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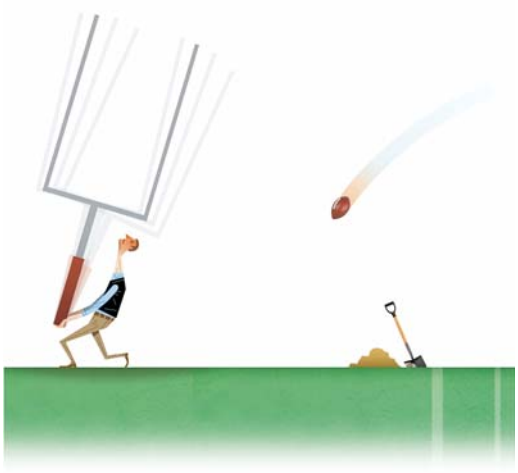

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## FEATURES

OF THE CALIFORNIA DENTAL ASSOCIATION

# Journal

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CDA JOURNAL, VOL 41, Nº3

# HIL2SW&LTMDET*

KERRY K. CARNEY, DDS

I used to think I was fluent in English. But every day I feel more and more like I may be a member of an "endangered linguistic group."

It is not modern spoken slang nor the abbreviated transcription of texting that defeats me. Those are puzzles that lend insight into the generation and technology that produced them. It is English as used by institutions that taxes me.

The realization of my tenuous hold on English comprehension came while trying to research information for this editorial. The topic was simple enough. I have been hearing hints and rumors of the "Medical Device Excise Tax" (MDET). Created by the Affordable Care Act (federal health care reform) in 2010, the MDET went into effect on Jan. 1, 2013. What could make a better topic than a 2.3 percent national tax that has the potential to affect every dental practice?

In order to become as informed as possible on the MDET, I turned to the FDA and IRS websites. As it turned out, that was not the best place to begin a journey of understanding.

When one initially hears the term "medical device," one might assume that could only mean fixed and removable prosthodontics. One would be wrong. A surprisingly long list of "medical devices" on the FDA site included, but was not limited to, the following:

- dental X-ray position indicating device
- X-ray film holder
- dental amalgam
- dental amalgamator
- dental amalgam capsule
- resin bonding agent
- articulation paper
- dental handpiece and accessories

**What could make a better topic than a 2.3 percent national tax that has the potential to affect every dental practice?**

- pit and fissure sealant and conditioner and (lest one forget)
- ethylene oxide homopolymer and/or carboxymethylcellulose sodium denture adhesive.[1]

The list included just about everything one could imagine in a dental office. According to the ADA Excise Tax Alert, though the FDA list may include as many as 180,000 taxable medical devices, based on IRS definitions, the total number of devices specific to dentistry is approximately 130.[2]

A catalog of 130 devices begins to sound a little daunting. This tax may impact every kind of dental practice from pediatric dental specialists to oral and maxillofacial surgeons and every general dentist in between.

Most of the narratives on the topic of the tax are quick to quote a reassuring sentence from the IRS: "The medical device excise tax applies to manufacturers and importers and generally does not apply to individual consumers."[3] This probably means that the tax will be incurred by another party (like dental supply houses or dental laboratories). That probably means that the tax will be passed on to the dentist as an additional cost to supplies, equipment and lab fees.

Alarmists might conclude this will result in an across-the-board increase in equipment and supply costs of 2.3 percent to the dentist. However, things are seldom as simple and clear-cut as we assume, infer or prefer. As is the case with many aspects of the ACA, the details of the MDET and its impact on dentists have yet to be finalized.

The regulations allow for some relief in the form of a "retail exemption." Though the IRS list included dental floss, items that could be purchased over the counter by a consumer might be part of the retail exemption. These items would not be subject to the tax and should not carry a tax-related cost increase to the dentist.

It seems many items may be excluded but it is hard to say exactly which items those might be. The IRS clearly states, *"the new tax does not apply to sales of eyeglasses, contact lenses, and hearing aids,"* these are items that require a prescription rather than simple over-the-counter purchase, but they are carved out. Trying to figure out exactly what will be taxed and what will be exempt is a challenge.

As elucidated on the IRS website:

*The new tax also does not apply to the sale of any other devices that are of a type generally purchased by the general public at retail for individual use ... In general, the final regulations provide a facts-and-*

* How I Learned to Stop Worrying and Love the Medical Device Excise Tax

*circumstances approach to evaluating whether a type of device qualifies for the retail exemption. Specifically the final regulations suggest factors to consider in evaluating whether a particular type of device qualifies for the retail exemption. The factors enumerated in the final regulations are non-exclusive; additional factors may be relevant to determining whether a given type of device qualifies for the retail exemption.*

*The final regulations also identify several categories of medical devices that qualify for the retail exemption (the retail exemption safe harbor). The retail exemption safe harbor includes devices in the FDA's online in vitro diagnostics (IVD) Home Use Lab Tests (Over-the-Counter Tests) database, devices that the FDA describes as "OTC" or "over the counter" in certain official FDA classification or product code heading or descriptors, and a number of devices that qualify as durable medical equipment, prosthetics, orthotics or supplies for which payment is available on a purchase basis under the Medicare Part B payment rules."*[3]

It was about this time that I realized: though the words in the previous paragraph looked like English, I did not understand them.

The IRS speak, with its run-on sentences, was confounding enough but next I began to lose my grasp on simple nouns. The meaning of the word "device" was beginning to escape me. As the ADA Excise Tax Alert warns, "device" is used as a term-of-art since many "devices" would be more commonly described as "products," "materials" or "substances." The short translation here is: "Device" is legal jargon not tied to common usage. (I was actually hoping that *term-of-art* had something to do with portraits by the Dutch Masters.)

Dental supply houses and dental laboratories probably perceive the same tax/cost quagmire as dentists. A reasonable business practice would be to recover their increased cost of doing business by passing it on to dentists. The ADA Alert advises dentists to review "... manufacturer and vendor price lists and invoices to make sure that the 2.3 percent tax is not being applied as a general cost increase with respect to all items, but is only being applied in cases where the law so requires."[2]

That is sound advice but not much comfort for anyone who has tried unsuccessfully to have the "fuel surcharge" removed from invoiced products when the price of gasoline drops.

This cursory look at the MDET leaves me feeling pessimistic about my competence with my mother tongue. However, I have become a Leibnizian optimist when it comes to the MDET. Surely, third-party payers will allow me to pass my increased cost on to them ... oh wait, what is this bag I am left holding?

*Editor's note: CDA and ADA will continue to provide members with information on the medical device excise tax as it becomes available in the CDA* Update *and at cda.org.* ■■■■

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2. Excise Tax Alert, ada.org/8053.aspx.
3. Medical Device Excise Tax, irs.gov/uac/Newsroom/Medical-Device-Excise-Tax.

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# One Colleague's Tribute

As incoming component president in 1993, I had asked Dr. David Gaynor to be our facilitator at the San Francisco Dental Society's overnight retreat and planning session. To prepare, he had read our bylaws and policies and had asked for an advance meeting with me and my successor, Dr. Tom Jacobs.

The three of us met for breakfast. Dr. Gaynor wasted no time and minced no words. I can still see him leaning over his oatmeal and growling at the two of us, "Do ya tell 'em what to eat for breakfast?"

I knew just what he meant — our component did tend to micromanage its volunteers a bit.

A short time later, Dr. Gaynor led our board in a productive and fulfilling session. I am forever grateful for his role in getting our component off the ground and on its way to a good year. It was a pleasure for me to thank him many times through the years.

**DONNA B. HUROWITZ, DDS**
*San Francisco Dental Society*
*San Francisco, Calif.*

*Dr. David Gaynor, past CDA president and co-founder of The Dentists Insurance Company, passed away Jan. 14 at the age of 81. His family requested that memorial contributions be made to the CDA Foundation. Contact Michelle Rivas at 916-554-5393, or go to cdafoundation.org to make a donation online.*

**The *Journal of the California Dental Association* welcomes letters.**

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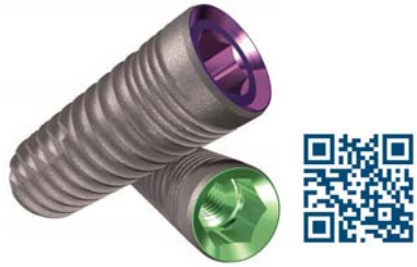

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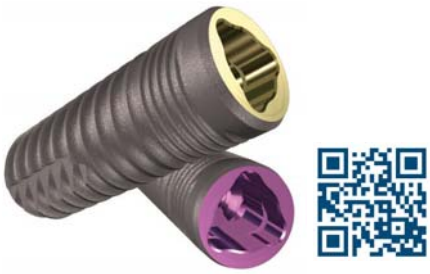


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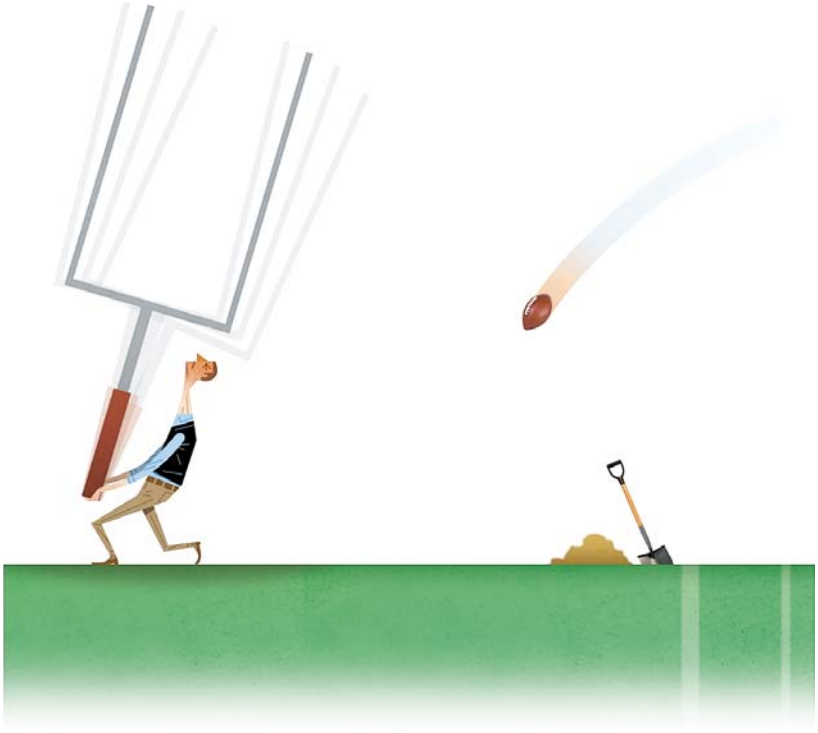

## The Illusion of an Objective Difference of Opinion

It is well known that if all the dental school deans are assembled in a room and asked to indicate whether their schools are in the top quartile, more than 25 percent of the hands will go up. It is a great relief that no schools are in the bottom quartile. But it begins to get a bit uncomfortable when study after study reports, as in fact they have, that well more than 50 percent of Americans are better than the median in terms of communication skills, empathy, sensitivity to others and ethics.

There is a double blindness working here. On average, we are wrong about how good we are at knowing whether we are right. Certainly a lot of other people are. I will present a brief list of features of our illusions of objectivity drawn from the three-volume collection of research papers edited by Nobel laureate in economics, Daniel Kahneman.

CONTINUES ON 167

## NIH Grants $2.3 Million to Study Midface and Diseases

The National Institutes of Health recently granted a team of scientists, headed by Penn State anthropologist Joan Richtsmeier, $2.3 million to learn more about the development of the human midface – upper jaw, cheekbones and eye sockets – and how diseases and abnormalities of the head affect the growth and shape of the face.

Their work is being funded by the five-year grant from the National Institute of Dental and Craniofacial Research, which is part of the prestigious National Institutes of Health. According to a news story from the university, the researchers will use genetically engineered mice and 3-D imaging technology to measure facial tissues and spaces and to study midface defects in human patients.

"These combined approaches will lead to the discovery of the underlying molecular, cellular and developmental basis of these disorders, which include the craniosynostosis syndromes, like Apert and Crouzon syndromes," said Richtsmeier in the news story. "We hope our work will eventually lead to the improvement of care for patients with these conditions."

For more information, see live.psu.edu/story/62679.

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## Dentists Rank in Top Five for Honesty, Ethics in Gallup Poll

Dentists were named No. 5 for their honesty and ethical standards in a recently released Gallup Poll, according to a news release from the American Dental Association.

A random sampling of 1,015 adults age 18 and older was asked to rate 22 professions on a five-point scale honesty and ethical scale, ranging from "very high" to "very low." With 62 percent of respondents ranking them as "very high" or "high," dentists came in slightly lower than physicians, pharmacists and nurses, but tied with their 2006 score.

"The ADA has a stringent Code of Ethics, and we're pleased to see that the public recognizes that our ADA members are truly putting these into practice," said ADA President Robert Faiella, DMD.

The honesty ratings of all medical professions are at the highest levels in Gallup's history, albeit by slim margins, according to Gallup.com.

Nurses ranked No. 1 with pharmacists, physicians, engineers, dentists, police officers, college teachers, clergy, psychiatrists and chiropractors filling in spots two through 10. Members of Congress and car salespeople ranked lowest with only 10 percent and 8 percent, respectively, rating their ethics and honesty as high or very high.

Gallup has conducted this same poll periodically but doesn't always include dentists as one of the professions tested.

For more information, see ada.org/news/8005.aspx.

## Obstructive Sleep Apnea Associated With Periodontal Disease

Noting that further research is needed to clarify the causal relationship between the two conditions, researchers of a recent study have found a significant association between obstructive sleep apnea (OSA) and periodontal disease.

Authors of a new cross-sectional study, which was published in the *Journal of Periodontal Research*, set out to evaluate the hypothesis that OSA is associated with the onset and progression of periodontal disease. Nearly 700 participants, between ages 47 and 77, underwent standard polysomnography, clinical periodontal examination and health screening examinations, according to the report.

Results showed 17.5 percent of participants had periodontitis, 46.6 percent had OSA and 60 percent who were diagnosed with periodontitis had OSA. OSA was positively associated with periodontitis, probing pocket depth, and CAL in a dose-response manner. OSA was also positively associated with periodontitis in participants age 55 and older but not in those younger than 55, the authors wrote.

For more information, see the study, "The association between periodontitis and obstructive sleep apnea: a preliminary study," published in the *Journal of Periodontal Research* online Nov. 30, 2012.

## Mussel-inspired Substance for Sensitive Teeth

In an attempt to help reduce and prevent tooth hypersensitivity, authors of a recent study looked to an adhesive material similar to what mussels use to adhere to surfaces.

Published in *ACS Applied Materials & Interfaces*, the study states roughly three out of four people have teeth that are sensitive to hot, cold, sweet or sour foods and drinks. Some sugar-free gums and special toothpastes can help reduce hypersensitivity, but researchers cite the need for materials that rebuild both enamel and dentin simultaneously.

According to a news release from the American Chemical Society, authors believed a sticky, mussel-inspired substance could help keep minerals in contact with dentin long enough for the rebuilding process to occur.

Human teeth with demineralized enamel and dentin were coated in dopamine to evaluate the effect of polydopamine coating on dental remineralization, authors noted. They found that while teeth bathed just in minerals reformed only enamel, teeth bathed in the sticky material and minerals reformed both dentin and enamel.

The authors concluded that "coating polydopamine on dental tissue surface may be a simple universal technique to induce enamel and dentin remineralization simultaneously."

For more information, see *ACS Appl. Mater. Interfaces*, 2012, 4 (12), pp 6901-6910.

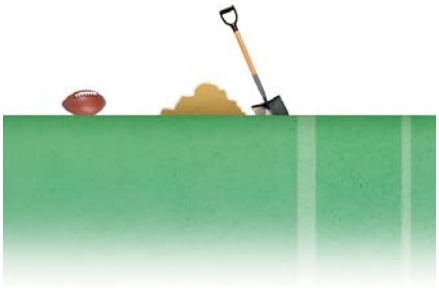
**DIFFERENCE OF OPINION,** CONTINUED FROM 163

The most common form of this myopathy is called false consensus. We overestimate how many others see the world the same way we do. Asked what proportion of people approve or disapprove of capital punishment, we strongly fantasize that we are in the majority. Dentists overestimate the proportion of Americans who value oral health. We exaggerate the degree to which our personal ethical standards are shared. This naturally causes us to think of others as uninformed, mean spirited, self-interested or sneaky — or some of each — when there are disagreements.

In a famous study, fans from Dartmouth and Princeton watched a film of a close football game and recorded the number of "bad calls" by refs. Princeton fans saw the game as biased in Dartmouth's favor; and Dartmouth fans were certain it was the other way. Everybody knows that the media in America are biased; we just can't agree on which way they lean. Beware of volunteering as a neutral mediator as neutrality, like truth, is among the first casualties in disagreements.

We overrate the gaps that separate ourselves from others. We focus on the differences, and we tend to attribute the disparities to character traits of others (they are unreasonable) rather than to situational differences (they are coming at this with a different set of needs). Compromise is frightening, and we tend to avoid it by moving the goal posts if necessary.

People who share a conversation each think they have learned more about the other, even when they did most of the talking. We are quicker to spot potential bias in others' information set than in our own and more likely to rate others as being susceptible to propaganda than we are. We even think our own group is more subject to unfair stereotyping than others.



The nub:

1. It is human nature to be a little biased about how biased we are.
2. There is suspicion of those who claim to be neutral or entirely justified by evidence.
3. It is difficult to defend ethical positions as being objectively obvious.

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*.

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## Teens in Asia Wearing Dangerous 'Fashion Braces'

In Thailand, China and Indonesia, a dangerous fad has been making its way through the mouths of teens — fake orthodontics. According to an article on Vice.com, these trendy 'fashion braces' have resulted in the death of at least two teens.

Orthodontics have become a status symbol due to their high cost, and teens in Asia have made them a trend worth the $100 purchase online and in open-air markets. Called "kawat gigi untuk gaya" or "behel" in Indonesia, the fake braces can be applied in beauty salons or at home.

So far, the deaths of two Thai teens have been linked to these fashion braces. In the death of a 17-year-old boy in Khon Kain, a thyroid infection progressed to fatal heart failure and was said to be linked to a set of fake braces. In another case, police linked the death of a 14-year-old Chonburi girl to braces purchased at an illegal open-air market.

The country's Consumer Protection Board has said that the wires of seized fashion braces contained lead.

Since the two reported deaths, Thailand has banned the importation, sale and manufacture of fashion braces. Selling the fake orthodontics is punishable by six months in jail and a fine up to roughly $1,300, while importers and producers could face one year in prison.

For more information, see vice.com/en_ca/read/deadly-fashion-braces-are-big-in-thailand.

## Online Dental Symptom Checker Now Available

To provide patients with accurate information about their symptoms and to help them make decisions about their oral health, the ADA recently launched the ADA Dental Symptom Checker available on MouthHealthy.org.

Users enter their age and gender into the Symptom Checker and identify the location of the symptom they're experiencing, and can read about conditions that match their description. In no way is the Symptom Checker intended to diagnose or replace the role of the dentist, in fact many conditions emphasize the importance of seeing a dentist or physician.

According to the ADA, 80 percent of Internet users seek health information online, and with the Symptom Checker, consumers can find the oral health information they're looking for — including topics from A to Z, health concerns by life stages, products with the ADA Seal of Acceptance, and tips and activities for kids.

The ADA Dental Symptom Checker is now available as an interactive Web platform on MouthHealthy.org, as well as a downloadable app on iTunes and Google Play.

For more information, see that ADA's news story at ada.org/news/8099.aspx.

## ADA Updates Dental Radiograph Recommendations

In collaboration with the Food and Drug Administration, the American Dental Association recently released updated recommendations for dental X-ray examinations.

Last updated in 2004, the ADA's "Dental Radiographic Examinations: Recommendations for Patient Selection and Limiting Radiation Exposure" are intended to be used in conjunction with dentists' professional judgment to determine whether and when dental X-rays are needed.

Changes to the recommendations include: updates to patient shielding recommendations; addition of a new section on limiting radiation exposure during radiographic examinations ; new topics such as receptor selection, handheld X-ray units, technique charts; and radiation risk communication.

"As doctors of oral health, dentists are in the best position to make decisions on whether to prescribe dental X-rays after an oral examination and with consideration of the patient's health history. Prescribing dental X-rays should be an individualized process," said ADA President Robert A. Faiella, DMD, in a news release.

Since 1989, the ADA has recommended, in relation to dental X-rays, that radiation exposure to patients be kept "as low as reasonably achievable."

According to the ADA, these recommendations are intended to serve as a resource for dentists and are not intended to be standards of care, requirements or regulations.

For more information, see ada.org/8006.aspx and to view the report in its entirety, see ada.org/5160.aspx?currentTab=2.

## Evidence Does Not Support Antibiotics for Dental Patients With Joint Replacements

The ADA and the American Academy of Orthopaedic Surgeons have found that the evidence to support routine prescription of antibiotic prophylaxis for joint replacement patients undergoing dental procedures is insufficient.

An AAOS-ADA work group conducted a systematic review of existing clinical research published in peer-reviewed journals to determine the correlation between dental procedures and prosthetic joint infection (PJI). According to a news release from AAOS, there is no direct evidence that routine dental procedures cause PJI.

"This guideline was based primarily on clinical research which examined a large group of patients, all having a prosthetic hip or knee and half with an infected prosthetic joint," said Elliot Abt, DDS, MS, MSc, a member of the ADA Council on Scientific Affairs, in the news release. "The research showed that invasive dental procedures, with or without antibiotics, did not increase the odds of developing a prosthetic joint infection."

This clinical practice guideline makes the following recommendations:

- Recommendation one, which is based on limited evidence, supports that practitioners consider changing their longstanding practice of prescribing prophylactic antibiotics for patients who undergo dental procedures. Limited evidence shows that dental procedures are unrelated to PJI.
- Recommendation two addresses the use of oral topical antimicrobials (topical antibiotic administered by a dentist) in the prevention of PJI in patients undergoing dental procedures. There is no direct evidence that the use of oral topical antimicrobials before dental procedures will prevent PJI.
- Recommendation three is the only consensus recommendation in the guideline, and it supports the maintenance of good oral hygiene.

The full guideline, supporting documentation and work group disclosures are posted on ADA.org.

For more information, see newsroom.aaos.org/media-resources/Press-releases/evidence-insufficient-to-recommend-routine-antibiotics-for-joint-replacement-patients-who-undergo-dental-procedures.htm or ada.org/news/8061.aspx.

Acknowledging that not all periodontitis cases are caused by *P. gingivalis*, the researchers also tested whether C5aRA could prevent or treat the disease when it arose due to other factors.

## Researchers Find New Strategy to Stop and Prevent Periodontitis

Researchers from the University of Pennsylvania recently found in a mouse model a new strategy — blocking a molecular receptor that bacteria typically target to cause periodontitis — prevented periodontitis from developing and halted its progression after developing.

Study authors aimed to evaluate if a synergism seen in previous research by other scientists between the complement system and Toll-like receptors (TLRs) was also at play in periodontal disease, according to a news release from the university.

To test this, researchers injected two types of molecules, one to activate C5aR and the other to activate TLR2, into the gums of mice. They found when only one type of molecule was administered, a moderate inflammatory response was apparent a day later, but when both were injected together, inflammatory molecules increased dramatically.

Researchers wondered if blocking one of these receptors could halt or prevent the inflammation that allows *P. gingivalis* and other bacteria to thrive and cause disease. To test that hypothesis, authors synthesized and administered a molecule that blocks the activity of C5aR. Giving this receptor "antagonist," known as C5aRA, to mice that were then infected with *P. gingivalis*, authors found C5aRA injections were able to reduce inflammatory molecules by 80 percent compared to a control, and completely stop bone loss.

Acknowledging that not all periodontitis cases are caused by *P. gingivalis*, the researchers also tested whether C5aRA could prevent or treat the disease when it arose due to other factors.

The findings "not only reveal a crucial cooperation between C5aR and TLR2 in periodontal inflammation but also provide proof-of-concept for local targeting of C5aR as a powerful candidate for the treatment of human periodontitis," authors concluded.

For more information, see the *Journal of Immunology*, Vol. 189:11, pp. 5442-5448.

## 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), 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), 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.*

cda PRESENTS

The Art and Science of Dentistry

Save the dates!

Anaheim California

Thursday–Saturday April 11–13 2013

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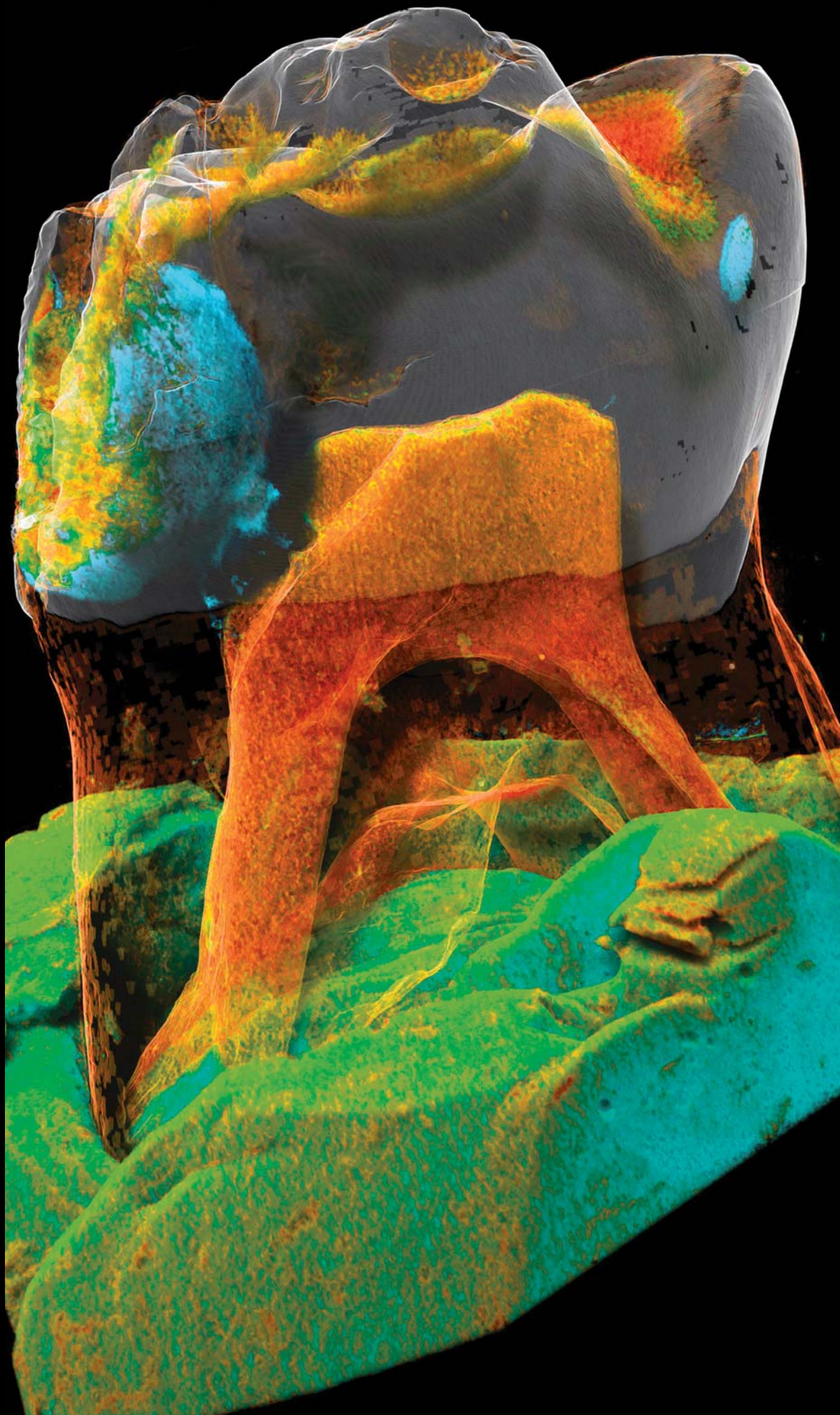


# Schedule-at-a-glance

## 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

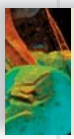


**Exhibit Hall Grand Opening**
**9:30 a.m.**

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

## 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

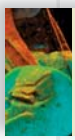
**Nutrition**
*Harper-Mallonee*, ACC Ballroom C/D

**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



cda PRESENTS **Download the app**

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

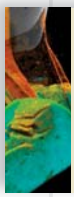
- **Insurance** *Dougan*
- **Dental Benefits** *Christensen*
- **Peer Review** *Kozak*
- **Emergency** *Ganzberg*

### Workshops — Ticket Required

- **Composites** *Mopper*, ACC 213 A
- **Dental Office/Team >** *Wallace*, Hilton Pacific A
- **> Dental Office/Team** *Wallace*, Hilton Pacific A
- **Crown Lengthening** *Grisdale*, ACC 213 B
- **Periodontics** *Grisdale*, ACC 213 B
- **Endodontics *** *Olmsted*, ACC 213 C
- **Endodontics *** *Olmsted*, ACC 213 C
- **Technology *** *Fasbinder*, ACC Exhibit Hall D
- **Technology *** *Poticny*, ACC Exhibit Hall D
- **Practice Management** *Tyson, et. al.*, Hilton Laguna A
- **Oral Surgery *** *Alonge*, ACC 210 C
- **Oral Surgery *** *Alonge*, ACC 210 C
- **Risk Management *** *Kodama, Watkins*, Hilton California A
- **Risk Management *** *Kodama, Watkins*, Hilton California A
- **Occlusion *** *Wilkerson*, ACC 213 D
- **Occlusion *** *Wilkerson*, ACC 213 D
- **Laser Dentistry *** *Coluzzi*, ACC Exhibit Hall 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
- **Restorative Dentistry** *Willhite*, ACC 303 A/B
- **Occlusion** *Tanaka*, ACC Ballroom E
- **Periodontics** *Edelstein*, ACC 209 A/B
- **Periodontics** *Edelstein*, ACC 209 A/B
- **Emergencies >** *Terezhalmy*, ACC 206 A/B
- **> Emergencies** *Terezhalmy*, ACC 206 A/B
- **General Topic** *Vrla*, Hilton Pacific C
- **General Topic** *Vrla*, Hilton Pacific C
- **Implants** *Tarnow*, Hilton California 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

## 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

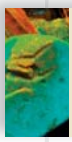
**Corporate Forum – Pacific Dental Services**
*Chokka, et al.*, ACC 204 C

**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

- **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

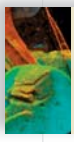
- **Restorative Dentistry** *Watanabe*, ACC 209 A/B
- **Restorative Dentistry** *Watanabe*, ACC 209 A/B

### 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

## Lectures (continued)

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

**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

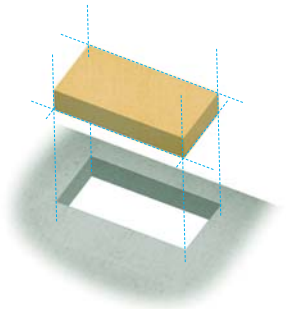
**OSHA**
*Andrews*, ACC Ballroom C/D

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

# Exhibitors

You, my friend, know your way around a Tofflemire.

CDA JOURNAL, VOL 41, Nº3



# Lateral Wall Sinus Floor Elevation for Implant Placement: Revisiting Fundamentals and the Surgical Technique

JAIME SANTIAGO GUERRERO, DDS, MHSC, AND BADR A. AL-JANDAN, BDS, MSC

**ABSTRACT** Sinus floor augmentation procedure is indicated to reconstruct the posterior maxilla with a sufficient amount of bone to allow for successful implant placement. This paper reviews the contemporary lateral wall technique, the related anatomy and some concepts and properties concerning graft materials currently available.

AUTHORS

**Jaime Santiago Guerrero, DDS, MHSC,** is an oral and maxillofacial surgeon associate in private practice in Bogotá, Colombia.
*Conflict of Interest Disclosure: None reported.*

**Badr A. Al-Jandan, BDS, MSC**, is chairman of the Department of Biomedical Dental Science and professor and head of the Department of Oral and Maxillofacial Surgery at the College of Dentistry at the University of Dammam in Dammam, Saudi Arabia.
*Conflict of Interest Disclosure: None reported.*

In many cases, dental practitioners are confronted with insufficient bone volume in the posterior maxilla, both in height and in the bucco-palatal dimension. This situation, which impedes the placement of endosseous dental implants, may occur due to the excessive pneumatization of the maxillary sinus, the progressive alveolar bone resorption related to periodontal disease, the resorption that occurs following tooth loss or a combination of the above. In the past, such cases were treated with a conventional removable partial denture, but satisfactory function, esthetics and mainly comfort, were difficult to achieve.

The challenge of reconstructive surgical therapy in the posterior zone of the upper jaw drove the dental profession to develop new grafting procedures for the management and treatment of the atrophic alveolar ridge. One such procedure, which consists of raising and augmenting the floor of the maxillary sinus by virtue of a bone graft material, is referred to as sinus floor elevation (SFE). In the 70s, Geiger, Pesh and Tatum[1-3] initially described the SFE technique, which is basically a modification of the classic Caldwell-Luc operation, and is known as the "lateral wall" technique or "lateral approach."[4] Since its inception, this technique has been refined, as well as subjected, to different modifications.[5-7] However, its original foundation has remained the same, and it continues to be considered the gold standard method, employed by many clinicians — including these authors — to approach the sinus and to deal with the atrophic posterior maxilla.[8-10] The purpose of this paper is to review the anatomy and grafting materials relevant to this approach, and to describe the surgical technique based on the authors' clinical experience.

## Anatomical Considerations

The maxillary sinus, or antrum of Highmore, is a pneumatic cavity that lies primarily within the body of the maxilla, but may extend into the zygomatic and palatine bones.[11] The maxillary sinus starts developing in the third week of gestation and is fully developed when the adult molars erupt. Throughout this process, the incipient cavity suffers two prenatal physiological pneumatization phases and three postnatal growth spurts. The last growth spurt occurs between the ages of 12 and 14 and corresponds with the eruption of the permanent posterior teeth and the growth of the maxilla's alveolar process. At this time, the sinus floor reaches its full development and is located approximately 1 cm below the floor of the nasal cavity, and its size and shape will remain barely unchanged during the rest of life. However, continued expansion and pneumatization can occur in some patients throughout the rest of life. Accordingly, in dentate patients, the roots of the posterior teeth can protrude into the sinus floor, and in edentulous patients, the sinus can occupy the entire residual alveolar ridge, whereby its bony walls become paper-thin.[12-15]

The adult maxillary sinus is shaped like a single, horizontal quadrangular pyramid consisting of five walls. Its base is adjacent to the vertical lateral wall of the nasal cavity (which is also its medial wall and its apex points to the zygoma.[11] The ostium is located on the highest aspect of this wall, and is distant from the surgical area aimed at approaching, elevating and augmenting the sinus floor. The superior wall makes up both its roof and the orbit's floor. The anterior wall faces anterolaterally and extends from the pyriform aperture anteriorly to the zygomatico-maxillary suture laterally and from the infraorbital rim superiorly to the alveolar process and maxillary teeth inferiorly. This wall is found just behind and forms the anterior (facial) aspect of the maxillary bone.[11-13] Some authors refer to this aspect of the maxillary bone as the lateral wall of the maxilla.[16] Accordingly, from an anatomical perspective, it is this sinus wall that is most often approached and osteotomized during the performance of the lateral approach technique — most SFE procedures are accomplished in the maxillary first and second premolars and first molar areas. On the other hand, the sinus's lateral and posterior walls blend and form what is often termed the maxillary tuberosity. This the latero-posterior wall separates the sinus from the infratemporal and pterygopalatine fossae. Finally, the inferior wall or floor of the sinus is adjacent to the alveolar process of the maxilla, being its most inferior point near the first molar region (**FIGURE 1**).[11-13,17]

The dimensions of the sinus vary and range from 2.5 cm to 3.5 cm mesiodistal width, 3.6 cm to 4.5 cm vertical height and 3.8 cm to 4.5 cm deep anteroposteriorly. Its average volume is 15 cm.[3,12,13]

The presence of bony septa within the sinus cavity is common. Called Underwood's septa, these septa are complete or incomplete struts of bone, which arise from the sinus floor. They vary in height and thickness and can be classified as primary or secondary. Primary septa are those that form as part of the sinus development. According to the Underwood model, primary septa act as dividers of the anterior, middle and posterior sinus compartments. These septa can be found between the roots of the second premolar and the first molar, the roots of the first and second molar and distal to the roots of the third molar. On the other hand, secondary septa are extrinsic to the sinus development process. They are not so regular in position and arrangement as primaries, are not related to teeth and occur as a result of sinus pneumatization after tooth loss (**FIGURES 2 AND 3**).[13,18,19] Whenever secondary septa are present, the SFE surgical procedure becomes challenging because they complicate the process of dissecting, luxating and lifting the bony window and sinus membrane, thus increasing the chance of membrane perforation.[20]

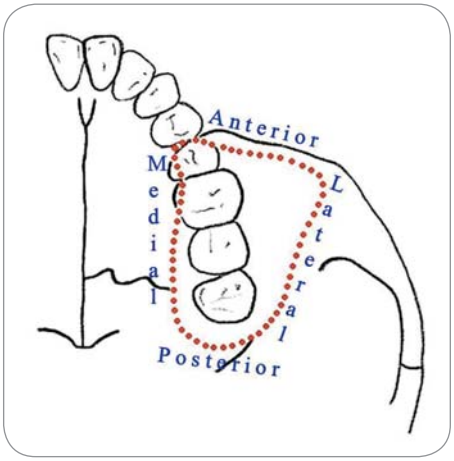



**FIGURE 1.** Diagram of the left dental arch, maxilla and zygomatic bone, inferior view, showing the maxillary sinus spatial configuration and its walls.

The maxillary sinus is lined by a mucous membrane called the Schneiderian membrane. This lining is in reality a mucoperiosteum that consist of three layers: a pseudostratified columnar ciliated (respiratory) epithelium, a lamina propria and the periosteum. The combined layers are intimately adherent to each other, being practically inseparable.12 Recent studies have shown that the Schneiderian membrane possesses a genuine osteogenic capacity, which represent an important factor contributing to bone regeneration related to successful SFE procedures (**FIGURE 4**).[21,22]

The blood supply of the maxillary sinus stems from the infraorbital artery (IOA), the greater palatine artery (GPA), the posterior superior alveolar artery (PSAA) and branches of the sphenopalatine.[23] However, the vascularization of the anterior and the latero-posterior wall of the sinus as well as the Schneiderian membrane — the main marks of interest involved in the lateral approach — emanates from an intraosseous anastomosis between the dental branch of the PSAA, also known as alveolar antral artery (AAA), and one branch of the IOA.[24]

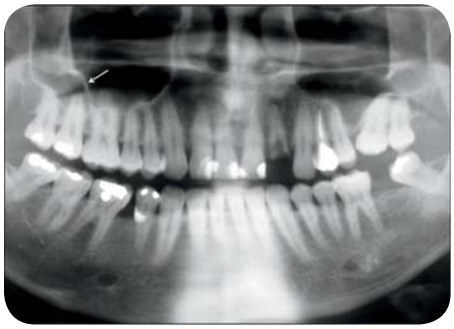


**FIGURE 2.** Panoramic radiograph indicating a primary Underwood's septum (arrow) in the right maxillary sinus.

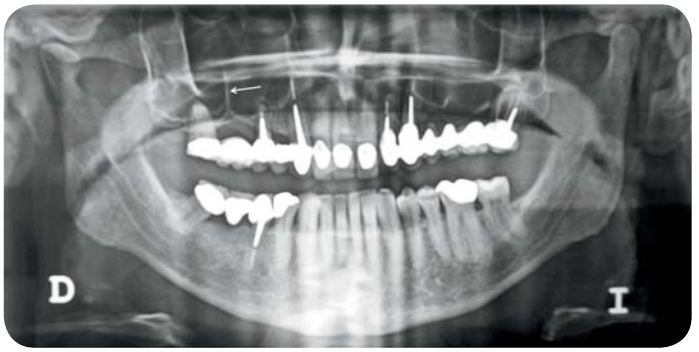



**FIGURE 3.** Panoramic radiograph indicating a secondary Underwood's septum (arrow) in the right maxillary sinus.

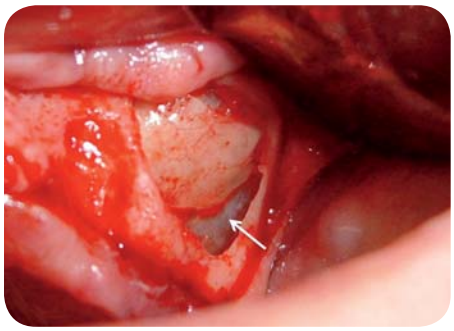


**FIGURE 4.** Normal bluish-gray aspect of the Schneiderian membrane (arrow), before its dissection and elevation.

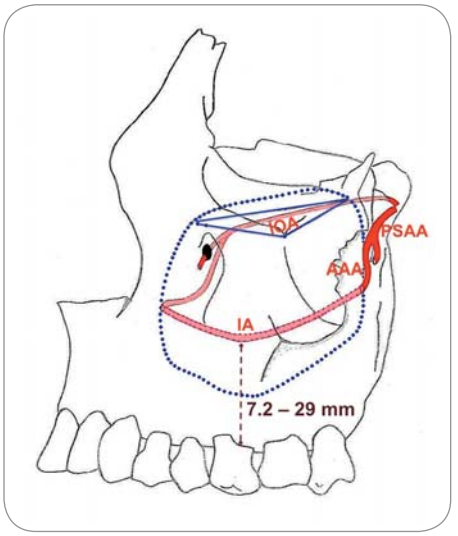



**FIGURE 5.** Diagram of the left maxilla, lateral view, showing the blood supply of the maxillary sinus relevant to the lateral wall technique. The infraorbital artery (IOA), posterior superior alveolar artery (PSAA), alveolar antral artery (AAA), and the intraosseous anastomosis (IA), with its range of distance from the alveolar ridge, are indicated.

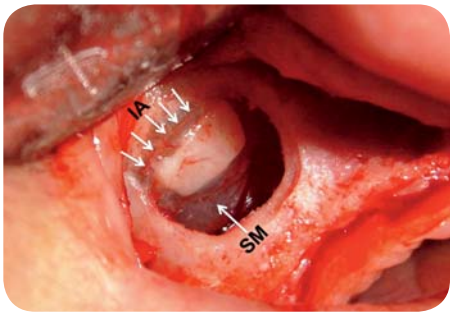



**FIGURE 6.** Intraoperative view of the bony window and sinus membrane elevated through the anterior wall. The intraosseous anastomosis (IA) (multiple arrows) and Schneiderian membrane (SM) are discernible.

This anastomosis, whose reported diameter ranges from <1 to 3 mm, runs intra-sinusal, sub-periosteal or endosseously in a canal along the anterior and latero-posterior walls of the sinus.[25, 26] According to several authors, the vertical distance from its most caudal point — corresponding to the first molar area — to the alveolar crest ranges between 7.2 and 29 mm. Yet, the presence of teeth, the degree of resorption and thus the height of the residual bony ridge appear to play a key role in its location (**FIGURE 5**).[24-28] Consequently, because of its variable location, it is possible to compromise this common vessel during the preparation of the bony window. Even though this situation is not life-threatening, it does have the potential to render the surgical procedure quite difficult and compromise the surgical outcome. The appropriate surgical management of this vessel is, therefore, paramount to guarantee proper vascularization of the grafting material and to avoid complications (**FIGURE 6**).

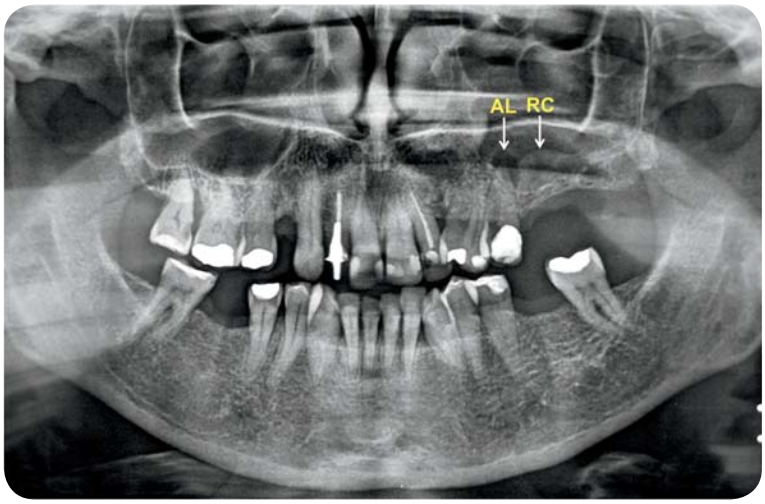



**FIGURE 7.** Panoramic radiograph indicating an apical lesion in number 12 and a mucous retention cyst in the left maxillary sinus. Both can compromise the outcome of the case.

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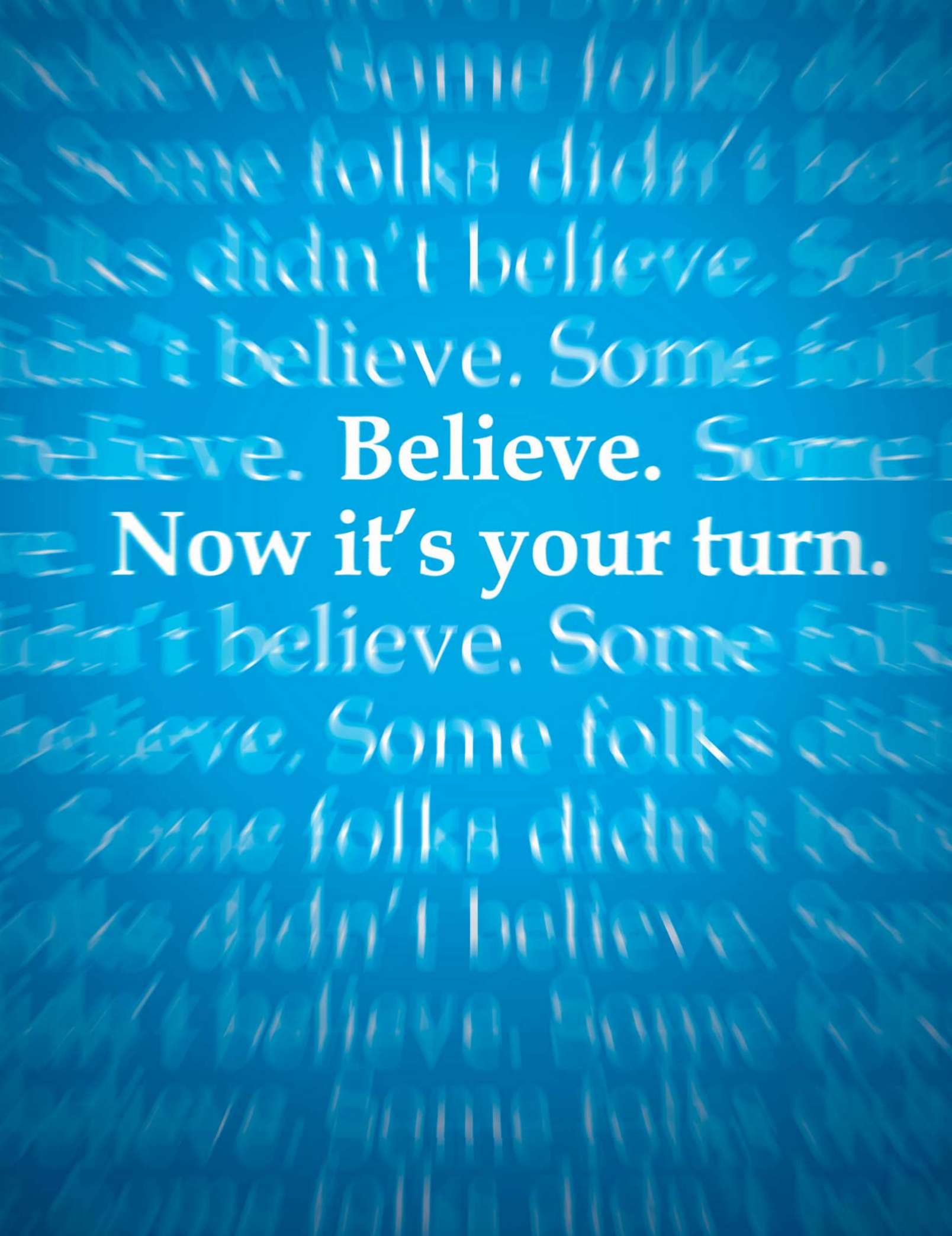
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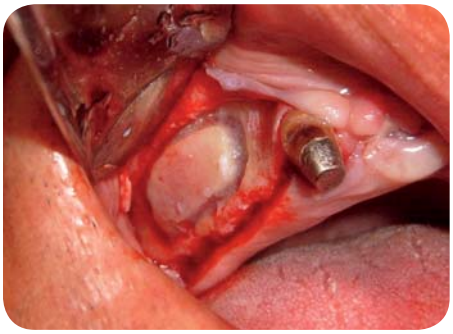

**FIGURE 8.** A rectangular-shaped window osteotomy with rounded edges.

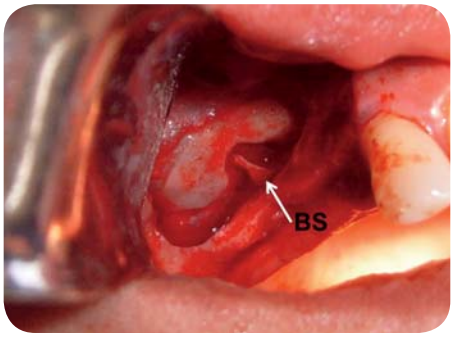


**FIGURE 9.** A W-shaped bony window prepared with a bone septum (BS).

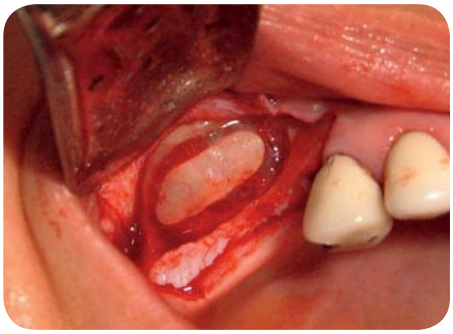

**FIGURE 10.** An oval-shaped window osteotomy created in the anterior wall.

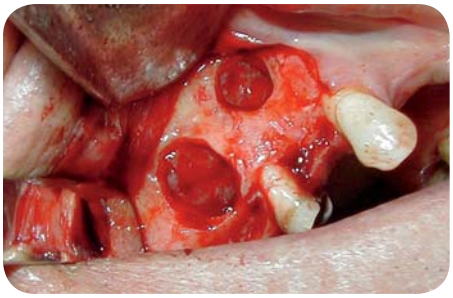

**FIGURE 11.** Two separate boneless round sinus windows.

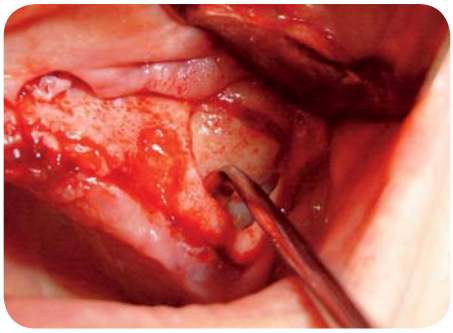

**FIGURE 12.**

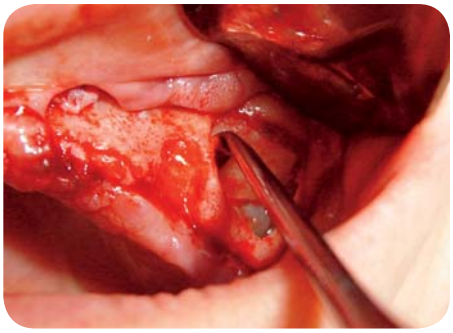

**FIGURE 13.**

**FIGURES 12 AND 13.** A sinus curette is introduced along the inferior and anterior margins of the membrane to begin the dissection.

## Surgical Technique

Before the procedure, each patient must be given a medical workup and asked about any history of maxillary sinus disease or related symptoms pertinent to the procedure. A radiological examination, based on at least a high-quality panoramic radiograph and a CT scan, is important to determine the presence of any ongoing pathology in the mucosal lining, the sinus floor location, the anterior extension of the sinus cavity, the height and width of residual bone and the existence of septa (**FIGURE 7**). These aspects are needed to schedule the procedure, to design the osteotomy outline, to decide whether to place simultaneous implants and to calculate the amount of graft needed. Appropriate antibiotics should be administered preoperatively, beginning no more than one hour before surgery and continuing for a minimum of five days postoperatively.

The procedure can be performed under local, intravenous sedation or general anesthesia. It starts by infiltrating a local anesthetic with vasoconstrictor into the buccal vestibule and the palatal vault. A horizontal antero-posterior beveled incision is made slightly palatal (2 - 3 mm) to the crest of the edentulous alveolar ridge. By doing so, a band of keratinized attached mucosa is preserved, and a solid wound closure can be ensured. This cut is connected with buccal releasing incisions as needed anteriorly and posteriorly and is placed at least 8 mm beyond the areas of the planned osteotomy to reduce flap tension. Similarly, this deed will allow soft-tissue closure over solid bone with little chance of exposing the underlying bone graft or barrier membrane. A full-thickness flap is then reflected superiorly — to the level of the anticipated window's superior osteotomy — to expose the anterior aspect of the maxilla and to allow access to the anterior and latero-posterior wall of the sinus. Once the maxillary surface has been exposed, the osteotomy is prepared with a long shank (HP) medium-sized round diamond bur (fine or medium) at low speed and under copious sterile saline irrigation. The goal is to create a bony window, delimited by four linear osteotomies, with a wide upper hinge base, and without damaging the membrane lining of the sinus. The window shape can vary — oval, square, rectangular, W-shaped, trapezoidal or U-shaped. It depends on, and is determined by, the combination of the clinical surgical aspect and the radiographic analysis. Namely, when septa are present, it is sometimes necessary to create a W-shaped window or two separate bony windows. As a rule, whichever shape is used, sharp edges should be avoided to diminish the risk of tearing the underlying Schneiderian membrane (**FIGURES 8, 9 AND 10**). The inferior window's osteotomy should follow the sinus floor contour and

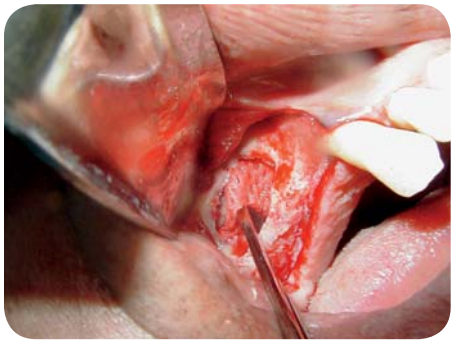

**FIGURE 14.**

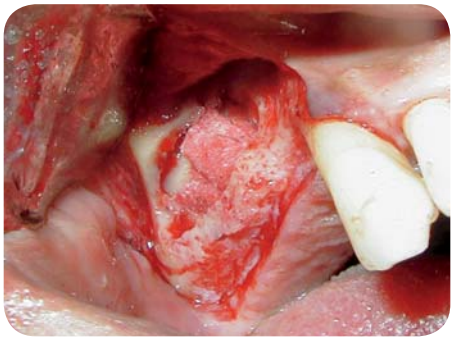

**FIGURE 15.**

**FIGURES 14 AND 15.** Piece of a sterile gauze pad soaked with Lidocaine with 1:80000 epinephrine being placed, and in sinus after the SFE.

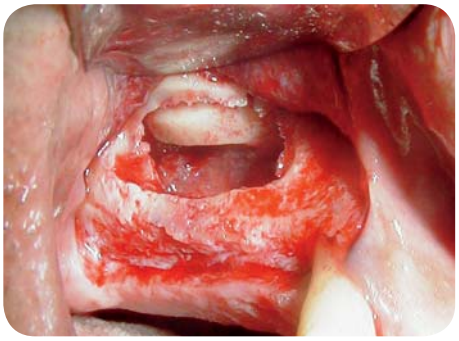

**FIGURE 16.** Final appearance of the sinus opening after removal of the gauze pad.

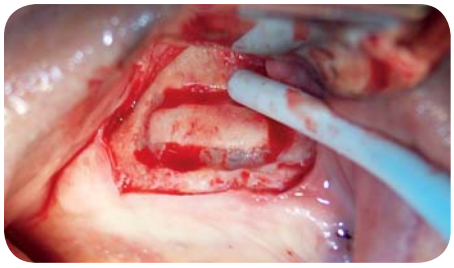

**FIGURE 17.** Suction tip should rest on the bony margins of the prepared window.

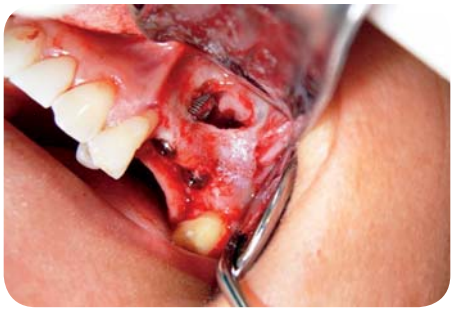

**FIGURE 18.**

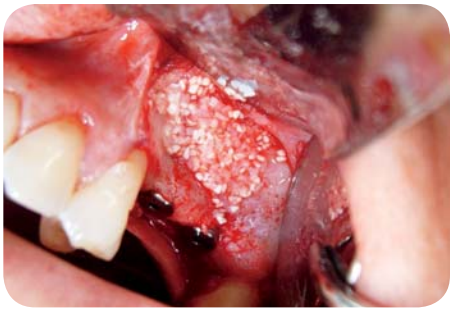

**FIGURE 19.**

**FIGURES 18 AND 19.** Two standard-diameter implants simultaneously placed, and sinus grafted.

be located at the same level or no more than 1 or 2 mm superior to it. The superior osteotomy placement does determine the height of the window, which should not exceed the width of the sinus, so that it can finally be horizontally positioned as the new floor. Yet, in the case of a narrow sinus, an alternative is to perform an extra horizontal osteotomy on the bony window to convert it into a double-hinged window and allow it to rotate. Another option is to remove completely the lamellar bony window (**FIGURE 11**). The anterior and posterior windows' osteotomies connect the former and their placement should offer the right size in accordance to the proposed augmentation. As the bone is gradually removed all along and around the window, the bluish-gray membrane becomes visible. It is important to test the window regularly and note if it moves to determine any spots that require further osteotomy. At this point, when the osteotomy is completed and the bony window freed from the surrounding bone, the sinus membrane is gently separated from the sinus floor and adjoining walls using specially designed curettes. This maneuver is started carefully at the inferior margin proceeding toward the medial, mesial and distal sides of the sinus (**FIGURES 12 AND 13**). When septa are present, cautious dissection is paramount. The separation must be enough to allow the membrane and the bony window attached to it to be lifted smoothly and hinged into the sinus. Once the space has been created and the osteotomized sinus wall positioned as the ceiling, a cottonoid or sterile gauze pad soaked in anesthetic solution with vasoconstrictor can be gently packed and left in the cavity for five minutes (**FIGURES 14, 15 AND 16**). This step provides further dissection and hemostasis for a better assessment of the membrane reflection. At this point, pulsation of the membrane with patient's respiration should be noticed. This situation does not occur if the membrane's continuity has been disrupted. Small perforations (≤ 5 mm) occurring during the procedure should be approached by delicately dissecting the mucosa surrounding the perforation to relieve the pressure and by placing an absorbable collagen membrane under it to cover and support the weak spot. Conversely, dealing with large perforations (> 6 mm) is more challenging. They can be managed by placing a slowly absorbable collagen membrane along with appropriate external tack fixation. However, due to the perforation magnitude, it is sometimes necessary to terminate the procedure. Re-entry may be considered but should not be performed until eight weeks after the first surgical attempt. Regarding the prevention of perforations, it is important to avoid direct contact of the suction tip with the membrane during surgery (**FIGURE 17**). Likewise, if the SFE procedure

involves the concurrent extraction of a hopeless tooth or of residual roots, it is recommended to separate and elevate the Schneiderian membrane first to avoid the chance of a perforation, in case they are attached to it. The space is then filled with bone graft material to restore a sufficient amount of alveolar bone to provide the bed for implant placement. The graft must initially be packed tightly against the intact medial wall, then against the anterior and posterior compartments and finally over the lateral aspect of the surgical site. If there is sufficient native bone between the sinus floor and the residual alveolar crest (≥4 mm), and simultaneous placement of implants has been considered (one-step procedure), these should be inserted after the initial medial wall graft packing (**FIGURES 18 AND 19**). Later, the grafted area can be covered with a guided bone regeneration membrane before the mucoperiosteal flap is repositioned and closed with interrupted absorbable sutures. Relevant postoperative measures include advising patients not to blow their noses, not to suck liquids through a straw, not to wear their prosthesis, and to cough and to sneeze with open mouths for at least two weeks after surgery. Patients should continue to be seen at regular intervals during the following four to six months, regardless of the procedure type — one-step or two-step — and before the next treatment phase begins.

As with any other surgical procedure, there are some potential complications (surgical and infection related) that can occur and are associated with this technique. These may include membrane perforation, intraoperative bleeding, nose bleeding, hemosinus, obliteration of sinus cavity, hematoma, infections, wound dehiscence, sinusitis, sequestration, oroantral fistula and loss of bone graft. (**FIGURES 20 AND 21**).[29]

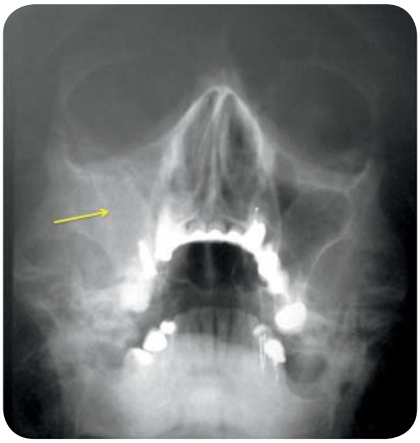

**FIGURE 20.** Waters view after a SFE procedure with simultaneous placement of implants showing opacification (arrow) of the right maxillary sinus (sinusitis).

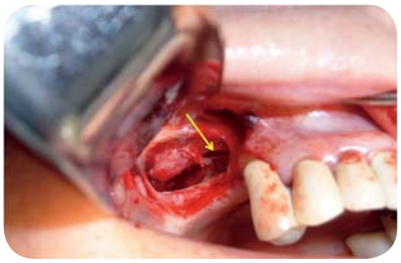

**FIGURE 21.** Perforation of the Schneiderian membrane (arrow).

## Sinus Graft Materials

The graft material used as filler to augment the sinus should be able to incorporate properly with the host receptor site and environment and provide structural stability. To do so, in addition to biocompatibility, it has to possess all or some of these desirable properties — osteogenesis, osteoinduction, osteoconduction and osteointegration — which will predict the result of new bone development. As osteogenic, a graft promotes formation of vital bone by virtue of its osteoprogenitor cells and viable components; as osteoinductive, it stimulates and recruits nearby undifferentiated mesenchymal stem cells to form new bone; as osteoconductive, it acts as a scaffold for the deposition of new bone; and as osteointegrative, it intimately bonds to the host bone.[30,31] Currently, sinus graft materials fall into the general categories of autografts, allografts, xenografts or alloplasts. Any of them can be used solely or in conjunction with each other.[32] Autologous bone is the only graft material that owns all of the aforementioned properties, and undoubtedly, because of its high osteogenic potential, it remains the gold standard for this or any other guided bone regeneration therapeutic procedure.[33] It grants larger and faster availability of vital bone to continue patients' integral treatment — namely, implant placement or loading — in contrast to any other graft material.[34-39] However, given that a second surgical site is always required — intraoral or extraoral source — many times patients do not find this alternative attractive because of related postoperative donor-site morbidity, length of the surgery and cost. Allografts constitute an excellent choice at present, as these materials eliminate the drawbacks associated with harvesting autologous bone. The most commonly used are those provided from approved tissue banks as mineralized (FDBA) (e.g., Puros, Zimmer Dental, Warsaw, Ind.) or either demineralized freeze-dried (DFDBA) (e.g., Symbios Demineralized Cortical Powder, Dentsply Implants, Waltham, Mass.) or demineralized bone matrix (DBM) (e.g., Grafton, Medical Technologies Ltd., Kingston, Jamaica or DynaBlast, Keystone Dental, Burlington, Mass.). Both mineralized and demineralized are treated and manipulated through different methods and steps — cleansing, decontamination, microbiological treatment, freezing, lyophilization, packaging and sterilization — to supply them free of contaminants and diminish the risk of disease transfer.[40] Calcium and phosphate salts are removed from DFDBA, as contrasted with FDBA. They are, in essence, osteoconductive as they afford a structural framework within which living cells derived from host differentiate and mature leading to appositional bone neoformation. Moreover, because

of processing, DFDBA is believed to be osteoinductive as well, owing to the fact that it displays bone morphogenetic proteins (BMPs). However, some authors have questioned this assumption as they have shown this potential to be limited and donor-age dependent.[41] With respect to this fact, tissue banks would need to verify and guarantee the presence of BMPs in their specific commercial products. Common presentation forms include blocks or particulate cortical, cancellous or corticocancellous bone. Different studies have shown and provided evidence of successful use of allografts in lateral approach SFE procedures.[5,42-45] Xenogenic materials are best described as deproteinized (anorganic) bovine, porcine or equine bone (e.g., Bio-Oss, Osteohealth, Shirley, N.Y., Endobone, E. Merck, Darmstadt, Germany) or derived from natural corals (e.g., ProOsteon, Biomet, Parsippany, N.J.). They are treated by removing all of their organic and antigenic elements, but leaving their crystalline structure intact. The resultant structure, which practically resembles human cancellous bone microporous structure, enhances bone formation by providing a bioinert scaffolding for the deposition of new bone, and thus it is deemed as osteoconductive.[30,46] The effective use of xenografts in sinus augmentation surgery using a lateral approach has also been demonstrated by different authors.[47-52] Alloplasts are inorganic synthetic materials, primarily ceramics, which possess two of the desired properties of an ideal graft: osteoconduction and osteointegration. Most commonly used include calcium phosphates (e.g., porous hydroxyapatite (HA) — IngeniOs, Zimmer Dental; porous β-tricalcium phosphate (TCP) — Cerasorb, Riemser Inc., Research Triangle Park, N.C.; HA and TCP — BoneCeramic, Straumann, Andover, Mass.), calcium sulfate (e.g., surgiplaster — Classimplant, Rome), and bioactive glass (e.g., Biogran, Biomet 3i, Palm Beach Gardens, Fla.) products. Another synthetic type of alloplastic graft material available combines inorganic and organic components (e.g., PepGen P-15, Dentsply Implants ).[29,30] They basically provide a bioactive platform that promotes both bone ingrowth and formation along the surface of these materials, and some of them can undergo remodeling.[53] As with the other types of graft materials, studies have shown alloplasts' use and clinical success in SFE surgery.[54-58] A unique synthetic (manufactured) graft material, which is actually the only osteoinductive, refers to a class of protein that belongs to the tissue growth factor B superfamily (TGF-B), and is named recombinant human bone morphogenetic protein 2 (rhBMP-2)[59] (e.g., INFUSE Bone Graft, Medtronic, Memphis, Tenn.). This FDA-approved material is provided in a pure, freeze-dried powder form in conjunction with an acellular collagen sponge (ACS) which acts as a carrier/matrix for administering the protein and simultaneously as a scaffold on which new bone can grow.[60] The use, safety and effectiveness of rhBMP-2 have also been demonstrated in SFE surgery, and thus represents a current, acceptable and well-founded alternative to the other bone graft materials.[61-63]

On the other hand, the adjunct use of platelet-rich plasma (PRP) to enhance bone regeneration in sinus grafting was first reported in 2000. The idea of using and incorporating PRP with bone grafts to accelerate and magnify the osseous healing process rapidly became a subject of controversy because of contradictory results that arose from different trials.[64] Currently, research-based evidence remains lacking to show that using PRP in sinus elevation procedures adds regeneration benefits.[65,66]

The success of the lateral approach in elevating and grafting the maxillary sinus with different materials for implant placement has been widely reported.[67] That has been presented in many clinical trials in terms of implant survival rates. Two exhaustive evidence-based studies have recently shown the overall level of implant survival rate has reached the 97 percent mark after a follow-up period of 12 years.[68,69]

**THE SUCCESS OF THE** lateral approach in elevating and grafting the maxillary sinus with different materials for implant placement has been widely reported.

## Conclusion

Since its inception more than 30 years ago, the lateral wall SFE technique has proven to be a predictable surgical procedure, allowing dental practitioners to obtain sufficient bone height and width in the posterior maxilla for the placement of implants. A successful and meticulous performance of this technique grounds in, and requires an in-depth knowledge of, the anatomy relevant to it, which usually is not at hand to the sensible practitioner. Likewise, knowledge of existing evidence and particulars about current available options such as sinus "bone fill" materials are essential to guide clinical judgment, as a way to improve the outcome and predictability of a biologically sound technique, and SFE procedures in general. ■■■■

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**THE CORRESPONDING AUTHOR,** Jaime Santiago Guerrero, DDS, MHSc, can be reached at jsgb2002@yahoo.com.

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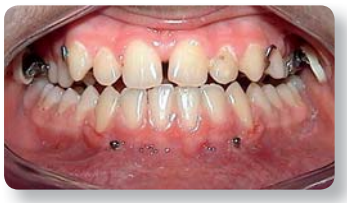

# A New Approach to Correct a Class III Malocclusion With Miniscrews: A Case Report

FARIBORZ AMINI, BDS, MDS, MD, AND MARYAM POOSTI, DDS, MSC

**ABSTRACT** This report presents the treatment of a patient with skeletal Class III relationship in the permanent dentition caused by maxillary hypoplasia. The treatment plan called for palatal expansion and maxillary advancement. Titanium miniscrews were placed in the mandible to facilitate the maxillary protraction after maxillary expansion. An increase of projection of the upper jaw relative to the cranial base and to the lower jaw and significant improvement of the facial profile were observed.

AUTHORS

**Fariborz Amini, BDS, MDS, MD,** is an associate professor and head of the Orthodontic Department at Tehran Islamic Azad University in Tehran, Iran. His research interests include biocompatibility of orthodontic appliances and contemporary clinical techniques.
*Conflict of Interest Disclosure: None reported.*

**Maryam Poosti, DDS, MSC,** is an assistant professor in the Orthodontic Department at Tehran Islamic Azad University. Her research interests include tooth movement, biocompatibility of orthodontic materials and lasers in orthodontics.
*Conflict of Interest Disclosure: None reported.*

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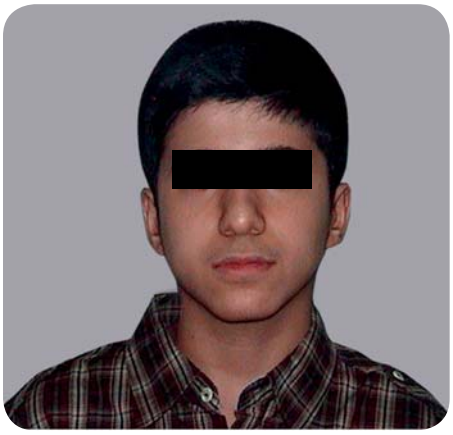
Although a Class III malocclusion occurs in less than 5 percent of the population,[1] it is one of the most difficult dental and skeletal discrepancies to manage. According to Ellis and McNamara,[2] the etiologic assessment of Class III cases indicated a combination of maxillary deficiency and mandibular excess in Swedish children and suggested that protraction of the maxilla would be the treatment of choice in many Class III patients. Although compliance in the wearing of extraoral appliances may be a concern, successful orthopedic treatment via facemask therapy has increased the nonsurgical options for correction in a Class III patient who is still growing. Mini-implant systems are being used successfully for a variety of orthodontic anchorage needs, including the intrusion of molars, the correction of anterior open bites, molar retraction and the treatment of patients with maxillary hypoplasia.[3-5] Sar et al. reported that undesired effects of conventional facemask therapy were reduced or eliminated with miniplate anchorage and efficient maxillary protraction was achieved in a shorter treatment period.[6] It has been shown that maxillary structures could be advanced in Class III patients by means of skeletal anchorage without using any extraoral appliances.[7] McNamara believes that rapid maxillary expansion (RME) may enhance the protraction effect of the facemask by disrupting the maxillary suture system.[8]

Because patients are more likely to be cooperative with intraoral appliances, the present case report demonstrates the orthopedic correction of a Class III malocclusion in a preadolescent patient using a banded RME, followed by intraoral maxillary protraction from miniscrews fixed in the anterior part of the mandible.



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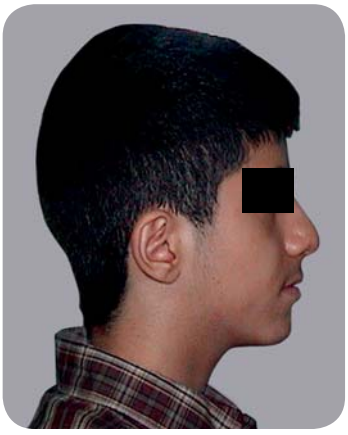

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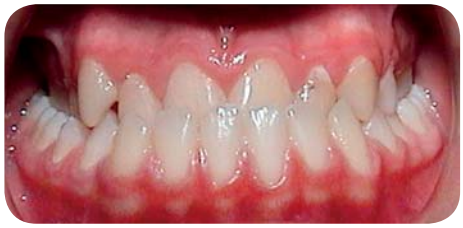

FIGURE 1C.

**FIGURES 1A–AC.** Pretreatment photographs.

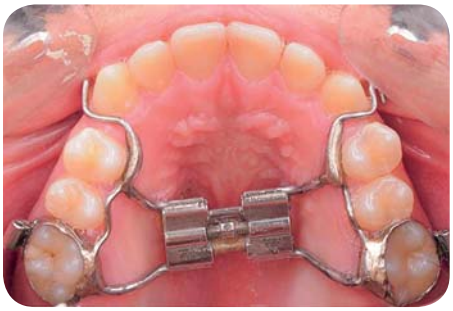

FIGURE 2A.

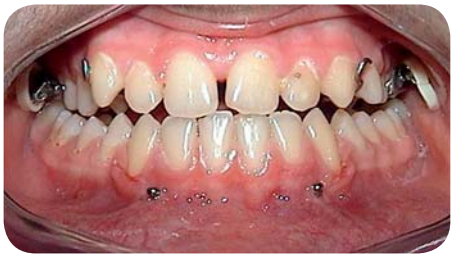

FIGURE 2B.

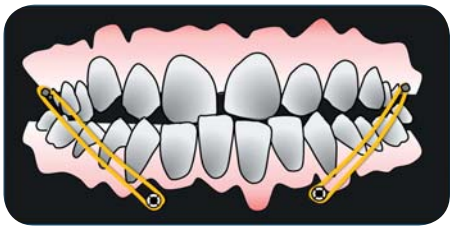

**FIGURE 3.** Schematic view of maxillary advancement by miniscrews.

**FIGURES 2A AND 2B.** Appliance design. (Expansion with RME appliance and miniscrew placement)

## Case Report

### *Description*

A 12-year-old boy with chief complaints of a "biting problem," a reverse overjet and an undesirable profile was seen for orthodontic treatment at a private clinic. His medical history was noncontributory and he reported no known drug allergies. The patient's mother stated that the patient had received regular dental care.

### *Diagnostic Findings*

A clinical examination revealed a -3 mm reverse overjet in centric occlusion, a unilateral posterior crossbite, and straight profile with competent lips without strain on closure. The patient presented with a Class III dental malocclusion caused by a maxillary deficiency (SNA=79°, ANB=0°), and increased mandibular plane angle (MP - SN=38° ) in cephalometric analysis. The maxillary incisors were retroclined (U1 to SN, 98_), and the mandibular incisors were proclined (IMPA, 101) accentuating the skeletal problem (**FIGURES 1A–1C**).

### *Treatment Course*

The treatment objectives aimed to correct the overjet to 3–4 mm, improve the facial profile and correct the posterior crossbite.

Based on these objectives, treatment options were considered and three were included:

- Facemask therapy with extraoral force
- Orthognathic surgery
- Maxillary protraction using miniscrews.

Because the patient and his parents wanted to avoid extraoral appliances and orthognathic surgery if possible, we agreed to implement a nonsurgical treatment plan starting with an RME to address the transverse discrepancy and attach to miniscrews in the mandible to treat the sagittal discrepancy (**FIGURES 2A, 2B AND 3**).

Liou and Tsai[9] reported a technique for protracting the maxilla in patients with cleft lip and palate by first loosening the maxillary sutures generated by one week of rapid expansion followed by one week of constriction alternatively for eight weeks. The difference in this protocol was that the patient was instructed to activate the expansion screw twice daily for one week. After one week of expansion the upper palatal cusps were in contact with the lingual slopes of the lower buccal cusps and in a state of overexpansion.

Self-drilling miniscrews with a diameter of 1.7 mm and 8 mm in length (Jeil Medical Corporation, Seoul,

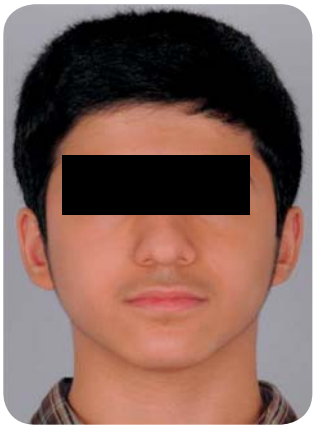

FIGURE 4A.

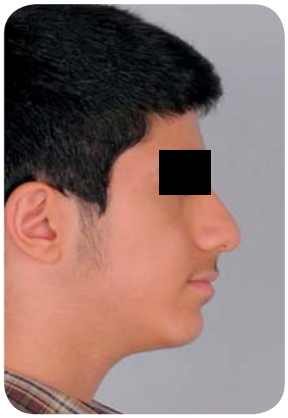

FIGURE 4B.

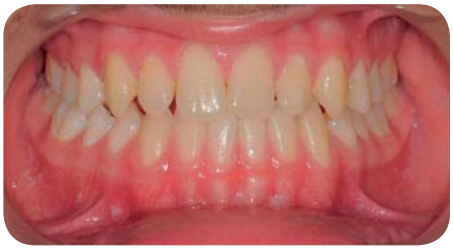

FIGURE 4C.

**FIGURES 4A–4C.** Post-treatment results.

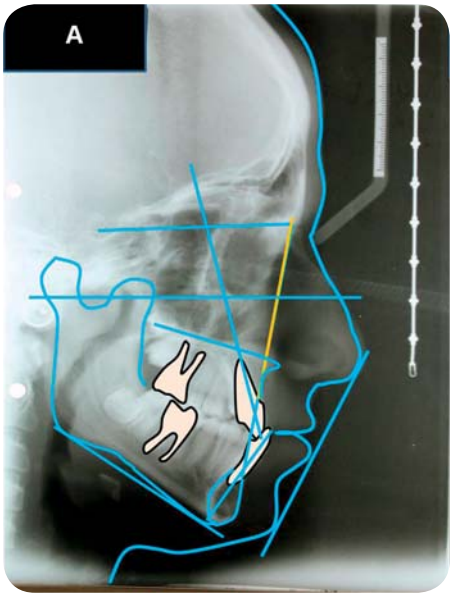


FIGURE 5A. Pre-treatment

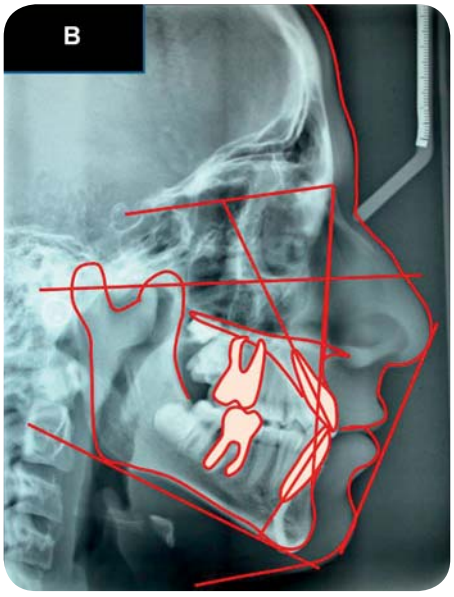


FIGURE 5B. Post-treatment

**FIGURES 5A AND 5B.** Comparison of pre and post-treatment cephalometric criteria.

TABLE

**Comparison of Cephalometric Characteristics in Case No.2 Before and After Treatment**

| Criteria | Before | After |
|---|---|---|
| SNA | 79 | 81 |
| SNB | 79 | 78 |
| ANB | 0 | 3 |
| MP-SN | 38 | 40 |
| MP-OccP | 10 | 10 |
| Mp-PP | 26 | 21 |
| U1- SN | 98 | 108 |
| L1-MP | 101 | 101 |
| Inclination Angle | 80 | 83 |

South Korea) were placed labially and bilaterally between lower lateral and canine teeth. Maxillary protraction started two weeks after the miniscrews were in place by applying elastics with a bilateral force of 150-200 gram force on each side and worn for 14 to 16 hours per day. The force direction was below maxillary center of resistance to minimize a possible counter-clockwise rotation of maxilla and maxillary dentition (**FIGURE 3**).

### *Treatment Results*

After six months of maxillary protraction, a positive overjet and acceptable occlusion was achieved (**FIGURES 4A–4C**). A cephalometric evaluation showed anterior displacement of the maxilla and nasomaxillary complex that was associated with a 3 degree increase in the ANB angle (**FIGURE 5**). The patient showed a significant improvement in overjet and facial esthetics. The improvement was the result of the maxilla and maxillary dentition moving downward and forward with the downward movement of the mandible. Facial esthetics were improved as much as or better than could be expected without surgery. The changes in cephalometric characteristics before and after treatment are summarized in the **TABLE**.

## Discussion

The use of intraoral elastics was successful in this case because of the patient's excellent compliance. It was

easy for him to cooperate because the appliance design was intraoral and the system was applied easily with no hygiene problems. As demonstrated by Jamilian and Showkatbakhsh, the fixed RME appliance made anterior traction more feasible compared to a removable appliance.[10] Traction continued for six months until sufficient anterior movement of the maxilla was achieved. Although the results of maxillary protraction using miniplates have been more pronounced, this approach eliminated a surgical stage. In addition, anterior movement of the maxilla by skeletal anchorage employing a facemask[6] was, of necessity, extraoral; the advantage of this method was the intraoral design of the appliance. The patient reported no discomfort during treatment. The screws were removed at the end of protraction and the patient was informed of possible relapse because of persistent and adverse maxillary or mandibular growth. Although a 2 - 3 mm midline discrepancy was present in pretreatment records, which could affect the buccal occlusion, the patient was satisfied with his facial and dental appearance. This problem could have been overcome by the use of asymmetric elastics if the patient demanded further treatment.

A disadvantage of maxillary protraction is the possibility of a counterclockwise rotation of the palatal plane accompanied by downward and backward rotation of the mandible and a resulting tentative improvement in the skeletal relationship. This was not observed in this case because vertical relapse is often seen after removal of the appliance, and the mandible rotates upward and forward during the post-treatment period. Long-term study suggested that the palatal plane would return to baseline value.[11]

Although a successful outcome was achieved, clinicians should be mindful of permanent tooth buds in the anterior area of the mandible, which could complicate miniscrew insertion. Miniscrew anchorage could be more confidently used in patients older than 10 whose permanent lateral incisors and canines have erupted. Bone quality in the mandibular anterior region needs to be sufficient, or a bi-cortical approach for miniscrew insertion considered. As always, the risk of inflammation or infection should be monitored.

## Conclusion

The use of miniscrews in the mandible for intraoral maxillary traction via an RME appliance is an advantageous method of treatment of maxillary deficiency cases. This method was well tolerated and accepted by the patient. The impressive results were achieved in a short period of time, which justified its application as a substitute for facemask therapy or surgery. ■■■■

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**THE CORRESPONDING AUTHOR,** Maryam Poosti, DDS, MSc, can be reached at poustimaryam@yahoo.com.

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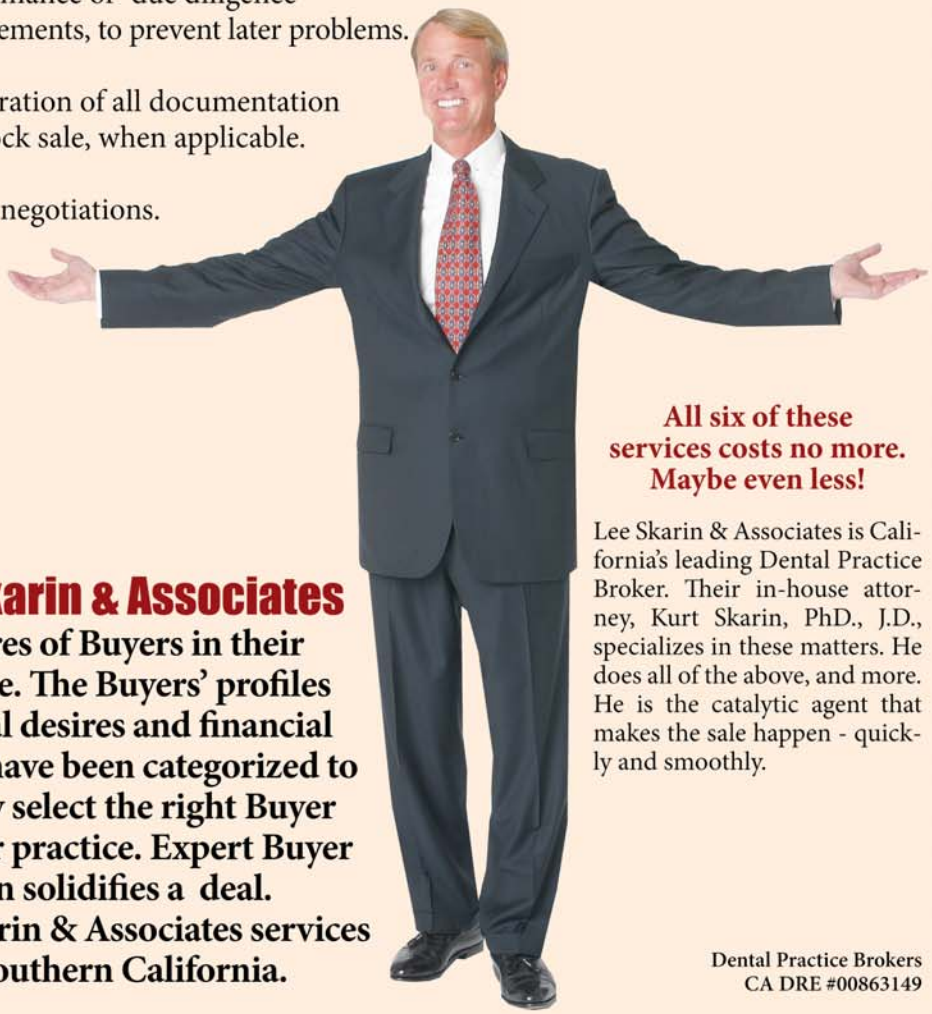

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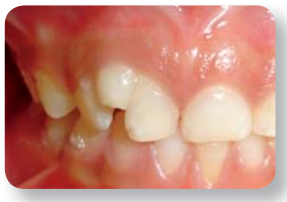

# Esthetic Management of a Primary Double Tooth Using a Silicone Putty Guide: A Case Report

RAVI AGARWAL, MDS; KALPNA CHAUDHRY, MDS; RAMAKRISHNA YELURI, MDS; AND AUTAR KRISHEN MUNSHI, MDS

**ABSTRACT** The term double tooth is often used to describe fusion and gemination. The development of isolated large or joined teeth is not rare, but the literature is confusing when the appropriate terminology is presented. The objective of this paper is to present a case of a primary double tooth in a 5-year-old girl with a history of trauma. The tooth was endodontically treated and esthetic management was carried out using a silicone putty guide.

AUTHORS

**Ravi Agarwal, MDS,** is a postgraduate student in the Department of Pedodontics and Preventive Dentistry at K.D. Dental College and Hospital in Mathura, India. *Conflict of Interest Disclosure: None reported.*

**Kalpna Chaudhry, MDS,** is a reader in the Department of Pedodontics and Preventive Dentistry at K.D. Dental College and Hospital in Mathura, India. *Conflict of Interest Disclosure: None reported.*

**Ramakrishna Yeluri, MDS,** is a professor in the Department of Pedodontics and Preventive Dentistry at K.D. Dental College and Hospital in Mathura, India. *Conflict of Interest Disclosure: None reported.*

**Autar Krishen Munshi, MDS,** is a senior professor and head of the Department of Pedodontics and Preventive Dentistry at K.D. Dental College and Hospital in Mathura, India. *Conflict of Interest Disclosure: None reported.*

Dental anomalies of number and form can occur in the primary and permanent dentition.[1] Fusion is a developmental anomaly characterized by the union of two adjacent teeth. This union of two tooth germs can be complete or incomplete. Its occurrence is more in the primary dentition (0.5 percent) compared to the permanent dentition (0.1 percent), with a rare chance of bilateral involvement in the primary dentition (0.02 percent).[2] Gemination is a developmental anomaly of form, which is recognized as an attempt by a single tooth germ to divide, resulting in a large single tooth with a bifid crown and usually a common root and root canal.[3] Fusion is differentiated from gemination by the presence of two separate roots or by a single root, and by counting the teeth.[4] Clinically, it may appear as two separate crowns or a double-the-normal-size crown.[5] Radiographically, it may vary from separate pulp chambers and root canals to a common pulp chamber and root canal system.[6] The phenomenon of fusion has often been confused with gemination, especially if it involves a supernumerary tooth.[7] Brook et al.[8] stated the difficulty in deciding whether a tooth is fused or geminated and used the neutral term "double tooth." The objective of this paper is to present a case of a supernumerary tooth fused to primary maxillary central incisor (primary double tooth) and its esthetic management.

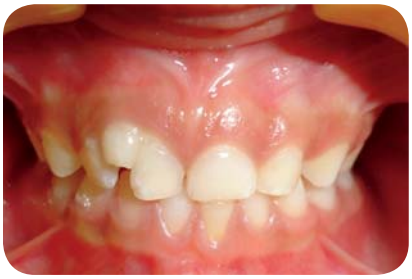

**FIGURE 1.** Intraoral view showing fusion of supernumerary tooth with primary right maxillary central incisor.

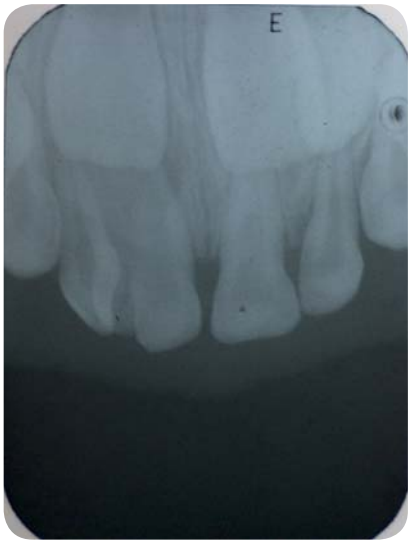

**FIGURE 2.** Pre-operative intraoral periapical radiograph showing periapical radiolucency with right maxillary central incisor and a separate canal with supernumerary tooth.

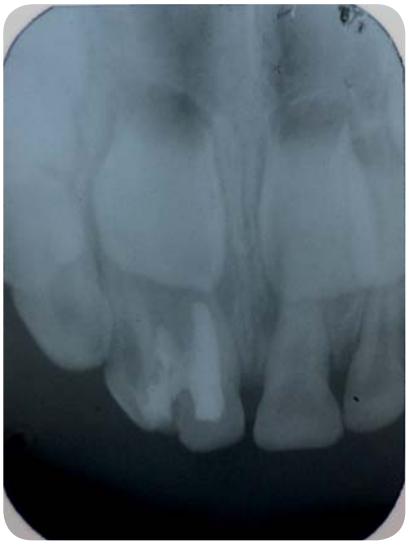

**FIGURE 3.** Post-operative intraoral periapical radiograph showing obturated canals with metapex.

## Case Report

A 5-year-old girl reported to the Department of Pedodontics and Preventive Dentistry complaining of pain that had been occurring for a week in the upper front region of the jaw. The pain was moderate, intermittent and aggravated on mastication. The patient also reported a trauma that had occurred a month prior. She had fallen on the floor while playing and broken a portion of tooth in the upper front region. An intraoral examination revealed the presence of a fractured supernumerary tooth between the right maxillary primary incisors and was fused to the central incisor (**FIGURE 1**). The mesiodistal width of the right maxillary central incisor was less when compared to the left central incisor and it was tender on vertical percussion. On radiographic examination, periapical radiolucency was observed with the right maxillary central incisor and a separate canal was visible in the supernumerary tooth (**FIGURE 2**). A pulp vitality test was performed with both the right primary incisors and the supernumerary tooth and it was found that the primary right maxillary central incisor and the supernumerary tooth were nonvital. Based on clinicoradiographic features and endodontic evaluation, a diagnosis of the nonvital primary double tooth was made in relation to the primary right maxillary central incisor. A treatment plan was formulated to treat the supernumerary tooth endodontically and the primary right maxillary central incisor followed by esthetic rehabilitation with both right incisors. The treatment plan was discussed with the father and his consent was obtained.

## Endodontic Treatment

Under local anesthesia, access of the right maxillary central incisor and the supernumerary tooth was gained. Pulp tissue was extirpated and cleaning and shaping of the canals of both teeth were done using H-files (MANI Inc., Utsunomiya, Tochigi, Japan). The canals were irrigated with 5.2 percent sodium hypochlorite followed by normal saline. The root canals were then filled with a mixture of calcium hydroxide, iodoform and silicon oil, (Metapex, Meta Biomed Co. Ltd., Chungbuk, Korea) (**FIGURE 3**) and the access cavities were sealed with glass ionomer cement (Ketac Molar Easymix, 3M ESPE AG, Seefeld, Germany).

## Esthetic Management

Upper and lower arch impressions were made in alginate and the models were poured using dental stone. The supernumerary tooth was scraped off on the model and a laboratory wax up was done using inlay wax to mimic the final esthetic look. A composite buildup guide (stent) was fabricated using addition-type silicone elastomeric impression material (Affinis putty supersoft, polyvinylsiloxane, Coltène/Whaledent AG, Altstätten, Switzerland) to register the palatal surfaces, proximal contours and the incisal edges of both the right maxillary primary incisors against which the composite resin would be built (**FIGURES 4A AND 4B**). Using this silicone putty guide, the supernumerary tooth was then clinically trimmed (**FIGURE 5**) using a No. 700L diamond bur. The teeth were etched for 15 seconds with 37 percent phosphoric acid (Scotchbond, 3M ESPE, St. Paul, Minn.), rinsed with water for 10 seconds and then dried with oil-free compressed air. A single coat of Adper Single Bond adhesive resin (3M ESPE, St. Paul, Minn.) was applied using a microbrush (3M ESPE, St. Paul, Minn.) and then photopolymerized for 20 seconds. The silicone putty guide was then placed in the oral cavity (**FIGURE 5**) and the incisal edge and proximal surfaces of both right primary incisors were built using Filtek Z-350 XT composite resin (3M ESPE, St. Paul, Minn.) in increments that were photopolymerized for 20 seconds. Final finishing and polishing was done using a composite finishing kit and Sof-Lex discs (3M ESPE, St. Paul, Minn.) (**FIGURE 6**). A follow-up was done with the patient after one month and a clinically acceptable result was obtained.

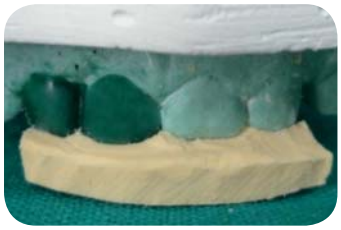

**FIGURE 4A.** Intraoral view showing fusion of supernumerary tooth with primary right maxillary central incisor.

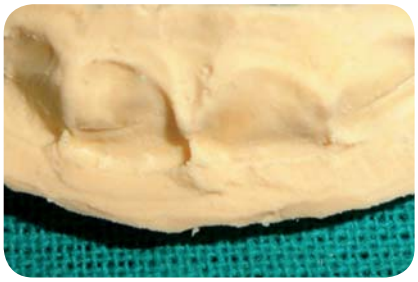

**FIGURE 4B.**

**FIGURE 4A AND 4B**: Mock-up done using inlay wax and fabrication of silicone putty stent.

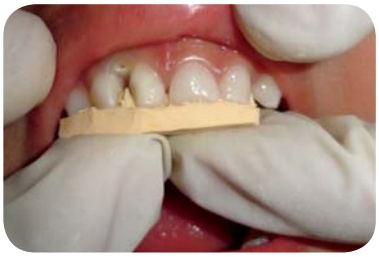

**FIGURE 5.** Placement of silicone putty stent intraorally for direct composite restoration.

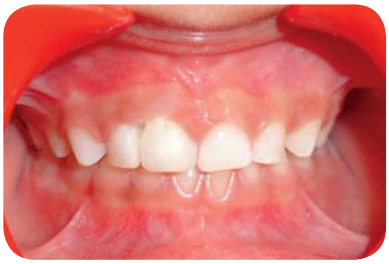

**FIGURE 6.** Intraoral view showing after esthetic build up.

## Discussion

A double tooth can occur in the primary dentition and can lead to orthodontic problems, including spacing or crowding of teeth, loss of arch length, esthetic problems, increased caries risk and deviation of the midline. Current data in the literature show that double teeth are observed in 0.1 percent to 1.6 percent of children with no sex predilection.[9,10] Fusion between a normal and the supernumerary tooth is quite rare in primary dentition, with a prevalence of 0.06 percent in Japanese children and 0.2 percent to 0.6 percent of children in Western countries.[11] The etiology of fusion is not exactly known. Some researchers believe that the physical pressure or force generated during growth causes contact between adjacent tooth germs.[12] Viral infection during pregnancy and the use of thalidomide may also be a possible cause of the anomaly.[13] Brook et al.[8] reported that half of the primary double teeth have been followed by an anomaly in the permanent dentition and family histories of hypodontia of the supernumerary teeth were found in some cases. Kamakura et al.[14] reported a similar case in which primary maxillary left central incisor was fused with a supernumerary tooth and was involved pulpally, which was treated endodontically and restored with a composite restoration. It is essential to diagnose the anomaly carefully and to organize a conservative, individualized treatment plan. Conventional radiography is almost universally used, e.g., periapical radiographs,[15] occlusal radiographs[16] and panoramic radiographs[17] for the diagnosis of the dental anomalies. However, all these diagnostic aids give only 2-D views of the tooth. Lucy et al.[18] utilized cone-beam CT imaging for diagnosing a double tooth. It determines the location of fusion and provides 3-D visualization of pulpal anatomy and construction of a 3-D stereolithographic model for treatment planning. The presence of a double tooth may cause delayed resorption of roots due to greater root mass and increased area of root surface relative to the size of the permanent successor crown. This may lead to delayed or ectopic eruption of the permanent successor. Therefore, extraction is the treatment of choice to allow easy eruption of the underlying permanent tooth, but parents' compliance plays a major role in extraction. In our case, the parent did not want the tooth extracted.

In our case, both teeth (i.e., right maxillary central incisor and supernumerary tooth) were endodontically treated as periapical radiolucency was seen in relation to the former tooth and the latter tooth had to be trimmed to the gingival level for a good esthetic to be built up. Esthetic management using strip crowns could also be a treatment option following endodontic treatment. In this case, the esthetic management was done with direct composite using a silicone putty guide. A similar case of esthetic management of a primary double tooth using a silicone putty guide was carried out by Kulkarni VK, et al.[19] This technique is an easy and accurate way to create the natural dentition anatomy and requires less time for trimming and polishing the restoration. It also provides accurate incisal and proximal contour.

## Conclusion

Esthetic management using direct composite buildup is difficult and requires more time for trimming and polishing of the restoration. The silicone putty stent serves as an accurate guide for composite restoration, giving accurate incisal and proximal contours of the tooth and appears to be a good alternative to esthetic enhancement of such anomalies. ■■■■

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**THE CORRESPONDING AUTHOR,** Ravi Agarwal, MDS, can be reached at dr.ravi_pedo@yahoo.com or ravimagarwal@gmail.com.

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CONTINUES ON 210

**CLASSIFIEDS,** CONTINUED FROM 209

minimum) with a valid Calif. X-ray license. Applicants should be capable and comfortable assisting with front office duties when needed. Applications should be made via email to halimdental@gmail.com and include the following items: Put "Dental Assistant" in the email subject line; Are you looking for full or part time work?; Write a brief statement describing why would you be the best candidate for the job indicating your short and long-term goals. Send email to halimdental@gmail.com.

**DENTAL HYGIENIST —** Leading cosmetic Beverly Hills Dental Practice is in need of an experienced Dental Hygienist. Initial employment is part-time and the opportunity for full-time employment will present itself in the near future. Ideal candidate will have a bachelor's degree, strong communication skills, strong work ethic and a team player and understands how to support the practice and its treatment plans and philosophy. Please reply via email, only emails with the following will be reviewed. 1. Please put Dental Hygienist Position in the email subject line. 2. Time, days and dates you would be available. 3. A personal statement that demonstrates your previous experience as well as your short and long-term goals. 4. A brief statement describing why would you be the best candidate for the job. 5. An up-to-date, CV or resume should accompany your email response. Send email to halimdental@gmail.com.

**REGISTERED DENTAL ASSISTANT —** RDA/front office needed for start-up general dental practice in lovely Willow Glen, Calif. Dr. Sheila Farahani is an experienced and compassionate dentist looking to establish a new practice where the patients' needs are respected. The ideal candidate will be: able to work chair side or at the front desk. Flexible work hours for the first few months until a patient base is established. Well-spoken and patient experienced with Dentrix and digital radiographs. Proficient with a rubber dam. Capable making temp crowns. Conscious of the importance of sterilization and asepsis. This position will likely be only Mondays and Tuesdays at first. Please email your resume and a cover letter to farahanidds@gmail.com.

**GENERAL DENTIST —** Experienced General Dentist needed for modern dental office located in Culver City, Calif. While our offices are very busy, we do not operate like a clinic. We desire to attract and retain a quality-oriented dentist who has excellent communication skills. State-of-the-art practices looking for part-time dentists 2-4 days a week. Offices equipped with five operatories, digital X-rays, digital charting (paperless office), and PanoRx. Doctor must be qualified to perform clinical dental services for patients including cosmetic dentistry, full-mouth reconstruction, implant-supported restoration, basic and surgical extractions, root canals, full and partial dentures and implant-supported overdentures. Job requirements: Must have at least five years experience. Requires a current license to practice dentistry in California. Current DEA registration for the purpose of writing prescription. Serious applicants who desire long-term engagement and who have had no previous lawsuits need only apply. Please email your resume for consideration to dentexdentalca@yahoo.com.

**ENDODONTIST —** Are you an Endodontist looking to start or purchase your own practice? We are looking for an Endodontist to work 2 days per month for private general dental practice in Turlock, Calif., until we relocate. Our private dental practice will be relocating between June-July 2013 within the city of Turlock. The existing office with furniture, most equipment and computers will be available for sale. The building is additionally available for purchase. We have 5 chairs, 2 X-ray units, dual computer monitors in each operatory, and more. It is a great opportunity for a specialist to walk in, get to know the community and get started. Please contact Dr. Oga. Email k.ogadds@gmail.com or call 209-634-9111.

**MANAGER —** Dentista Hispano con licencia para california busca asociarse con manager o administrador para abrir oficina dental en el area de los angeles o alrededores. luismiguelcollazos@yahoo.com.

**ASSOCIATE DENTIST —** Our office has an opening for a general dentist to join our team. We are looking for someone who is interested in long-term, stable employment with our practice. An opportunity to establish a strong, quality patient base with continued advancement and growth is at hand. We are a private family dental office. We see mostly adults and some kids. We accept most PPO insurances, Liberty (county insurance) and cash patients. We do not accept capitation plans or Medi-Cal. Our office is high-tech, comfortable, spacious and a great environment to work in. Our staff is competent, honest and very friendly. Along with all aspects of general dentistry, applicant must be proficient and comfortable doing routine endo, including molars. Difficult cases are fine to refer out. Compensation includes a base pay with percentage threshold bonus pay. Some experience is preferred, but completion of and AEGD or GPR is acceptable. Please send resume and optional picture to put a face to the application for consideration. Thank you for your interest in joining our team. We look forward to hearing from you. admin@customdental.com.

**DENTIST —** Private, family dental practice equipped with digital technology is seeking a part-time dentist who can deliver gentle, quality care to our patients. Associate will be working 2 days a week. Knowledge in using CAD/CAM, CEREC machine is a plus. Please fax resume to 510-245 3188.

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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 $150k

**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**

**BG-106 UNION CITY Facility:** Open floor plan. 1,800sf w/ 6 fully equipped ops. New Computers and New Telephone Systems $**150k**

**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**

**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***

**DG-107 MOUNTAIN VIEW Facility:** ~ 3 mi. from Google HQ. $400k+ in build-outs. Top-of-the-line, state-of-the-art, Sirona Eq w/ built-in intra-oral cameras & curing light units. 1,800 sf w/3 ops. Plumbed for 1 add'l **REDUCED! Now only $245k & seller will pay 2 MONTHS RENT!**

**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 **$680k**

**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:** "Move-In Ready" near popular anchor stores. Estab ~ 6 yrs. Street Level. Heavy Foot-Traffic. 1,500 sf w/ 4 ops. Top of the Line Build-outs & Equipment **$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-112 SAN JOSE:** Fee-for-service ~1008 sf w/ 2 ops and plumbed for 2 add'l **$100k**

**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-026 ROSEVILLE:** Warm Caring Environment, ~1000sf, w/ 3 ops **$380k**

**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-883 CHICO AREA:** Quality FFS GP. Attractive Prof Plaza. 1,990 sf w/ 5 ops **$495k**

**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 **$450k**

**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**

**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, paper-less, 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 **$399k**

**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**

**G-975 CHICO Ortho:** Denti-Cal patient base. ~ 900 sf w/ 2 + ops . **$90k**

**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**

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CLASSIFIEDS, CONTINUED FROM 210

**ORTHODONTIC REGISTERED DENTAL ASSISTANT** —Riverside Dental Group and Dental Associate Offices have seven locations across the Inland Empire. Our practices provide comprehensive general and specialty dental care for all ages in multiple offices that are convenient to many residents. We currently have a job opportunity for a part-time Ortho Registered Dental Assistant. This assistant will travel with the ortho team to our different practices. The ideal candidate must be energetic, passionate about their career, have excellent communication skills, dedicated to patient satisfaction and committed to ongoing growth and development. If you are ready for a challenge in a fun, exciting, professional environment and you have a positive attitude, we want you. Submit your resume by emailing Donna Dahlen at ddahlen@amdpi.com and reference ptorthorda when applying.

**ASSOCIATE DENTIST** — Seeking a general dentist to join our family practice. We have a large, modern dental practice with digital X-rays, E4D and laser. Large fee-for-service patient base averaging 40-50 new patients per month, no HMO or capitation. Candidate needs at least 2 years experience. Position will be 2-3 days per week with potential increase to 4-5 days. Send resumes to jswebbdds@yahoo.com.

**ASSOCIATE DENTIST** — Established General Practice in Scotts Valley-Santa Cruz County seeks Associate Dentist 1-2 days per week (no weekends). Busy, friendly, patient-centered practice. Preference given to practitioner with experience running his/ her own private practice. Please fax your CV to 831-438-8548 or email it to davidestradadds@yahoo.com.

CONTINUES ON 214

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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. GR 545K 3 days/wk (4 avail). 3 hygiene days/week. 5 Ops (6 Avail) 1,950 sq ft. Refers out most/all Ortho, Perio, Endo, Surgery. Office has Laser, Intraoral Camera, Pano, & Dentrix Software. Owner retiring. #14372.
- **GRASS VALLEY:** *For Sale*-General Dentistry Practice. Owner relocating. 2011 gross receipts $505K on 4 days per week with 5 days of hygiene. This well-established practice with approximatley 1,300 active patients is located in an 1,100 sq. ft. office with 4 ops, Dentrix software, Panoramic X-ray, Cerec, Intra-oral Camera, and X-rays in all ops. #CA509
- **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
- **MODESTO AREA:** *For Sale*-General Dentistry Practice. Owner is a senior partner in a practice set up to share expenses and reduce overhead. Each partner has their own patients, operatories, etc. Selling partner's gross receipts in 2011 were over $950,000 with only 54% overhead or $443,777 adj. 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.
- **MOUNTAIN VIEW:** *For Sale*-General Dentistry Practice: This 2 day per week satellite office is located the heart of Silicon Valley, surrounded by most of Mountain View's largest employers. 2 fully equipped treatment rooms (expandable to 4), Pano, Digital Processor and Dentrix Software in approx.. 1500 sq. ft. With household names as your neighbors, few opportunities are this good! #14398
- **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
- **ROSEVILLE:** *For Sale*-General Dentistry Practice and Building: This well-designed, 1,763 sq. ft. office has 4 ops, Softdent software, and 5 days of hygiene. 2012 GR were $616,648 with 64.4% overhead. Equipment includes a new $7,000 Air Techniques x-ray processor. The office is a standalone dental building, which is also being sold. Owner is retiring. #CA516
- **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. 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
- **SONOMA:** 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

## CALIFORNIA / NEVADA REGIONAL OFFICE


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**CLASSIFIEDS,** CONTINUED FROM 212

**DENTAL ASSOCIATE —** Immediate opening for an associate dentist in our Bakersfield office. We are a well-established and progressive office. We are technologically advanced and close to paperless. Dr. Trunkey is Pankey trained and performs implants and orthodontics, among many other services. We are willing to mentor a younger dentist. Offers competitive wages in concert with a great benefits package and a chance to work with an outstanding team. Duties and responsibilities include providing general dentistry services to patients of all ages. Job requirements include DDS or DMD degree with 2 years experience as a licensed dentist, licensed in California. Email resumes to dtrunkey@me.com.

**DENTIST —** I am looking for a motivated individual to join my practice in Sonoma County. I have a large established practice that needs a second dentist; there is a substantial patient population. I recently lost my associate due to illness and I am looking to hire someone who is good with patients, has excellent skills and would like a 3-4 days with an upbeat group of dental professionals. Please email your resume to jdhammer@hotmail.com.

**DENTAL ASSISTANT/RDA —** Busy dental group practice in search of an office administrator and dental assistant. Qualifications: RDA certification highly preferred. Must possess excellent English communication skills (verbal and written) as well as bilingual skills in Spanish, Chinese, or Korean. Must be extremely meticulous in his/her work as he will have to perform his/her laboratory tasks with great precision. Manual dexterity is also required. A team player with a pleasant, professional demeanor when communicating with patients, the doctors and staff. Ability to develop and maintain strong relationships with patients and demonstrate a friendly attitude, even while under pressure. A detail-oriented, fast-learner with the ability to stay well organized, multi-task and work with interruptions. Use critical thinking to create solutions on the spot. Excellent computer skills; knowledge of DEXIS and Dentrix software preferred. Compensation DOE. Email your resume to drahndentist@gmail.com along with a brief cover letter explaining why you believe you are the right candidate for our practice.

**ORTHODONTIST —** Experienced orthodontist available up to 3 days per week. Terms and conditions negotiable, but looking for long-term opportunity. Buy-in/buy-out or start-up possible. Please contact doc.braces@yahoo.com.

**ENDODONTIST —** Looking for an endodontist with at least one-year experience who would like to practice in a high-quality, patient-centered, general practice 2 days per month, preferably Tuesdays. Office is located in Millbrae, Calif. Please email us your resume if interested, DentalEaseJobs@gmail.com.



## OPPORTUNITIES WANTED

**PERIODONTIST —** In-house Periodontist/Implant Surgeon available for your office in the Greater San Francisco Bay Area. Implant surgery/bone grafting/ perio surgery/third molar extractions/surgical extractions. Send email to bayareaperio@gmail.com.

**ORTHODONTIST —** Available to work in your office, evenings/weekends possible. Specialty or multi-specialty practice preferred. Long-term interest. Send email to osocal@ymail.com.

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# CARROLL & COMPANY

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**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. Great location & exceptional long term staff. 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.

**3090 PACIFICA GP**
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.

**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.

**3078 GILROY DENTAL FACILITY**
1,280 sq. ft. turn-key dental facility w/5 ops in medical/professional office complex adjacent retirement community near Westwood Shopping Center. Great opportunity to establish a practice with little start-up cost or open a satellite office. Asking $75K.

**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. Stable patient base. 4 doctor days, 3 hygiene days/week. 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. Seller retiring & willing to help for smooth transition. Asking for practice $560K. Building is also available for purchase.

**3086 SONOMA COUNTY GP**
PENDING
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. State-of-the art fully-equipped practice w/pano, laser, intra-oral camera, Dentrix. 2011 GR $1.1M+, 2012 on schedule for $1.2M. Asking $828K.

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**CLASSIFIEDS,** CONTINUED FROM 214

**DENTIST —** Dentist seeking temporary or permanent position in a practice where patient quality care is a priority. I'm looking in the Sacramento, Roseville or Yuba City area. I have more than nine years experience in all aspects of dentistry. Available weekdays. Thank you for your consideration. Aicha Benbrahim, DDS, 916-580-3945, email aicha_benbrahim@hotmail.com.

**QUALIFIED DENTIST SEEKING ASSOCIATESHIP —**I am interested in being an associate for your private practice. I have a CV and photographic portfolio that highlights the cases I have performed and that demonstrates my commitment to quality patient care. I completed my Prosthodontic Residency at UCSF. I received my DDS from UCLA and completed a GPR at Brigham and Women's Hospital- Harvard. These credentials have allowed me 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. I can be reached at 310-210-2301 or catherinehdo.dds@gmail.com.

## OFFICES FOR RENT OR LEASE

**OFFICE FOR RENT OR LEASE —** Bellflower freestanding building for lease. Ideal location for a dental practice with 4-5 operatories. Located on a major, busy street with great exposure, heavy foot traffic, excellent signage and ample on-site parking. Near shopping centers and residential area. Easy access to 105, 605 and 91 freeways. Contact Dr. Balci (818) 343-0664 or drbalci@aol.com.

**OFFICE FOR RENT OR LEASE —** Dental Specialist seeking office space to share/rent for percentage of production in dental or multi-specialty practice with good patient base. 1+ days per week. San Diego, Escondido, San Marcos, Carlsbad, Temecula, El Cajon. Please email information to sandiegoofficesharing@yahoo.com.

**OFFICE FOR RENT OR LEASE —** Sublease state-of-the-art dental office in a major shopping center in West Los Angeles. Space available for rent/sublease to the specialist only — seven op. (four fully equipped) flexible days and times. Please email farjam2000@yahoo.com or call 310-428-2421 and ask for Dr. J.

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**OFFICE FOR RENT OR LEASE —** Newly renovated dental office space in Tarzana, Calif., avail for lease Features: Brand new receptionist area with granite tops. 5 fully equipped operatories — see several patients at the same time. Panoramic X-ray. Private office. 100 percent free parking. 100 percent turnkey condition — you can see patients ASAP. Details: 1,500 sq.ft. available (out of 3,000 total). Space is shared with a very established dentist and is a sublease. Includes shared waiting room, employee lounge and restrooms. There are lots of improvements including new floors. The dental office is in a highly desirable area and is in the vibrant Tarzana Square Shopping Center facing Ventura Blvd. Across from the Tarzana Providence Hospital. For questions or to come see the office, please contact Zella at 818 708-3233.

**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 w/ plenty of patient parking. Great location, w/in walking distance from the Beverly Hospital. Densely populated Hispanic community and lots of 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 or email to rocio@rootvisionendo.com.

**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 and improvement allowance is available. Free rent concession with long-term lease. Must see. Email rocio@rootvisionendo.com or call Rosie at 310-710-2890.

**OFFICE FOR RENTOR LEASE —** Dental office for lease, great location in Bakersfield. Corner lot, 5 ops fully equipped, 2,300 sq. ft., 27 parking spaces. All you have to do is just move in, any questions call 661-444-0442.



CONTINUES ON 218

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**6008** **MENDOCINO COAST - FORT BRAGG** Cultural haven offers attractive lifestyle. 2011 collected $725,000 on Owner 3-day week. 4-days of Hygiene. Digital radiography. Computers in ops.

**6025** **CENTRAL MARIN COUNTY - SAN ANSELMO** Well established practice collected $490,000+ in 2011 on 2-day week. 2+ days of Hygiene. SOLD

**6026** **SACRAMENTO** 2011 collected $825,000 on 3-day week. Practice coupled with facility and ortho can do much more. Bring in specialists. Strong foundation can be developed into busier practice.

**6029** **NORTHEAST CALIFORNIA - ALTURAS** Trade in smog and congestion for soaring mountains and close-knit communities. 2012 tracking $600,000 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. Full price $185,000.

**6030** **SANTA ROSA AREA** 2012 tracking $850,000+ in collections, reflecting growth over 2011. Strong profits. 4-days of Hygiene per week. Digital x-rays. Building optional purchase.

**6031** **MODESTO** Owner retiring. 2012 tracking $430,000 in collections. 4-ops. Bilingual staff. SOLD

**6032** **MODESTO** Currently collecting $520,000+ with Available Profits of $210,000. 3-days of Hygiene SOLD

**6034** **SAN LEANDRO AREA** Did $650,000 in 2011. Owner reduced time in 2012. Shall collect $475,000. 5-ops. Nice Hygiene schedule. Great blue collar practice.

**6035** **SAN FRANCISCO'S EAST BAY – ORTHO** Part-time practice grossing $350,000 per year. Very desirable location.

**6036** **SAN JOSE'S 827 BLOSSOM HILL ROAD - FACILITY ONLY** Highly coveted address. Complex 100% occupied. Phenomenal access per proximity to intersection of Almaden Expressway & Blossom Hill Road, and right off Highway 85 and Guadalupe Expressway. 5 equipped Ops in attractive 1,500 sq.ft. suite. Digital radiography. SOLD

**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.

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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 216



## OFFICES FOR SALE

**OFFICE FOR SALE —** A brand-new 4-ops dental office in Fremont, Calif., is up for sale. Office built just 5 months ago. New chairs, state-of-the-art office just ready for a new doctor to start his/her practice right away. All new equipment, computers, Dexus, Dentrix, new vacuum, compressor, statim, etc. In a nice Medical Building at a very popular intersection. If you are interested please email us your contact information to jobs1556@yahoo.com.

## PRACTICES FOR SALE

**PRACTICE FOR SALE —** One of the most respected dental practices in Ventura county. 4 operatories, 8 computers, digital cameras, digital x-rays, Nobel Biocare implant system, new endo. system and well-maintained equipment. 2 year average collection $895,000. Very liberal lease. A buyer with a sense of humor will be a great asset. Send email to drjohndds@mac.com.

## EQUIPMENT FOR SALE

**DENTAL EQUIPMENT FOR SALE —** Zoom 2 bleaching light by Discus. Only used three times. Really. Didn't fit our office routine. Sells for $2,100 direct from Discus. They do not sell through other dealers, nor do they offer discounts. Selling for $600. Why pay full price when you can pay less than a third for a brand new unit? No sales tax or shipping charges, brings the price down to roughly a quarter of retail. Pick up only. San Ramon. Please reply by email or call 925-837-8126 (daytime Mon - Thurs) or 925-735-6181 (evenings and weekends). Email PhantomRose@comcast.net.

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**NEW LISTING -$180,000 - General Dentistry Practice in Huntington Beach,** Orange County, Southern California, with four (4) operatories, three (3) fully equipped, one (1) plumbed, not equipped, sterilization room, reception area, staff lounge, private office, and storage room. This office was built out in 2008 with new design and equipment. The practice is paperless and digital with two (2) sensors. Modern design with neutral colors and upgraded surfaces. **IN ESCROW.**

**$388,000 - Endodontic Practice in the Bay Area,** Northern California with four (4) operatories, sterilization/lab combo, staff lounge, business office, private office, PBS Endo software, Kodak digital radiography with two (2) sensors and two (2) Zeiss microscopes. Contact our office for more information. **IN ESCROW.**

**$709,000 - General Dentistry Practice in Coastal Orange County,** Southern California, with four (4) operatories, fully equipped. Great location near shopping center. Modern, beautifully appointed office with high end finishes. Must see! Call our office for more information.

**NEW LISTING - $575,000 - General Dentistry Practice in San Juan Capistrano,** South Orange County, Southern California, with four (4) operatories, fully equipped, reception area, private office, and storage room. This practice utilizes digital x-rays with one (1) sensor. **IN ESCROW.**

**NEW LISTING - $530,000 - General Dentistry Practice in the San Gabriel Valley,** Los Angeles County, Southern California, with five (5) operatories, fully equipped, reception room, staff lounge, private office, sterilization area, and storage room. This office utilizes a laser, and digital radiography with one (1) sensor.

**$998,000 - General Dentistry Practice in Downey,** Los Angeles County, Southern California, with fourteen (14) operatories, 1 large sterilization room, 1 small sterilization room, reception room, staff lounge, private office, business office, 2 storage rooms, and 2 consultation rooms all located in a free-standing builiding near shopping and freeway. Contact our office for more information.

SOLD

**PRICE REDUCTION - $245,000 - General Dentistry Practice in Palm Springs,** Riverside County, Southern California with four (4) operatories. This practice is located on a main street, and has been established since 2005. Seller is moving out of the area. This is a PPO/Fee For Service practice, no HMO.

**$595,000 - Amalgam-free General Dentistry Practice in Westwood**, Los Angeles County, Southern California with five (5) operatories, includes equipment, wet lab, consultation/ seminar room, sterilization room. Doctor retiring. Great location across from UCLA campus in a professional building.

**NEW LISTING - Price TBD - General Dentistry Practice in the South Bay,** Los Angeles County, Southern California, with five (5) operatories, fully equipped, private office, sterilization room, and consultation room. This office has an intra-oral camera, Schick digital radiography, and has been in the same location for over 50 years. Retiring doctor refers out most specialty work. Contact our office for more information.

**$450,000 - General Dentistry Practice in the South Bay,** Los Angeles County, Southern California, with four (4) operatories, sterilization room, adjustment lab, reception room, staff lounge, private office, and consultation room. This practice is fully digital and paperless. Contact our office for more information.

SOLD

**PRICE REDUCTION - $395,000 - Prosthodontic Practice in Walnut Creek,** Contra Costa County, Northern California with three (3) operatories, fully equipped, two-desk laboratory, administrative office, and private office near a retirement community. Doctor retiring, 28 years in the same location.

**$275,000 - Perio Practice in Coastal Orange County,** Southern California with five (5) operatories, lab, sterilization area, business office, private office in a professional building. Great location. Seller is retiring with 33 years of goodwill. Call our office for more information. **IN ESCROW.**


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## ADVERTISER INDEX

**DR. BOB,** CONTINUED FROM 222

them, some entrepreneurs have incurred the Environmental Protection Agency's displeasure. In fact, the EPA has filed complaints against 18 companies that claimed their products killed bacteria or effectively disabled them. We purchased all of them.

This growing market for antibacterial products is based on the same marketing research that produced Lifebuoy soap years ago. Lifebuoy was colored a disagreeable shade of red and was formed of congealed phenol potent enough to disable a Sherman tank. Not only was it said to decimate bacteria, but worked in a similar manner on your social life. The bacteria, however, liked it and asked for more, resulting in Dial, and 54 varieties of Lysol.

The point is nobody wants to acknowledge the fact that we cannot kill bacteria—maybe stun them momentarily, but that just makes them furious. They are worse than ants. Ants at least travel for the most part in a straight line as if they had some important place to go, making them easier to whack. But bacteria, knowing they can't be seen by the naked eye, just hang around like juvenile delinquents on a Saturday night.

*1st Bacteria*: So, whattaya wanna do?

*2nd Bacteria*: I dunno, whatta *you* wanna do?

*1st Bacteria*: Pink eye? Dermatophytosis interdigitalis?

*2nd Bacteria*: That's fungal!

*1st Bacteria*: Oh.

Even if we had a powerful antibacterial agent strong enough to take down the entire bacteria population, we're like a blind man trying to strike a piñata with a toothpick. The bacteria just laugh. Ha ha, they snicker, imagine trying to prevent urinary tract infections or Witzke's Rash with this stuff! What a bunch of losers!

Right now, even as I write this, I bet there are literally dozens — if not an entire biomass — of bacteria lounging on my keyboard. They are engaging in random acts of binary fission and mitosis, probably criticizing my use of apostrophes and commas, drawing straws for who gets to go first into my intestinal tract. If the bacteria, in a fit of pique like they threw during the Black Plague of the Middle Ages decided to wipe us all out, it's game over. They'd have nothing to do then but take on the insects for planetary supremacy.

The nations' supermarkets, those coupon-driven, mail-box stuffing, corporate behemoths are admittedly doing something to divert the attention of manic bacteria by providing customers with antibacterial wipes for shopping cart handles. Steam cleaning carts with Lysol would be better, but tedious. Checkout lines are already too long as it is, especially since the "15 items or less" restriction has been dumped by appellate courts for being discriminatory and too vaguely worded for customers to understand. "Fifteen items or less *what?*" was the often expressed consumer demand even though nobody in the history of supermarkets has even been evicted for boldly marching through express lanes with upwards of six dozen items. "Define *items!*" they challenge.

So, yes, the grocery giants are definitely antibacterial in terms of offering soaps, sprays and requiring meat and bakery personnel to wear gloves of some sort when handling fire-engine red hamburger and cheese Danish. The hairnets or caps with the company logo are a nice touch, too.

Unfortunately, in their zeal to palliate the microbial fears of their clientele, markets have exacerbated the qualms of customers like me who cannot quickly choose a ready-to-eat avocado from a bin of 300 Central American imports whose price rivals that of a Fabergé egg.

Recklessly, *without a bacterial barrier*, I palpate a dozen or so to ascertain those that are already well past their eat-by date or won't be ripe for a salad for 90 days, if ever. Same goes for pre-squeezed bananas whose edible window of opportunity does not exceed 48 hours at best. Are these edibles covered with bacteria? Count on it!

Our economy is based not only on subsidizing the tobacco industry and paying packaging companies for labels warning the public against using the contents, but the sale and distribution of antibacterial products as well. Practically, it is probably not a good idea to spend too much time trying to hide from your bacteria since there are about 100,000 of them grazing on every square centimeter of your skin at any given moment. We are, for them, the ultimate smorgasbord. Give the EPA all the funding it needs to protect us. Get a receipt. We can help by not vomiting, sneezing or succumbing to diarrhea. Shallow breathing into a small pillowslip while outdoors couldn't hurt, either.

Eventually our sun will explode with a Big Bang of its own. No worries, you won't be there. A few heretics hold that we wouldn't notice this inconvenience anyway, until hypothermia sets in when the sun didn't come up one morning. In any event, all the bacteria would go down with the rest of us, making the bacterial problem academic.

OK, we made a mistake with the overuse of antibiotics to cure everything from plantar warts to alopecia. It's top secret now, but I can reveal that my colleagues and I are developing a friendly virus programmed to attack only unfriendly bacteria. It's a turf war with benefits.

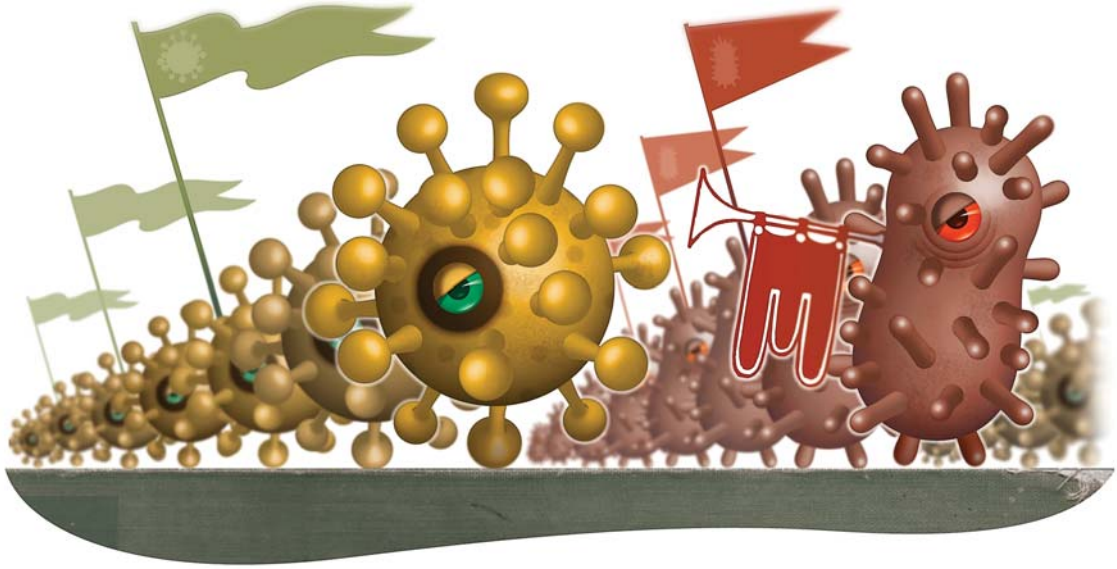
Until that time — if the sun can wait — wipe the handles, spray the sprays and lather the soap. If unwellness strikes, lie down, call in sick and wait for your defensive white cells to do their job. Chances are you'll survive. It doesn't make sense from the bacterial POV to eliminate the host, just make him miserable for a while. ■■■■

## We're taking your requests

*If you have a favorite Dr. Bob column you want to see again, email Publications Specialist Andrea LaMattina at andrea.lamattina @cda.org. We will oblige by reprinting those requested favorites interspersed with any new Dr. Bob submissions.*

CDA JOURNAL, VOL 41, Nº3

# The Bacteria Go Marching One by One



Even if we had a powerful antibacterial agent strong enough to take down the entire bacteria population, we're like a blind man trying to strike a piñata with a toothpick.

Robert E. Horseman, DDS

ILLUSTRATION BY VAL B. MINA

The great thing about science and scientists is the dedication to finding out exactly and precisely how everything originated, how it's progressing and where it is all going. Being basically human, this dedication frequently results in minor disagreements among scientists, so they cut themselves a little slack. The Earth can be anywhere from 40 million years old to 4,550 million years (plus or minus 70 million), subject to changes revealed with new discoveries and interpersonal whimsy. The only thing constant about science is the resolution that explanations to the general public must be discreet and mounted in language impossible to comprehend, much like the field of law.

That is why when the non-scientists, who comprise 98.9 percent of the populace, found out that there are "*approximately* (key word) *five nonillion* (a whole bunch) *bacteria on Earth forming a biomass that exceeds that of all plants and animals,*" we became visibly rattled. Even if further studies estimate the sum to be only a *gazillion* (not so much), it is sufficient to induce paranoia in everyone but *Avatar* director James Cameron.

Biomass—even Catholics failed to recognize this term, but everybody agreed it couldn't be a good thing. Scientists have long tried to explain that not all bacteria are bad, in fact some are just as friendly as can be and necessary for our well-being.

This was instantly recognized as a sop to the layman's instinctive fears like that of antipathy to snakes, spiders and no-see-ums. Thus began the campaign to avoid bacteria at all costs. The scientific community has tried to gloss bacillophobia over by stressing that they are merely a "large domain of prokaryotic microorganisms." Pro is always better than con. *Pro*-karyotic—why didn't they say so in the first place?

Eager to cash in on the American public's paranoia that bacteria are out to get

CONTINUES ON 221

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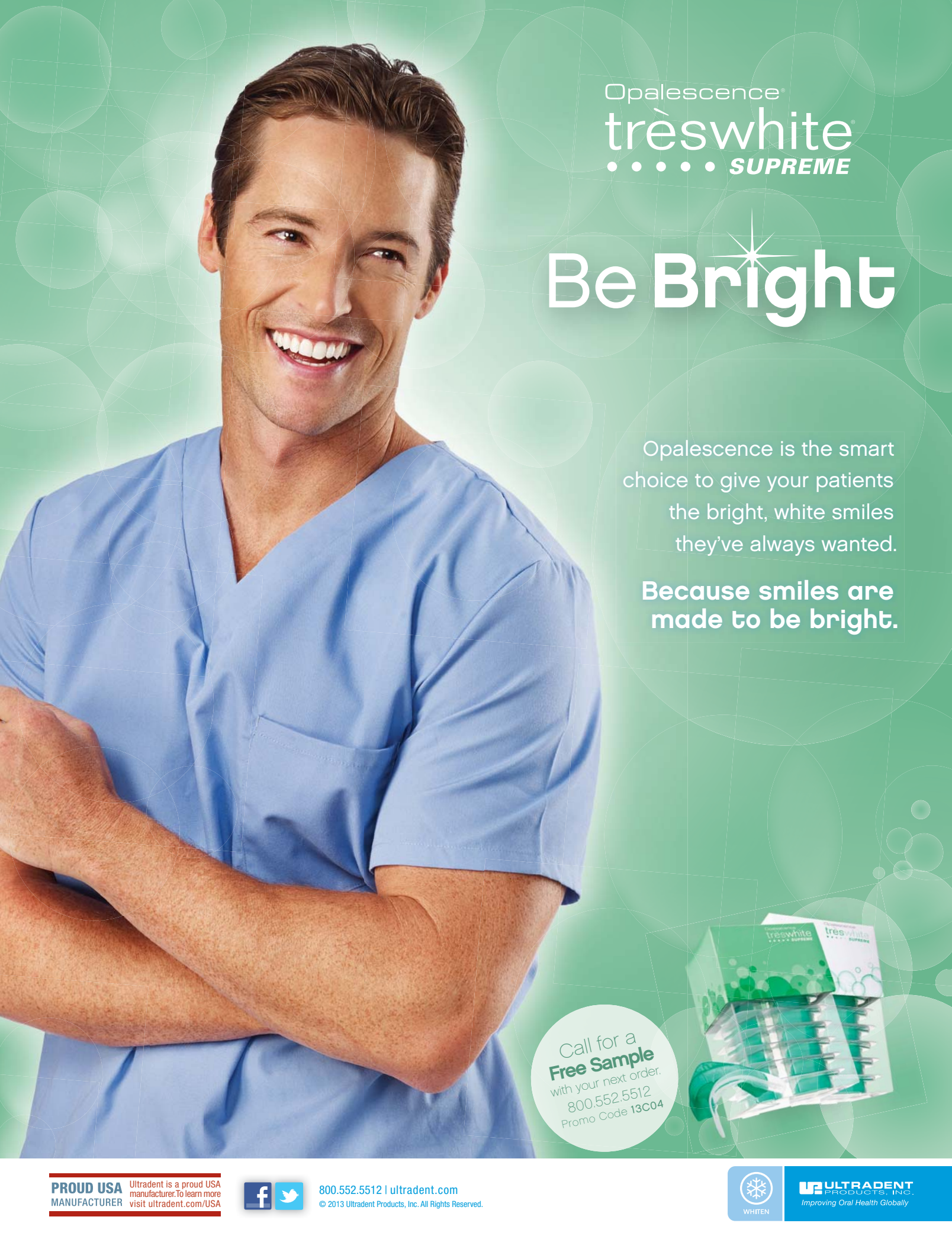
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