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'If it sounds too good to be true, it probably is ...'

An interview with Michael Miller, president/editor in chief of REALITY

By DT International Staff

Would you please tell our readers a little bit about yourself and how you got started in dentistry?

After graduating from dental school, I did a general practice hospital residency, which aroused my curiosity with research. Even though I decided to go into private practice instead of pursuing an academic career, I never lost that urge to participate in the scientific world in some way. About seven years after starting my practice, I decided I was guessing too much about patient care, and especially how to select and use all the new tooth-colored materials that were just beginning to explode in the marketplace. It was my contention that dentistry needed a publication that was a non-commercial product and technique guide. Because none existed, I asked another dentist here in Houston if he would like to help me get this publication off the ground. Our first book came out in October 1986 and I've been at it ever since.

Michael Miller

You are the co-founder of REALITY Publishing Company. Could you explain, in brief, what REALITY is, which goals it is persuing and how?

REALITY is a consensus report on products and techniques. Our mission is very simple: protect patients by informing dentists. We accomplish this by testing products and techniques using clinically relevant methods in our research laboratory as well as having our editorial team [ET], comprised of leading clinicians from around the world, use the products in their clinics and practices.

Some clinicians criticize the REALITY star system as being a commercial process that only supports the marketing of the manufacturers. How do you react to such statements?

Nothing could be farther from the truth. When a manufacturer submits a product, it has absolutely no control over the evaluation process. This is the reason some manufacturers do not submit products — they are wary about what we are going to find. In addition, because there is no fee involved for manufacturers when they submit products, we have no reason to try to please them. While we don't believe in trashing products unprofessionally, we have warned our readers numerous times about products that don't live up to their marketing propaganda. Any clinician who believes we are merely a marketing arm for manufacturers has never asked a manufacturer if it's true.

How exactly does the product rating process work?

Products are listed on a password-protected section of our site for ET members' eyes only. We then ask the ET members to select products that they are interested in evaluating. At least 10 members must volunteer to evaluate a consumable-type product such as a composite or adhesive for it to qualify for a complete evaluation. For more expensive equipment, the minimum is five. The manufacturers of these products are then invited to submit the product. If they agree, we provide them with the list of evaluators who have volunteered to evaluate the product.

Once the evaluators receive the product, they have 90 days to use it clinically and/or perform tests of

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Inside this week

Get ready for www.DTStudyClub.com

Dental Tribune launches Internet-based learning site with input from practitioners and opinion leaders

Online learning allows everyone to benefit from C.E. courses without incurring the same costs as traveling to training sites.

Now Dental Tribune takes that idea one step further by introducing the Dental Tribune Study Club (DTSC). The site not only creates higher expectations in online learning, but also delivers on its promise.

Study clubs help increase interaction, providing practitioners with the opportunity to gain knowledge about products and techniques by easily tapping into their colleagues' knowledge, including that from respected opinion leaders. Online dental study clubs provide an unpar-

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DTSC

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alleged opportunity for practitioners to "meet with" colleagues in order to learn in a friendly, non-threatening environment that is as close as the nearest computer.

DTStudyClub.com offers dentists an exciting mix of possibilities, including:

- C.E. lectures that are live and interactive, as well as archived ones, bringing local events to national audiences;
- focused discussion forums that allow practitioners to stay up to date;
- product reviews with recordings of opinion leaders' first impressions;
- a growing database of case studies and articles featuring topics important to today's practitioners;
- networking possibilities that go beyond borders to create a global dental village;
- contests with chances to win free tuition for ADA/CERP C.E. accredited Webinars; and much more!

Dental Tribune is very excited about launching this initiative and would like to invite you to join in breaking new ground in e-learning.

On March 14, from 9 a.m.–5 p.m., Dental Tribune will introduce the DTSC via a full-day online symposium. The DTSC C.E. Festival — V.I.P Launch Party will feature five Webinars in succession, made available by educational grants from PreXion Inc., Obtura Spartan, VOCO and Discus Dental, Inc.

Each Webinar will include a one-hour presentation, followed by a 20-minute live Q&A session between the online audience and the speaker. Participants will receive seven C.E. credits, and attendance is free for the first 100 registrants.

After the first 100 spaces are filled, the cost of the full-day symposium is only $49 (U.S.), a mere fraction of what one would pay if traveling to an event.

Live attendees also have 30-day access to the recorded Webinars to review at their convenience. Additional details and registration can be found at *www.DTStudyClub.com*.

Registering as a DTSC member is free and provides access to accredited C.E. Webinars and other tools. For example, in today's dental world, new products, concepts and techniques are brought to light with amazing speed, so it's not surprising that many practitioners are finding it difficult to stay up to date.

In an effort to make the most of practitioners' time, *www.DTStudyClub.com* will feature "First Impressions" by Dr. George Freedman. These five-minute video vignettes will present various dental products with support by demo videos and will be archived in an online product library to be viewed at any time.

Please contact Julia for full details and the DTSC launch registration by phone at (416) 907-9836 or e-mail j.wehkamp@dtstudyclub.com.

Canker sore therapy

A team of physicians at Ben-Gurion University of the Negev has discovered that a nightly dose of vitamin B12 is a simple, effective and low risk therapy to prevent recurrent aphthous stomatitis (RAS), better known as "canker sores."

The findings were reported in the Jan./Feb. issue of the The Journal of the American Board of Family Medicine. The lead reasercher Dr. Ilia Volkov is a primary care physician in the Clalit Health Services and lecturer in Ben-Gurion University's Department of Family Medicine in its Faculty of Health Sciences.

The researchers tested the effect of vitamin B12 on 58 randomly selected RAS patients who received either a dose of 1,000 mcg of B12 by mouth at bedtime or a placebo, and were tested monthly for six months. Approximately three quarters (74 percent) of the patients of the treated group and only a third (32 percent) of the control group achieved remission at the end of the study.

According to the research, "The average outbreak duration and the average number of ulcers per month decreased in both groups during the first four months of the trial. However, the duration of outbreaks, the number of ulcers, and the level of pain were reduced significantly at five and six months of treatment with vitamin B12, regardless of initial vitamin B12 levels in the blood. During the last month of treatment a significant number of participants in the intervention group reached 'no aphthous ulcers status' (74.1% vs. 32.0%; P < .01)."

The treated patients expressed greater comfort, reported less pain, fewer ulcers, and shorter outbreaks during the six months while among the control group the average pain level decreased during the first half of the period but increased during the second half.

(Source: Ben-Gurion University of the Negev and American Associates)

Correction

Please note that the correct name of the book mentioned in Dr. Hoexter's editorial on page 2 of the previous edition, Nos. 3 & 4, is: "A Daughter's Gift of Love". Also, the very last paragraph that began with, "From Wall Street …," should not have been included in the editorial. Dental Tribune regrets these errors.

Tell us what you think!

Do you have general comments or criticism you would like to share? Is there a particular topic you would like to see more articles about? Let us know by e-mailing us at **feedback@dtamerica.com**. If you would like to make any change to your subscription (name, address or to opt out) please send us an e-mail at database@dtamerica.com and be sure to include which publication you are referring to. Also, please note that subscription changes can take up to 6 weeks to process.

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IF IT SOUNDS

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their choosing if they are privy to a testing lab. During this 90-day period, we perform our own tests on the product in the REALITY Research Lab [RRL], a specialized testing facility we created more than 10 years ago. At the end of the 90 days, each evaluator completes a form that I write concerning the product and sends it to me via e-mail. I then compile the results from all the evaluators, check the results from the RRL and write the final report. The actual numerical score and star rating for each product is largely the average of the evaluators' scores modified by any exemplary or poor results in the RRL, although clinical results are always considered at a higher level than those from the lab.

Which facilities are available in the REALITY Research Lab?

We have many pieces of equipment you would find in other research labs around the world, including an Instron for testing bond strength of adhesives and other materials, a digital hardness tester for measuring depth of cure, a thermocycler to age materials rapidly, a temperature/humidity chamber to test products in a mouth-like environment, a spectrophotometer to analyze the translucency/opacity of materials, a custom-made black light box to check the fluorescence of materials and much more.

However, the real difference between our lab and others is the way we perform tests. Our methods have all been designed to simulate the clinical condition as closely as possible, which is the primary reason our results can be radically different compared to those claimed by manufacturers. For example, our depth of cure tests are done in real, human teeth. These tests show that the claims of composite and curing light manufacturers are greatly exaggerated. If any clinician follows a manufacturer's advice in this area, there is a great probability that the restoration will be undercured.

Aside from checking the REALITY Web site, what clues should clinicians look for when choosing the right product?

It's definitely a minefield out there, with clinicians and patients the ones to suffer when manufacturers overhype their products. But the old adage definitely applies — if it sounds too good to be true, it probably is. Reading the scientific research can also be helpful, but pretty boring and possibly outdated when it finally hits print. Listening to lectures from speakers who are honest about their commercial alliances is valuable, assuming the audience can separate the real information from the propaganda. And online chat groups can venture opinions on clinical factors such as whether a composite has nice handling characteristics, but can also be misleading if research is quoted incorrectly.

Are you familiar with the market in Asia and if so, how does it compare to the U.S. market?

I have lectured in Japan and Thailand, but I am not an expert in how dentistry differs between the two regions. My gut feeling, however, is that there is more dentistry in the U.S. focused on pure cosmetics compared to Asia.

How would you grade the quality of work done by Asian professionals?

I have seen some absolutely beautiful dentistry come from the offices of Asian clinicians. Definitely on par with the U.S. and Europe.

Do you have any suggestions for readers who have an interest in incorporating cosmetic dentistry into their practice?

First, it takes a lot of study. You cannot attend a weekend seminar and learn the nuances of really fine cosmetic dentistry. Read as much as possible, attend numerous and varied seminars, and watch as many masters as possible. Then start with easy cases and progress to more demanding ones.

Contact info

Dr. Michael B. Miller is a Fellow of the Academy of General Dentistry, a Founding and Accredited Member, and Fellow of the American Academy of Cosmetic Dentistry, and has memberships in the International Association of Dental Research, Academy of Dental Materials and Academy of Operative Dentistry. He is also a founding board member of the National Children's Oral Health Foundation, which is dedicated to fostering the development of local dental heath and education facilities for underserved children. In addition, Dr. Miller is the co-founder, president and editor in chief of REALITY and maintains a dental practice in Houston,Texas.
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Dentistry State of the Union

By Lorne Lavine, DMD

Most of us tuned in to see President Obama's de facto State of the Union address to the nation a number of weeks ago. These speeches are meant to give the public a sense of where things are at and where things are going. While we don't have anything like that in the dental world, I think it is beneficial to take a step back each year and get an overview of what's exciting in the industry and where I see things going. I travel to most of the major dental shows and have an opportunity to see what products are out there and which ones are generating the most "buzz."

Digital impressions

Who would have thought that the age-old system of taking impressions would become passé in 2009, but the new systems from Cadent, called the iTero and the 3M Lava, aim to do just that. According to Cadent, the iTero is designed to replace the uncomfortable and imprecise method of conventional impression taking.

iTero, powered by proprietary imaging technology, enables the dentist to take a digital scan of the patient's teeth and bite, make any necessary adjustments in real-time and then transmit the file via a wireless Internet connection to a Cadent-partnering laboratory for further processing. From there, the digital file is transmitted to Cadent where a model is milled. The physical model is then sent to the laboratory where a highly precise physical restoration is created.

There are significant benefits from these systems such as increased patient satisfaction, improved clinical outcomes and enhanced office efficiencies. I had the opportunity to see these systems in action at the Yankee Dental Congress and Chicago Midwinter meeting and they are everything they are cracked up to be.

Cone beam

Cone beam or 3-D imaging is the new frontier for digital radiography.

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This is the appointment confirmation tab within the Demandforce platform. It shows patients that have confirmed their appointments via e-mail or text-message, as well as those individuals who have yet to confirm and are at risk for no-show.

About the author

Dr. Lorne Lavine, founder and president of Dental Technology Consultants, has more than 20 years invested in the dental and dental technology fields. A graduate of USC, he earned his DMD from Boston University and completed his residency at the Eastman Dental Center in Rochester, N.Y. He received his specialty training at the University of Washington and went into private practice in Vermont until moving to California in 2002 to establish DTC, a company that focuses on the specialized technological needs of the dental community.
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Who do your patients believe?

By Louis Malcmacher, DDS

This is a common scenario: you present a treatment plan to a patient — whether it is something as simple as a tooth-colored restoration or an endo, post, core and crown — and the patient goes home to think about it. The patient then says, "My hairdresser thinks that a root canal is a bad idea and I would rather just take out the tooth."

You think to yourself what an idiot this patient must be. Here I went to dental school, have many hours of advanced continuing education, treat patients every single day, and instead of believing me, the patient is listening to her hairdresser? How in the world could a patient compare my treatment recommendation to the dental information she receives from a cosmetologist?

This scene will repeat itself many times over during your dental career. I'll tell you exactly why it happens: There is an aura of believability that we as dental professionals sometimes don't project. Think about it: this patient has come to your office, met your entire staff, you as the dentist did the examination and made a recommendation. It was all very clinical and confident, but was it believable? That connection is essential to forming a relationship where the patient will trust you and your team more than she will trust the dental IQ of her hairdresser.

I often say this in my lectures and I know this disturbs some dentists: Your patients have absolutely no way to judge your clinical skills. They don't know if you are a better clinical dentist than the dentist down the street. They really don't know what all of the diplomas on your wall mean. Truth be told, you go into many dental offices and they all have the same wall hangings of all the continuing education that they have taken. As a profession, people pretty much assume that most dentists know what they are doing, so how can your office be different from everyone else?

The answer is in the personal connection that you provide to patients. The easiest and fastest way to establish that connection is with the little chit-chat conversations that your team members have with your patients to get to know them a little better, find out about their families, hobbies, interests and what they do for a living. These are valuable pieces of information that you can incorporate into formulating how you are going to approach your treatment plan by making yourself believable and connecting with the patient.

It's funny when a dentist tells me that his team talks too much to patients and they waste too much time in the office in conversations about what seems to be nothing. I point out that this can be the basis for building a great patient relationship, which then leads to a loyal, long-lasting patient.

The other very important piece that I believe adds value to a patient appointment is by pointing out some of the unique things that you do in your office that he or she may never have done before. The most valuable words that come from a patient's mouth that I love to hear are, "Nobody has ever done that for me before."

A couple of quick examples to illustrate what I mean. When patients come in, I tell them that I am using a Waterlase MD laser so that they won't have to get a shot before their restorative treatment. Another patient comes in and has a periodontal abscess. I clean out the pocket and place Arestin by OraPharma. In both cases if I say nothing to the patient, the patient will not think that anything special has occurred. However, if I point out that I am using these patient-friendly technologies to make the patient's visit easier, I am different from every other dentist out there and I am unique and uniquely believable.

Learn the valuable art of connecting with people. It takes only a few moments to be friendly and believable. Then, instead of choosing whom to believe, your patients will start referring their cosmetologists to you!

About the author

Dr. Louis Malcmacher is a practicing general and cosmetic dentist in Bay Village, Ohio, and an internationally recognized lecturer, author and dental consultant known for his comprehensive and entertaining style. An evaluator for Clinicians Reports (formerly Clinical Research Associates), Malcmacher has served as a spokesman for the AGD and is a consultant to the Council on Dental Practice of the ADA. You may contact him at (440) 892-1810 or e-mail dryowza@mail.com. You can also see his botox and dermal filler hands-on training for dentists and general lecture schedule at *www.commonsensedentistry.com* where you can find information about building the best dental team ever, big case acceptance success and sign up for his affordable monthly consulting programs, teleconferences, audio CDs and free monthly e-newsletter.

Minimally invasive and biomimetic endodontics: The final evolution?

By David J. Clark, DDS

Traditional endodontics has been based on feel, not sight. Tactile proprioreception was the only guide as burs and files were blindly inserted into pulp chambers and root canal systems. Together with radiographs and electronic apex locators, this blind approach has produced surprising success that, in the words of Dr. Eric Herbransen, "the endodontics succeeds often in spite of us."

There is, however, a significant failure rate, especially long-term failure, that is driving mainstream dentistry to aggressively extract natural teeth in favor of implants. The sting of clinical failure is a powerful motivator for change. In this article, I will describe the rationale and techniques involved in minimally traumatic endodontic access and shaping (Part I). In my upcoming Webinar I will discuss obturation techniques for smaller and non-round endodontic shapes, which will also appear as a follow up article in this publication (Part II).

Ribbons, sheets & banners

One of the most distressing "hangovers" of the era of blind endodontics and endo-restorative is the belief that canal systems are straight, exit at the radiographic apex and are round in cross section. In reality, most canal systems curve and exit short of the radiographic terminus. A very large number, at least 50 percent, are ovoid or super-ovoid in cross section. Figure 1 demonstrates that of the three roots and canal systems shown, only one is round. As these canal systems mature, they narrow into a variety of unpredictable ovoid shapes, often with smaller anastamosing canal systems (Figs. 4–6).

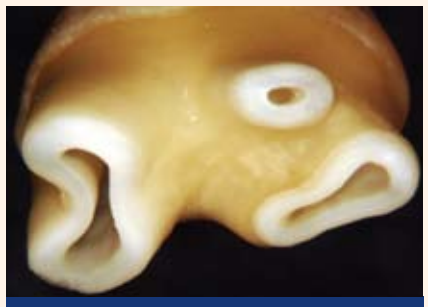

Fig. 1: An immature maxillary molar is sectioned and viewed from the apical aspect.

The evolution of endodontic shaping

The original endodontic shape was established based on mostly hand filing and filled with either silver points or cold lateral condensation of gutta-percha. Sargenti later introduced a more rapid approach that involved machine-driven instruments (rotary files) creating larger shapes with significantly more dentin removal. As of late, a crown-down approach is now popular. The roots are rapidly and blindly machined. This can result in better obturation of the apical half because of improved penetration of irrigation during instrumentation and improved hydraulics during obturation. But at what cost (Fig. 2)?

Is crown-down endo actually better than lateral condensation?

The outcome studies are inconclusive, but what we do know is that the success rate today is no better than it was 40 years ago (Fig. 3). The advantages of crown down are often offset by the weakening caused by Gates-Glidden burs and orifice shapers. The short-term thrill of the radiographic "puff of sealer" at the apex is lost when the tooth implodes a few years down the line. Residual dentin is directly related to long-term strength and has indisputably been shown as the key to long-term tooth retention.

In contrast, the supposed strengthening of the root from a "monoblock" of bonded resin obturation, bonded core and fiber post is proving to be inconsistent.[1] Another startling revelation is that the dentin in an endodontically treated tooth is *not* more brittle than in a vital tooth.[2–4] In short, preservation of peri-cervical dentin and ferrule girth trump all other factors.

Ovoid canal systems & roots are non-round for a reason

Rotary instruments and obturating points of gutta-percha are round because of the limitations of their mechanical nature. They create anatomically appropriate shapes in round roots, but fail in ovoid roots. Over the ages, the dynamics of occlusion and arch form have guided the development of human tooth roots such that at least half have ovoid roots.

Smaller and/or ovoid shaping: Why and how?

Why? Biomimetics is a treatment approach that has, as its ultimate goal, to retain as much of the natural tissue as practical, and to mimic the physics and structures of the human body. There is nothing biomimetic about a stiff, round rod (prefabricated post) running through the center of an ovoid root.

The natural ovoid root is essentially a semi-rigid pipe deriving its strength from without, not within. The endodontic and endo-restorative goal should be to mimic the pulp space that was present when the tooth was young. From that point, it can be argued that any secondary dentin that is deposited adds little additional strength because of the amorphous and irregular deposition pattern. This point is supported by the robust strength of young teeth with large pulp chambers and large radicular pulp spaces.

Fig 2: This lower bicuspid was treated with a generous crown-down endodontic shape and suffered a retrograde root fracture within three years of the endodontic treatment.

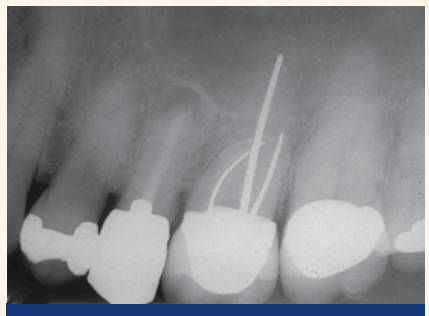

Figure 3: This radiograph demonstrates a 31-year success with delicate shaping and crude obturation with silver points (#14), and a four-year failure with a large crown-down shape and heated gutta-percha (note the lesion on #13).

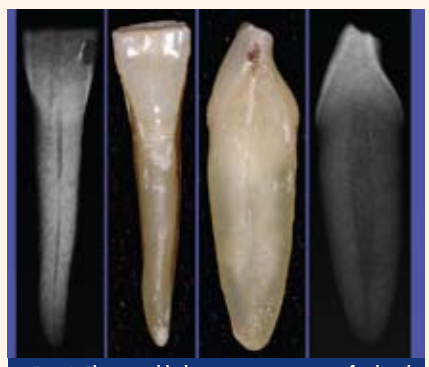

Fig. 4: This mandibular incisor appears so frail with a lingual view or radiographic image. It appears husky with a mesial view. It is at least twice as broad buccal lingually.

If a small round access that does not disturb primary dentin can allow instruments to engage potentially significant complex anatomy (e.g., a second or third major system and corresponding portals of exit), then the round access is acceptable. The

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ENDODONTICS

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Fig. 5: One variation of potential anatomy in an ovoid root; system branches in apical third of a C-shaped second molar.

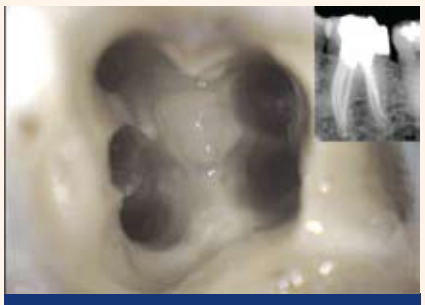


Fig. 6: Another variation of ovoid roots, non-round systems branch into five systems in the coronal third. (Image courtesy Dr. John Khademi)

reality of ovoid roots would seem to disagree with this approach.

Creating a large round access that results in removal of primary dentin of the delicate, narrow portion of the root is the common approach today. While this can allow access to complex branching of systems that occurs further apically, it does not satisfy the more appropriate goals of anatomic, biomimetic dentistry. Additionally, the single large round endodontic shaping pattern often encroaches upon a fluting in the center of the root.

How? Visually shaping ovoid systems. The three components of ovoid shaping are:

1) the operating microscope with powerful coaxial shadowless lighting,

2) ultrasonic instruments, and

3) an understanding of the anatomy of ovoid roots.

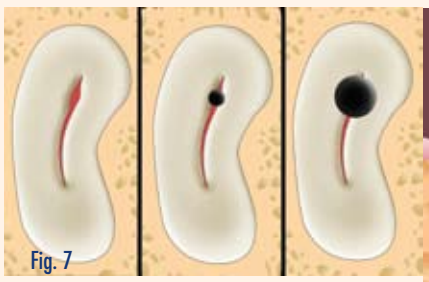


Fig. 7

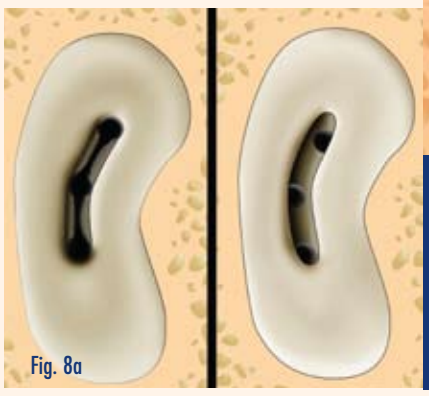
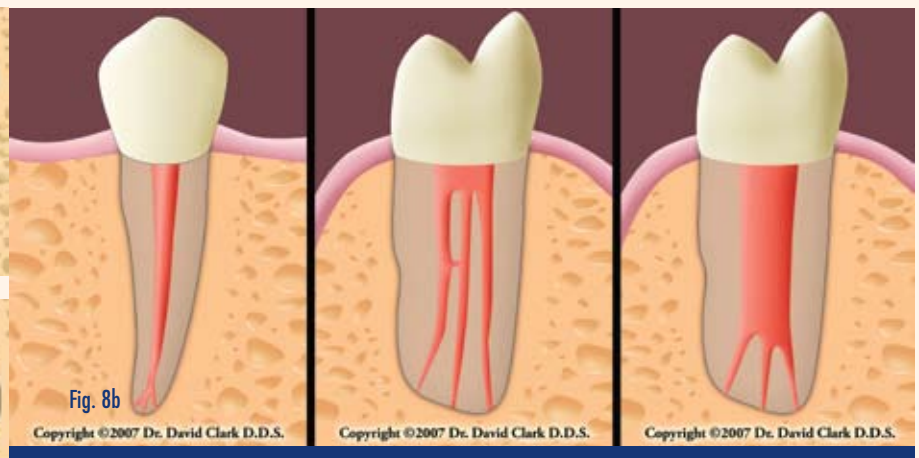


Fig. 8a



Figs. 7, 8a, 8b: Several renderings contrast current endodontic shapes versus new biomimetic microscope enhanced shapes. Figure 7 shows the preoperative pulpal space of the root, sectioned at the orifice, then shows lateral condensation shape that does not weaken the root but also does not address the potential complex anatomy. The third image shows the new aggressive crown-down shape that weakens non-round roots. Figure 8a shows two potential shapes that are anatomic and address the complex anatomy, yet do not weaken the tooth. Figure 8b shows the obturated anatomic shapes in the second axis.

Fig. 9: A new model for lower incisor access is depicted, along with the new CK endodontic access bur. Note that the access has been moved away from the cingulum and toward the incisal edge. The delicate tip size of the bur and its conical shape are helpful for both visual (dentists using microscopes) and tactile (little or no magnification) endodontics.

Anatomic, biomimetic shaping cannot occur safely "by feel" (Figs. 7, 8a, 8b).

Summary

Although no two roots are the same, general anatomic patterns allow the microscope-equipped clinician to search for major pulpal regions that will yield a high probability of cleaning and shaping the clinically available pulpal zones. The shapes that were introduced during the Schilder era have served as a transitional technique to allow the first real three-dimensional compaction of gutta-percha. Endodontics is, in reality, a *restoratively* driven procedure; and to be minimally invasive and to apply biomimetic principles will require different skills and materials to shape, pack and restore these non-round canal systems.

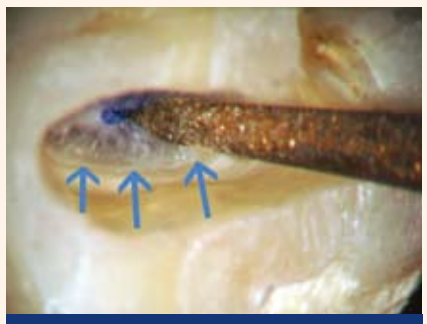


Fig. 10a. Extracted bicuspid is shaped to follow the pattern of secondary dentin that has been described by Carr as resembling "glacial ice" in appearance under the microscope. One border of secondary dentin and primary dentin is outlined with arrows. Glacial ice is one of the many terms used to describe the many color and translucency features of secondary and tertiary dentin. CPR-2D (Obtura-Spartan) ultrasonic tip is pictured at 16x.

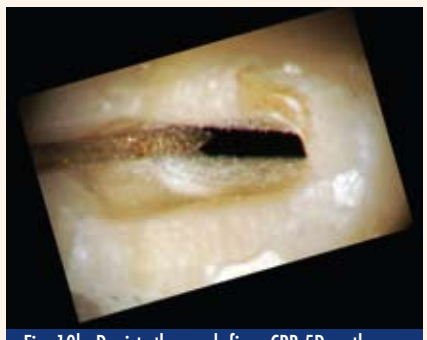


Fig. 10b: Depicts the much finer CPR 5D as the ovoid system is explored further apically with constant microscopic visualization. Note the ideal visual environment that is the hallmark of the microscope-ultrasonic combination. It allows for identification of dentin maps for the ultimate in dentin preservation.

References

1. Tay FR, Pashley DH. Monoblocks in root canals: A hypothetical or a tangible goal. J Endod

Attend Dr. David Clark's Webinar!

On March 14 at 1:45 p.m. E.S.T., Dr. Clark will present a one-hour Webinar, "World Class Obturation for General Dentists," followed by a live question-and-answer session with the online audience.

Can endodontics be minimally invasive? Biomimetic? Last as long as implants?

The implant era has raised the bar for endodontics serendipitously as new tools and techniques allow for the next level of endodontic excellence. Instead of "blindly poking around" the pulp chamber and "machining" the delicate root with Gates-Glidden and large rotary files, there are other options! *Once we have created the new shapes, then how can we perform ideal obturation?* Join us to find out!

This is one Webinar in a five part Webinar series that will be running over the course of the entire day to launch the brand new Dental Tribune Study Club. Participants will receive C.E. credits and attendance is free for the first 100 registrants. After the first 100 spaces are filled, the cost of the full-day symposium is only $49. Live attendees have 30-day access to the recorded Webinars to review at their convenience. Attendees require an online computer with audio capabilities. Please register at *www.DTStudyClub.com.* Upon registration, you will be provided with a pass code. However, if you cannot attend the live Webinar, you may access the archived version for $49 by signing up on the site.

Table 1: New microscope-enhanced protocol
1. Initial access with round-ended carbide or diamond burs. For incisors and canines, the new CK endo access burs provide optimum safety and dentin preservation (Fig. 9).
2. Gross de-roofing with tapered diamond burs, retaining a small "soft-fit."
3. Provide straight-line access sweeping away from high-risk anatomy with the CPR-2D.
For ovoid systems …
4. Sweep the coronal ¼ of the ovoid system with the CPR-2.
5. Sweep the next ¼ or ½ with the CPR-4D or 5D (Fig. 10b).
6. Irrigate, dry with the Stropko syringe and then evaluate at 16–24x for multiple systems that branch in the apical half.
7. Begin filing.

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2. Sathorn S, Palamara JE, Messer HH. A comparison of the effects of two canal preparations on root fracture susceptibility and fracture pattern. J Endod 2005;31;4:283–287.
3. Sedgley CM, Messer HH. Are endodontically treated teeth more brittle? J Endod 1992;18(7);332–335.
4. Huang TJ, Schilder H, Nathanson D. Effects of moisture content and endodontic treatment on some mechanical properties of human dentin. J Endod 1992;18(5);209–215.

About the author

Dr. David Clark founded the Academy of Microscope Enhanced Dentistry and is a course director at the Newport Coast Oral Facial Institute. He lectured for Clinical Research Associates in the "Update Series." In addition, Clark authored the first comprehensive guide to enamel and dentinal cracks based on 16 power magnification, and numerous articles relating to minimally invasive dentistry, biomimetic endodontic shaping, diastema closure and advanced magnification. Clark helped pioneer the concept of "biomimetic micro-endodontics." He serves as an opinion leader for restorative dentistry and endodontics, introduced the "Clark Class II" for posterior composites and developed the Bioclear Matrix System.

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DENTISTRY

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While these systems go by many different names, the best way to describe the system is that it's a cross between a digital pan/ceph and a CAT scan machine. The most popular model right now in the United States is the i-Cat by Imaging Sciences. While I could describe the system in detail, this excerpt from an i-Cat user does the best job of explaining why they are becoming so popular:

"Compared to medical scanners, cone beam scanning is 10 times more accurate while reducing a patient's exposure to radiation by more than 95 percent. Pre-surgical implant treatment planning, preparing to remove impacted third molars, determining how sinus grafts and ridge augmentations have healed, and determining the ideal position for a single-tooth replacement are just some of the benefits of cone beam scanning technology. Because cone beam scanning permits multiple slices through the axial, sagittal and coronal views, the guesswork is removed when it is critical to determine the width of edentulous ridges, whether or not cancellous bone exists between cortical plates, the position of supernumerary and developing tooth buds, if sockets have filled with bones, if irregularities exist to the condyles, where the mandibular nerve is relative to an impacted tooth and implant sites, or to visualize the borders of a cyst or tumor. Cone beam scanning has an added benefit in that it can take the maxilla and mandible in a single scan."

Probably the biggest drawback to these systems is the initial cost: they average around $170,000 to $200,000 each, although new units from Kodak and Gendex are now below $100,000. I'm seeing many dentists group together to create imaging centers to share the costs of the machines, and these centers are sprouting up all over the country. While the cone beam may someday be the standard of care for many procedures, it will be quite some time before that happens.

Patient scheduling

Of all the duties and responsibilities of your staff, we hear more complaints about needing to fill the schedule than any other. The truth is that using the phone and paper-based systems is time-consuming, expensive and doesn't allow for much interaction from our patients. Wouldn't it be nice if there were some newer systems that could handle these chores with minimal input and time from us and, at the same time, involve the patient in the process? (You already know the answer to this!)

There are two basic types of systems out there: electronic and phone based. The electronic systems all work in the same manner: once a patient is entered into the practice management software's scheduler, it automatically generates an e-mail to the patient (you are collecting e-mail addresses, aren't you?) that he or she can click to confirm the appointment. Reminders can then be sent at intervals you designate, such as two weeks and four days before the appointment.

The companies that use these systems include DemandForce, Uappoint and Smile Reminder. Smile Reminder also has a feature where you can send text message reminders to patients on their cell phones, such as reminding them to premedicate before appointments.

The other option is to use a phone-based system like the one used by Elexity. If you've used phone systems in the past, these are nowhere near as advanced as Elexity, which uses central software to track the calls and uses the hygienist's or doctor's voice. All of these systems run a couple of hundred dollars per month, but when you think about how much time and money is typically spent on phone calls, postcards and postage, etc., they are a real bargain.

Patient activation

In the same vein, don't you find it annoying when a patient shows up for the first appointment and has not filled out the forms that the practice sent weeks ago? That can really play havoc with a 45-minute hygiene visit. That's why I love a program like Dentforms. Not only does it allow you to have the patient sign forms in the office that normally require signatures (HIPAA, informed consent, etc.), but you can also direct patients to an online site where they can fill in all of their medical and dental information. That information is then automatically sent to the practice's computer server so that the information is in your system long before the patient arrives.

Dentistry is evolving rapidly and being aware of the latest technologies will always put you one step ahead!