SPECIAL GNYDM EDITION

DENTAL TRIBUNE

The World's Dental Newspaper · U.S. Edition

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ENDO TRIBUNE
The World's Endodontic Newspaper · U.S. Edition

Canal shapes and sizes
Complex canal anatomy and the instruments that shape them. ▶ *page 1B*

COSMETIC TRIBUNE
The World's Cosmetic Dentistry Newspaper · U.S. Edition

Replacing a faulty restoration
The main challenge was removal with minimal effects on the healthy tooth structure. ▶ *page 1C*

LAB TRIBUNE
The World's Dental Lab Newspaper · U.S. Edition

Shade-taking variables
Tips from a tech advisor on the difficult task of shade matching. ▶*page 1D*

'Filling the gap' in Afghanistan

A unique dental program in Afghanistan is saving lives, raising the infrastructure level and bringing about social change for women and orphans.

Imagine that you have a dental problem, a toothache. The tooth is painful and getting more intense. What would be your best course of action?

Most people would be very concerned and want to contact a dentist to arrange for prompt treatment. You might be given antibiotics and pain medication, and your great concern would be lessened knowing that you had access to proper care.

In another country, you might not be as fortunate. You would know that no treatment was possible because there were no dentists. So you would resign yourself to endure the pain, as you had done in the past, and hope for the best. Or you might access a barber, who would take the tooth out without anesthetic.

No thought of antibiotics or pain medication would cross your mind, as these things are not available, either. All of your life you had lived in poverty, along with your neighbors and fellow villagers, with hardly enough to eat. You had never owned a toothbrush in all your life.

This country is Afghanistan.

Dr. James Rolfe with a patient in Afghanistan. (Photo/Provided by ADRP)

Afghan health

Ninety percent of Afghans, 29 million people, have never seen a dentist. With only 134 dentists, each dentist would have to serve a quarter million people. However, dentists congregate in big cities, and rural areas have no access to care. Ninety percent of the Afghan population live in rural areas that are completely unserved by dentistry.

Dental conditions left untreated lead to eventual pulpal necrosis and chronic infection. This is a progressive condition, eventually leading to multiple abscessed teeth and, in some cases, a systemic septicemia infection that is lethal.

Many people in Afghanistan die from their teeth problems. But now, there is hope for the dental needs of

→ DT page 3A

A 'dental bite' of the Big Apple awaits you

Go ahead, take a bite. A big dental bite of the Big Apple awaits, and this year's Greater N.Y. Dental Meeting promises to be even bigger than previous years. Get the details about who, what and when, as well as some tips that will help you make the most of the city when you aren't at the dental meeting. (Photo/David Watts Jr., www.dreamstime.com)

→ *See page 20A*

Fish fights gum disease

Recently published research suggests that polyunsaturated fatty acids (PUFAs), found in foods such as fatty fish and nuts, will help keep people's smiles healthy, as they have been shown to help lower the risks of gum disease and periodontitis.

The research examined the diet of 182 adults between 1999 and 2004, and found that those who consumed the highest amounts of fatty acids were 30 percent less likely to develop gum disease and 20 percent less likely to develop periodontitis.

Lead researcher of the study, Dr. Asghar Z. Naqvi of Beth Israel Deaconess Medical Centre in Boston, said: "We found that n-3 fatty acid intake, particularly docosahexaenoic acid [DHA] and eicosapentaenoic acid [EPA] are inversely associated with periodontitis in the U.S. population.

"To date, the treatment of periodontitis has primarily involved mechanical cleaning and local anti-

→ DT page 2A

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'Fatty fish and nuts have been shown to help lower the risks of gum disease and periodontitis.'

(Photo/www.sxc.hu)

← DT page 1A

biotic application. A dietary therapy, if effective, might be a less expensive and safer method for the prevention and treatment of periodontitis."

Chief Executive of the British Dental Health Foundation Dr. Nigel Carter said: "Most people suffer from gum disease at some point in their life. What people tend not to realize is that it can actually lead to tooth loss if left untreated, and in this day and age, most people should be able to keep all their teeth for life.

"This study shows that a small and relatively easy change in people's diet can massively improve the condition of their teeth and gums, which in turn can improve their overall wellbeing."

The study was published in the November issue of the Journal of the American Dietetic Association: Naqvi et al. "n-3 Fatty Acids and Periodontitis in U.S. Adults," Journal of the American Dietetic Association, Volume 110, Issue 11, pages 1589–1780. DT

(Source: British Dental Health Foundation)

'Toothy' toys at National Museum of Dentistry

These vintage toys are on display at the National Museum of Dentistry. (Photos/Provided by the National Museum of Dentistry)

Members of the public are invited to take a trip into the not-so-distant past to discover childhood toys with a toothy twist. "Open Wide! Toothy Toys that Made Us Smile" is on view at the National Museum of Dentistry. The exhibit features more than 50 objects, ranging from the original wind-up Yakity Yak chatterteeth created in 1949 to Cabbage Patch dolls with teeth from the 1980s.

From Play Doh's Dr. Drill-n-Fill to Barbie Dentist to an Evel Knievel battery-operated toothbrush complete with launching ramp, visitors to the museum can see games, dolls, puzzles and character toothbrushes.

The exhibit also features a playable Tooth Invaders video game from 1981 and a hands-on game corner where visitors can try their hand at classic dental themed games such as Crocodile Dentist and Mr. Mouth.

"Times change, and toys reveal what was important to us during certain times in our history," said National Museum of Dentistry Executive Director Jonathan Landers.

For example, Hopalong Cassidy cowboy toothbrushes were all the rage in the early 1950s when Westerns were popular. Westinghouse made a build-your-own rocket toothbrush during the space race in the 1950s. Barbie found a career as a dentist in the 1990s.

"Many of these tooth-related toys are rare windows into our past, while others are still being played with by kids, and adults, today," Landers said. "They all show the creative ways we've encouraged children to care for their teeth over the years."

This special exhibit is drawn from the National Museum of Dentistry's 40,000-object collection of dental treasures and the toy collection of guest curator Elaine M. Miginsky, DDS.

This exhibit, which will be on display through Jan. 30, 2011, is made possible in part by Webb Mason. DT

(Source: National Museum of Dentistry)

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← DT page 1A

the Afghan people.

The tragedy of Afghanistan

More than 30 years of war have made Afghanistan into a desperate place. The nation is filled with poverty and hardship. More than 3 million orphans search for some kind of meaningful future. Widows and single mothers are everywhere, begging in the streets, trying to survive.

So many adults have died that the average age is only 14. Due to the great challenges of just staying alive, 20 percent of young children die before the age of 5. The birth/death rate is the highest of any nation in the world.

Twenty children a month are killed or maimed by mine explosions. Many children are affected by post-traumatic stress disorder, and 80 percent of older children feel that life is not worth living. But there is hope. And that hope lies in education.

Inspiration for change

The Afghanistan Dental Relief Project was founded in 2003 following a visit to the Central Highlands province of Wardak. Taking 500 pounds of portable equipment to an orphanage at 11,000 feet elevation, Dr. James Rolfe of Santa Barbara, Calif., spent three weeks treating the orphan boys there. He would first treat one of them, and then he would have the patient become his assistant.

Rolfe discovered that around 85 percent of the boys were fast learners and adapted well to the challenges of dental assisting. Seeing that the boys had no future without education, he imagined training them to be professionals.

Toward the end of his visit, Rolfe began to see people living in the surrounding area. What he saw shocked him; many people had multiple abscessed teeth, and some were on the verge of death. How could this be, he thought.

Then he learned that there was no dental care available in the entirety of Wardak Province, which is about the size of Conneticut. No dental care whatsoever for more than 200,000 people.

Why not train the orphans to be dental technicians?

Rolfe returned to Santa Barbara and, with the help of local craftsmen, converted a forty-foot shipping container into a modern dental office with three chairs, a sterilizing room and a complete dental laboratory, all self-contained with its own water supply and electricity.

He then shipped the clinic and an additional 60 tons of dental supplies and equipment at his own expense to a site in Kabul, donated by a generous Afghan-American family. Now, the clinic is up and running with three dentists seeing patients each day, treating about 20,000 patients a year. But where do the orphans come in?

The Kabul School of Dental Technology

In 2007, the Kabul School of Dental Technology was formed. Students were selected from the local population of orphans, widows, handicapped, single mothers and socially disadvantaged populations. The eager students study hard for four months of intensive course work and clinical experience to become certified dental assistants.

Graduates can immediately get a job with local dentists or choose to continue their education to get an additional certificate as a dental hygienist or dental laboratory technician. The program has allowed the clinic to see many more patients and to provide a higher standard of care for the patients coming there. And it's all provided free of charge.

Many of the students endure hardships in order to attend the school. They are extremely dedicated, always coming early and working hard to master the technical material.

In August 2009, the full-service commercial dental laboratory was opened and now dentists throughout Afghanistan have a reliable resource for their crowns and dentures, rather than sending their work to Pakistan for a questionable product. Recently, a chrome partial casting machine was added to the dental laboratory, which will soon allow production of chrome frameworks.

The first class of dental hygienists ever produced in Afghanistan is now working in the dental hygiene field, providing local dentists with a service that was not obtainable previously; you just could not get your teeth cleaned before these students graduated. Now, people line up for this service.

Making social change

The educational program has opened up new opportunities for these students. Orphans with no future now are able to determine their own lives as productive individuals. Women from the Afghan Dental Relief Project (ADRP) program have become authority figures in a male-dominated society. Many people have been able to access dental health care in a sophisticated system, which has improved their health and longevity.

Better access to dental care should help people live longer in Afghanistan, and raise the average mortality from only 42 years. The ADRP recently opened a clinic in the women's prison as well.

All graduates are taught the atraumatic restorative technique promoted by the World Health Organization, in which lay people are trained to excavate gross caries without anesthesia and place glass ionomer restorations.

Each student is given a kit of instruments and restorative material when graduating, and encouraged to participate in field trips to rural clinics where no care is available. After training, they are encouraged to practice the technique in underserved areas by themselves.

Promoting volunteerism

Many dentists have journeyed to the clinic from all over the world, paying their own travel expenses, to volunteer at the facility and teach, work in the laboratory with the students or treat patients.

In addition, other dental professionals, including dental assistants, dental hygienists and dental lab technicians, also volunteer. Guests stay in a modern, secure guest house, which provides comfortable sleeping accommodations, meals, laundry, hot showers and Internet access to communicate with the folks back home, all for a small cost.

Information about travel and volunteering can be accessed on the website, *www.adrpinc.org*.

What you can do

With a little change, you can make a big change. One-hundred percent of all donations go directly to the support of our project. We have no salaried employees, and we all pay our own expenses. You can become a member by joining ADRP with a monthly contribution that will help support the work in the clinic and in the school.

Help build a permanent facility on the present clinic site and move the shippable clinic to another town so that we can begin another training site in that town to benefit the local residents. You can give a child complete dental care for $15.

We need donated supplies, instruments and equipment. Dentists are encouraged to contribute their gold scrap to the project, where it can be recycled to provide funding for supplies and operating expenses.

We all became dental professionals because we love doing dentistry; let's experience the joy of using that knowledge and skill without a fee, for the good of mankind.

Donations are tax-deductible, as ADRP is a 501(c)3 non-profit organization. Donations can be sent to ADRP, 31 E. Canon Perdido St., Santa Barbara, Calif., 93101.

For more information, please visit the website *www.adrpinc.org* or e-mail the headquarters at *adrp@verizon.net*. Rolfe can also be contacted at (805) 963-2329. DT

(Source: Afghan Dental Relief Project)

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How do you terminate the dentist-patient relationship?

By Stuart J. Oberman, Esq.

(Photo/www.sxc.hu)

The American Dental Association's code states that each dentist has a "duty to respect the patient's right to self-determination." Patients choose their dentists for a variety of reasons. These reasons may range from the type of insurance a dental practice may accept, the personality of the practice or the type of dental care a particular practice may provide.

A dentist's main obligation to a patient is to provide complete and competent dental care. However, dentists do have discretion regarding the patients they choose to accept in their practice. Dentists also have the autonomy to terminate an existing dentist-patient relationship.

Yet, the termination of a dentist-patient relationship presents difficult issues, and a dentist must carefully follow the appropriate procedures for termination of the relationship.

When considering the termination of a dentist-patient relationship, a dentist should consult with his or her attorney to determine the proper procedure for termination of the relationship, which may vary depending on state law.

The termination of a dentist-patient relationship is legally justified when both parties agree to end it (such as when the patient's dental insurance plan changes and the current dentist is not a member of the plan or when the patient moves out of town).

Another legally justified termination occurs when a course of treatment is completed. In this case, however, the patient should be made aware of the fact that the treatment has been completed.

Another example of a legally justified termination occurs when the patient decides to terminate the relationship unilaterally, typically over either unhappiness with the results of the treatment or over administrative, management or personality conflicts.

Abandonment

The type of termination that causes dentists to have potential legal challenges occurs when a dentist decides to unilaterally terminate the dentist-patient relationship. One of the biggest areas of concern when a dentist decides to terminate a patient relationship is abandonment.

Abandonment occurs when a dentist terminates a patient relationship without giving the patient adequate notice or time to locate another practitioner. Abandonment issues generally will not arise when a dentist properly dismisses a patient from his or her practice.

However, abandonment may occur when a dentist refuses to complete a patient's treatment for no justified reason or when a dentist refuses to see a patient for a follow-up visit. Abandonment is difficult for the patient to prove if a dentist follows the proper and required steps in order to terminate the dentist-patient relationship.

How to terminate the relationship

Any dentist contemplating the termination of a dentist-patient relationship should notify the patient of the dentist's intention to terminate the relationship.

A letter should be sent to the patient by certified mail with a return receipt requested, which informs the patient of the reasons that the dentist-patient relationship is being terminated. A copy of the termination letter should always be kept in the patient's file.

The patient's five obligations

A dentist may unilaterally terminate a patient relationship if the patient has breached one of the five obligations that he or she may owe to the dentist.

- The first obligation owed by a patient is to follow the dentist's instructions and to cooperate in his or her own care.
- Second, the patient has the obligation to keep scheduled appointments.
- Third, the patient is obligated to compensate the dentist for any, and all, professional services rendered.
- Fourth, the dentist-patient relationship may be terminated if the patient is (or was) disruptive or abusive to the office staff or even to other patients in the office.
- Finally, the patient has breached his or her obligations to the dentist if he or she withheld information regarding his or her medical status or history.

The terminating dentist should provide the patient with adequate time in order to seek alternative care if the patient still requires continued care. The dentist should provide a specific timeframe, often defined by state law, during which the patient should seek a new dentist, such as 30 days.

This timeframe may vary depending on whether the dentist is a generalist or specialist, as well as on the availability of other practitioners in the area. During this timeframe, the dentist should be available for emergency care.

A dentist is not required to make a specific recommendation to a subse-

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quent treatment provider. The dentist is only responsible for helping the patient find a subsequent provider if the patient requests it.

It is sufficient for the dentist to refer the patient to a local dental society for a referral. It is also sufficient to simply provide the patient with a copy of the Yellow Pages listing of local dentists.

The only restriction on patient referrals imposed on the dentist is that a dentist should not refer a patient to a subsequent provider if the dentist knows that the subsequent provider is not qualified to satisfy the patient's needs.

Finally, the dentist should inform the patient that, upon request, a copy of his or her records will be forwarded to him or her or to a subsequent treatment practitioner.

It is important to note that HIPAA compliance must be considered and followed regarding the transfer of any patient file.

Legally, while it may be acceptable to charge the patient a fee for the copy of his or her records, it may not be prudent in this situation, and may give the patient grounds to consider retaliating by filing a complaint with the local dental board.

After patient termination

The office staff of a dental practice should be fully aware that a particular dentist-patient relationship has been terminated. Office staff must be aware that an appointment should not be scheduled for a particular patient after the specified termination date.

In addition, if a potential subsequent treatment dentist contacts a dental office in order to ascertain the reason behind the patient seeking a new dentist, office staff must be trained how to properly handle the discussion.

No member of the dental staff should malign the patient, as this might interfere with the formation of a new dentist-patient relationship. A member of the office staff, preferably the office manager or the treating dentist, should merely state that there were administrative differences to which the treating dentist and the patient could not agree upon.

Once a patient has been dismissed from a practice, the patient should not be accepted back to the practice.

Dentists should understand that there are exceptions that apply to terminating a patient relationship. The decision to terminate a patient relationship must not be discriminatory.

In addition, a dentist should not dismiss a patient who is bleeding profusely, in excruciating pain, suffering from major swelling or in a life-threatening situation.

Dentists do have the right to discontinue ongoing treatment if, in their best clinical judgment, the patient's best interests are served by doing so. This can be accomplished without the risk of having abandoned the patient.

When a dentist discontinues treatment, the patient still remains a patient of the practice and should be able to seek further treatment at any time.

The patient must consent to the discontinuation of treatment. However, if the patient refuses to consent, the dentist has the option of legally terminating the dentist-patient relationship based on the patient's failure to follow the dentist's medical advice and to cooperate in their own care.

The obligations and duties of both dentists and patients must be understood within the dentist-patient relationship.

Understanding the significance and ramifications of theses duties and how and when to properly terminate a patient will minimize the risk of being sued by the patient or having a patient file a complaint with the local dental board. DT

About the author

Stuart J. Oberman, Esq., has extensive experience in representing dentists during dental partnership agreements, partnership buy-ins, dental MSOs, commercial leasing, entity formation (professional corporations, limited liability companies), real estate transactions, employment law, dental board defense, estate planning and other business transactions that a dentist will face during his or her career.

For questions or comments regarding this article, visit *www.gadentalattorney.com.*

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‘Help! Things have got to change!’

Sally McKenzie, CEO

You want to change your practice. You know that you need to change the culture, the systems, perhaps even the staff. You have the desire, but desire alone doesn’t prepare you for the climb when you are standing at the base of what seems like Mt. Everest.

Singlehandedly achieving real change in the dental practice can be a truly Herculean effort. Team dynamics, history, patients, practice culture and technology all play significant roles in the transformation efforts, and each can erect seemingly insurmountable barriers to achieving the goals unless outside help is brought in to effectively and constructively remove those barriers.

Most likely, what you really want is not just change, but excellence. Excellence can be an intimidating concept. After all, an entire industry has been built searching for it since Tom Peters released his best-selling book in 1982.

With all the guides, books, formulas and motivational speakers who have dedicated countless pages of wisdom and endless hours of inspiration, we’ve learned this: Achieving excellence comes down to hard work, commitment and, most importantly, leadership.

At the root of excellence — or even just “very good” — is change. Change in any organization, be it a corporate giant such as Microsoft or your own dental practice, is a huge undertaking. In fact, studies have shown that 60 to 90 percent of the efforts to change the way things are done never come to fruition.

Why? It’s because the culture of most every business is “hard-wired” from the top down. In other words, if those driving the train don’t change course, everyone else is just another cart on the same track, along for the same journey, and on their way to the same destination yet again.

Creating change begins with you

The beauty of the dental practice is that if you, Mr. or Ms. Dentist, are not satisfied or don’t like the direction of your practice, you have the power to change it.

In reality, only you have the power to change it. Yes, you need your team to be actively involved, but real change begins with you.

From there comes the development of the plan, which involves asking a few fundamental questions, starting with: What’s your vision for your practice? What does a really good dental practice do differently? How do we get there?

Next is fact finding. Talk to your patients about their experiences. You don’t need to conduct a formal survey, although it’s helpful if you can. At a minimum, ask how your practice can do things better.

Just remember that only a handful will be honest with you. Those who share less than stellar comments are doing you a huge favor in offering their candid opinions.

Studies indicate that if one person complains, at least seven others have had the same negative experience and each of them has told nine others about the problem.

This means that at least one negative comment about your practice has been shared with 63 others in your community. Thus, this is not exactly the word-of-mouth marketing you want circulating.

Begin to assemble the building blocks of practice excellence by examining each individual system and how it fits into the vision of the office that you have chosen to create.

What does the new patient experience involve in a practice that is dedicated to setting itself apart from others in the community? How do patients feel when they call a practice that is committed to excellence? How is the team involved in carrying out the practice culture that the dentist wants to create?

Once the broad-brush concepts are identified, take an honest look at how your team currently handles specific systems. Don’t sugar coat it.

Then ask your employees for their input. What do they see as

→ DT page 9A

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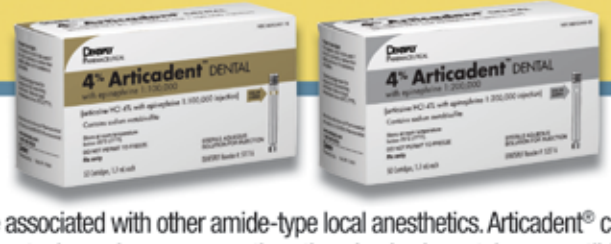

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Articadent™ is contraindicated in patients with a known history of hypersensitivity to local anesthetics of the amide type, or in patients with known hypersensitivity to sodium metabisulfite.

WARNINGS
Accidental intravascular injection may be associated with convulsions, followed by central nervous system or cardiorespiratory depression and coma, progressing ultimately to respiratory arrest. Dental practitioners and/or clinicians who employ local anesthetic agents should be well versed in diagnosis and management of emergencies that may arise from their use. Resuscitative equipment, oxygen, and other resuscitative drugs should be available for immediate use.

Intravascular injections should be avoided. To avoid intravascular injection, aspiration should be performed before Articadent™ is injected. The needle must be repositioned until no return of blood can be elicited by aspiration. Note, however, that the absence of blood in the syringe does not guarantee that intravascular injection has been avoided.

Articadent™ contains epinephrine that can cause local tissue necrosis or systemic toxicity. Usual precautions for epinephrine administration should be observed.

Articadent™ contains sodium metabisulfite, a sulfite that may cause allergic-type reactions including anaphylactic symptoms and life-threatening or less severe asthmatic episodes in certain susceptible people. The overall prevalence of sulfite sensitivity in the general population is unknown. Sulfite sensitivity is seen more frequently in asthmatic than in non-asthmatic people.

Articadent™, along with other local anesthetics, is capable of producing methemoglobinemia. The clinical signs of methemoglobinemia are cyanosis of the nail beds and lips, fatigue and weakness. If methemoglobinemia does not respond to administration of oxygen, administration of methylene blue intravenously 1-2 mg/kg body weight over a 5 minute period is recommended.

The American Heart Association has made the following recommendation regarding the use of local anesthetics with vasoconstrictors in patients with ischemic heart disease: "Vasoconstrictor agents should be used in local anesthesia solutions during dental practice only when it is clear that the procedure will be shortened or the analgesia rendered more profound. When a vasoconstrictor is indicated, extreme care should be taken to avoid intravascular injection. The minimum possible amount of vasoconstrictor should be used." (Kaplan, EL, editor: Cardiovascular disease in dental practice, Dallas 1986, American Heart Association.)

PRECAUTIONS
General: Resuscitative equipment, oxygen, and other resuscitative drugs should be available for immediate use (see **WARNINGS**). The lowest dosage that results in effective anesthesia should be used to avoid high plasma levels and serious adverse effects. Repeated doses of Articadent™ may cause significant increases in blood levels with each repeated dose because of possible accumulation of the drug or its metabolites. Tolerance to elevated blood levels varies with the status of the patient.

Debilitated patients, elderly patients, acutely ill patients and pediatric patients should be given reduced doses commensurate with their age and physical condition.

Articadent™ should be used with caution in patients with heart block.

Local anesthetic solutions, such as Articadent™, containing a vasoconstrictor should be used cautiously. Patients with peripheral vascular disease and those with hypertensive vascular disease may exhibit exaggerated vasoconstrictor response. Ischemic injury or necrosis may result. Articadent™ should be used with caution in patients during or following the administration of potent general anesthetic agents, since cardiac arrhythmias may occur under such conditions.

Systemic absorption of local anesthetics can produce effects on the central nervous and cardiovascular systems. At blood concentrations achieved with therapeutic doses, changes in cardiac conduction, excitability, refractoriness, contractility, and peripheral vascular resistance are minimal. However, toxic blood concentrations depress cardiac conduction and excitability, which may lead to atrioventricular block, ventricular arrhythmias, and cardiac arrest, possibly resulting in fatalities. In addition, myocardial contractility is depressed and peripheral vasodilation occurs, leading to decreased cardiac output and arterial blood pressure.

Careful and constant monitoring of cardiovascular and respiratory (adequacy of ventilation) vital signs and the patient's state of consciousness should be performed after each local anesthetic injection. It should be kept in mind at such times that restlessness, anxiety, tinnitus, dizziness, blurred vision, tremors, depression, or drowsiness may be early warning signs of central nervous system toxicity.

In vitro studies show that about 5% to 10% of articaine is metabolized by the human liver microsomal P450 isoenzyme system. However, because no studies have been performed in patients with liver dysfunction, caution should be used in patients with severe hepatic disease.

Articadent™ should also be used with caution in patients with impaired cardiovascular function since they may be less able to compensate for functional changes associated with the prolongation of A-V conduction produced by these drugs.

Small doses of local anesthetics injected in dental blocks may produce adverse reactions similar to systemic toxicity seen with unintentional intravascular injections of larger doses. Confusion, convulsions, respiratory depression and/or respiratory arrest, and cardiovascular stimulation or depression have been reported. These reactions may be due to intra-arterial injection of the local anesthetic with retrograde flow to the cerebral circulation. Patients receiving these blocks should be observed constantly. Resuscitative equipment and personnel for treating adverse reactions should be immediately available.

Dosage recommendations should not be exceeded (see **DOSAGE AND ADMINISTRATION** in package insert).

Information for Patients:
- The patient should be informed in advance of the possibility of temporary loss of sensation and muscle function following infiltration and nerve block injections.
- Patients should be instructed not to eat or drink until normal sensation returns.

Clinically Significant Drug Interactions: The administration of local anesthetic solutions containing epinephrine to patients receiving monoamine oxidase inhibitors, nonselective beta adrenergic antagonists or tricyclic antidepressants may produce severe, prolonged hypertension. Phenothiazines and butyrophenones may reduce or reverse the pressor effect of epinephrine. Concurrent use of these agents should generally be avoided. In situations when concurrent therapy is necessary, careful patient monitoring is essential.

Carcinogenesis, Mutagenesis, Impairment of Fertility: Studies to evaluate the carcinogenic potential of articaine HCl in animals have not been conducted. Five standard mutagenicity tests, including three *in vitro* tests (the nonmammalian Ames test, the mammalian Chinese hamster ovary chromosomal aberration test and a mammalian gene mutation test with articaine HCl) and two in vivo mouse micronucleous tests (one with Articadent™ with epinephrine 1:100,000 and one with articaine HCl alone) showed no mutagenic effects. No effects on male or female fertility were observed in rats for Articadent™ with epinephrine 1:100,000 administered subcutaneously in doses up to 80 mg/kg/day (approximately two times the maximum male and female recommended human dose on a mg/m2 basis).

Pregnancy: Teratogenic Effects-Pregnancy Category C.

In developmental studies, no embryofetal toxicities were observed when Articadent™ with epinephrine 1:100,000 was administered subcutaneously throughout organogenesis at doses up to 40 mg/kg in rabbits and 80 mg/kg in rats (approximately 2 times the maximum recommended human dose on a mg/m2 basis). In rabbits, 80 mg/kg (approximately 4 times the maximum recommended human dose on a mg/m2 basis) did cause fetal death and increase fetal skeletal variations, but these effects may be attributable to the severe maternal toxicity, including seizures, observed at this dose.

When articaine hydrochloride was administered subcutaneously to rats throughout gestation and lactation, 80 mg/kg (approximately 2 times the maximum recommended human dose on a mg/m2 basis) increased the number of stillbirths and adversely affected passive avoidance, a measure of learning, in pups. This dose also produced severe maternal toxicity in some animals. A dose of 40 mg/kg (approximately equal to the maximum recommended human dose on a mg/m2 basis) did not produce these effects. A similar study using Articadent™ with epinephrine 1:100,000 rather than articaine hydrochloride alone produced maternal toxicity, but no effects on offspring.

There are no adequate and well-controlled studies in pregnant women. Animal reproduction studies are not always predictive of human response. Articadent™ should be used during pregnancy only if the potential benefit justifies the potential risk to the fetus.

Nursing Mothers: It is not known whether articaine is excreted in human milk. Because many drugs are excreted in human milk, caution should be exercised when Articadent™ is administered to a nursing woman.

Pediatric Use: In clinical trials, 61 pediatric patients between the ages of 4 and 16 years received Articadent™ with epinephrine 1:100,000. Among these pediatric patients, doses from 0.76 mg/kg to 5.65 mg/kg (0.9 to 5.1 mL) were administered safely to 51 patients for simple procedures and doses between 0.37 mg/kg and 7.48 mg/kg (0.7 to 3.9 mL) were administered safely to 10 patients for complex procedures. However, there was insufficient exposure to Articadent™ with epinephrine 1:100,000 at doses greater than 7.00 mg/kg in order to assess its safety in pediatric patients. No unusual adverse events were noted in these patients. Approximately 13% of these pediatric patients required additional injections of anesthetic for complete anesthesia. Safety and effectiveness in pediatric patients below the age of 4 years have not been established. Dosages in pediatric patients should be reduced, commensurate with age, body weight, and physical condition. See **DOSAGE AND ADMINISTRATION** in package insert.

Geriatric Use: In clinical trials, 54 patients between the ages of 65 and 75 years, and 11 patients 75 years and over received Articadent™ with epinephrine 1:100,000. Among all patients between 65 and 75 years, doses from 0.43 mg/kg to 4.76 mg/kg (0.9 to 11.9 mL) were administered safely to 35 patients for simple procedures and doses from 1.05 mg/kg to 4.27 mg/kg (1.3 to 6.8 mL) were administered safely to 19 patients for complex procedures. Among the 11 patients ≥ 75 years old, doses from 0.78 mg/kg to 4.76 mg/kg (1.3 to 11.9 mL) were administered safely to 7 patients for simple procedures and doses of 1.12 mg/kg to 2.17 mg/kg (1.3 to 5.1 mL) were safely administered to 4 patients for complex procedures.

No overall differences in safety or effectiveness were observed between elderly subjects and younger subjects, and other reported clinical experience has not identified differences in responses between the elderly and younger patients, but greater sensitivity of some older individuals cannot be ruled out. Approximately 6% of patients between the ages of 65 and 75 years and none of the 11 patients 75 years of age or older required additional injections of anesthetic for complete anesthesia compared with 11% of patients between 17 and 65 years old who required additional injections.

ADVERSE REACTIONS

Reactions to Articadent™ are characteristic of those associated with other amide-type local anesthetics. Adverse reactions to this group of drugs may also result from excessive plasma levels (which may be due to overdosage, unintentional intravascular injection, or slow metabolic degradation), injection technique, volume of injection, hypersensitivity, or may be idiosyncratic.

The reported adverse events are derived from clinical trials in the US and UK. Table 1 displays the adverse events reported in clinical trials where 882 individuals were exposed to Articadent™ with epinephrine 1:100,000 and Table 2 displays the adverse events reported in clinical trials where 182 individuals were exposed to Articadent™ with epinephrine 1:100,000 and 179 individuals were exposed to Articadent™ with epinephrine 1:200,000.

Table 1. Adverse Events in controlled trials with an incidence of 1% or greater in patients administered Articadent™ with epinephrine 1:100,000.

Body System	Articadent™ with epinephrine 1:100,000 N (%)
Number of patients	882 (100%)
Body as a whole	
Face Edema	13 (1%)
Headache	31 (4%)
Infection	10 (1%)
Pain	114 (13%)
Digestive system	
Gingivitis	13 (1%)
Nervous system	
Paresthesia	11 (1%)

Table 2. Adverse Events in controlled trials with an incidence of 1% or greater in patients administered Articadent™ with epinephrine 1:100,000 and Articadent™ with epinephrine 1:200,000.

Number of patients exposed to drug	Articadent™ with epinephrine 1:100,000 (N=182)	Articadent™ with epinephrine 1:200,000 (N=179)
Number of patients that reported any Adverse Event	35	33
Pain	14 (7.6%)	11 (6.1%)
Headache	6 (3.2%)	9 (5.0%)
Positive blood aspiration into syringe	6 (3.2%)	3 (1.6%)
Swelling	5 (2.7%)	3 (1.6%)
Trismus	3 (1.6%)	1 (0.5%)
Nausea and emesis	0 (0%)	3 (1.6%)
Sleepiness	1 (0.5%)	2 (1.1%)
Numbness and tingling	2 (1.0%)	1 (0.5%)
Palpitation	2 (1.0%)	0 (0%)
Ear symptoms (earache, otitis media)	2 (1.0%)	1 (0.5%)
Cough, persistent cough	2 (1.0%)	0 (0%)

The following list includes adverse and intercurrent events that were recorded in 1 or more patients, but occurred at an overall rate of less than one percent, and were considered clinically relevant.

Body as a Whole: abdominal pain, accidental injury, asthenia, back pain, injection site pain, burning sensation above injection site, malaise, neck pain.

Cardiovascular System: hemorrhage, migraine, syncope, tachycardia, elevated blood pressure.

Digestive System: constipation, diarrhea, dyspepsia, glossitis, gum hemorrhage, mouth ulceration, nausea, stomatitis, tongue edemas, tooth disorder, vomiting.

Hemic and Lymphatic System: ecchymosis, lymphadenopathy.

Metabolic and Nutritional System: edema, thirst.

Musculoskeletal System: arthralgia, myalgia, osteomyelitis.

Nervous System: dizziness, dry mouth, facial paralysis, hyperesthesia, increased salivation, nervousness, neuropathy, paresthesia, somnolence, exacerbation of Kearns-Sayre Syndrome.

Respiratory System: pharyngitis, rhinitis, sinus pain, sinus congestion.

Skin and Appendages: pruritus, skin disorder.

Special Senses: ear pain, taste perversion.

Urogenital System: dysmenorrhea.

Persistent paresthesias of the lips, tongue, and oral tissues have been reported with use of articaine hydrochloride, with slow, incomplete, or no recovery. These post-marketing events have been reported chiefly following nerve blocks in the mandible and have involved the trigeminal nerve and its branches.

OVERDOSAGE
Acute emergencies from local anesthetics are generally related to high plasma levels encountered during therapeutic use of local anesthetics or to unintended subarachnoid injection of local anesthetic solution (see **WARNINGS, PRECAUTIONS;** ***General*** and **ADVERSE REACTIONS**).

Management of Local Anesthetic Emergencies: The first consideration is prevention, best accomplished by careful and constant monitoring of cardiovascular and respiratory vital signs and the patient's state of consciousness after each local anesthetic injection. At the first sign of change, oxygen should be administered.

The first step in the management of convulsions, as well as hypoventilation, consists of immediate attention to the maintenance of a patient airway and assisted or controlled ventilation as needed. The adequacy of the circulation should be assessed. Should convulsions persist despite adequate respiratory support, treatment with appropriate anticonvulsant therapy is indicated. The practitioner should be familiar, prior to the use of local anesthetics, with the use of anticonvulsant drugs. Supportive treatment of circulatory depression may require administration of intravenous fluids and, when appropriate, a vasopressor.

If not treated immediately, both convulsions and cardiovascular depression can result in hypoxia, acidosis, bradycardia, arrhythmias and cardiac arrest. If cardiac arrest should occur, standard cardiopulmonary resuscitative measures should be instituted.

HOW SUPPLIED
Articadent™ (articaine HCl 4% with epinephrine 1:100,000 or 1:200,000 injection) is available in 1.7 mL glass cartridges, in boxes of 50 cartridges. The product is formulated with a 15% overage of epinephrine.

NDC 66312-602-16 4% Articadent™ with epinephrine 1:200,000 Box of 50 cartridges
NDC 66312-601-16 4% Articadent™ with epinephrine 1:100,000 Box of 50 cartridges

Manufactured for:
DENTSPLY Pharmaceutical by
Novocol Pharmaceutical of Canada, Inc.
Cambridge, Ontario Canada N1R 6X3

Change in the dental practice is tough, and you may not be able to go it alone. The first step is admitting that you assistance. The next step is knowing how to choose a reputable company to help you achieve the goals you'd like to set before you give up on them out of frustration. (Photo/www.sxc.hu)

← DT page 6A

the strengths and weaknesses of practice systems and protocols? What changes would they recommend to improve them?

What protocols could be developed to reduce stress and improve the patient experience, practice productivity and the total culture of the office?

Develop your plan for each area and put it in writing. Focus on the specifics of each practice system and create a timeline for addressing individual areas.

Remember, keep it manageable and establish realistic goals. Change efforts frequently fall short because businesses attempt to take on too much too soon and quickly become overwhelmed. Some system changes can be implemented in a few weeks while others may require up to a full year.

When to seek additional help

Face the reality of your individual situation. In other words, recognize that there are many dental teams that simply cannot make the necessary changes on their own. Some dentists can successfully direct true system and cultural change in the practice on their own.

However, most don't have the time, the energy or the mental fortitude to push through when seemingly everyone else is pushing back.

Often, dentist and staff are too close to the situation to be able to objectively consider what is truly working and what needs to be corrected.

Tough decisions become clouded by personalities, turf wars and tenure. In those circumstances, it's critical to seek outside help from a professional.

Nevertheless, how do you distinguish between those that can deliver results and those that can't? Like dentists, there are excellent consultants, good consultants and, unfortunately, bad consultants.

Rather than lumping all practice management consultants in the same category, I suggest you conduct a simple evaluation. Consider the following questions.

First, is the practice-management consulting firm you are considering endorsed by a credible outside organization, such as your state dental society?

For example, McKenzie Management is the only national practice management company endorsed by the California Dental Association.

Does the company or consultant you are considering come to you or must you and your team go to them?

Certainly, it's valuable for your team to go off-site for a team retreat and continuing education, but there is no substitute for what happens on-site, day-after-day in your practice.

If you are trying to make major changes to critical systems, a consultant cannot make effective recommendations until he or she stands in your office, witnesses the challenges you face, understands your goals and vision, studies your practice data on-site, evaluates the demographics and psychographics of your community and stands alongside the team that makes or breaks your success.

Does the company have a record of proven success? You want numbers, you want data and you want references. The credible companies and consultants will not hesitate to share this information with you.

Can this company tailor its recommendations to address the specific needs and uniqueness of your practice? Perhaps yours is a specialty practice or maybe you have certain economic challenges in your community.

Possibly yours is an HMO office or maybe your practice is in a rural setting. Certainly, there are management systems that every practice must implement — such as scheduling, collections, production, etc.

Yet, no two practices are exactly alike. You want a consulting company that has the experience and breadth of knowledge to address the uniqueness of your practice.

What type of follow-up will this company or consultant provide? Is this a once-and-done operation?

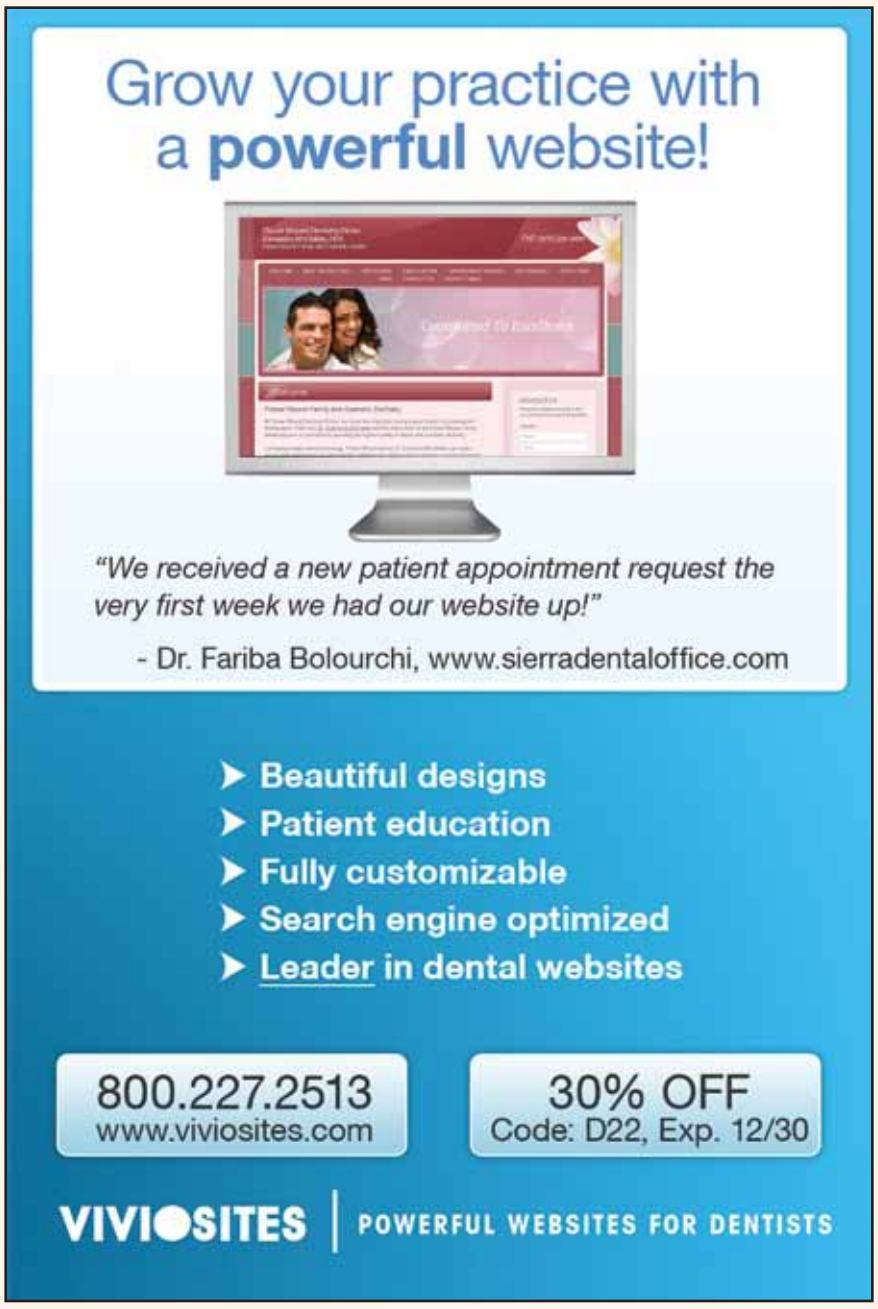
Does the company representative spend a day or a few hours with you, hand you a manual to follow and leave you to implement the recommendations on your own?

In most cases, that's a strategy for failure. The dentist cannot make major changes in his or her practice singlehandedly.

Alternatively, are the consultants on-site for as many days as the dentist would like? Regardless of the number of onsite days, it is imperative that you have a partner walking through the change process with you and your team for a full 12 months.

Ultimately, you want to work with a consulting firm that is prepared to provide individual attention and specific assistance to your practice over the long haul. DT

About the author

Sally McKenzie is CEO of McKenzie Management, which provides success-proven management solutions to dental practitioners nationwide. She is also editor of The Dentist's Network Newsletter at *www.thedentistsnetwork.net;* the e-Management Newsletter from *www.mckenziemgmt.com;* and The New Dentist™ magazine, *www.thenewdentist.net.* She can be reached at (877) 777-6151 or *sallymck@mckenziemgmt.com.*

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