7 AM | 8 AM | 9 AM | 10 AM | 11 AM | Noon | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM

Occlusion >
Wilkerson, ACC 210 A/B

General Topic
Vrla, ACC Ballroom A

Compromised Patients
Terezhalmy, Hilton California C

Social Media >
McNulty, et al., Hilton Pacific A

Technology
Fasbinder, ACC 304 C/D

Anesthesia/Sedation
Ganzberg, ACC 204 B

Periodontics
Grisdale, ACC Ballroom E

Endodontics *
Olmsted, ACC 207 C/D

Dental Assistant Program
Wallace, Hilton Pacific D

Geriatric Dentistry >
Shapira, Hilton Pacific B

Dental Hygiene Program
Millar, Hilton California D

Nutrition
Harper-Mallonee, ACC Ballroom C/D

Operative Dentistry
Sameni, ACC 208 A/B

Corporate Forum – Carestream
Clark, ACC 204 C

Insurance
Conway, Nelle, Hilton Laguna A

> Occlusion
Wilkerson, ACC 210 A/B

General Topic
Vrla, ACC Ballroom A

Compromised Patients
Terezhalmy, Hilton California C

> Social Media
McNulty, et al., Hilton Pacific A

Technology
Fasbinder, ACC 304 C/D

Anesthesia/Sedation
Ganzberg, ACC 204 B

Periodontics
Grisdale, ACC Ballroom E

Endodontics *
Olmsted, ACC 207 C/D

Dental Assistant Program
Wallace, Hilton Pacific D

> Geriatric Dentistry
Shapira, Hilton Pacific B

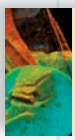
Nutrition
Harper-Mallonee, ACC Ballroom C/D

Operative Dentistry
Sameni, ACC 208 A/B

Corporate Forum - Philips
Low, Millar, Hilton California D

Social Media
McCollough, ACC 204 C

National Health Care Reform
Short, ACC Ballroom B



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7 AM | 8 AM | 9 AM | 10 AM | 11 AM | Noon | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM

Schedule-at-a-glance

Friday, April 12, 2013

■ Anaheim Convention Center ■ Hilton
> Continued Course *Repeated Course

Friday Exhibit Hall Hours
9:30 a.m.—5:30 p.m.

Required Courses — Ticket Required

Infection Control
Canham, ACC Ballroom C/D

CDPA
Curley, ACC Ballroom C/D

The Spot — Debuting the Smart Dentist Series, Free Lectures in the Educational Theater

Insurance
Dougan

Dental Benefits
Christensen

Peer Review
Kozak

Emergency
Ganzberg

Workshops — Ticket Required

Composites
Mopper, ACC 213 A

Dental Office/Team >
Wallace, Hilton Pacific A

Crown Lengthening
Grisdale, ACC 213 B

Endodontics *
Olmsted, ACC 213 C

Technology *
Fasbinder, ACC Exhibit Hall D

Practice Management
Tyson, et. al., Hilton Laguna A

Oral Surgery *
Alonge, ACC 210 C

Risk Management *
Kodama, Watkins, Hilton California A

Occlusion *
Wilkerson, ACC 213 D

Laser Dentistry *
Coluzzi, ACC Exhibit Hall D

> Dental Office/Team
Wallace, Hilton Pacific A

Periodontics
Grisdale, ACC 213 B

Endodontics *
Olmsted, ACC 213 C

Technology *
Poticny, ACC Exhibit Hall D

Oral Surgery *
Alonge, ACC 210 C

Risk Management *
Kodama, Watkins, Hilton California A

Occlusion *
Wilkerson, ACC 213 D

Laser Dentistry *
Coluzzi, ACC Exhibit Hall D

Prosthodontics/Removable
Sharifi, ACC 213 A

Lectures

Prosthodontics/Removable
Sharifi, ACC Ballroom B

Restorative Dentistry
Willhite, ACC 303 A/B

Occlusion
Tanaka, ACC Ballroom E

Periodontics
Edelstein, ACC 209 A/B

Emergencies >
Terezhalmy, ACC 206 A/B

General Topic
Vrla, Hilton Pacific C

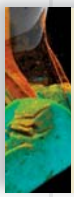
Implants
Tarnow, Hilton California C

Restorative Dentistry
Willhite, ACC 303 A/B

Periodontics
Edelstein, ACC 209 A/B

> Emergencies
Terezhalmy, ACC 206 A/B

General Topic
Vrla, Hilton Pacific C



Dental Student/ Dental Assistant Student Table Clinic Viewing
Noon–2 p.m.

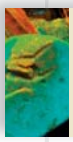
7 AM 8 AM 9 AM 10 AM 11 AM Noon 1 PM 2 PM 3 PM 4 PM 5 PM 6 PM

Schedule-at-a-glance

Lectures (continued)

7 AM | 8 AM | 9 AM | 10 AM | 11 AM | Noon | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM

- **Peer Review** — *Hansen*, ACC 204 C
- **Restorative Dentistry** — *Chu*, Hilton Pacific B
- **Endodontics >** — *Beach*, Hilton California B
- **> Endodontics** — *Beach*, Hilton California B
- **Orthodontics >** — *Roblee*, ACC 304 C/D
- **> Orthodontics** — *Roblee*, ACC 304 C/D
- **Compromised Patients** — *Glick*, ACC 207 A/B
- **Compromised Patients** — *Glick*, ACC 207 A/B
- **Geriatric Dentistry >** — *Shapira*, ACC 205 A/B
- **> Geriatric Dentistry** — *Shapira*, ACC 205 A/B
- **Dental Contracts** — *Perry*, ACC 204 B
- **Dental Assistant Program** — *Blaes*, ACC 303 C/D
- **Dental Assistant Program** — *Blaes*, ACC 303 C/D
- **Implants** — *Higginbottom*, Hilton Pacific D
- **Implants** — *Higginbottom*, Hilton Pacific D
- **Laser Denistry >** — *Roshkind*, ACC 210 A/B
- **> Laser Denistry** — *Roshkind*, ACC 210 A/B
- **Dental Materials >** — *Glazer*, Hilton California D
- **> Dental Materials** — *Glazer*, Hilton California D
- **Financial Planning *** — *Straine*, Hilton Huntington A/B/C
- **Financial Planning *** — *Straine*, Hilton Huntington A/B/C
- **Infectious Diseases *** — *Gerba*, ACC Ballroom A
- **Infectious Diseases *** — *Gerba*, ACC Ballroom A
- **Nutrition** — *Harper-Mallonee*, ACC Ballroom B
- **Nutrition** — *Harper-Mallonee*, ACC Ballroom B
- **Pharmocology** — *Byrne*, ACC Ballroom E
- **Pharmocology** — *Byrne*, ACC Ballroom E
- **Decisions Panel** — *Curry, et al.*, ACC Ballroom C/D
- **Corporate Forum – Pacific Dental Services** — *Chokka, et al.*, ACC 204 C
- **USC Research Track** — *Sedghizadeh, et al.*, ACC 207 C/D
- **Pediatric Dentistry** — *Psaltis*, Hilton California C
- **Insurance Claims** — *Cheesebrough, Milar*, ACC 204 B
- **Dental Task Force** — *Manos, Sparer*, ACC 303 A/B



CDA's Party in the Plaza
7–10 p.m.

7 AM | 8 AM | 9 AM | 10 AM | 11 AM | Noon | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM

Schedule-at-a-glance

Saturday, April 13, 2013

■ Anaheim Convention Center ■ Hilton
> Continued Course *Repeated Course

Saturday Exhibit Hall Hours
9:30 a.m.—4:30 p.m.

Required Courses — Ticket Required

7 AM | 8 AM | 9 AM | 10 AM | 11 AM | Noon | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM

- **California Dental Practice Act** *Curley*, ACC Ballroom C/D
- **Infection Control** *Andrews*, ACC Ballroom C/D

The Spot — Debuting the Smart Dentist Series, Free Lectures in the Educational Theater

- **Dental Benefits** *Thomason*
- **Dental Benefits** *Cheese-brough*
- **Dental Benefits** *Pichay*

Workshops — Ticket Required

- **Corporate Forum Invisalign - Cert. I** *Ataii*, Hilton Pacific A
- **Corporate Forum Invisalign - Cert. II** *Gates*, Hilton El Capitan
- **Laser Certification >** *Roshkind, Coluzzi*, ACC Exhibit Hall D
- **> Laser Certification** *Roshkind, Coluzzi*, ACC Exhibit Hall D
- **Overdentures *** *Higginbottom*, ACC 213 B
- **Overdentures *** *Higginbottom*, ACC 213 B
- **Practice Transition >** *Hoover*, Hilton Huntington A/B/C
- **Endodontics *** *Beach*, ACC 213 C
- **Endodontics *** *Beach*, ACC 213 C
- **Technology *** *Fasbinder*, ACC Exhibit Hall D
- **Technology *** *Poticny*, ACC Exhibit Hall D
- **Risk Management** *Kodama, Watkins*, Hilton California A
- **Dental Assistant Program** *Wallace*, ACC 213 D

International Symposia of Dental Learning

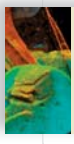
- **Restorative Dentistry** *Watanabe*, ACC 209 A/B
- **Restorative Dentistry** *Watanabe*, ACC 209 A/B

Lab Track

- **Lab Track** *Edwards, Jr.*, ACC 206 A/B
- **Lab Track** *Rodriguez*, ACC 206 A/B
- **Lab Track** *Di Tolla*, ACC 206 A/B
- **Lab Track** *Edwards, Jr., et al.*, ACC 206 A/B

Lectures

- **Pediatric Dentistry** *Psaltis*, Hilton California C
- **Pharmacology** *Byrne*, ACC Ballroom E
- **Anesthesia/Sedation** *Ganzberg*, ACC 304 C/D
- **Dental Materials *** *Malament*, ACC Ballroom A
- **Pharmacology** *Byrne*, ACC Ballroom E
- **Emergencies** *Ganzberg*, ACC 304 C/D
- **Dental Materials *** *Malament*, ACC Ballroom A



Military/Resident Table Clinic Viewing
Noon–2 p.m.

7 AM | 8 AM | 9 AM | 10 AM | 11 AM | Noon | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM

Schedule-at-a-glance

Lectures (continued)

7 AM | 8 AM | 9 AM | 10 AM | 11 AM | Noon | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM

Oral Surgery *
Alonge, ACC 303 C/D

Temporomandibular > Joint Dysfunction
Tanaka, Hilton Pacific C

CAMBRA
Kutsch, ACC 210 A/B

Crown & Bridges >
Garber, ACC Ballroom B

Dental Hygiene Program
Millar, ACC 207 A/B

Periodontics
Blair, ACC 205 A/B

Orthodontics >
Dugoni, ACC 204 C

Insurance *
Dougan, ACC 208 A/B

Dental Hygiene Program *
Press, Hilton California B

Restorative Dentistry >
Bertolotti, Hilton Pacific D

Periodontics
Edelstein, ACC 207 C/D

Infectious Diseases *
Gerba, Hilton California D

Forensic Dentistry
Glazer, ACC 303 A/B

Social Media *
Newman, ACC 204 B

Oral Surgery *
Alonge, ACC 303 C/D

> Temporomandibular Joint Dysfunction
Tanaka, Hilton Pacific C

CAMBRA
Kutsch, ACC 210 A/B

> Crown & Bridges
Garber, ACC Ballroom B

Finance
Blair, ACC 205 A/B

> Orthodontics
Dugoni, ACC 204 C

Insurance *
Dougan, ACC 208 A/B

Dental Hygiene Program *
Press, Hilton California B

> Restorative Dentistry
Bertolotti, Hilton Pacific D

Photography
Edelstein, ACC 207 C/D

Infectious Diseases *
Gerba, Hilton California D

Communication
Glazer, ACC 303 A/B

Social Media *
Newman, ACC 204 B

Esthetic Dentistry
Mopper, ACC 207 A/B

OSHA
Andrews, ACC Ballroom C/D

7 AM | 8 AM | 9 AM | 10 AM | 11 AM | Noon | 1 PM | 2 PM | 3 PM | 4 PM | 5 PM | 6 PM

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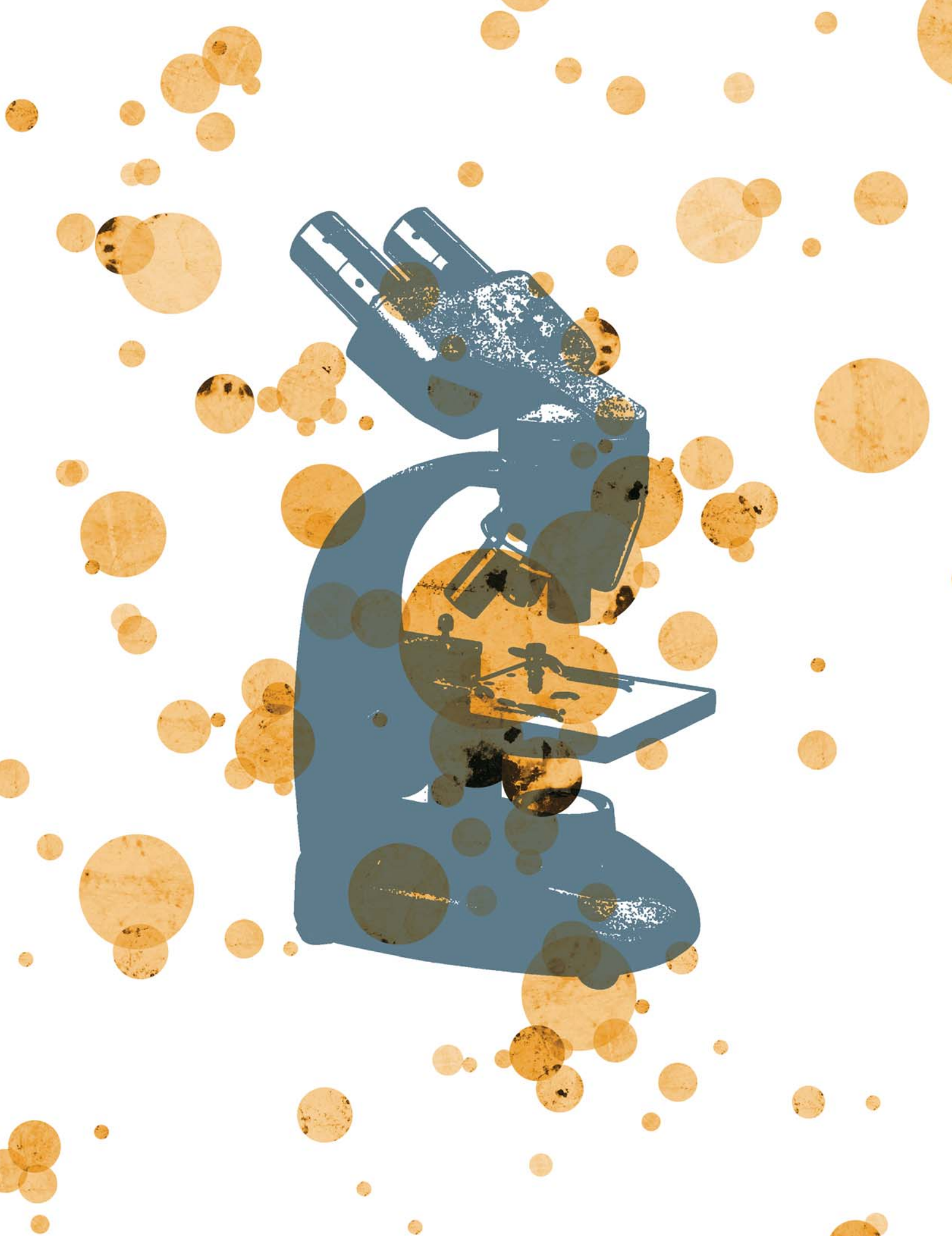

CDA JOURNAL, VOL 41, Nº4

Oral Medicine Update: Infectious Oral Lesions

JOEL M. LAUDENBACH, DMD

GUEST EDITOR

Joel M. Laudenbach, DMD, a diplomate of the American Board of Oral Medicine, practices oral medicine in Beverly Hills and Tarzana, Calif. He is an assistant professor of oral medicine and geriatric dentistry at Western University of Health Sciences and is on the medical staff at Cedars-Sinai Medical Center. *Conflict of Interest Disclosure: None reported.*

In the midst of a busy dental practice, all oral health care providers (OHCPs) are faced with detecting, screening and diagnosing oral, orofacial and head/neck pathologic findings. Patients depend on the ability of all OHCPs to diagnose symptomatic and sometimes unsightly lesions, perform appropriate tests (i.e., screening/adjunctive tests, biopsy, etc.) and institute management when indicated. Patients also rely upon OCHPs to appropriately refer them to other professionals (dental and medical) in situations when the diagnosis and/or management of the oral/orofacial pathologic finding is beyond the OCHP's expertise. The *Journal of the California Dental Association* has dedicated the April and May 2013 issues to clinical oral medicine updates for OHCPs.

Oral medicine is the discipline of dentistry concerned with the oral health care of medically compromised patients and with the diagnosis and nonsurgical management of medically related disorders or conditions affecting the oral and maxillofacial region. In these issues, clinically relevant oral medicine topics are presented in such a way that the clinician may easily and quickly review the topic and then clinically implement the updated information readily.

The April issue is focused on three important aspects of infectious oral lesions: herpes simplex virus, oral candidiasis and orofacial infections in children.

Oral and perioral HSV infections are a common complaint and clinical finding that OHCPs encounter. Drs. Stoopler and Balasubramaniam present an update on topical and systemic therapies for oral and perioral HSV infections, which all OHCPs can appreciate and implement readily. This update on therapeutics for HSV infections is an important resource for the clinician faced with the challenge of successful and effective management of oral and perioral HSV infections.

Oral candidiasis is a fungal infection that can cause severe and alarming intraoral symptoms — pain, burning and dysgeusia (bad taste). Furthermore, the intraoral lesions of candidiasis can present in multiple forms — pseudomembranous, erythematous and chronic hyperplastic. These various forms can complicate and confuse practitioners when formulating a differential diagnosis, as well as require different management strategies/therapeutics to effectively treat the infection. Lastly, recurrence of oral candidiasis, host immunosuppression and salivary gland hypofunction all make treatment and fungal prophylaxis very challenging. Dr. Lalla et al. have provided an update on oral candidiasis, which can be put right to use by OHCPs.

When oral lesions are discovered in children, OHCPs and parents are rightly concerned about symptoms, etiology, persistence, diagnosis, management and any associated implications. All OHCPs strive to minimize discomfort and suffering in all patients, especially in this vulnerable population. Drs. Pinto and Hong present a thorough review of the orofacial manifestations of bacterial and viral infections in children. This article focuses on the OHCP's recognition and understanding of bacterial and viral infections in children, and reviews important differential diagnoses and management strategies and concepts.

This and the following issue of the *Journal of the California Dental Association* provide a clinically relevant update on important oral medicine topics that OHCPs face daily and serve as a resource for clinical practice. The May issue is dedicated to oral cancer: screening, lesions and human papillomavirus.

I am especially honored to have all the contributing authors participate in this project and truly appreciate their efforts. I hope you find this issue educational and useful in your oral health care practice. ■■■■

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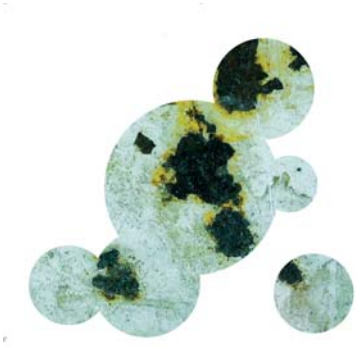

Topical and Systemic Therapies for Oral and Perioral Herpes Simplex Virus Infections

ERIC T. STOOPLER, DMD, FDS RCSED, AND RAMESH BALASUBRAMANIAM, BDSC, MS

ABSTRACT Oral and perioral herpes simplex virus (HSV) infections in healthy individuals often present with signs and symptoms that are clearly recognized by oral health care providers (OHCPs). Management of these infections is dependent upon a variety of factors and several agents may be used for treatment to accelerate healing and decrease symptoms associated with lesions. This article will review the pertinent aspects of topical and systemic therapies of HSV infections for the OHCP.

AUTHORS

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Oral and perioral (herein referred to collectively as oral) herpes simplex virus (HSV) infections represent one of the most common oral soft tissue disease processes encountered in the general population.[1,2] HSV-1 serotype is the most common cause of orofacial infections, however, HSV-2 serotype has been implicated as a causative agent of these infections (and HSV-1 as the etiology for genital infections) due to sexual practices.[3,4] Primary oral HSV infections usually occur in early childhood and while the majority are subclinical, clinical infections initially present with general symptoms, such as malaise, fever and lymphadenopathy (referred to as a prodrome) followed by vesicles and/or ulcers affecting a variety of intraoral surfaces.[3] Most primary oral HSV infections are readily diagnosed based on clinical history, signs and symptoms and further laboratory investigation is generally not warranted.[2,5] The majority of oral HSV infections are self-limiting with resolution usually within two weeks, often requiring only palliative treatment and supportive care as needed.[3]

Following primary infection, the virus migrates to the trigeminal nerve ganglion where it can remain latent indefinitely but may be stimulated to reactivate under a variety of circumstances (environmental triggers, stress, illness, etc.) that results in clinical infection.[3] The most common presentation of recrudescent HSV infection (development of clinical lesions) in healthy individuals is recurrent herpes labialis (RHL), observed as a lesion located

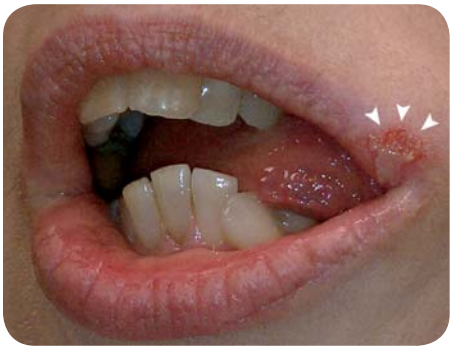

FIGURE 1. Typical presentation of recurrent herpes labialis (RHL) (white arrows). (*Courtesy of Martin Greenberg, DDS, and Thamer Musbah, BDS, University of Pennsylvania.)*

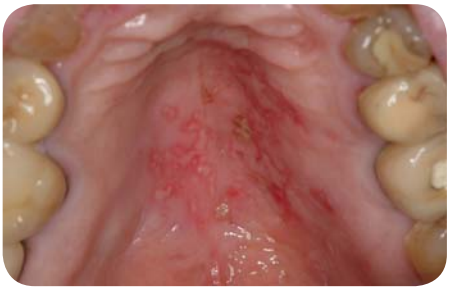

FIGURE 2. Recurrent intraoral herpes (RIH) of the palatal mucosa. *(Courtesy of Martin Greenberg, DDS, University of Pennsylvania.)*

at the mucocutaneous junction of the lips (known as a fever blister or cold sore) (**FIGURE 1**). A majority of patients experience prodromal symptoms preceding an episode of RHL, which often consists of pain, itching and/or burning at the site of lesion development.[6] Recurrent intraoral herpes (RIH), which is observed more often in immunocompromised patients, may be difficult to distinguish clinically from other oral mucosal disorders, such as aphthous stomatitis (**FIGURE 2**). Prodromal symptoms preceding an episode of RIH are not commonly observed.[6] Management of recurrent herpes infections is dependent upon frequency, severity and distribution of lesions and may include topical and/or systemic therapeutic agents.

Topical Therapies

Topical therapies for oral HSV infections can be divided into palliative, preventive and antiviral categories. Palliative topical agents available over the counter (OTC) commonly contain the anesthetic benzocaine and are beneficial in reducing pain associated with an oral HSV infection. Palliative topical agents available by prescription, such as lidocaine gel 2 percent, viscous lidocaine 2 percent or mixtures of topical anesthetic with coating agents +/- diphenhyrdamine (e.g., magic mouthwash) may afford patients more relief compared to OTC topical anesthetic preparations. These agents may be used for both primary and recurrent oral HSV infections in adults for symptomatic relief and are often used in combination with systemic antiviral agents for more effective management. Other topical agents that have been recommended for use to treat RHL include ice and lip compounds containing lanolin, cocoa butter or petrolatum-based products.[6]

Use of topical anesthetic preparations in the pediatric population is controversial due to possible increased risk of life-threatening events.[7,8] Aspiration of topical lidocaine in this population has been linked to adverse neurologic and cardiovascular reactions, such as seizures and hypotensive episodes, respectively[9,10] while ingestion of topical benzocaine has been associated with development of methemoglobinemia.[8,11] In April 2011, the Food and Drug Administration (FDA) issued a safety alert regarding topical benzocaine products (sprays, liquids, gels) in association with risk of methemoglobinemia and recommended that benzocaine products not be used on children younger than 2 years of age, except under the advice and supervision of a health care professional.[12]

Preventive agents are primarily used for decreasing the risk of an RHL episode, especially if a patient is aware of precipitating factors, such as sun exposure. Evidence supports using sunscreen on the lips with a sun-protection factor (SPF) of at least 15 to decrease the risk of developing an episode of RHL.[4,13]

Topical antiviral agents have demonstrated efficacy in accelerating the healing time of RHL lesions, especially if administered during the prodromal phase.[6] The topical antiviral agents that are most commonly recommended to treat RHL include Acyclovir 5 percent cream, Penciclovir 1 percent cream and Docosanol 10 percent cream.[1,2,4,13] Acyclovir is a nucleoside analogue of guanosine with a selective affinity for thymidine kinase (TK), which is necessary for activation of acyclovir, in virus-infected cells.[1] Acyclovir is a potent inhibitor of viral DNA synthesis and thus ultimately prevents viral replication.[1] Penciclovir is an acyclic guanine derivative with a similar antiviral spectrum as acyclovir. It is also phosphorylated by viral TK and inhibits viral DNA polymerase.[1,14] Penciclovir has approximately 1/100th the potency of acyclovir, but is an effective antiviral agent due to its long half-life and high intracellular concentrations.[1] Docosanol is a 22-carbon primary alcohol that blocks the virus from attaching to cells via interference of epithelial cell surface receptors and viral envelope proteins.[6] Acyclovir 5 percent cream and Penciclovir 1 percent cream are available by prescription, while Docosanol is the only agent approved by the FDA as an OTC product for treatment of RHL.

Topical formulations of foscarnet, cidofivir and imiquimod are generally reserved for treatment of RHL lesions that are nonresponsive to typical antiviral agents and are rarely used in healthy individuals.[1,4,15] In contrast to other antiviral agents dependent upon viral TK, foscarnet and cidofivir inhibit viral DNA synthesis independently of this mechanism.[1] Foscarnet has demonstrated efficacy in treating acyclovir-resistant HSV infections, while cidofovir is generally reserved for both acyclovir and foscarnet-resistant HSV infections.[1,4] Imiquimod

TABLE 1

Topical Therapies for Treatment of Oral HSV Infections

Category	Agent	Indications	Recommendations
Palliative	Ice, lip balms Over-the-counter topical anesthetic preparations (e.g., containing benzocaine)‡	Primary HSV infections, Recurrent HSL infections, RIH infections	As needed or per manufacturer's instructions.
	Topical lidocaine preparations* (Viscous lidocaine 2%, lidocaine gel 2%)	Primary HSV infections, Recurrent HSL infections, RIH infections	Viscous lidocaine 2% - 10 ml swish and spit as needed for pain relief. Lidocaine gel 2% - apply layer to affected area as needed for pain relief.
	Magic Mouthwash*†	Primary infections, RIH infections	10 ml swish and spit as needed for pain relief.
Protective	Sunscreen (SPF 15 or higher)	Recurrent HSL infections	As per manufacturer's instructions.
Antiviral	Acyclovir 5% cream	Recurrent HSL infections	Apply every two hours from the time of prodrome until lesions are healed.
	Penciclovir 1% cream	Recurrent HSL infections	Apply every two hours from the time of prodrome until lesions are healed.
	Docosanol 10% cream	Recurrent HSL infections	Apply every two hours from the time of prodrome until lesions are healed.
	Topical foscarnet, cidofivir and/or imiquimod	Recalcitrant HSV lesions	Rarely used in healthy individuals; Refer to appropriate health care provider for management with these agents.

‡ Food and Drug Administration recommends benzocaine products (spray, liquid, gel) should not be used on children younger than 2 years of age, except under the advice and supervision of a health care professional.
* Aspiration of topical lidocaine in the pediatric population has been associated with adverse neurologic and/or cardiovascular side effects.
† Various combinations of agents — usually contains topical anesthetic (e.g., viscous lidocaine 2%) with coating agents (e.g., Maalox) + / - diphenhydramine.

is a novel agent that enhances innate immunologic responses to viruses and topical formulations has shown to be effective in treating resistant HSV infection in the setting of HIV.[15] TABLE 1 outlines the indications and usage recommendations for topical agents used for treatment of oral HSV infections.

Systemic Therapies

Systemic therapies may be required for the treatment of primary oral HSV infection and treatment or prophylaxis of both RHL and RIH, especially in immunocompromised patients. Unlike topical agents, systemic medications enable greater drug exposure, rapid access to site of viral replication, better biocompatibilityd less frequent dosing and improved compliance. Systemic medications are exclusively antiviral agents and may be administered orally or intravenously.[16,17]

As noted previously, treatment of primary oral HSV infection is typically based on supportive and symptomatic interventions.[18] However, off-label use of systemic antiviral medications may accelerate healing time of primary oral HSV lesions by inhibiting DNA replication of infected cells if commenced when prodromal symptoms are recognized or within one day of vesicle eruption.[6] Oral acyclovir 200 mg five times a day or 400 mg three times a day for 10 days may be used in severe cases of primary oral HSV infection in adults as currently prescribed in primary genital infection.[6] In the pediatric patient, treatment with oral acyclovir suspension 15 mg/kg within three days of symptom onset and continued five times a day for one week was shown to accelerate healing, reduce viral shedding and improve oral intake.[19]

Contemporary antiviral medications such as famciclovir and valacyclovir may also be prescribed given their more convenient dosing and increased bioavailability.[14] (TABLE 2) Famciclovir (prodrug of penciclovir) is a diacetyl-6-deoxy analogue that is rapidly absorbed and undergoes deacetylation in the gastrointestinal tract, blood and liver to its active form.[1] Valacyclovir (prodrug of acyclovir) is an L-valine ester that is well absorbed and 99 percent converted to its active form in the gastrointestinal tract and liver.[1] This results in a three- to five-times increase in bioavailability. [14]

Systemic antiviral medications may be used as prophylaxis or treatment in patients with severe, frequent, persistent and unsightly outbreaks.[20] Oral valacyclovir has been shown to be effective and is approved by the FDA for the treatment of RHL.[17] Oral acyclovir and famiciclovir are approved by the FDA specifically for the treatment and suppression of genital herpes, but have also been used for RHL therapy.[13,21]

In the immunocompromised individual, such as during chemotherapy or during

TABLE 2

Systemic Antiviral Medications for the Treatment of Primary Herpes Simplex Virus Infection

	Acyclovir		Valacyclovir	Famciclovir
Dose	200 mg *	400 mg +	1000 mg *	250 mg +
Frequency	5x/day	3x/day	2x/day	3x/day
Duration	7–10 days	7–10 days	7–10 days	7–10 days

* Food and Drug Administration treatment recommendations for genital herpes

+ Recommendations from the Center for Disease Control and Prevention for genital herpes

TABLE 3

Systemic Therapies for Treatment of Oral HSV Infections

Indication	Therapy
Treatment of RHL in the immunocompetent host	Oral acyclovir 400 mg three times a day for five to seven days Oral valacyclovir 500 mg to 2000 mg twice a day for one day Oral famciclovir 500 mg two to three times a day for three days
Prophylaxis of RHL in the immunocompetent host *	Oral acyclovir 400 mg two to three times a day Oral valacyclovir 500 mg to 2000 mg twice a day
Treatment of recurrent HSV infections in the immunocompromised host	Oral acyclovir 400 mg three times a day for 10 days or longer as necessary Oral valacyclovir 500–1000 mg twice a day for 10 days or longer as necessary Oral famciclovir 500 mg twice a day for up to one year
Prophylaxis of recurrent HSV infections in the immunocompromised host	Oral acyclovir 400–800 mg three times a day Oral valacyclovir 500–1000 mg twice a day Oral famciclovir 500–1000 mg twice a day

Adapted and modified from Woo SB, Challacombe SJ. "Management of recurrent oral herpes simplex infections." *Oral Surg Oral Med Oral Pathol Oral Radiol Endod* 2007; 103 (suppl 1): S12.e1-S12.e18.

* Duration of the prophylaxis is based on the extent and frequency of exposure to triggers of RHL episodes, such as sunlight, dental treatment, etc.

the use of immunosuppressive drugs, RIH may present as a severe outbreak.[22] Oral or intravenous acyclovir has been shown to be effective in the prevention and treatment of RIH in these patients.[23] Similarly, valacyclovir and famciclovir may also be prescribed for the prevention and treatment of RIH in immunocompromised patients. **TABLE 3** summarizes the antiviral agents available, their dosages and duration of use based on the expert recommendations from the Fourth World Workshop in Oral Medicine.[13] Newer intravenous medications such as foscarnet and cidofovir may be necessary in acyclovir-resistant, severely immunocompromised patients. These medications are highly nephrotoxic and should be used with caution.[21]

Conclusions

There is a variety of treatment modalities for oral HSV infections. OHCPs must be cognizant of the advantages and limitations of both topical and systemic therapies for this condition. It is imperative for OHCPs to determine the appropriate agents for treatment in the context of the patient's disease presentation and overall medical status. ■■■■

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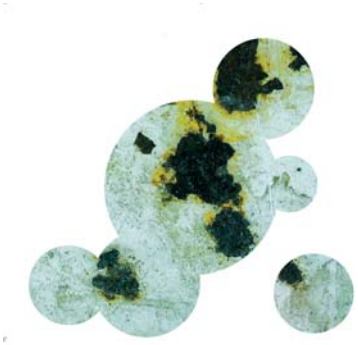

Oral Candidiasis: Pathogenesis, Clinical Presentation, Diagnosis and Treatment Strategies

RAJESH V. LALLA, DDS, PHD, CCRP, DABOM; LAUREN L. PATTON, DDS; AND ANNA DONGARI-BAGTZOGLOU, DDS, PHD

ABSTRACT Oral candidiasis is a clinical fungal infection that is the most common opportunistic infection affecting the human oral cavity. This article reviews the pathogenesis, clinical presentations, diagnosis and treatment strategies for oral candidiasis.

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Conflict of Interest Disclosure: None reported.

Oral candidiasis is a clinical fungal infection that is the most common opportunistic infection affecting the human oral cavity. However, the mere presence of fungal organisms in the oral cavity is not considered to be of clinical importance. Indeed, 35 percent or more of healthy individuals may carry *Candida albicans* as a component of the normal oral flora, without any clinical disease.[1] This percentage is further increased in immunocompromised populations such as patients with cancer[2] or organ transplants.[3] The term "candidiasis" is used only when there is clinically visible disease. The shift from commensal organism to pathogenic clinical infection is typically caused by a change in local and/or systemic predisposing factors. Local predisposing factors include hyposalivation (which may be secondary to drugs, disease or radiation therapy), poor oral hygiene, use of a removable oral prosthesis, tobacco use, changes in the oral flora (such as due to topical or systemic antimicrobial use), local immunosuppression (such as due to topical steroid use) and local tissue damage (such as oral mucositis secondary to cancer therapy). Systemic predisposing factors include general debilitated status and immunosuppression, which may be due to disease (such as HIV infection or diabetes mellitus) and/or drugs (such as chemotherapy or systemic steroid use). In most cases, oropharyngeal candidiasis remains a local infection with limited morbidity. However, in significantly immunocompromised patients, it can result in a life-threatening systemic fungal infection.[4]

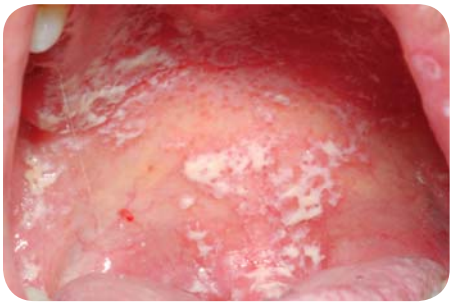

FIGURE 1. Pseudomembranous candidiasis in an HIV patient. (*Courtesy of Rajesh V. Lalla, DDS, PhD, CCRP, DABOM.*)

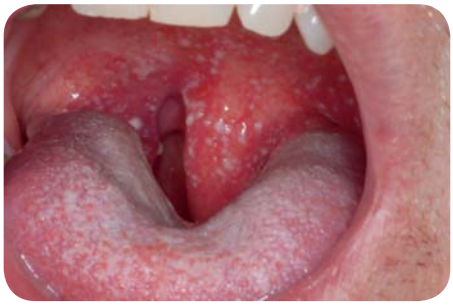

FIGURE 2. Pseudomembranous candidiasis in patient undergoing head and neck radiation therapy. (*Courtesy of Linda Choquette, RDH, MS, CCRP.*)

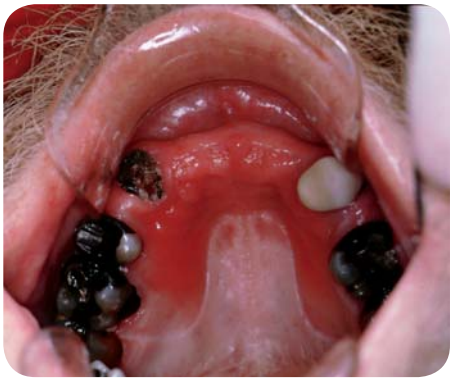

FIGURE 3. Denture stomatitis in a patient with diabetes mellitus. (*Courtesy of Lauren L. Patton, DDS.*)

Pathogenesis

The majority of cases of oral candidiasis are caused by *Candida albicans*. Other *Candida* species that are sometimes involved include *Candida tropicalis*, *Candida glabrata* and *Candida krusei*.[2,5] In angular cheilitis, staphylococcal species are often co-isolated with *C. albicans*, whereas a pathogenic synergy between *C. albicans* and oral streptococci has been recently demonstrated in an organotypic model of the human oral mucosa.[6] These findings suggest that the microbial etiology of this infection may be more complex than traditionally thought, since it may involve bacterial interaction with *Candida*. Most clinical forms of oral candidiasis are triggered by the formation of biofilms, on dentures or mucosal surfaces, that are dominated by *Candida* but also contain microorganisms.[3,7] These biofilms trigger a massive infiltration of neutrophils and play a major role in the pathogenesis of this infection by promoting the adhesion of the fungus on mucosal and denture surfaces and by providing a protective environment from neutrophilic killing.[3,8]

Candida albicans exists in two major forms, a yeast form and a hyphal form. The yeast form is typically associated with mucosal commensalism, whereas conversion to the hyphal form is usually related to invasion of the superficial layers of the oral epithelium and clinical disease.[9] Fungal invasion of the superficial layers of the oral epithelium is found in human cases of advanced immunosuppression and in animal models of oropharyngeal candidiasis.[9,10] Localized mucosal invasion by this fungus amplifies the intensity of the inflammatory response and is associated with proteolytic breakdown of epithelial E-cadherin by fungal proteases.[11,12] Other *C. albicans* virulence factors that may contribute to more severe, locally invasive disease are phenotypic switching, adhesins and phospholipases.[13]

Clinical Presentation

Oral candidiasis exists in several different clinical forms.[14] These diverse clinical manifestations are often associated with different predisposing factors and symptomatology, as described below.

Pseudomembranous Candidiasis (Thrush)

This is the most widely recognized form of oral candidiasis.[15] It appears as white or yellow pseudomembranes on the oral mucosal surface (**FIGURES 1 AND 2**). These pseudomembranes are adherent but can be removed with some pressure. The underlying mucosa is typically erythematous and inflamed. It often occurs on the tongue, buccal mucosa, soft palate and pharyngeal areas. Common predisposing factors include hyposalivation and local or systemic immunosuppression. Pseudomembranous candidiasis is usually asymptomatic and patients are often unaware of its presence. In some cases, patients may report an alteration of taste or discomfort if extensive areas are involved.

Erythematous Candidiasis

Erythematous candidiasis, as the name suggests, appears as red atrophic areas of the oral mucosa, without any white pseudomembranes. It may be clinically missed due to a less pathognomonic clinical appearance. It often occurs on the hard palate and the dorsum of the tongue. When affecting the tongue, it may result in an atrophic, smooth-appearing dorsal tongue, with loss of filiform papillae. Common predisposing factors include the use of broad-spectrum antibiotics and the use of steroid inhalers. Patients may complain of a burning sensation.

Denture stomatitis is a form of erythematous candidiasis that occurs under a removable denture. It usually affects the palatal surface under a maxillary denture. The boundaries of the lesion correspond to the tissue within the denture margins (**FIGURE 3**). It is typically asymptomatic. Denture stomatitis occurs in patients who do not remove their dentures at night and in patients who do not clean their dentures regularly.[16]

Median rhomboid glossitis is a form of erythematous candidiasis that presents as a characteristic oval to rhomboid erythematous patch along the midline of the dorsum of the tongue.[17] The affected surface demonstrates loss of filiform papillae (**FIGURE 4**). Predisposing factors include smoking and use of steroid inhalers.

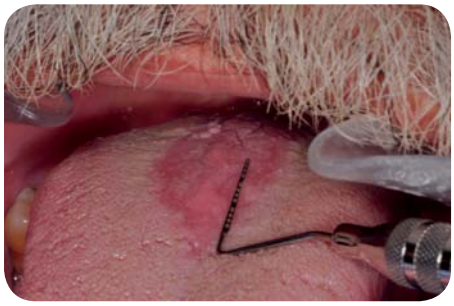

FIGURE 4. Median rhomboid glossitis, identified with the dental probe. (*Courtesy of Joel M. Laudenbach, DMD.*)

On occasion, a similar erythematous lesion may be seen on the palate, in the area contacted by the affected part of the tongue. Median rhomboid glossitis is asymptomatic and can persist chronically.

Angular Cheilitis

Angular cheilitis refers to a mixed fungal and bacterial infection of the commissures of the mouth. It appears as a red, fissured and sometimes crusted area of the mucosa. It may also affect the adjacent skin at the corners of the mouth. Predisposing factors include denture wearing, loss of vertical dimension and vitamin deficiencies.[18] Angular cheilitis may be seen in association with intraoral candidiasis, especially denture stomatitis, but can also occur alone. Patients may complain of discomfort when opening the mouth wide, such as during dental treatment.

Chronic Hyperplastic Candidiasis

This is an uncommon form of oral candidiasis, characterized by the presence of a white hyperkeratotic plaque that cannot be wiped off. It clinically resembles an oral leukoplakia and is asymptomatic. It has been reported on the buccal mucosa and lateral tongue. There is controversy about the malignant potential of such lesions.[19]

Diagnosis

Many forms of candidiasis are diagnosed clinically based on the pathognomonic clinical appearance, presence of predisposing factors and response to treatment. These include pseudomembranous candidiasis, denture stomatitis, median rhomboid glossitis and angular cheilitis. Pseudomembranous candidiasis may sometimes resemble food debris. Food debris is removed when rinsing the oral cavity while pseudomembranous candidiasis is not. However, pseudomembranous candidiasis should be removable by rubbing a piece of gauze firmly across the lesion.

If needed, exfoliative cytology can be used to confirm the diagnosis. This involves taking a smear from the affected area, which is then fixed in alcohol and stained with periodic acid-Schiff (PAS) stain. Under microscopic examination, the presence of fungal organisms confirms the diagnosis. Another similar diagnostic technique is the potassium hydroxide (KOH) preparation. Treatment of a smear with KOH solution with gentle heating dissolves mucosal cells and makes the fungal organisms easier to see under a microscope. Fungal culture using Saboraud agar plates can be used to identify the fungal species involved and test susceptibility to antifungal agents. This particular type of culture is usually reserved for cases involving those with no response to initial treatment, fungal recurrence and/or immunocompromised patients. Results of such testing can guide the choice and dose of the antifungal agent used. Suspected chronic hyperplastic candidiasis, that is nonresponsive to antifungal treatment, must be biopsied and a fungal stain performed, to confirm the diagnosis and rule out dysplasia or malignancy.

Treatment Strategies

The first step in the management of oral candidiasis should be to identify and correct predisposing factors, wherever possible. For example:

- Patients with oral candidiasis secondary to hyposalivation may benefit from strategies to keep the oral cavity moist. These can include frequent rinsing of the mouth, maintaining good hydration and the prescribing of pilocarpine or cevimeline, which stimulate salivary flow.20 If hyposalivation is secondary to a prescribed medication, the prescriber should be consulted about whether it is possible to switch to another medication.
- Patients undergoing cancer therapy may be prone to oral candidiasis due to side effects of the cancer therapy, including immunosuppression and hyposalivation. While immunosuppression secondary to chemotherapy is usually transient, radiation therapy for head and neck cancer often causes a permanent reduction in salivary flow. The use of amifostine during head and neck radiation therapy has been shown to reduce severity of xerostomia and hyposalivation.21 After radiation therapy, the strategies discussed above for patients with hyposalivation may be used, with the caveat that drugs to stimulate salivary flow will be effective only if there is an adequate volume of functional salivary gland tissue left.
- Patients with oral candidiasis secondary to the use of steroid inhalers should be asked to rinse the mouth after each use of the steroid inhaler. If oral candidiasis still recurs, they can be asked to use the inhaler through a spacer device, which reduces the amount of medication deposited on the oral mucosa.
- Patients with recurrent oral candidiasis secondary to HIV infection should be referred to their physician for evaluation. Recurrent oral candidiasis in HIV patients suggests suboptimal HIV disease control.[22] HIV patients with low CD4 counts (less than 200 cells/mm^3)

are sometimes treated with prophylactic fluconazole to prevent recurrent mucosal candidiasis.[23] However, such a practice can lead to the emergence of resistant Candida organisms as well as increased medication costs.

■ Patients with denture stomatitis should be asked to keep the denture out of the mouth at night and to clean the denture regularly. Treatment for denture stomatitis should include treating the denture as well as the affected oral tissue. An antifungal cream or ointment can be applied to the tissue bearing surfaces before wearing the denture, so that both the denture and the tissue are treated. At night, the denture should be soaked in a commercially available denture cleanser. During an active infection, it is useful to soak dentures and/or oral appliances in diluted bleach or chlorhexidine, which have fungistatic properties. Dentures soaked in a bleach solution must be washed carefully before reinsertion into the mouth. This practice can also result in a bleaching of the denture color. In addition to its antimicrobial properties, chlorhexidine also has limited antifungal effects.[24]

TABLE

Antifungal Medications Commonly Used for Oral Candidiasis

Drug	Formulation and Dosage	Instructions For Use
Nystatin	Oral suspension, 100,000 units/ml*	Use 1 teaspoon as a rinse 5 times/day. Hold in the mouth for 2-3 minutes and then spit out.
Nystatin	Pastilles, 200,000 units/pastille*	Dissolve one pastille in the mouth slowly 5 times/day.
Nystatin	Ointment, 100,000 units/gm	Apply to the undersurface of the denture and the affected area 5 times/day.
Clotrimazole	Troches, 10 mg*	Dissolve one troche in the mouth slowly 5 times/day.
Miconazole	Oravig mucoadhesive tablet, 50 mg	Apply one tablet to the canine fossa region, once/day in the morning.
Fluconazole	Tablet, 100 mg	Swallow 2 tablets on day 1 and then 1 tablet daily for the next 13 days.

*May have high sugar content

Topical Therapies

Topical agents are the preferred first line of antifungal therapy in most patients. First-line options for topical antifungal therapy include nystatin, clotrimazole and miconazole. Some systemic antifungal agents such as itraconazole and amphotericin B are also available as oral suspensions. Guidelines from the Infectious Diseases Society of America (IDSA) recommend the use of clotrimazole troches (lozenges) or nystatin suspension (rinse)/pastilles (lozenges) as first-line therapy for the management of mild oropharyngeal candidiasis.[25] With all topical therapies, patients should be asked not to eat, drink or rinse for at least one hour after use to prevent the drug from being washed away. A 14-day treatment period is usually prescribed.

Nystatin

Nystatin is a polyene antifungal that is poorly absorbed in the gastrointestinal tract. Its efficacy depends on direct contact with fungal organisms. It must therefore be used on the oral mucosa several times a day. Nystatin is generically available as a liquid suspension, cream and pastille. These formulations have a high sugar content, which can be a concern due to caries risk with prolonged use, especially in patients who have a dry mouth. Despite the high sugar content, some patients may complain of a bitter taste.[26] Nystatin cream and pastille allow for a longer contact time with the oral mucosa than the suspension.

Clotrimazole

Clotrimazole is an imidazole antifungal agent that is also poorly absorbed in the gastrointestinal tract. Therefore, it must also be used several times a day. It is generically available as a troche to dissolve in the mouth. The troches have a high sugar content and taste is not usually a complaint. In addition to caries risk, use of antifungals with a high sugar content can be detrimental in brittle diabetic patients.[27] Clotrimazole should be used with caution in patients with hepatic impairment.

Miconazole

A new formulation of topical miconazole was recently approved by the Food and Drug Administration for the treatment of oropharyngeal candidiasis. It is sold under the brand name Oravig in the U.S. and under the brand name Loramyc in Europe. This formulation consists of a miconazole tablet that is applied once daily and adheres to the canine fossa region of the oral mucosa.[28] The tablet slowly releases the antifungal drug over several hours. In a randomized double-blind study, this was found to be as effective as clotrimazole troches in treating oropharyngeal candidiasis in HIV patients.[29] Miconazole should be used with caution in patients on warfarin.

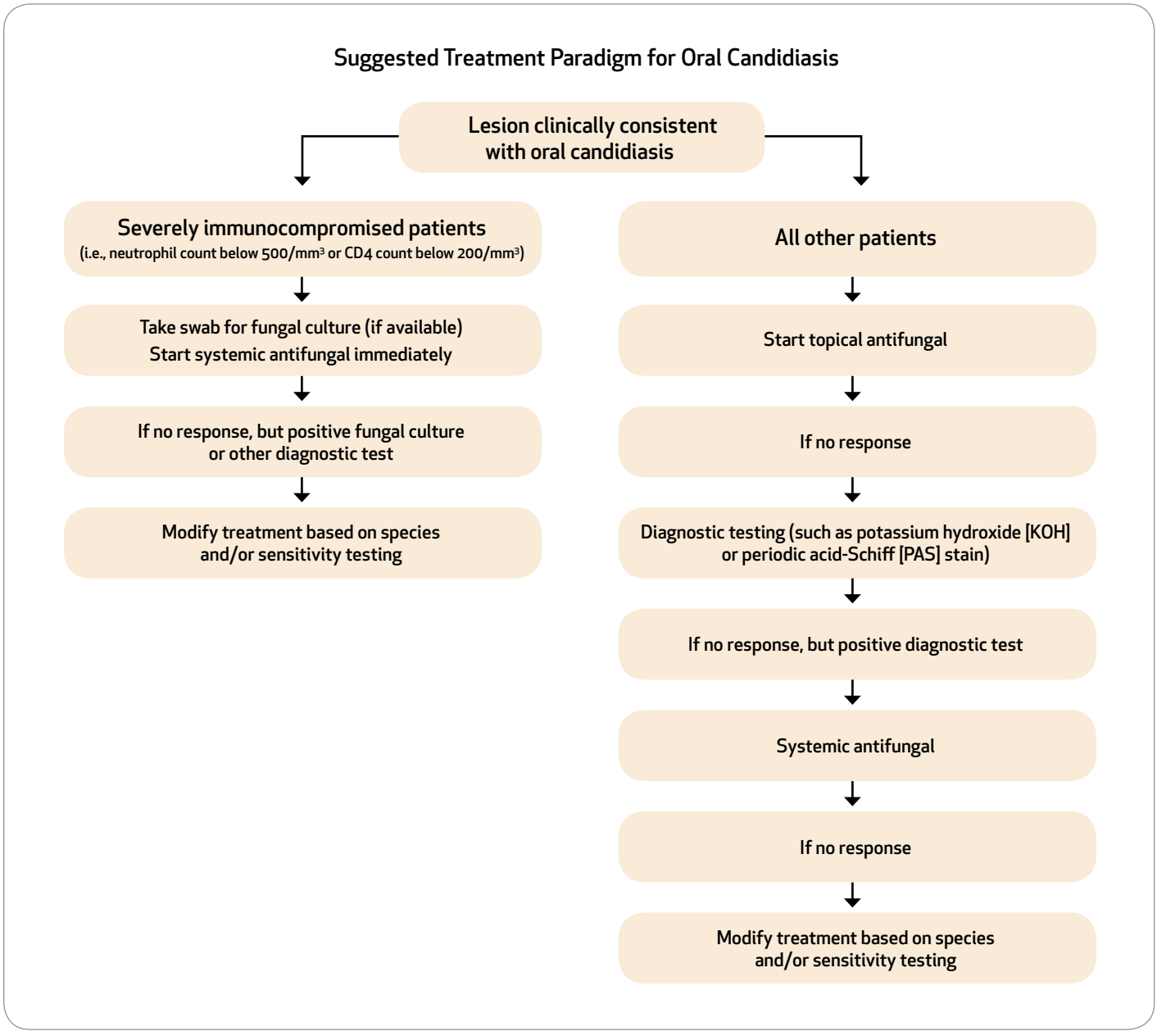

FIGURE 5. Treatment paradigm for oral candidiasis.

Systemic Therapies

Systemic agents are often preferred as the first line of antifungal therapy for oropharyngeal candidiasis in patients who are significantly immunocompromised. A large number of systemic antifungal agents are available, including fluconazole, ketoconazole, itraconazole, posaconazole, voriconazole and the new echinocandins. However, fluconazole is by far the most commonly used systemic drug for oropharyngeal candidiasis and therefore will be discussed here. IDSA guidelines recommend fluconazole as the first-line systemic agent for moderate to severe oropharyngeal candidiasis.[25]

Fluconazole is a triazole antifungal agent that is extremely effective in treating oropharyngeal candidiasis. It can also be used as a preventive agent in populations prone to developing recurrent oral candidiasis, such as HIV and cancer patients. This is referred to as suppressive therapy. A systematic review of 17 studies using fluconazole as a preventive agent during cancer therapy reported a weighted prevalence of clinical oral fungal infection of only 1.9 percent, as compared to 20.3 percent in patients receiving placebo or no treatment.[2] Fluconazole is available

generically as a tablet to be swallowed. Due to its long half-life, it can be taken only once a day. Fluconazole is an inhibitor of the CYP 450 3A4 enzymes that play a role in breaking down many medications. Therefore, use of fluconazole can result in higher plasma concentrations of some medications and a resulting increased risk of side effects. When prescribing fluconazole, its many drug interactions should be taken into account, including those with warfarin, phenytoin, statins, proton pump inhibitors and sulfonylureas (oral hypoglycemic agents).[30] For example, concomitant use of fluconazole and statins can result in an increased risk of statin-associated side effects such as rhabdomyolysis, with patients reporting muscle pain. Fluconazole should be used with caution in patients with hepatic dysfunction. Details on commonly used treatments for oropharygeal candidiasis are listed in the **TABLE** and and a suggested treatment paradigm is described in **FIGURE 5.**

Conclusion

Oral candidiasis is a common opportunistic infection affecting the oral cavity. Diagnosis is typically made on a clinical basis although diagnostic tests are available when needed. Oral candidiasis can often be successfully managed using one of the topical antifungal agents available. Cases refractory to topical therapy or recurrent cases may require systemic therapy, and referral to an oral medicine practitioner or other health care provider (i.e., oral pathologist or infectious disease specialist) who is experienced in the management of oral candidiasis. ■■■■

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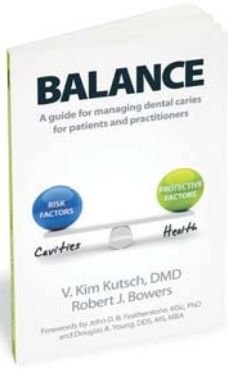

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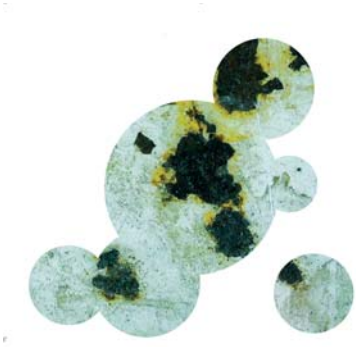

Orofacial Manifestations of Bacterial and Viral Infections in Children

ANDRES PINTO, DMD, MPH, FDS RCSED, AND CATHERINE H. HONG, BDS, MS, FDS RCSED

ABSTRACT Orofacial manifestations of bacterial and viral infections in children may cause significant discomfort and suffering. Recognition of the clinical presentation of these disorders is paramount to their clinical management and appropriate referral.

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Children are susceptible to oral infections because of their developing immune systems and recurrent exposure to infectious vectors. The signs and symptoms of bacterial and viral oral infections in this age group are diverse and depend on the source and site of infection. Of concern are children who have medical risk factors that predispose them to infections.[1] Oral health care providers should be comfortable assessing children who present with these infections. This manuscript provides an overview of general predisposing conditions and reviews common bacterial and viral occurrences in young patients.

Conditions Predisposing to Infections

Several conditions predispose a child to opportunistic infections in the oral cavity. These can be broadly grouped into systemic and local factors.

Systemic Factors

Systemic diseases that predispose to infections include those affecting the immune system, recovery/healing mechanisms or those that compromise normal tissue integrity. Those with hematologic malignancies, autoimmune disease, endocrine disorders, granulomatous disease, HIV infection and solid organ transplant form a large group of patients who are at increased risk. Infections may ensue due to granulocytopenia either from the disease itself (e.g., aplastic anemia) or from medical therapy (e.g., cytotoxic therapy). Qualitative white blood cell dysfunction (e.g., diabetes mellitus) may contribute to the severity of infection, as the immune response is greatly decreased in hyperglycemic states.[2]

Orofacial infections may be caused by organisms that usually do not cause significant disease and can occur in a presumably healthy host. For example,

recurrent herpes simplex virus (HSV) infections may present as multiple extensive ulcerations affecting keratinized and nonkeratinized tissues, compared to the smaller ulcerations limited to the keratinized mucosa that have been described in textbooks. This clinical picture is often associated with malnutrition, systemic or local immune deficiency.

Local Factors

Local factors linked to oral infections include changes in salivary flow or quality and patient-specific circumstances. Saliva consists of elements including histatins, secretory immunoglobulin A and lysozyme, which protect the oral cavity against infections. It is therefore not surprising that a lack of saliva is an important local risk factor for opportunistic infections in the oral cavity. The common causes of low salivary production are dehydration and medication-induced hyposalivation.[3] Less frequent causes include destruction of salivary glands due to cytotoxic therapy or pathology. Even in the presence of adequate flow, alteration of salivary buffering capacity, as an example of a qualitative reduction in salivary function, may affect the local immune response against oral infection.

Patient-specific local risk factors include poor oral hygiene, dental appliances and trauma. Poor hygiene allows for a rapid increase of bacterial load and gingival inflammation responsible for periodontal breakdown. The use of interim dentures and other dental appliances increases the risk for trauma or superinfection of the mucosa with organisms of bacterial or fungal origin. Exposure of connective tissue caused by trauma increases the risk of bacterial infection in the presence of inadequate hygiene. Finally, ectopic, inclined or severely crowded teeth are an obstacle for appropriate oral cleansing.

Bacterial Infections

Dental caries and periodontal disease (gingivitis and periodontitis) are the most common oral infections in children and adults.[4] A thorough review of these conditions is outside the scope of this manuscript and readers are referred to the current dental literature for more detail. Dental caries is characterized by the destruction of teeth caused by acid-producing, gram-positive facultative bacteria (*streptococcus mutans* and *lactobacillus sp*). The prevalence of dental caries in children is 17 percent for ages 6 to 9 and 14.4 percent in the 3 to 5 year age group in the United States (National Health and Nutrition Examination Survey (NHANES) 2009, 2010). Periodontal disease is a bacterial infection of the tooth-supporting apparatus, specifically the gingiva and alveolar bone. Gingivitis, the milder form of periodontal disease, is a reversible inflammation of the gingival in response to dental plaque. The prevalence of periodontal disease is relatively low in young children depending on the diagnostic criteria used (gingivitis versus attachment loss, national estimates in the U.S. ranging between 0.5 percent and 0.7 percent) and the population studied. A common pattern is an increase in the prevalence of periodontal disease in adolescents 12 to 17 years of age.[5,6] Bacterial species associated with periodontitis include *Porphyromonas gingivalis, Bacteroides forsythus, Treponema denticola and Aggregatibacter actinomycetemcomitans*.[7] On rare occasions, localized and generalized aggressive periodontitis are seen in children. The management of aggressive periodontitis includes ruling out metabolic etiologies (e.g., diabetes mellitus, hypophosphatasia, Papillon-Lefèvre syndrome), implementation of local measures involving debridement, strict home care and systemic antibiotic therapy with metronidazole and/or amoxicillin. Severe necrotizing forms of periodontal disease, such as necrotizing gingivitis, necrotizing ulcerative periodontitis and noma, are rare in children.[8]

THE USE OF INTERIM dentures and other dental appliances increases the risk for trauma or superinfection of the mucosa with organisms of bacterial or fungal origin.

Impetigo is a contagious, superficial bacterial infection frequently observed in children between the ages of 2 and 6 and is primarily caused by *Staphylococcus aureus*. Impetigo is the most common bacterial skin infection in children, with a reported incidence of 2 percent - 4 percent. Group A beta-hemolytic streptococci A is responsible for a minority of cases. These cases may be complicated by post-infectious sequelae such as post-streptococcal glomerulonephritis and rheumatic fever. Impetigo is spread through skin contact. The prevalence of impetigo is variable, occurring more frequently in warm, humid climates. Predisposing factors include crowded living conditions, poverty and poor hygiene. Topical and systemic therapy is used to treat this disorder; topical therapy with mupirocin (three applications daily) is sufficient if there are limited lesions without bullae. In the presence of bullous lesions, cephalexin or clindamycin are appropriate systemic agents. Penicillin is not recommended because of the significant role of *Staphylococcus aureus* in this infection.[9] The differential diagnosis of impetigo includes tinea, pemphigus

vulgaris (rare in children), cutaneous candidiasis and infectious dermatophytosis.

Scarlet fever is a delayed type hypersensitivity response to the erythrogenic toxin produced by Group A streptococci (e.g., *Streptococcus pyogenes*). The patient develops a characteristic full-body rash that presents as a diffuse erythema that blanches with pressure, with numerous small (1-2 mm) papular elevations. The prevalence of scarlet fever is between 1 percent and 2 percent in children between 6 and 12 years of age. The incidence of this infection reached 4,176 cases in the United Kingdom in 2009, and 9,400 cases were reported in the U.S. between 1999 and 2008.[10] A characteristic oral finding commonly termed "strawberry tongue" is often noted in this infection. The tongue presents with a thick white coating and red swollen papillae usually in the first or second day, giving it a white, strawberry appearance. The white coating usually sheds on the fourth or fifth day. Systemic antibiotic therapy is indicated in the management of scarlet fever.[10] Penicillin is the antibiotic of choice because of its proven efficacy, safety, narrow spectrum and low cost. Clindamycin is a viable alternative in patients who have allergies to beta-lactam antibiotics. The differential diagnosis of scarlet fever includes rubella, Fifth disease, viral exanthemata (e.g., enterovirus, hepatitis B) and bacterial infections that are linked to dermatologic eruptions.

Cervicofacial actinomycosis is a bacterial disease caused by Actinomyces israelii, a filamentous, branching gram-positive anaerobic bacteria. Cervicofacial involvement accounts for 50 percent of all actinomycosis infections. Actinomyces are normal constituents of the oral flora and are particularly prevalent in periodontal pockets, dental plaque and on carious teeth. Epidemiologic estimates of prevalence and incidence in the U.S. have not been

TABLE 1

Bacterial, Mycobacterial and Viral Infectious Causes of Cervical Lymphadenitis in Children

Presentation	Bacterial/ Mycobacterial Causes	Viral Causes
Acute unilateral	*Staphylococcus aureus*, Group A streptococcus, Anaerobic bacteria	Not specific
Acute bilateral	*Mycoplasma pneumoniae*, Group A streptococcus	Epstein-Barr virus, Cytomegalovirus, Herpes simplex virus, Adenovirus, Enterovirus, Rhinovirus, Influenza
Chronic unilateral	Nontuberculous *Mycobacterium*, Cat scratch disease	Not specific
Chronic bilateral	Not specific	Epstein-Barr virus, Cytomegalovirus

Modified from: Bass JW, Vincent JM, Person DA. The expanding spectrum of Bartonella infections: II. Cat scratch disease. *Pediatric Infect Dis J.* 1997;16:163–179 and Edwards MS. Diagnostic approach and initial treatment of cervical lymphadenitis in children. UptoDate (uptodate.com) accessed on 8/31/2012.

reported, and city-specific estimates exist only from the 1970s. These bacteria do not cause any harm unless there is tissue injury or a break in the mucosa; for example, following a tooth extraction, when they can invade deeper and adjacent structures (e.g., soft tissue and the jawbone). The hallmark signs of actinomycosis are the production of characteristic "sulfur granules," spread of infection across anatomical barriers and the development of multiple sinus tracts.11 Local predisposing factors include dental caries and extractions, gingivitis, soft-tissue infection around erupting permanent teeth and poor oral hygiene. Malnutrition and certain systemic conditions that include diabetes mellitus are also known risk factors. Penicillin is the antibiotic of choice and a four- to six-week course is typically needed for complete resolution. Tetracycline and clindamycin are acceptable alternatives in patients with penicillin allergy. In severe cases, intravenous antibiotics and surgical intervention to excise fibrous and necrotic tissue and drain extensive abscesses is required. The differential diagnosis of actinomycosis includes other infectious (e.g., odontogenic) causes of cervical adenopathy.

Although dentists do not routinely treat cervical adenitis, except when the source is from an odontogenic infection, it is still pertinent to understand its differential diagnosis because of the common occurrence of cervical lymphadenitis in children. There are numerous infectious and noninfectious causes of cervical lymphadenitis.[12] The common infectious causes are listed in **TABLE 1**. The diagnostic and treatment approaches vary from observation and reassurance (specifically for acute bilateral cervical lymphadenitis) to comprehensive medical and surgical therapy. A thorough workup of the child presenting with cervical adenitis demands for a careful history of the onset, duration, localization of the enlarged nodes and concomitant constitutional symptoms (e.g., fever, malaise). An association with dental/oral complaints, including facial/skin trauma, must be explored. Posterior cervical adenitis stemming from odontogenic sources is uncommon, unless the infection has crossed several anatomic spaces and involves multiple teeth. In addition, the node change is not bilateral in dental infections, but limited to the side of the affected teeth. Careful examination of contralateral nodes, cervical anatomic triangles, dentition and exposed skin in the area will assist in ruling out oral sources. The differential diagnosis of unilateral lymphadenopathy in the anterior neck triangle includes infectious processes (in the oral, nasal or pharyngeal mucosae, dentition, maxillary sinuses and salivary glands) and, infrequently, malignancy.

Viral Infections

Primary herpetic gingivostomatitis is the most common manifestation of initial HSV infection and typically occurs in children who are between the ages of 6 months and 5 years. Nevertheless, it has been reported in older children and adolescents.[13] This infection is almost exclusively caused by HSV type 1 virus and diagnosis is made clinically, based on the typical appearance and location of the lesions. The prevalence of primary infection may be as high as 50 percent, with a quarter of these children developing frank oral ulceration. The mode of transmission is through direct contact with the lesions or infected oral secretions from both symptomatic and asymptomatic individuals with primary or recurrent HSV infections.[14]

The clinical presentation is characterized by the development of clusters of small blisters that rupture to become ulcers. The ulcers often coalesce to form irregularly shaped and painful erosions on both the keratinized (e.g., gingival and hard palate) and nonkeratinized tissues (e.g., buccal/labial mucosa and ventral tongue) (**FIGURE 1**). The lips and perioral skin may also be affected. Oral lesions are often accompanied by systemic signs and symptoms, which include sudden onset of fever, arthralgia, headache and cervical lymphadenopathy. The oral lesions heal without scarring in 10 to 14 days.

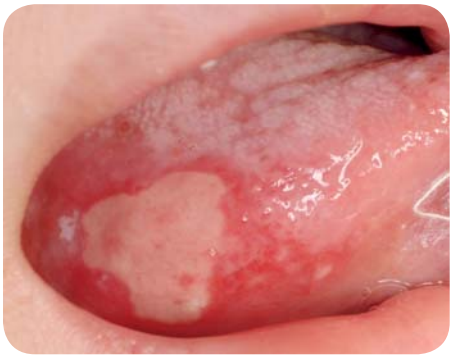

FIGURE 1. Extensive herpetic ulceration on right posterior lateral tongue on a 10-year-old female.

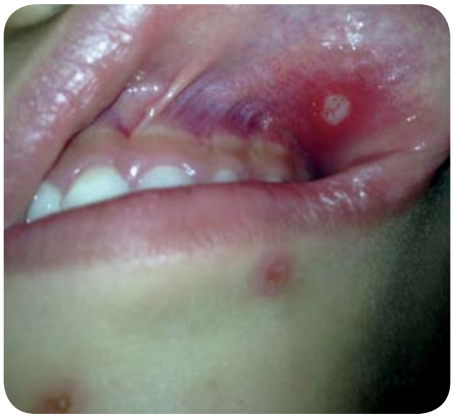

FIGURE 2. Varicella zoster lesion on the left buccal mucosa of an 8-year-old male.

After primary oral infection, HSV migrates to the trigeminal ganglion where it remains latent. Reactivation (e.g., herpetic labialis, intraoral recurrent herpes) is preceded by prodromal symptoms (e.g., pain, burning, tingling), and in rare cases with accompanying systemic signs or symptoms.[13] In healthy individuals, recurrent intraoral herpetic infection is almost always limited to the keratinized mucosa. Recurrence patterns vary between individuals; however, lesions tend to predictably recur at the same site for each individual. Known triggers include exposure to sunlight and/or stress. Management of this infection involves antipyretics, hydration and adequate pain control with analgesics. Topical pain control therapies (e.g., 2 percent viscous lidocaine) are problematic in very young children because of the risk of systemic overdose and their inability to swish and spit. Topical antiviral agents are not recommended for the treatment of primary herpetic gingivostomatitis in immunocompetent children. Systemic acyclovir (15 mg/kg, max single dose: 200 mg, five times per day) may be prescribed for healthy children (older than 2 years of age) who are unable to drink or who are in extreme pain and present within 72 to 96 hours of the disease onset. The differential diagnosis of HSV infection includes other viral ulcerative disorders (see varicella zoster virus and Coxsackie virus below) erythema multiforme, aphthous stomatitis and necrotizing gingivitis.

Primary varicella zoster virus (VZV) infection causes chicken pox, which is generally a mild, self-limiting disease in children. The primary infection is characterized by a pruritic skin rash that progresses through stages of erythema, papules, vesicles, drying vesicles and scabs. Oral lesions are relatively common and frequently involve the lips, palate and buccal mucosa (**FIGURE 2**). Although the prevalence of VZV infection has dramatically decreased in the U.S. secondary to broad vaccination, the majority of cases still involve young children and up to 20 percent of children vaccinated once are still at risk for primary infection. In select hosts, new crops of vesicles will continue to develop over weeks resulting in large and hemorrhagic skin lesions, and if not treated will result in widespread disease (e.g., central nervous systemic involvement, pneumonia.).[15] The main routes of transmission are by inhalation of infective droplets or by direct contact with the lesions. After the primary infection, the virus remains latent in the dorsal root ganglion. Reactivation of the virus results in herpes zoster (shingles). Treatment for primary VZV disease is largely symptomatic (i.e., antipyretics, antihistamines for pruritus) except in older individuals (> 12 years old) for whom antiviral therapy with acyclovir is indicated. The differential diagnosis of oral VZV ulcers includes trauma and other disorders of viral etiology with limited dermatologic involvement.

A majority of primary Epstein-Barr virus (EBV) infections are subclinical in children and thus often go undiagnosed. The main route of transmission is by blood or saliva. In adolescents and young adults, EBV is responsible for infectious mononucleosis, which is the best-known primary EBV infection. The prevalence of primary infection among children ages 1 to 5 can reach 50 percent in industrialized countries, although not all children develop symptoms. The incidence in the U.S. is about 500 cases per 100,000 persons per year. The infection begins with malaise, headache and low-grade fever and progresses to the development of tonsillitis with or without pharyngitis and cervical lymph node enlargement and tenderness. Oral ulcers, palatal petechiae and gingival ulcerations have been reported. The acute symptoms of primary EBV infection typically resolve in one to two weeks but the fatigue may persist for months.

EBV has also been associated with oral hairy leukoplakia, certain malignancies (e.g., nasopharyngeal carcinoma, Burkitt's lymphoma, B and T cell lymphomas) and a variety of lymphoproliferative disorders (e.g., post-transplant lymphoproliferative disorder).[16] Post-transplant lymphoproliferative disorder (PTLD) is a unique EBV-mediated condition that is specifically seen in post-allogeneic hematopoietic stem cell transplant recipients. Children are at higher risk for this disease compared to adults because this complication is most common in EBV-negative recipients who contract the virus from EBV-positive donor grafts and subsequently develop the primary EBV

infection. Oral PTLD lesions may present as mucosal swellings, nonhealing ulcers or radiolucent intraosseous lesions. The differential diagnosis of EBV oral lesions includes trauma, hematologic disorders (e.g., thrombocytopenia), reactive gingival lesions and malignancy. Other causes of cervical adenopathy must be ruled out if infectious mononucleosis is considered.

Cytomegalovirus (CMV) is a member of the herpesvirus family and is found in many bodily secretions including blood, milk and saliva of infected individuals. As with EBV infections, most CMV infections are asymptomatic and mild, and treatment is not required in healthy individuals. The prevalence of antibodies against CMV reaches more than 90 percent worldwide, and epidemiologic data on oral manifestations is scarce. Symptomatic newborns are at risk for serious CMV disease with significant morbidity and mortality. Antiviral therapy with ganciclovir is indicated for this group. Developmental dental defects, such as generalized and localized areas of enamel hypoplasia and hypomaturation, have been reported in children with a history of congenital CMV infection. The differential diagnosis of oral lesions in CMV disease includes HSV-related infection, aphthous stomatitis and Coxsackie-associated ulcers.

Among infections caused by enteroviruses, only hand-foot-and-mouth disease (HFM) and herpangina have significant oral findings.[17] Hand-foot-and-mouth disease is caused by either Coxsackie A, B virus or enterovirus 71. The illness is characterized by fever, oral vesicles/ulcers (commonly on the buccal and labial mucosa and tongue) and similar cutaneous lesions on the hands and feet (**FIGURE 3**). Occasionally, other sites such as the buttocks and genitalia may be affected. The epidemiology of the disease in the U.S. is unknown, as HFM is not a mandatory reportable condition. A total of 63 cases were reported in 2011 in the U.S. The infection is usually benign and resolves in a few days. However, children with enterovirus 71 infection should be closely monitored because of the risk for central nervous system disease (e.g., viral meningitis).

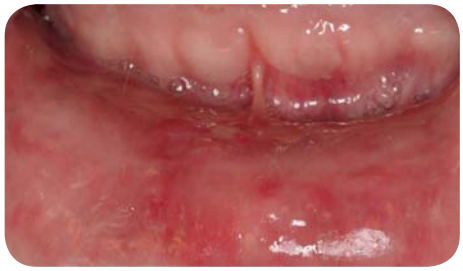

FIGURE 3. Mucosal lower lip lesions in an 11-year-old male with HFM disease.

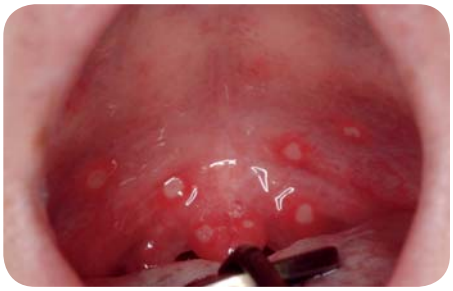

FIGURE 4. Herpangina lesions on the palate of a 7-year-old male.

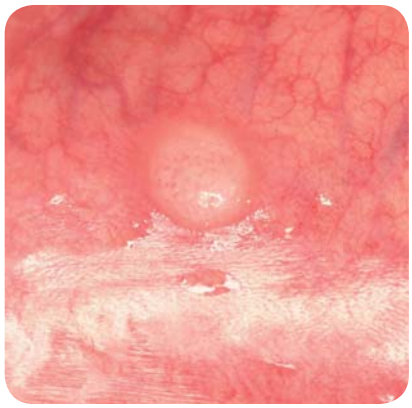

FIGURE 5. Verruca on the labial mucosa of an 11-year-old male.

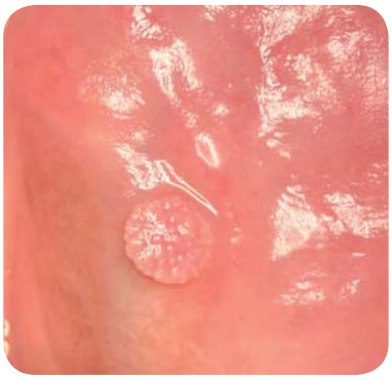

FIGURE 6. Squamous papilloma on the ventral tongue of a 12-year-old female.

Herpangina is another Coxsackie A virus infection. Symptomatic children present with an acute onset of sore throat, dysphagia and fever. Oral blisters develop in the posterior areas of the mouth, which quickly rupture to form small ulcers (2-4 mm) (**FIGURE 4**). The systemic signs typically resolve within a few days and the ulcers usually heal in one to two weeks. The management for both HFM disease and herpangina is symptomatic with antipyretics, hydration and adequate pain control. The differential diagnosis of Coxsackie infections includes other viral mucosal ulcers (e.g., HSV, CMV and EBV).

There are more than 100 serological types of human papillomavirus (HPV), all of which may cause lesions in various areas of the body (e.g., oral cavity, larynx, esophagus, genitalia). The prevalence of HPV in the oral mucosa has been reported between 20 percent and 83 percent, depending on detection methods and the population studied. Specific strains, in particular HPV 16 and 18, are associated with the development of cervical and anal cancer, and more recently with squamous cell carcinoma of the tonsils and base of tongue.[18] Two vaccines (Gardasil, Cervarix) against HPV infection have been developed and are recommended for individuals who have not been infected with HPV. The World Health Organization recommends the vaccine for females between the ages of 9 through 13 years to prevent cancer (www.who.int/wer, No. 15, 2009, 84, 117–132). Others, however, have recommended catch-up vaccination

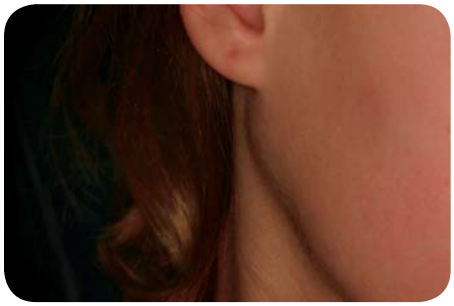

FIGURE 7. Mumps parotitis (right-side view) in a 7-year-old female.

for females aged 13 to 26 who have not been previously vaccinated or have not completed their vaccine series.

The clinical manifestations of oral HPV infections include squamous papilloma, verruca vulgaris (common wart), condyloma acuminatum and focal epithelial hyperplasia (Heck's disease). Symptomatic oral HPV- associated diseases are relatively uncommon in the pediatric population. Verruca vulgaris, or the common wart, is probably the most frequent presentation of HPV infection in children; self-inoculation is often the mode of transmission[19] (**FIGURE 5**). HPV subtypes associated with this lesion are 2, 4, 6 and 40. Verruca vulgaris appears as a benign, painless nodule with a rough, pebbly surface. It may be pedunculated or sessile and often appears white. These lesions are usually found on the vermillion border, labial mucosa and anterior tongue.

Squamous papilloma is a benign, painless, usually pedunculated exophytic nodule and has been described to have a "cauliflower" appearance because of its numerous finger-like surface projections (**FIGURE 6**). Color can range from pink to white depending on the degree of surface keratinization. It may occur on any surface but tends to occur on the tongue, lips and soft palate. HPV subtypes 6 and 11 have been identified in up to 50 percent of oral papillomas.

Condyloma acuminatum is considered to be a sexually transmitted disease caused mostly by HPV subtypes 6 and 11. These lesions are thought to result from vertical transmission from mother to

TIMOTHY G. GIROUX
DDS/BROKER

ASK THE BROKER

Is the number of "Active Patient Files" an important issue in a practice purchase?

March 2013

Great Question!!! My answer is emphatically **YES!**

When you buy a practice, you are paying mostly for the "book of business" generally referred to as "goodwill", "cash flow", profitability, etc. What you are actually buying is the opportunity to meet all the patients of the practice and win them over to continue their treatment in that office. Unfortunately, there is no single definition of what constitutes an "active patient". In a recent situation, the Seller's patient count was 1800, while my count was 1500 and the Buyer's count was 450 patients. Amazingly, the Buyer actually increased the practice production in the first month of ownership! Obviously the Buyer's definition of an "active patient" was much more stringent than the Seller's, but the actual number did not matter as the Buyer proved to be much more adept in treatment planning the existing patients.

Of course, it is up to the Buyer to determine if they can fill the shoes of the Seller, or continue to perform as well with that "book of business". The problem is that if we put a patient in the middle of 10 dentists, we might get 10 treatment plans that are light years apart. This could even happen with 10 classmates from the same school who respect each other! Conclusion: 800 active patients (whatever the definition) in one doctor's hands might yield a $1 million practice and the same patients in another doctor's hands might yield half that amount. In the case of a practice where a classmate who is a conservative treatment planner buys out the more aggressive treatment planner, chances are that this buyer may go broke as he will never produce what the Seller produced. Result: Lawsuit, name calling and finger pointing, regardless of the patient count! Reverse the scenario and the result will be a buyer who doubles production in the first year and the Broker is a genius!

I recently had a buyer's attorney remove the contract clause that took the responsibility of the patient count out of the buyer's hands. While that might help the Buyer if a lawsuit ensues, all parties lose if poor due diligence results in a bad transition and a lawsuit. All Buyers need to do a chart review ***themselves*** and confirm that they are capable with their own skill set and/or agree with the philosophy and treatment being prescribed to that patient base.

The best way to prevent a misunderstanding or poor result in a transition is to make sure the Buyer does his own due diligence concerning the practice' philosophy of treatment planning. A patient count, whatever the definition, is important, but should ***not*** be used as ammunition to defend poor due diligence.

Timothy G. Giroux, DDS is currently the Owner & Broker at **Western Practice Sales (westernpracticesales.com)** and a member of the nationally recognized dental organization, ADS Transitions. You may contact ***Dr Giroux at*:** **wps@succeed.net or 800.641.4179**

TABLE 2

Bacterial and Viral Disorders With Orofacial Manifestations

Disease	Clinical presentation	Etiology	Treatment
Dental caries	White spot or other surface discoloration, cavitation	*Streptococcus mutans, lactobacillus sp*	Preventive (fluoride), restorative
Periodontal disease	Gingival inflammation, attachment loss	*Porphyromonas gingivalis, Bacteroides forsythus, Treponema denticola and Aggregatibacter actinomycetemcomitans*	Mechanical debridement, scaling and root planing, local antibiotics
Impetigo	Ulceration, edema, exudates (mucosal or dermal)	*Staphylococcus aureus*	Mupirocin (topical) or systemic antibiotics (clindamycin or cephalosporin)
Scarlet fever	Diffuse erythema and papular eruption, strawberry tongue	*Streptococcus pyogenes*	Systemic antibiotics (penicillin or clindamycin)
Cervicofacial actinomycosis	Rapidly spreading infection, development of one or multiple sinus tracts	*Actinomyces israelii*	Systemic antibiotics for 4–6 weeks (penicillin)
Primary herpetic gingivostomatitis	Mucosal blistering and erosion	HSV -1	Palliative, hydration, pain control, systemic acyclovir if within 3 days of onset
Chickenpox	Vesicular/popular mucosal eruption	VZV	Palliative, antihistamines, pain control, hydration, systemic acyclovir
Infectious mononucleosis	Tonsillitis, pharyngitis, petechiae, cervical adenopathy	EBV	Palliative, pain control to stimulate oral intake, hydration, rest
CMV infection	Enamel defects (perinatal transmission), oral ulceration	CMV	Systemic antivirals such as ganciclovir, valganciclovir, foscarnet, cidofovir
HFM and Herpangina	Vesicular dermatologic and mucosal eruptions that may lead to erosion	Coxsackie virus	Palliative, pain control to stimulate oral intake (Herpangina), hydration
Squamous papilloma	Pedunculated exophytic nodule; cauliflower appearance	HPV	Surgical excision
Verruca vulgaris	Broad-base nodule, rough pebbly surface	HPV	Surgical excision
Condyloma acuminatum	Larger than papillomas, multiple	HPV	Surgical excision
Focal epithelial hyperplasia	Multiple plaque or papular mucosal lesions	HPV	Conservative/cosmetic surgical excision
Measles	Rash, fever, conjunctivitis, rhinitis, cough, Koplik's spots (mucosa)	Morbillivirus	Symptom management, rest, vitamins
Mumps	Bilateral parotid gland swelling, fever, headache, muscle ache, fatigue	Mumps virus	Symptom management, rest, hydration, soft/liquid diet

child during vaginal delivery in children younger than 2-3 years of age. However, sexual or nonsexual transmission is still probable in this age group and should be considered in older children. The oral presentation of condyloma is similar to an oral papilloma but tends to be larger and clustered with other condylomata. The average size is approximately 1 to 1.5 cm. The treatment for verruca vulgaris, squamous papilloma and condyloma acuminatum is surgical excision.

Focal epithelial hyperplasia presents as multiple, benign, plaque-like or papular normal-colored lesions in the oral mucosa and is common in children in specific populations.[20] HPV subtypes 13 and 32 have been implicated as the main etiologic agents. The labial, buccal and lingual mucosae are mostly involved, though lesions can also be seen in other sites such as the gingiva. The spontaneous resolution of these lesions has been reported and treatment with conservative excision of lesions is mainly performed for diagnostic or esthetic purposes. The recurrence is minimal after excision and malignant transformation has not been reported. The differential diagnosis of HPV-associated lesions includes other viral lesions such as molluscum contagiosum and verruciform xanthoma.

Measles is a highly infectious disease caused by a virus of the Morbillivirus

genus. The patient develops a characteristic rash with accompanying fever, conjunctivitis, rhinitis and cough. The incidence of measles is low in areas with good vaccination coverage. Worldwide, mortality is greater than 300,000 children per year. Koplik's spots are distinctive oral findings of measles that develop early in the course of the infection. These are 1-3 mm whitish, grayish or bluish elevations with an erythematous base occurring on the buccal and labial mucosa, and the hard and soft palate. The differential diagnosis of measles includes scarlet fever, rubella, Fifth disease, drug eruptions and dermatologic manifestations of viral hemorrhagic fevers.

Mumps is an acute and highly infectious but self-limiting disease among school-aged children. The prevalence of this infection decreased dramatically after the introduction of a trivalent measles, mumps, rubella (MMR) vaccine. In the U.S., an IgG age-adjusted seroprevalence of 90 percent was reported in the 1999-2004 period. A classic feature of mumps infection is the development of bilateral parotitis due to the inflammation of the ductal epithelium caused by the viral infection (**FIGURE 7**). Infection in older children can lead to more serious illness and complications such as orchitis, aseptic meningitis, pancreatitis and oophoritis. The treatment is symptomatic (e.g., antipyretics and analgesics). Warm or cold compresses to the parotid gland may provide some relief. The differential diagnosis of mumps includes other bacterial or autoimmune causes of parotitis (e.g., Sjögren's disease) in children.

Conclusion

Bacterial and viral infections are important oral complications in children (**TABLE 2**). Knowledge about their presentation and management is relevant to oral health care providers, as they may encounter these diagnoses in practice. Prompt recognition will lead to adequate management, parental reassurance about their child's complaint and improve the quality of life and long-term outcomes in young patients. ■■■■

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A look into the latest dental and general technology on the market

Pulse News (*Alphonso Labs, free*) Available through Google Play and iTunes (iPad only), Pulse News offers users a colorful, organized and customizable display of headlines in several different categories (business, sports, entertainment, art and more) from some of the top news outlets. The app requires users to create a Pulse account, after which, news topics can be customized to fit the user's preferences. Those who want to only see sports news from ESPN or AP, for example, can set for those outlets to appear, or for business news they can select CNN Money or Forbes, among others. Articles open within the app with the option to view them in a web browser. There also is a built-in sharing function for Facebook, Twitter and Google Plus. Users can save stories for reading later across all platforms or sync them with Instapaper, Read it Later and Evernote. For those who don't have an Internet connection, Pulse loads stories already read and makes them available even without Internet access. The widget function on the Android operating system allows users to customize their news on a home screen, which turns the screen into a collage of photos and headlines. The app has a 4.5 rating on both Google Play and iTunes with a few users complaining of crashing. For those who would like to use Pulse on a laptop or desktop computer, the developers have made the service available via the URL pulse.me. Users just need to log in with their Pulse account and they will have access to all of their customized news. The browser version does have trouble loading on occasion, however. This free app gives users headlines/stories in an accessible format while on the go. The font size adjustor, several sharing functions and a clean presentation make Pulse a useful app for any news junkie. — *Blake Ellington, Tech Trends editor*

Expensify (*Expensify Inc., free*) Available on iOS, Android, Windows Phone and Blackberry, the Expensify mobile app is a mirror extension of the already popular Expensify cloud-based expense reporting website. With this app, users can take pictures of receipts with their mobile phones and upload them to their Expensify accounts. Expenses can then be entered on the app and merged with the uploaded receipt pictures. Users can also take advantage of SmartScan, a feature that takes uploaded receipt pictures and reads the merchant, date and transaction amount to create an expense automatically. Users can scan up to 10 receipts per month for free and 20 cents per scan thereafter. Another feature is the ability to add certain major bank credit cards for automated transaction importing. Any imported transaction of $75 or less will generate a digital receipt called an eReceipt, which does not

require the user to upload receipt pictures in order to be valid. All recorded expenses are stored in the cloud and are accessible on the Expensify website or through any other device with the Expensify mobile app. Once users have uploaded or imported all their expenses, a report can be generated on the app and sent electronically to employers or exported into any major personal financial accounting software. Transactions support custom categories, and expense reports support entry of notes and policies. Uploading receipt pictures and entering expenses manually can be cumbersome at first. When entering many expenses, the automated features help considerably but SmartScan can get costly over time if the monthly free scans are exceeded. Employers who receive expense reports electronically receive the first two reports per month free but the cost is $5 per report thereafter. Users tracking personal transactions will find this app useful for exporting their on-the-go data to their home accounting software. Whether submitting expense reports for reimbursement or managing personal finances, the Expensify app makes the entire process of recording transactions and creating reports much easier and more organized. — *Hubert Chan, DDS*

Vine — Make a Scene (*Vine Labs, Inc., free*) The Vine app, from the makers of Twitter and currently available only for iOS devices, takes social networking to the next level by incorporating video in a simple-to-use, Twitter-like interface. Users need to sign up for a new Vine account or sign in using their Twitter login. Once users are logged in, a timeline of "vines" appear, where each vine is a post from a followed user. Each post contains a six-second segment of video and automatically starts playing and looping as the user scrolls through his/her timeline. When creating a vine on the app, live video from the iPhone camera appears on the screen. Placing a finger on the screen records video and removing it stops the recording. This is done until a total of six seconds has been recorded. The result is a short, stop-motion video that can be captioned and shared on Vine, Twitter and/or Facebook. The Vine is a separate social network from Twitter so followers on Twitter may not realize that a user has posted on the Vine unless they explicitly choose the "Share on Twitter" option when posting with the app. Users cannot limit who follows them on the Vine nor can users privately post their vines to certain users. The Vine app currently does not support multiple users, the front-facing camera or video editing. Users can like and comment on each Vine posting. The Vine app shows the amazing potential and power of video in social networking.— *Hubert Chan, DDS*

Vine Flow (30 Matches, free) The popular video sharing app Vine — Make a Scene has yet to come to the Android operating system, but Vine Flow does allow users to watch videos uploaded from the iOS app. Available in the Google Play store, this third-party app presents a simplistic format that gives users the ability to browse through recently uploaded, six-second Vine videos. When launched, the home screen displays the most recent Vine video and plays it on a loop. To watch more videos, simply hit the next button. There isn't much more to the format and features. In the top-left corner there is a drop-down bar that gives users the option to explore videos by searching for hashtags. In the upper-right corner, users have the option to share videos on multiple platforms such as text, email, Facebook, Twitter, Livestream and Google Plus. The app is still under development and is not affiliated with Vine in any way, so there are some glitches, and the low rating in the Google Play store reflects that. There are complaints of crashing, lag time and videos not playing. Users can't sign into an account and as a result, profile customization isn't an option. And while the option to search for hashtags can be useful, there is no way to search for other users. Vine Flow does, however, give Android users a good look into the purpose of the popular iOS app while Android works on its own version. Those who use their phone and tablets to pass time while say, waiting in the airport, may find the random videos that appear in the app entertaining and even somewhat addicting. A look into the world of people around the globe at the touch of the button isn't anything new in the Internet age, but Vine and Vine Flow, to some extent, have broken down yet another barrier to constant communication. Vine Flow also is a good example of the creativity out there among app developers who do their best to compensate for any lack of available apps. Vine Flow does exactly what is it advertised to do, and while not all Android users may be satisfied, it is an interesting download. — *Blake Ellington, Tech Trends Editor*

Would you like to write about new technology?

Dentists interested in contributing to this section should contact Tech Trends Editor, Blake Ellington, at blake.ellington@cda.org.

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LOS ANGELES COUNTY

BURBANK (Ortho) - 45 yrs gdwll. Consists of 2 chairs in open bay w/ Pano/Ceph in 1,221 sqft ste. Grossed ~$292K in 2012.ID #4047.
CULVER CITY - Leasehold & Equip Only! 10 eq op office in a single story bld. In residential area. Heavy traffic flow. ID #4261.
GLENDALE (GP) - Turn-Key office located in 2 story Med/Dent bldg w/ 3 eq ops. Grossed approx. $392K in 2012. ID# 4293.
HUNTINGTON PARK (GP) Established in 2008. In a 2 story free stranding bldg near residential area. Has 4 eq ops. ID#4295.
LONG BEACH (Ortho) - 46 yrs of goodwill. Located in a 3 story medical bldg. 4 chairs in open bay. In residential area. ID # 4255.
LONG BEACH (Ortho) - Three practices as one entity. Have approx. 300 active patients. Has over 50 yrs of goodwill. ID#4285.
N. HOLLYWOOD (GP/ORTHO) -Over 14 years of goodwill located in Prof. Bldg. Consists of 4 ops. Monthly revenues ~$32K. ID#4265.
RESEDA (GP) Corner location w/ excellent signage. With 17 yrs of goodwill this practice has 5 eq ops and 1 plmbd not eq. #4175. **SOLD**
TARZANA (GP) - Fee for service practice w/ over 28 yrs of goodwill. Consists of 8 eq ops and 2 plmbd not eq. ID #4313.
SANTA MONICA (GP) - Fee for service practice located in 4 story med/dent bldg with over 30 years of goodwill. ID #4297
W. HOLLYWOOD (GP) Modern designed office w/ 3 eq ops. 48 yrs of goodwill. 100% cash. Monthly revenues of $83K/mo. ID #4153
WHITTIER - Estab. in 1955. Large state-of-the-art off. located in a single story strip mall. Net $484K. #4259 **SOLD**

ORANGE COUNTY

FOOTHILL RANCH - Modern contemporary designed office w/ 6 fully eq ops. Established in 2006. Mo. revenues of $34K. ID #4209.
LAGUNA HILLS - General practice located in 2 story busy shopping center. 19 yrs gdwll. 4 eq. ops. NET OF $230K . ID # 4155.
LAKE FOREST (GP) - Turn key practice w/ 3 spacious eq ops, 1 plmbd not eq in a 1,200 sq ft ste. Busy shopping center. ID #4123.
ORANGE - Leasehold & Some Equip! Modern designed office w/ 4 plumbed operatories, not eq. in a single story prof. bldg. ID # 4299.
RANCHO STA MARGARITA (GP) State of the art office in 2 story plaza center. Has 7 fully eq ops. NET $242K. ID #4187.
SANTA ANA - Leasehold & Equip Only! Well designed practice consists of 4 eq ops in multi story med bldg. Excellent lease. **SOLD**
TUSTIN - Leasehold & Equip Only! Beautiful state-of-the-art off. Great for GP or Spec. 5 eq ops/3 plmbd not eq for expansion. ID #4225.

RIVERSIDE / SAN BERNARDINO COUNTIES

APPLE VALLEY (GP) - Established in 2007 this modern designed office is in a busy shopping center. Net of $384K. ID #4271.
BARSTOW(GP) - Long established office w/ 4 eq ops in a single story bldg. Easy freeway access. Fee for service. ID #4241
FONTANA (PEDO) - State-of-the-Art office w/ 2fully eq ops & 3 chairs in open Bay. 15% Insurance & 85% Denti-cal. ID #4301.
LA QUINTA - Price Reduced. Leasehold & Equip Only! Located in strip shopping center W/ 3 eq. ops, 1,000 sq. ft. ste.ID#4063
MURRIETA (GP) - Beautiful office w/ 3 eq ops surrounded by major anchor tenants. Some Capitation. 4 day/wk office. ID #4247
RIVERSIDE (GP) - Established in January 2012 in busy shopping center. 4 fully eq ops. In residential area. ID #4269. **SOLD**
SUN CITY (GP) -Long established office w/ 2 eq ops, 1 plumbed not eq room for expansion in a 4 suite medical/dental bldg. ID #4287

SAN DIEGO COUNTY

ENCINITAS (GP) - Corner location w/ excellent signage and street visibility. Consists of 2 eq ops. Fee for service. ID # 4315.
RAMONA (GP) - Established in 1979 and located in single strip mall. Busy area. Fee for service. Consists of 3 eq op. ID #4305.
SAN MARCOS - Leasehold & Equip Only! Modern designed office. Established in 2007. Consists of 2 eq ops in 800sqft ste. ID #4217.
SAN DIEGO (GP) - In free standing bldg w/ private prkng. Consists of 5 ops w/ Dentrix software. Monthly revenues of ~$40K. ID #4279.

VENTURA & SANTA BARBARA COUNTY

THOUSAND OAKS (GP) - Modern designed off. w/ 6 eq ops. Seller owns bldg/ not for sale. 50 yrs of goodwill. Absentee owner. #4257.
SANTA BARBARA (GP) - Well established practice in busy shopping center w/ 3 eq ops in a 1,220 sq ft suite. ID #4311.

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How to Place a Free Classified Ad

The *Journal* has changed its classified advertising policy for CDA members to place free classified ads online and publish in the *Journal*. Only CDA members can place classified ads. Non-CDA members can place display ads.

All classified ads must submitted through cda.org/classifieds. Fill out the blank fields provided, including whether the ad is to appear online only or online and in the Journal. Click "post" to submit your ad in its final form. The ad will post immediately on cda.org and will remain for 90 days. Space permitting, your ad will run one time in the next issue of the Journal following the posting of your online ad. After 90 days, you will need to repost your ad if you wish to continue running it online.

Classified ads for publication in the Journal must be submitted by the fifth of every month, prior to the month of publication. Example: Jan. 5 at 5 p.m. is the deadline for the February issue of the *Journal*. If the fifth falls on a weekend or holiday, then the deadline will be 5 p.m. the following workday. After the deadline closes, classified ads for the *Journal* will not be accepted, altered or canceled. Deadlines are firm.

Classified advertisements categories are: Equipment for Sale, Offices for Sale, Offices for Rent or Lease, Available Positions, Opportunities Wanted, and Practices for Sale.

How to Place a Display Ad

Non-members are welcome to place display ads. For information on display advertising, please contact Corey Gerhard at 916-554-5304 or corey.gerhard@cda.org.

CDA reserves the right to edit copy and does not assume liability for contents of classified advertising.

AVAILABLE POSITIONS

DENTAL ASSISTANT — We are looking for an experienced Dental Assistant with a valid X-ray license for our practice in Pleasanton, Calif. Must be a well-spoken, presentable and energetic individual with the d rive to learn. Please send your resume and cover letter via email to stevenroy12345@gmail.com.

DENTIST — General practice in Pleasanton is in need of the following specialists on part-time basis: Endodontist, Oral Surgeon and Orthodontist. Flexible schedule available. Please send your resume to stevenroy12345@gmail.com.

DENTIST — Associate wanted at upscale, digital, 5-operatory Prosthodontic office in Westlake Village, Calif. Large, in-office laboratory with modern technology and equipment. We are looking for someone with good communication and technical skills. Review of applications will begin immediately and will continue until position is filled. Please email resumes to dr.montella@smilesbyaps.com or call 805-494-3377. View our website at www.smilesbyaps.com.

DENTIST — Seeking an experienced Dentist to fill in on Saturdays in a private dental office located in downtown Bakersfield, Calif. May lead to more days. Please contact Dr. Pham at 661-472-2803.

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CDA JOURNAL, VOL 41, Nº4

CLASSIFIEDS, CONTINUED FROM 283

DENTIST — Great part-time opportunity (3-4 days) in our private, multi-specialty dental office in San Jose. Please send your CV/resume for immediate consideration. Minimum 3 years post-schooling experience required. Simple RCT and extraction experience preferred. Email resumes to HR Department at bayareadentist2009@yahoo.com.

DENTIST — We are inviting board-eligible or certified Endodontists to come and help us maintain and grow our endodontic program in our offices in San Jose and surrounding area. Please email resumes to HR at bayareadentist2009@gmail.com or call 408-656-4567.

DENTIST — Looking for an Endodontist to work in a busy general practice 2-3 times per month. Microscope on site available. Send email to Dr. Ghassemi at summitdental@gmail.com.

DENTIST — Looking for a Prosthodontist or experienced general dentist (at least 5 years) to work part time in a fee-for-service office. Please forward resume and portfolio (if available) to kcabugao@gmail.com.

DENTIST — New dental office is looking for a General Associate to help with future; partnership available. Associates need to be willing to learn and have great communicating skills. Salary is negotiable. Send email to JohnVuDMD@gmail.com.

DENTIST — Looking for part-time Associate Dentist with GPR/AGD training or at least 2 years of work experience. Portfolio of past dental work is a plus. Send email to kcabugao@gmail.com.

DENTIST — Upland, Calif., office seeking General Dentist to associate part time two to three per week. Minimum 3 years experience, excellent communication skills. Contact Elizabeth at 909-985-9866 or email resume to elizabeth@paulchangdental.com.

CONTINUES ON 286

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BAY AREA

AC-085 SAN FRANCISCO: Long established. 2nd floor. 1,433 sf overlooking Park Presidio. 4 large ops. Skylights/large windows **$189k**

AC-141 DALY CITY Facility: Close to Serramonte ShpCtr. 950 sf w/ 3 ops REDUCED! Now $125k

AG-125 SAN FRANCISCO: Relaxed schedule (weekends only) Professional building, major thoroughfare, highly desirable area. 1,000 sf w/2 ops. Plumbed for 1 add'l **$125k**

B-9851 SAN RAMON Facility: This opportunity will not wait! Office ~ 1,700sf w/ 3+ ops **$219k**

BN-130 OAKLAND: Large successful FFS practice, in a multi-story Prof. Building. ~ 2,200sf w/ 4 ops **$1.4m**

BG-150 ORINDA: Well-loved family-oriented practice in bustling heart of town. 600 sf w 2 ops + 1 **$315k**

CC-056 MARIN CO: Beautiful garden setting. Near popular shopping center. Easy access to Hwy 101. 1200sf w/ 3 ops. Room for 2 add'l **$350k**

CC-077 BENICIA: Highly visible. Within walking distance of downtown. 820 sf w/2 ops **$125k**

CC-109 PETALUMA: Priced for quick sale! Reasonable overhead & below market rent. 2 ops. Plumbed for 3 add'l **$170k**

CC-118 VACAVILLE Facility: Highly visible, easily accessible. Ample parking. Growing city. 859 sf w/3 ops. Suite Lease/Purchase option **$245k**

CC-133 SANTA ROSA: Stable patient base. Well-respected. Location = new patient traffic. Excellent signage/major thoroughfare. 1,291 sf w/3 ops + 1 add'l **$480k**

CC-151 SANTA ROSA: Sonoma Wine Country/ family-oriented community. Stable patient base, well-respected, relaxed atmosphere, close to Memorial Hospital. 2,262 sf w/ 6 ops **$875k** *Real Estate avail.*

D-9091 ATHERTON: Turnkey operation 969 sf & 3 ops ***Call for Details!***

DC-113 MILPITAS: Seller retiring! Great location 1,009 sf w/ 3 ops. Plumbed for 1 add'l **$140k**

DC-122 CUPERTINO: Rare Opportunity! Well-respected, fee-for-service/cash practice. 1,075 sf w/ 3 fully equipped ops. Plumbed for 1 add'l ***$889k***

DC-152 Castro Valley/Hayward Area: Large, family-oriented practice. Room to grow w/ marketing & schedule focus. 1,700 sf w/ 4 ops +1 **$215k**

DG-124 MILPITAS: Highly visible. Desirable area. 960 sf w/ 2 ops + 1 add'l **$130k**

DG-116 SALINAS AREA: Large, loyal, stable patient base. Popular Retail Center. 1,400 sf w/5ops. State-of-the-art Equipment **$245k**

BAY AREA CONTINUED

DG-138 MONTEREY: Centrally located in "New Monterey". Charming office. Excellent street exposure! 1200 sf w/ 4 ops **NOW ONLY $620k**

DG-139 SUNNYVALE: Brand new leaseholds! Retail Shopping Center- Street level w/heavy foot traffic! 1,489 sf w/ 2 ops + 2 add'l **$195k**

DG-147 SANTA CLARA Facility: Popular anchor stores/Retail Shp Ctr. Street-level presence invites high foot traffic. 1,500 sf w/ 3 ops + 2 add'l **$185k**

DN-063 SAN JOSE: Long-established, Popular Retail Shopping Center. 780 sf w/ 2 ops **$70k**

DN-084 PALO ALTO Facility: Drawing from an educated, upper middle class community. "Move-in" ready! 700 sf w/3 ops **$125k**

DN-099 SAN JOSE Facility: Ultra-modern facility. Well-established. Dental Professional Complex. 1,450 sf w/5 ops **$99k**

DN-146 PLEASANTON: Live and Practice in one of the nations wealthiest midsize communities! ~1,170 sf w/4ops **$950k**

NORTHERN CALIFORNIA

E-8641 SACRAMENTO Facility: 2,100+ sf w/ 3 ops & plumbed for 1 add'l **$50k**

EN-114 ANTELOPE Facility: **Great** Location! "Move-in-ready" with 4 ops + 1 add'l **$120k**

EN-145 ROCKLIN Facility: Very desirable community! ~1,400sf w/3ops +1 add'l **$150k**

F-1013 FORTUNA: Well respected FFS GP. Loyal stable patient base. 1,000 sf w/ 3 ops **REDUCED! Now only $150k**

FN-087 LAKE COUNTY: Quality practice w/ friendly staff! ~2400 sf w/ 3+ ops **$775k**

FN-088 SISKIYOU CO: Family Friendly Location. ~1300 sf w/ 2 ops **$85k /Real Estate: TBD**

G-998 CHICO/PARADISE: Breathtaking natural beauty! ~898sf, 3 ops **Now $240k**

GN-058 YUBA CITY: Known for quality dental care , 1704 sf w/ 4 ops Reduced! **$359k**

GN-103 CHICO: Successful, highly esteemed practice! ~3500 sf w/ 8 ops + 2 add'l **$850k**

GN-134 REDDING: Stellar reputation, quality care and location! ~2,264sf w/4 ops. **$500k**

GG-140 OROVILLE: Multi-Generational w/ "Small-Town" feel. 1200sf w/4ops **$248k**

GN-149 YREKA: Quality FFS, Warm & Caring practice. ~900sf w/ 3 ops **$200k/Real Estate $110k**

HN-059 LASSEN CO: Quality, well-established, family-oriented. 1600 sf w/3 ops **$120k**

CENTRAL VALLEY

I-1005 SAN JOAQUIN VALLEY: Long-estab. High-End. 2500+ sf w/ 6ops **$650k**

I-9721 STOCKTON: Prof. complex . 1,450 sf w/ 3 ops & plumbed for 1 add'l **$75k**

IG-067 STOCKTON: Fully computerized, paperless, digitalized. 5000 sf w/ 10 ops **$475k**

IG-081 TURLOCK Facility: Close to heart of town and public transportation. Highly visible intersection. 1512 sf w/ 5 ops. **Oppty to Buy Condo Also! Practice: $50k**

IN-135 GREATER MERCED: Major thoroughfare/ Prof Corridor. 1,300 sf w/ 3 ops **PRICE REDUCED! NOW ONLY $350k**

J-1000 TULARE: Highly visible location! ~1650 sf w/ 4 ops **$465k /Real Estate: $249k**

J-1001 LINDSEY: All American City! Conveniently located ~3380 sf w/ 5 ops **$220k**

JG-136 FRESNO Facility & Real Estate: Highly visible, free-standing Professional building on major thoroughfare. 5000 sf w/ 9 ops **$475k**

JG-137 FRESNO: Own the Building too! Stable Patient Base! ~3500 sf w/ 5 ops **$465k/ Real Estate $350k**

SPECIALTY PRACTICES

AC-119 MILL VALLEY Prostho: Near downtown. Recently remodeled! State-of-the-art equipment including: digital charting and x-ray. 1,100 sf w/ 3 ops. Plumbed for 4th **$450k**

AG-096 PACIFICA Ortho: Easy accessibility, solid referral base. Perfect opportunity for merger/secondary office. 1,400 sf w/5 chairs **$178k**

CG-105 VACAVILLE Ortho: Strong, loyal, widespread referral base. 30+ pats/day. 5-6 new starts/mo. 2,000 sf - 4 chairs/bays **$280k**

EG-131 ROSEVILLE/AUBURN Ortho: 2 practices within ½ hour of each other! Call for all the details on both locations! **$175k**

GN-117 SACRAMENTO/N. VALLEY Endo: Highly esteemed, Fee-for-Service. ~2000 sf w/3ops **$310k**

I-7861 CENTRAL VALLEY Ortho: 2000 sf, open bay w/ 8 chairs. Fee-for-Service. 60-70 patients/ day. Professional Plaza **$370k**

I-9461 CENTRAL VALLEY Ortho: ~ 1650 sf w/5 chairs/bays & plumbed for 2 add'l **$180k**

CLASSIFIEDS, CONTINUED FROM 284

OFFICE STAFF — Established Pediatric dental office in Sunnyvale is looking for a friendly, outgoing front office receptionist whose primary responsibility is to provide outstanding service to our patients and their parents. Along with being able to exhibit a high level of professionalism in a extremely busy environment, applicants must have the following qualifications: excellent phone skills; punctuality; great people skills; ability to multi-task; prior front office experience; knowledge of Dentrix; experience working with DMO,HMO and PPO insurances; confirming insurance eligibility; electronic claim submission; doing treatment plans. Prior pediatric dental office experience a plus. Schedule is Monday through Friday, 8 a.m. to 5 p.m. Send email to Maureen Vander Zwaag at maureen@vzconsultinginc.com.

OPPORTUNITIES WANTED

DENTIST — General Dentist seeking a part-time job opportunity 1-2 days per week, Saturdays included. I gained great experience during the 18 months I worked as an associate in a private practice. I have been working temporary for a private practice in the Bay Area. I am efficient in all disciplines of dentistry. I am very open to hygiene work as well. I am very easy to work with and would love to be an addition to your practice. Resume and references available upon request. Thank you for your consideration. I hope to hear from you soon. 707-372-6928, dentistcoach707@yahoo.com.

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- **BISHOP:** *For Sale*-General Dentistry Practice & Building. After 29 years in the same location this retiring dentist is selling both his practice and building. Collections were $1,000,243 in 2011 with $387,000 adjusted net income. There are 6 days of hygiene in this 5 op., 1,800 sq. ft. building. 100% financing available for both building and practice. Owner has reduced price below valuation price. #14390
- **CHICO:** *For Sale*-General Dentistry Practice. The collections in 2011 were $1,209,207. There are 7 days of hygiene in this 5 op., 2,400 sq. ft. office. Equipment includes Laser, Intra-Oral Camera, new Cone Beam X-ray and Dentrix software. This excellent practice has 1,824 active patients with 12 new patients a month. Owner will consider an Associate to Buy-In position leading to the purchase of this practice. #14392
- **CORONA DEL MAR:** *For Sale*-General Dentistry Practice: A gorgeous 4 op practice in the most desirable location in America. Office was built almost 4 yrs ago by Henry Schein. Owner did not spare any expense. All high-end Pelton and Crane equipment. Kavo electric handpieces and implant systems in every operatory, Dentrix and Dexis. 1,800 sq. ft.. Implant business makes up about 46% of business. 2011 GR $1,250,000. Great location to sell high-end dentistry. #CA520
- **FRESNO:** *For Sale*-General Dentistry Practice: $935K in collections in 2011, w/adjusted net income of $337K. Office is 2,300 sq. ft. and is located in north Fresno in a highly visible professional office complex on a main thoroughfare. There are 6 equipped operatories, owner reports average age of equipment is 4 years. Practice has been operating in present location for over 20 years. Eaglesoft software, owner is retiring. #CA502
- **GRASS VALLEY:** *For Sale*-General Dentistry Practice. Gross Receipts of $491K with an adjusted net income of $130K. Overhead 73%. Office leased 1,555 sq. ft., 4 equipped operatories, 5 available. Laser, Intra-oral Camera, Cerac, & Eaglesoft Software. Owner would like to retire. #14379
- **GRASS VALLEY:** *For Sale*-General Dentistry Practice. Owner retiring, 2012 GR of $442,736 on 3 day week. 6 Ops, 3 days hygiene, Dentrix software, Pano, Laser, Intra-oral Camera, long time cash practice. Approximately 1,950 SF office condominium available to purchase. #14372
- **HAWAII (MAUI):** *For Sale*-General dentistry practice. Gross Receipts of $636K. Office has four equipped operatories in 1198 sq.ft. Pano, Laser, I.O. Camera, Fiber Optics, 2 ½ days of hygiene. Owner retiring: Don't miss this opportunity to live and work in paradise. #20101
- **HUNTINGTON BEACH:** *For Sale*-General Dentistry Practice: Jump start office. 2012 Gross Receipts of $187K. Henry Schein built, high-end office with 1,395 sq. ft. in a retail location with street traffic. Completely computerized and chartless with Dentrix. Equipped with Digital Instrumentarium X-rays with Dexis, OP200 Digital Pan. Kavo Quatrocare handpieces, Pelton and Crane massage chairs in both operatories. #CA521
- **LANCASTER:** *For Sale*-General Dentistry Practice. This 4 operatory office is located in 2,360 sq. ft. on the second floor of an attractive Medical-Dental office building. Gross receipts were $676,000 with a $174K adjusted net income. Dentist is retiring after 39 years. 4 days of hygiene. Additional operatories could be added to existing space. Great location. Asking price has been significantly lowered! #14376
- **LAS VEGAS:** *For Sale*-General Dentistry Practice. This 4 operatory practice is in a great location in a high-end professional building with a view of the city of Las Vegas. It is equipped with an Intra-oral camera, Pano, Laser, and Dentrix software. There are 2 days of hygiene. The staff is well trained to efficiently run this low overhead office with great potential for further growth, 2011 gross receipts were $727K with adj. net income of $331K. Doctor moving out of state. PRICE REDUCED! Available for immediate sale. #NV500
- **MERCED:** *For Sale*-General Dentistry Practice. This is a tastefully done, 4 op., 1,550 sq. ft. office with 4 and 1/2 days of hygiene/week. All equipment is less than 10 years old and includes 2 Lasers, Intra-oral Camera, Panographic X-ray, Digital X-rays, and Dentrix Software. Molar endo and involved oral surgery cases referred out. Basic general (non-amalgam) type dentistry. 2011 gross was $878,000 with 4 weeks out as a result of a medical issue. 2010 collections were $956,000. Excellent location. Seller retiring. PRICE REDUCED! Available for immediate sale. #CA512
- **MILLBRAE:** *For Sale*-General Dentistry Practice. This beautiful, well-established office is located on the main thoroughfare of the North Penninsula, offering great exposure that generates 25-30 new patients per month. 5 treatment rooms (6th plumbed) in approx. 1,500 sq. ft. equipped with Digital Pan, Digital Imaging and Intra-Oral Camera. 2011 gross receipts of $651,000 with $230,000 adjusted net income. Owner is retiring. Don't delay, this won't last long! #14395
- **TURLOCK:** *For Sale*-General Dentistry Practice: Doctor's gross receipts in 2012 were over $950,000 with only 54% overhead or $443,777 adjusted net income. There are 8 days of hygiene. Intra-oral camera, Panoramic X-ray, Digital X-rays, and Dentrix software. Owner is retiring. #CA506
- **MODESTO-TRACY-AREA:** *For Sale*-Pediatric Practice. $677,000 in collections in 2010 with a $357,000 net income. This 3-chair office is located in approximately 1,250 sq. ft & has recently been remodeled. Patient Base software. Office equipped for NO2 & IV sedation. Practice has operated in its present location for 20 years.
- **ORINDA:** *For Sale*-FACILITY SALE. If you are thinking about relocating or building out a new office in a prime location, then you need to look at this opportunity. At half the cost or less, you can have an outstanding, fully furnished, 3 operatory office (2 additional plumbed) in a great location with good parking in an upscale building. Pictures and a complete list of equipment and furnishings are available. Office is suitable for Endo, Oral Surgery, or General Dentistry. #CA508
- **REDDING:** *For Sale*-General Dentistry Practice and Building: Doctor collected $888,015 in 2012 with adj. net income of $324,896. The dental office was remodeled in 2001, approx. 1,500 sq. ft. There are 13-14 new patients a month with 7 1/2 days hygiene per week. The building is also for sale and has two additional occupied dental suites. A commercial Real Estate Appraisal was completed recently on the building. 100% financing is available for both the practice and building. Doctor has owned practice since 1977 and is now retiring. #CA519
- **RIDGECREST:** *For Sale* – General Dentistry Practice and Dental Building: This 4 operatory office is located in 1,536 SF office building. Owner has worked in same location for 32 years and is now retiring. This small practice grossed about $175K in 2012. Pictures of the building are available upon request. Lots of Potential. #CA523
- **SACRAMENTO:** *For Sale*-General Dentistry Practice. **Ideal start-up or satellite practice.** This is a satellite practice of the owner. this is a 5 op. office that includes Intra-oral camera, Panoramic X-ray, and Soft Dent software. 2011 gross receipts were $202,000. Average age of equipment is 5 to 10 years. Purchase price is far less than purchasing equipment and paying for leasehold improvements in a new location. This office also comes with approximately 450 active patients that provides an immediate cash flow. #CA507
- **SACRAMENTO:** *For Sale*-General Dentistry Practice. Owner moving out of state. 2011 GR $130,373. 830 SF office with 2 equipped ops. Practice has been in same location since 1981. This is an opportunity for anyone looking to start a practice or open a satellite office with a small investment. #CA522
- **SACRAMENTO:** For Sale-General Dentistry Practice. Gross Receipts $546K with adjusted net income of $159K. Office is 2,400 sq ft with 7 operatories. Practice has been operating in the same location for the past 50 years. Pano, Softdent software. Owner to retire. #14374
- **SAN RAMON:** *For Sale*-FACILITY SALE. Great San Ramon location in professional complex: equipment, leaseholds & furnishings only. 1,400 sq. ft. with 4 equip. treatment rooms (2 additional plumbed), Pano X-ray, Computer Server & Workstations w/Dentrix, Intra-oral Camera & wired for digital. Priced to sell in an upscale community that's home to Chevron, AT&T, Robert Half International, Accenture and Safeway Stores. #CA511
- **SAN JOSE:** For Sale-FACILITY ONLY: Avoid the expensive cost of leasehold improvements and equipment! Central Blossom Valley location ready for a start-up practice or 2nd office. 3 fully equipped treatment rooms in approx. 1,200 sq. ft.. Photos and complete inventory of furnishings and fixtures available. Owner is relocating. #CA515
- **NORTH BAY AREA:** For Sale-ENDODONTIC Practice: This beautiful Wine Country office has 4 treatment rooms in well-appointed 1,600 sq. ft., digital imaging, Intra-Oral Camera, and Datacon/Schick software. Office has been in same location for over 20 years with a very strong referral base. Great, long-term staff will ensure a smooth transition. Owner is retiring but is willing to stay during transition. #CA517
- **WHITTIER:** For Sale-General Dentistry Practice: Retiring doctor, over 30 years in the practice. 7 ops., 2,850 sq. ft. office, long-term staff, 3 hygienists. Doctor refers out all Ortho, Endo, Pedo, Perio, and Oral Surgery. Gross receipts for 2012 were $803K. This office will not last long! #CA518

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DENTIST — I am looking for full-time or part-time work as an Associate. I am an enthusiastic, friendly, caring, flexible and well-qualified dentist who is committed to quality patient care. I have a well-rounded scope with experience in treating medically, dentally and psychologically complex patients, oral pathology, full-mouth rehabilitations, esthetic restorations, implants and CAD/CAM with e.max, zirconia and titanium. While having a strong restorative background, I emphasize preventative care and educate my patients so that they can receive the maximum benefit from my work. I am confident that I can contribute to the growth of your practice if given the opportunity to work with you. I am available at 310-210-2301 to discuss my resume and portfolio.

EQUIPMENT FOR SALE

EQUIPMENT FOR SALE — CEREC 3 Acquisition Center Unit & Milling Unit with some accessories. Great working condition. Send email to berniecoffee@yahoo.com for more information.

OFFICES FOR RENT OR LEASE

DENTAL OFFICES FOR RENT OR LEASE — Encino office space to share. Great opportunity for recent graduate or satellite office. Modern suite with up-to-date equipment. Shared with general dentist. Located on Ventura Blvd., high-visibility medical building with ample parking. Available without dentist or share daily. Negotiable terms. Contact Dr. Greg Don at 818-784-5414 for more information or send email to gregdondds@gmail.com.

DENTAL OFFICES FOR RENT OR LEASE — Located in mid-Wilshire Los Angeles, 1,600 sq. ft. dental suite for lease. Ideal for pediatric dentist or dental specialist. Two-story professional medical building with pediatrician, plastic surgeon and ophthalmologist in the building. Ample parking for patients. Call Jason at 213-840-6585.

DENTAL OFFICES FOR RENT OR LEASE — Dental office for lease in the heart of the medical/dental community of Yuba City, Calif. Wonderful community to raise a family with excellent schools and local amenities. Professionally remodeled dental office is 3,200 sq. ft. upstairs and 1,400 sq. ft. downstairs. It has 11 operatories, 2 private quiet rooms, 1 private exam room and 8 open-bay operatories ideal for a group practice. 2 private doctors offices one with a bathroom, large lab, sterilization room and digital pan/ceph room. All wired for a paperless office. Raised floor construction easily modified if desired. Check out our office on www.Loopnet.com, listing # 17840407. Please email us at drwvota@gmail.com or call 530-683-6317.

DENTAL OFFICES FOR RENT OR LEASE — Dental office for lease In the commercial heart of Yuba City. Gray Ave. is one of only two four-lane roads that run North-South in town. Very high traffic counts. This suite is available to be turned into whatever your needs require. A four-lane, major road passes in front with a high traffic count. Very flexible with great signage available on building and trash enclosure. Landlord will deliver in a warm shell condition for a qualified tenant with agreed upon lease terms. Check us out on www.Loopnet.com, listing 16404548. Please email us at drwvota@gmail.com or call 530-683-6317.

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3092 SF FACILITY

1,600 sq. ft. street-level dental facility in Marina/Cow Hollow neighborhood across from Presidio with excellent visibility and signage for foot traffic plus easy diagonal parking in front of building. Move in ready with 4 ops., 2 labs, kitchenette, reception and 2 desk areas plus 2 pvt. offices, 2 bathrooms, 1/2 basement & backyard with deck.

3091 MORGAN HILL GP

Well-stablished GP in prime Southern Santa Clara County location. Gorgeous 1,500 square foot state-of-the-art office with 4 operatories. Ideal turn-key operation. Asking $195K.

3090 PACIFICA GP

SOLD

Seller retiring from well est., well-run, coast side practice. Located a block from the beach with rolling hillsides in a charming community just 20 minutes from SF. Approx. 1,400 active pts., 4 doctor-days/wk, 6 hygiene days/wk. & 13-15 new pts./month. Avg. GR for past 3 years $473K. Seller willing to help for smooth transition. Asking $313K.

3086 SONOMA COUNTY GP

SOLD

Seller retiring after 30 years of practice located in highly desirable suburban area. Excellent reputation with local community and relationship with large, stable patient base of approx. 1,400, avg. 15 new pts./ month. 2011 GR $1.1M+, 2012 on schedule for $1.2M. Asking $828K.

3080 SAN BENITO COUNTY GP

SOLD

State-of-the-art family practice. 1,558 sq. ft. facility. Approx. 1,100 active pts. 3 Dr. days. 2011 GR $449K+. Asking $305K.

3085 STANISLAUS COUNTY GP

General, family practitioner now retiring. Offering well-est. successful, state-of-the-art practice in approx. 2,800 sq. ft. facility w/7 fully-equipped ops. Owner willing to help in transition. Estimated 2,500+ active pts. 5 year avg. GR $1.4M w/net of approx. $500K & just 3.5 doctor days & 10 hyg. days/wk. This practice is for an established dentist or 2 dentists w/experience & who will appreciate a high quality practice. Asking $895K.

3093 SAN JOSE FACILITY

Avoid the expensive cost of leasehold improvements and equipment! Central Blossom Valley location ready for a start-up practice or 2nd office. Three fully equipped treatment rooms in approximately 1200 sq. ft. Photos and complete inventory of furnishings and fixtures available. Owner is relocating.

3089 GILROY GP

SOLD

Seller retiring from well-est. high quality practice w/approx. 1,200 active pts. 2011 GR $513K+ w/3.5 doctor days/wk. 5 fully-equipped ops in 1,440 sq. ft. modern facility. Seasoned and dedicated staff providing a relaxed atmosphere to loyal pt. base. Asking $350K.

3082 SONOMA COUNTY GP

SOLD

Well-established, family-oriented practice in charming community located in the hub of Sonoma County. Approx. 14 new pts./ month. Approx. 1,500 active pts. 3 fully-equipped ops., recently upgraded equipment, in 900 sq. ft. state-of-the-art office. 2011 GR $552K+. Asking $384K.

3083 SONOMA COUNTY GP & BLDG

SOLD

Well established & respected GP known for personalized, quality dental care in a family oriented community. 2011 GR $767K+ w/4 doctor days.Asking for practice $560K. Building is also available for purchase.

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Redwood City, CA 94061

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CLASSIFIEDS, CONTINUED FROM 288

DENTAL OFFICES FOR RENT OR LEASE — 4-operatory office has 2 operatories available for rent in a modern central-Santa Rosa business complex. Floor-to-ceiling windows with fully equipped operatories. Great for beginning practitioner as well as established doctor just cutting expenses or slowing down. Plenty of parking available. Email inquiries to skiboat9@comcast.net.

OFFICE FOR RENT OR LEASE — City of Montebello – 1,104 sq. ft., medical/dental suite located at the corner of 6th/Beverly Blvd., close to the 10 and 60 freeways, has a suite available for rent in a newly remodeled building. Great visibility and signage with plenty of patient parking. Great location, within walking distance from the Beverly Hospital. Densely populated Hispanic community and many PPO/indemnity insurances in the area. Landlord will help generously with tenant improvements to build a brand new suite to fit your needs upon layout approval. Rental rate is $1.95/sq. ft. with modified gross. Free rent concession with a long-term lease. This is a must-see space/location. Call Rosie at 310-710-2890.

OFFICE FOR RENT OR LEASE — City of Torrance-750 to 7,000 sq. ft. space available. Central Torrance location with great visibility, signage and parking. Only one block from Little Company of Mary Hospital. Densely populated with PPO ins. Patients. In a class "A" building, lease rates and terms are negotiable. Landlord will help generously with tenant improvement to build a brand new suite to fit your needs upon approval of layout, free rent concession with long-term lease. Must see. Please call Rosie at 310-710-2890.

CONTINUES ON 292

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6008 **MENDOCINO COAST – FORT BRAGG** Cultural haven offers attractive lifestyle. 2012 collected $750,000. 4-days of Hygiene. Digital radiography. Computers in ops.

6026 **SACRAMENTO** 2011 collected $[illegible],000 on 3-day week. Practice coupled with facility and [illegible] can do much more. Bring in specialists. Strong foundation can be developed into busier practice. SOLD

6029 **NORTHEAST CALIFORNIA – ALTURAS** Trade in smog and congestion for soaring mountains and close-knit communities. 2012 collected $514,000 on 3-day week. 3+ days of Hygiene. Strong Recall. Great staff. Beautiful office. 3-ops with Adec delivery systems. Be busy, be happy and take vacations. No worries here.

6030 **SANTA ROSA AREA** 2012 collected $850,000. Strong profits. 4-days of Hygiene per week. Digital x-rays. Building optional purchase.

6034 **SAN LEANDRO AREA** Did $650,000 in 2011. Owner reduced time in 2012. Collected $450,000. 5-ops. Nice Hygiene schedule. Great blue collar practice.

6035 **SAN FRANCISCO'S EAST BAY – ORTHO** Part-time practice collected $425,000 in 2012. Very desirable location.

6037 **SAN FRANCISCO'S UNION SQUARE** Optimum opportunity for Dentist seeking high-end Downtown SF practice. 5-days of Hygiene. Collected $750,000+ with Available Profits of $325,000+. Great views.

6038 **FREMONT** On part-time schedule due to other responsibilities, collects $300,000 per year. 2-days of Hygiene.

6039 **LAKE TAHOE – CALIFORNIA SIDE** Long established. 2012 collected $515,000 with 2-months off. Realized Profits of $220,000+. Digital radiography. Attractive 3-Op office.

6040 **SANTA ROSA** Sleeping Giant. Beautiful 4-Op office is paperless, digital and employs laser technology. Collected $480,000 in 2012. Should have done more! Prior year did $625,000. Package includes 1,500 sq.ft. condo which shall create a facility cost which shall be cheaper than rent.

6041 **PLEASANT HILL** Collected $365,000 with Profits of $142,000 in 2012. Owner slowing down. Previous 3-years averaged collections of $415,000 and Profits of $180,000.

6042 **BERKELEY** 2012 produced $1.3 Million and collected $1.23 Million. Available Profits totaled $465,000. Owner works just 3-days a week. 6-days of Hygiene per week. Very strong foundation

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3294 **ARVIN – LAMONT** Grossing $20-to-$40,000/mth on 2-days. 5-Ops. HMO shall pay for building & practice. FP for Building & Practice $350,000.

3296 **PALM SPRINGS** High identity 6-op building. Grossing $1.2 Million. FP $1.55 Million for building & practice.

3297 **PALM DESERT** High visibility Shopping Center Practice across from 5,000 senior citizens. 4-ops. Great upside. FP $660,000.

3298 **BALDWIN PARK** Conservative DDS grosses $250,000. 3-ops. Great visibility. FP for Practice and Building $750,000.

3299 **NORTH SAN DIEGO COUNTY BEACH CITY** Owner does no-hands on dentistry. Does apprx $800,000/year. Hands-on DDS can take over $1+ Million. Building $1.6 Million. FP for practice $550,000.

3300 **FULLERTON - FREE STANDING DENTAL BUILDING ON MAJOR BLVD - BANK OWNED** Previously grossed $660,000+. Grosses apprx $15-to-$20,000/mth. 6 Ops plumbed & 4 equipped. All Offers tendered to Bank.

3301 **CUCAMONGA & MONTCLAIR - TWO ALMOST IDENTICAL PRACTICES** 5 & 6 Ops with each positioned to exceed $80,000/mth first year. Both offices state-of-art with reasonable rent. MONTCLAIR ASKING $750,000. CUCAMONGA ASKING $900,000.

3303 **REDLANDS** In busy Plaza near freeway off ramp. 5 Ops, great equipment. Previous gross approx $500,000. FP $250,000.

3304 **HEMET** Seller works 2-day, grosses apprx $600,000. Full time DDS can gross $1.5 Million. 8 op office in "WESTERN DENTAL" type location. FP $450,000.

3305 **ONTARIO** Stater Brothers Shopping Center. Grossing $15,000-to-$20,000/mth. Recently renovated. 30+ new patients/mth. Should do $500,000. FP $250,000

3306 **MISSION VIEJO - EMERGENCY SALE** Gorgeous office. Bank will assist right Buyer.

3307 **RESEDA** 60 new patients/mth! High identity location, electronic billboard. Gorgeous 7-op office. Will Gross close to $1 Million. FP $885,000.

3308 **LANCASTER** Enjoys #1 position in PPO directory. Grossing $400,000+. Seller likes to golf. Manager says: "Find motivated Successor. Practice should do $1 Million." FP $350,000.

3309 **FOLLOW THE MONEY - TAKE HOME $500,000 PER YEAR!** Gold Mine in exquisite ski & recreational area. Grosses apprx $1 Million, Profits of $500,000. Seller will take $775,000.

3310 **INTERSECTION OF 210/57 FREEWAYS** Hi identity location. Grossing $1.2 Million. Includes Cerec & CT. Full-time DDS with specialists can Gross $1.5 Million. Office Condo can be included.

3311 **CARLSBAD** Absentee GP Grossing $750,000. Free-standing Dental Building also part of sale. Hi identity location.

3012 **CUCAMONGA** Grossing apprx $70-to-80K/mth. Owner has health issues. 60 new patients/mth. Full Price $850,000. Manager believes practice capable of doing $1.2 Million.

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CLASSIFIEDS, CONTINUED FROM 290

OFFICES FOR SALE

OFFICES FOR SALE — Turnkey starter practice for sale in Daly City, Calif. This is a facility sale, does not include patients' chart. Excellent location with ample parking and high traffic in surrounding area. Office is located in a professional building with 950 sq. ft. 3 fully equipped operatories, nitrous oxide, panoramic X-ray machine, digital radiography, networked computers/phone, ceiling mounted LED TVs and more. Most of the equipment is 5 to 7 years old. This is a great opportunity for someone who has an existing patient base or someone who wants to start his/her own practice. Please send email to perfectsmile06@yahoo.com for more details.

PRACTICES FOR SALE

PRACTICES FOR SALE — Berkeley dental practice for sale. 35-plus years of goodwill. Very active, growing practice in great community near Highway 80. 3 operatories with 3.5 days of hygiene per week. Renovated in 2008. Collection in 2012 was $900,000. Owner very motivated. Serious buyers only. Send email to DentistBerkeley@gmail.com.

PRACTICES FOR SALE — Practice is located in rural northeast California. Beautiful recreation area. 5-year-old equipment, newly remodeled office, 4 operatories, pano, Nobel Biocare implant system, and much more. 3 days of hygiene per week. Collected $746,000 in 2010 on 5 days per week, $527,000 in 2011 on 3 days per week. Great Christian staff, reasonable rent. Asking $175,000. Email ddspractice4sale@yahoo.com for more information.

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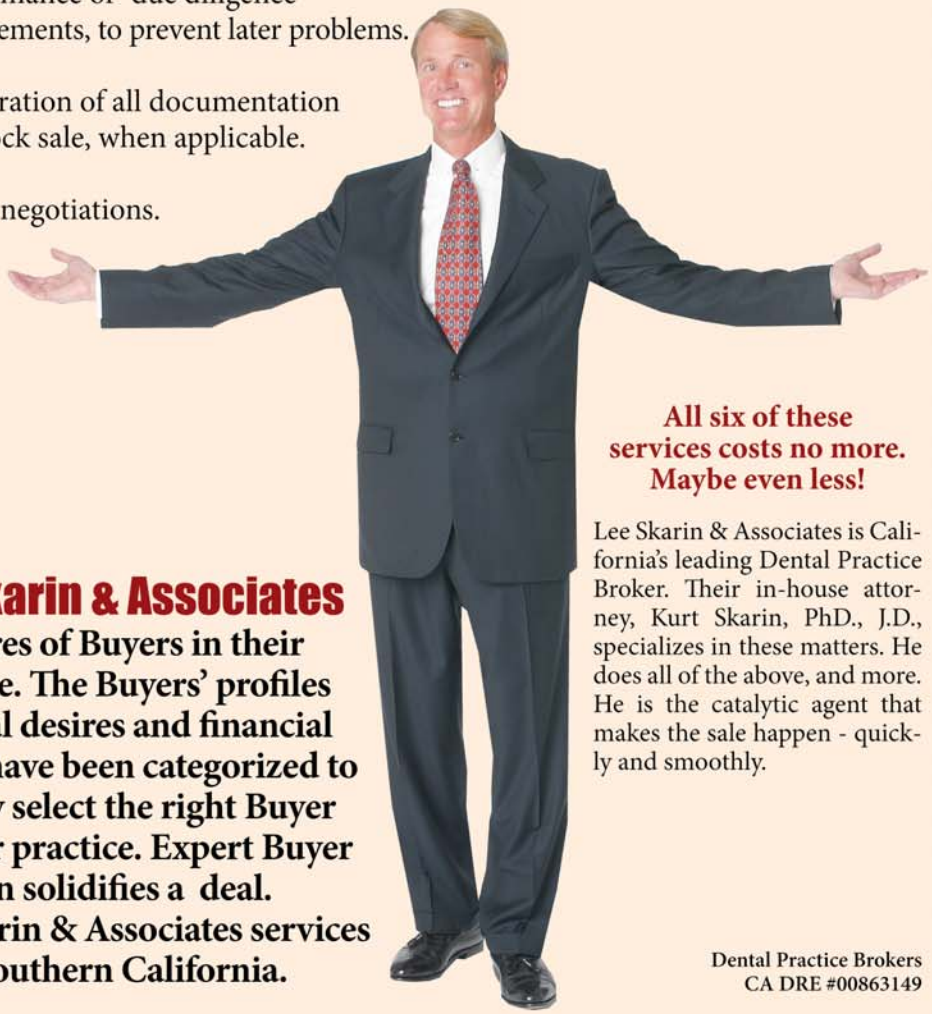
6. Lease negotiations.



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DR. BOB, CONTINUED FROM 298

Mano a mano, boy, that's right up my alley! I haven't flown an airplane in 60 years, small wonder I'm nervous. While waiting for the formal briefing to begin, I'm also considering that this is an Italian aircraft. This is not to suggest that the Italians do not manufacture exemplary aircraft or even if they don't, that it is not within their rights as a sovereign nation to make any kind of aircraft they want. Granted, the Italians do make Ferraris and Lamborghinis, both very fine examples of native craftsmanship, but I'm finding it difficult to recall any famous Italian aces from recent wars. Joe Foss, Eddie Rickenbacker and Baron von Richthofen come quickly to mind, but if any of Il Duce's boys became big-time aces in Italian aircraft, I must have missed the news.

Nevertheless, poised on the tarmac in front of me this morning are two of the most beautiful planes I have ever seen. The *Marchetti SF 260* is a low wing, tricycle geared, 260-horsepowered beauty, capable of +6 to -3 Gs and is able to withstand about any acrobatic maneuver you can imagine at a top speed of 270 mph. Fine! As a chronologically gifted senior citizen with the usual baggage of infirmities peculiar to my age and having led the sedentary life of a dentist for the past 60 years, the most acrobatic thing I have done within memory is stepping carefully over the edge of the tub when getting out of the shower.

Enter Spock. His real name is Brian, a computer science grad from Penn State, ex Air Force jet jockey and prime candidate for the NBA.

Spock is his *nom de pilote,* given to him because, for reasons known only to him, he has affected a perfect Mr. Spock hairdo the whole crew from Star Trek would be proud of, even though he has eschewed the Vulcan ears. Well over 6 and a half feet tall, my Mr. Spock certainly commands the presence to carry it off. When I converse with him I have to tilt my head way back, otherwise my remarks are addressed to an area just north of his navel.

Today he is radiating more good will and bonhomie than a stockbroker with a hot tip. He says he is going to be my co-pilot and that we are going to have a memorable day. *One way or another*, I think to myself. I confess to him I have not flown an airplane of any size, shape or description for well over half a century. He brushes it off as of no concern, repeating the old saw, "It's just like riding a bicycle; it'll come back to you."

Spock accompanies me to a room where I'm fitted with a regulation khaki flight suit, complete with about 50 assorted pockets with matching zippers and a nice array of patches and logos. I also get a Mae West life vest, a backpack parachute and the pièce de résistance, a big white helmet. The helmet has a nearly opaque dark grey visor and is fitted with earphones and a swing-out microphone. Spock leads the way to the briefing room, me stumbling along in his wake with my 50 pounds of gear and feeling like a complete imposter whose charade is about to be exposed in the next few minutes.

The briefing room is Dooley's territory. Dooley is really Dennis who has 7,000 hours of flight time, some of it straight and level. It is here that I meet Brian, who will be my designated nemesis. This Brian is late 40ish and has the look of an accountant or a sixth-grade math teacher. He has done this whole thing a couple times before and is therefore an Old Hand. He must have liked it, because he is back again today, courtesy of his mother, who has given him another go as a birthday present. The mother has come along, accompanied by a small nondescript dog on a leash. In an effort to ease the palpable tension, I remark that although I knew there was going to be a dogfight, I had *no idea* that … my voice trailing off to a very small courtesy laugh offered by Dooley and Spock, obviously following instructions on how to keep the clients happy.

Dooley launches straight into the cape work. He has two model fighter jet planes mounted on 4-foot sticks that he uses to illustrate the intricacies of the moves he wants us to duplicate in the air. Brandishing his stick planes around like a deranged fencing instructor, he describes Air Combat Maneuvers 101 with names like "high yo-yos," "low yo-yos," "lead pursuit," "lag pursuit," and "rolling scissors."

I glance over at Brian to see if he is getting all this, because I haven't understood a word that's been said. Dooley could have been describing the fall of the Roman Empire in Hindustani for all I know. Brian, to my dismay, seems to be hip, nodding knowingly whenever Dooley looks his way. The lecture drones on. "Fly-through extensions," "head-fake," "nose-low slice turn." I'm about to suggest we just fly low and slow down to Laguna and back and call it a day, but then the briefing is over and we stagger out to the planes.

This is it! Spock straps me into the side-by-side seat arrangement, plugs in my headphones and points out some of the salient features of the cockpit featuring a gross or so of instruments and dials, the function of which only God knows. There is a tricky video camera arrangement installed, one camera is pointed directly at me, another is directed at the gunsight mounted just in front of us and a third one surveys the outside world at about the 10 o'clock position, as we fighter pilots like to say. Spock will switch to whatever camera he feels most vividly records the events in

the heat of battle and the whole episode will be recorded on tape in a VCR mounted just behind our seats.

With Spock strapped in to my right, there is not enough room for either of us to move more than a quarter inch in any direction. I wonder how his head is going to clear the canopy when he eventually closes it. "I will operate the throttle," Spock informs me. "Keep your feet off the rudder pedals." I pull my feet back so that my knees are now on a level with my chest. "There are three buttons on the stick," he goes on. "One is for the intercom, one operates the laser gun and the other one lets us talk to Dooley and Brian in the other plane."

"There will be six 'encounters,'" Spock explains as we taxi out on the runway. I'm deathly afraid he is going to ask me to do the takeoff since he has already given me the bicycle analogy three times, but with an OK from the tower, he slams the throttle forward and we follow the other Marchetti off the runway, curving over Knott's Berry Farm, and head for Long Beach.

"OK, Bob," he says suddenly, "you've got the airplane. Come up just behind and slightly lower than Dooley's right wing and we'll fly formation out over the Catalina Channel." This is where the FAA has kindly allowed us to do our foolishness, minimizing the risk to everyone but ourselves.

I hold the stick delicately between thumb and forefinger, having quickly discovered the Marchetti is a very responsive airplane. A quarter-inch pressure on the stick and we rise 50 feet, or God forbid, drift 50 feet closer to Dooley who looks close enough already to clearly see individual hair follicles on the back of his hands. By the time we reach the coastline and Spock announces in pilotese, "Feet wet," I'm

With Spock strapped in to my right, there is not enough room for either of us to move more than a quarter inch in any direction.

beginning to think maybe I haven't forgotten entirely what it was like to fly the F4U Corsair of my youth.

Spock says he will guide me through the first practice fight. It is to be a high yo-yo. Right! A high yo-yo. That would have been my choice. Keep your eye on the other plane, he commands. This is the first rule: never, *ever* lose sight of the other plane, or you're dead meat, you're history. Unfortunately, the other plane has drifted off to my left someplace until I can barely identify it in the distance. Or is that a speck of dirt on the canopy? We're at 7,000 feet out over the slate-gray ocean flying in a slate-gray sky. If there is a horizon, I can't readily recognize it. It seems to me we are suspended in a huge gray dome without any point of reference.

"All right, roll left, nose down and pick up some energy," Spock rasps through the intercom. "Energy" turns out to mean speed, although why he couldn't have just said so, I don't know. I'd tell him this, but I can't remember which of the three red buttons beneath my hand controls the intercom.

"Harder," he yells. "Harder!" I've got the stick clear over against my left knee. The gray outdoors has shifted to the right along with my viscera. The noise level suggests the engine may disengage from its mountings at any moment as my head swivels rapidly within the narrow limits of my cervical vertebrae. I have no idea of where we are or what has happened to the other plane I'm supposed to be watching.

"Roll out, roll right and pull the nose up — hard!" Instructions are coming fast and furious now and Spock's inflections seem to indicate that all is going well when suddenly he yells, "We got 'em, we got 'em!" And there — streaking diagonally in front of us — big as a 747 — is the other plane. By some miracle, instinct maybe, I manage to get the "enemy" in the center of the gunsight whose red, concentric circles glow in front of me. With Spock yelling, "Tracking, tracking, tracking!" over the plane-to-plane radio, I push what I hope is the gun button and hear loud satisfying reports through my headphones like six 50-caliber machine guns or a couple of 20-mm cannons all responding at once.

Air Combat USA has a neat system of recording their successes in the air. Instead of using real bullets, which could be very expensive and possibly unpleasantly fatal, they have rigged up a laser light which locks on the target plane when it's properly aligned. When the targeted plane's pilot hears the words "tracking, tracking, tracking," he knows he has bought the farm and is required to push a button or pull a lever to release some special oil-based smoke, which then trails spectacularly behind him while he simulates a wide looping death spiral

Dooley and Brian oblige, grudgingly, I feel, and the smoke pours out on schedule. My first kill. I am stunned, especially since I haven't a clue of how this happened. Spock says for me to hold up my hand. I do. Wrong hand. He wants to give me a high five for the

camera that has been turned on since takeoff. Spock praises me extravagantly and we exchange three or four more high fives. I grin idiotically at the camera. I feel I am being patronized shamelessly, but the feeling is good, so I let it go.

We line up for another encounter, one of Dooley's Immelmann attacks with a one and a half gainer and a full twist. I made that up, I haven't the foggiest idea of what we're about to do. The cardinal sin again, I promptly lose sight of the other plane. Spock is issuing instructions left, right and center. Palos Verde Peninsula zips by directly overhead where it has no business being. The two shades of gray representing the ocean and the sky exchange places at least twice and suddenly "tracking, tracking, guns, guns, guns" pours from the phones and we're smoking.

"What happened, Bob?" smirks my ex-mentor Spock.

"How the hell would I know?" I respond petulantly, lapsing into my poor loser mode, forgetting for the moment that the camera is still trained on my chopfallen features.

We regroup and hurtle through several more battles. The score is now three kills each and I'm beginning to differentiate the other plane from a seagull. I take some solace in knowing that I scored the *first* kill and if this had been real life, Brian wouldn't have had a chance to nail me once, let alone three times. It's only through my sense of chivalry and largesse that he's still up here beside me.

Both of us are going for one more try. This time we will approach each other head on, full tilt like a couple of crazed cape buffalo on amphetamine. At the last possible second, we'll both pull up in a vertical climb and at some point just before stalling out, we'll grab whatever

The score is now three kills each and I'm beginning to differentiate the other plane from a seagull.

advantage we think is there and go for the final showdown. This is Spock's idea, not mine. I'm ready to take the Sopwith Camel back to the aerodrome and have that sweet little mademoiselle in the bombed-out farmhouse serve me some root beers while I wow her with tales of my derring-do.

"Grab some energy," Spock explodes, "this is for all the marbles!" I head straight for what I believe to be the ocean and, at Spock's command, pull the stick straight back and suddenly weigh in excess of 1,200 pounds. I tip my head as far back as I can, trying valiantly to lock on to the other plane so I won't end up the smoker again, but find my head that now has increased its normal weight of 40 pounds to a bit over 300, cannot return to its original position. I envisage being able to look straight ahead only when I'm lying on my stomach for the rest of my life.

A lot of things are happening. We are either going straight up or straight down with a left spiral thrown in, I can't tell. The other plane is in trouble, too, Spock notes with some satisfaction. I think we're in a dive, because when Spock instructs me to pull up HARD, suddenly I am looking out at the world from just beneath my clavicles, perhaps forever. I started out on this trip at 6 feet 1 and have the feeling that I will be emerging at the conclusion resembling a Munchkin.

But Spock is happy, he's talked me into suddenly being in the enviable position of tailing the Dooley plane and we're trackin' man! *Smoke!* You imperialistic fascist running Commie dog! No hard feelings, Brian!

"You want to do a Victory Roll?" asks Spock, high-fiving me again. "Of course!" I agree. "OK, slam the stick over hard left when I say now.

"NOW!" I do and the Marchetti corkscrews a beautiful 360-degree roll and Spock nurses his left knee where the stick gave him a good whack. This is even more fun than filling teeth!

The trip back to Fullerton is uneventful, the landing impeccable. I could have greased it in myself, I think, full of pseudo-confidence. The debriefing consists of viewing the videos taken from each plane and making ribald remarks about the ineptitude of the opposition. We fraternize cheerfully with the enemy, having cheated death once more and vow to meet again, some other war, some other place. Too bad Richthofen never got to do this, he missed the best part.

The adrenaline rush generated by this day's activities carries over on the way home. The old Volvo seems more powerful than ever before and I in more complete control. With consummate ease, I shoot down two enemy Toyotas and a Jerry BMW before I roll hard left into the garage, missing the doorframe by inches and the adjacent car by a hair. Hey, once a fighter pilot, always a fighter pilot! Insufferable. ■■■■

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CDA JOURNAL, VOL 41, Nº4

Fighter Pilot for a Day

I haven't flown an airplane in 60 years, small wonder I'm nervous.

Robert E. Horseman, DDS

ILLUSTRATION BY VAL B. MINA

It's my own fault, I guess. For more than six decades I have been reminding my family at every opportunity that as a Marine fighter pilot during World War II, I possessed in abundance — and still do — those qualities of instant reaction, uncanny depth perception and coolness under pressure that characterize the breed. To their credit, they seldom pointed out that those characteristics were largely wasted, as I never actually ventured beyond the shoreline of the continental United States. A pity, they say with ill-disguised sarcasm, because the war surely would have been over in half the time had my awesome capabilities ever been unleashed on our enemies.

It was this attitude that prompted my son and his wife to present me with a sort of "put up or shut up" birthday gift of an air-to-air combat mission provided by Air Combat USA, a company devoted to fulfilling the fantasies of both real and wannabe fighter pilots. Read this quote from their brochure:

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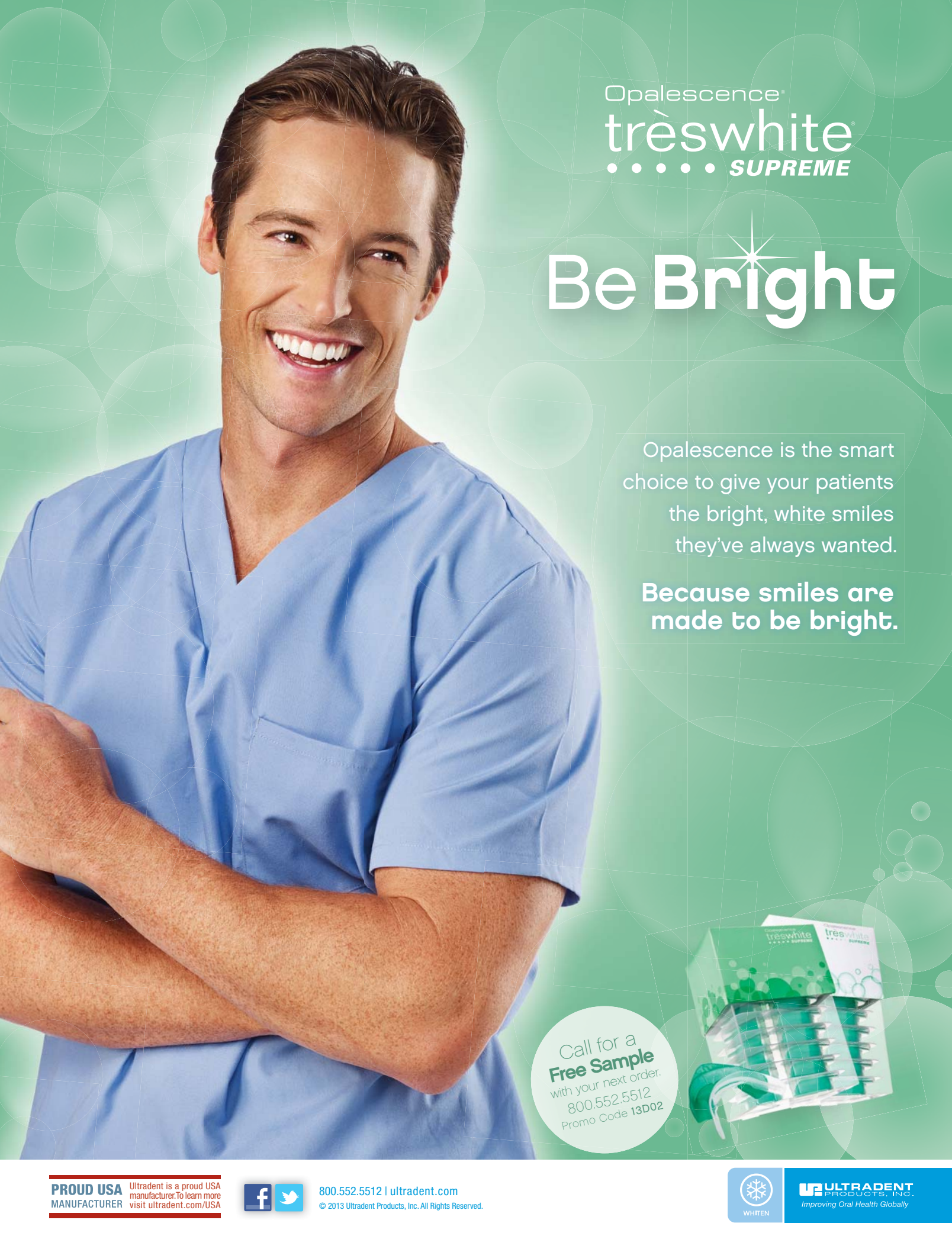
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