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TAKING THE REINS

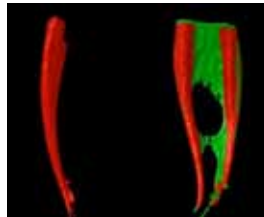
AAE names its new executive director. A look at who he is and where he comes from.

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**INSTRUMENTAL TRENDS**

Dr. Barry L. Musikant on why files break and what steps you can take to prevent it from happening.

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**TIME TO GO SHOPPING**

The exhibit hall is full of products to help you, including ones to reduce root canal prep time.

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Many ways to learn

It sometimes feels like there are as many preferred learning styles as there are endodontists, and here at the AAE16, that has never been more clear. Just flipping through the schedule for the meeting shows a broad range of speakers and great variety in program formats.

“Not everyone learns in the same way, so we’re excited to introduce new programming this year to meet the needs of all attendees,” said AAE President Terryl A. Propper. “In addition to traditional lectures, other educational sessions will feature point/counterpoint



San Francisco's famed cable cars are just blocks away from the Moscone Center.

Photo/Provided by California Travel and Tourism Commission/Shutterstock

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Dispelling myths of root canals through education

Despite state-of-the-art advancements in endodontic treatment that make root canal procedures often as straightforward as fillings, Americans still express fear of the procedure. According to a recent survey by the American Association of Endodontists (AAE), 67 percent of Americans say fear of pain most concerns them about having root canal treatment.

In an effort to help dispel these fears, the AAE recently held its 10th anniversary celebration of Root Canal Awareness Week, from March 27 to April 2. As part of the celebration, the organization released two new videos to get patients up-to-speed on the realities of modern root canal treatment.

“It’s time that patients realize the once-dreaded root canal has come a long way,” said AAE President Dr. Terryl A. Propper,

**For more information**

More information about the AAE and Root Canal Awareness Week is available online. Follow the AAE on Twitter at @savingyourteeth or search #rootcanal.

a private practicing endodontist in Nashville, Tenn. “Advancements in training, equipment, technology and anesthesia make modern root canal treatment virtually painless.”

The videos, “Root Canals Aren’t What They Used To Be” and “Get Up To Speed on Today’s Root Canal,” are available on youtube.com by searching for the titles.

Root Canal Awareness Week is a nationwide effort to encourage patients who need a root canal to see an endodontist to save their natural teeth.

In this publicity effort, AAE informs the public that endodontists have at least two years of additional training beyond dental school and are highly skilled specialists in performing root canals and diagnosing and treating tooth pain. Their mix of advanced training, techniques and equipment improve patient comfort, ease anxiety and alleviate pain, AAE emphasizes.

“Endodontists, the root canal specialists, devote their practice to root canal treatment and related procedures,” Prop-

per said. “We use technologies like microscopes, digital and 3-D imaging and ultrasonics to diagnose and treat our patients quickly, comfortably and successfully.”

AAE research shows that dentists refer an average of 43 percent of root canal patients to an endodontist, yet almost all the general dentists surveyed — 94 percent — say they have a positive or very positive perception of endodontists and the care they provide.

“Americans are taking more control of their health care, and that should include oral health,” Propper said. “Patients who need root canal treatment should consider seeing an endodontist.”

(Source: American Association of Endodontists)

AAE names Kenneth J. Widelka as the new executive director

The American Association of Endodontists' Board of Directors has selected Kenneth J. Widelka as its new executive director, effective April 19.

Widelka joins the AAE from the American Association of Diabetes Educators, where he serves as the chief operating officer. Widelka joined AADE in 2010 and also served as its chief administrative officer and chief financial officer.

"After an extensive, nationwide search, the AAE board is pleased to announce Ken as our new executive director," said AAE President Dr. Terryl A. Propper. "The board was very impressed with Ken's wide range of executive level experience; successful track record in developing and improving programming, strategic and operational expertise; and service as a strong leader and mentor for his staff.



Kenneth J. Widelka

Photo/Provided by the AAE

The board is confident that Ken has the experience and personal qualities needed to lead the AAE."

"I am honored to have been named executive director of the American Association of Endodontists, and I'm excited to work with the board of directors and oth-

er volunteers to grow and advance the mission of the AAE," said Widelka. "The AAE has a vibrant membership, and I am eager to lead the staff to help members serve their current and emerging needs."

As the AAE's executive director, Widelka also will serve as executive director for the AAE Foundation.

Prior to his role at the AADE, Widelka was associate executive director and chief financial officer of the American Bar Association. He has held corporate executive roles at Pearson PLC, McGraw-Hill and Tribune Co., focusing on strategy development, organizational optimization and team building.

Widelka is a certified association executive and certified public accountant. He received his bachelor and master's degrees from DePaul University.

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debates, talk show-style interviews, panel discussions and some shorter, more focused programs we're calling 'CE Express.'

New educational tracks at AAE16 include "Interdisciplinary Care and Derailment." The interdisciplinary care track will bring together endodontic experts and leaders in orofacial pain, otolaryngology, pharmacology and others to examine cases from different perspectives.

The derailment track — looking at the things that can go wrong each day — addresses challenges such as managing material extrusion, removing broken or separated instruments, repairing failed referring dentist relationships and dealing with staffing issues.

Beyond the educational programs, AAE16 also offers an interactive approach — more than 100 vendors offering the latest in endodontic equipment, materials and supplies are available in the exhibit hall, most of them allowing clinicians to the opportunity to see, feel and sometimes even try out the various products.

Special events at here at this year's AAE16 include the President's Breakfast; the Louis I. Grossman Ceremony, recognizing the newest diplomates of the American Board of Endodontics; and the Edgar D. Coolidge Luncheon, honoring the AAE's award winners.

Making the most of the Bay Area, tonight's Welcome Reception will feature wines and cheeses from the famed Napa Valley and Sonoma County regions, while Friday night's Celebrate San Francisco! Event will be held at the Exploratorium museum on San Francisco's Embarcadero.

"I'm so excited about this year's meeting and all of the innovative approaches we're taking to make AAE16 memorable," said Propper in a press release. "I want all of our attendees to return to their practices, schools or residencies with new enthusiasm and ideas to provide the best patient care and support the specialty."

Here at the AAE

To view the entire meeting schedule, visit www.aae.org/aae16, pick up an on-site guide or download the mobile app to your smartphone.



Meeting participants attend a live Master Clinician Series educational presentation offered by Dr. Leesa Morrow and Dr. Donald R. Nixdorf at the 2013 AAE meeting in Honolulu.

Photo/Fred Michmershuizen, Endo Tribune

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Endodontic trends that do and don't make sense

By Barry L. Musikant, DMD

With the increasing awareness that greater tapered rotary instruments can induce dentinal micro-cracks,^{1,2} which in turn can lead to vertical fractures and tooth loss over time, a growing number of endodontists are preparing canals more conservatively, with smaller apical preparations and reduced tapers along length.

Where apical preparations of a .35–.40 mm were once the norm, today those preps are being reduced to .25 mm or less, with tapers no greater than 0.04 mm/mm. The result is the preservation of tooth structure in the mesio-distal plane with the additional bonus of needing fewer instruments, lowering costs and reducing the time needed for instrumentation. It should also be stated that lesser tapered instruments are more flexible and more resistant to cyclic fatigue that, if excessive, leads to instrument separation.³

From the perspective of iatrogenic events, the implementation of conservative endodontics as defined above reduces instrument breakage and leaves a tooth less prone to vertical fracture. On the other hand, we must not forget that pulpal tissue is most often configured as a highly oval body with buccal and lingual isthmus-like extensions.

When preparing canals with greater tapered rotary NiTi instruments, these buccal and lingual extensions are left untouched and, worse, are blocked off from the irrigants by a smear layer that coats their entry points (Fig. 1). From the point of tissue removal, thinner less tapered preparations are removing less tissue and leaving a space where a smaller volume of irrigant will be applied.

Stated simply, rotary shaping produces round conical preparations. Reduce the tip size and taper of the shaping instruments and we still produce a conical preparation, only smaller. Dentin is preserved, but more pulpal tissue and the bacteria they support are left untouched.

We are left with a bit of a dilemma. Use greater tapered instruments and we will remove more tissue but increase the likelihood of producing dentinal micro-cracks⁴ while definitively weakening the remaining tooth structure and increasing our costs and the time needed for the shaping procedure. Switch to lesser-tapered preparations and the canals are not adequately cleansed particularly in the bucco-lingual plane.

What appears to be a set of choices, each of which have their strengths and weaknesses, does not give us the tools we need to attain our goals of optimum cleansing with minimal tooth removal.

Since its implementation more than 25 years ago, those who use rotary in-



Fig. 1: CT scan showing treated canals (red) and untreated isthmus (green). Photo/Provided by Barry L. Musikant, DMD, and used with permission from rootcanalanatomy.blogspot.com.

struments have learned that care must be taken to minimize the incidence of instrument separation. That learning curve includes:

1. The creation of a glide path that allows the unimpeded progress of the rotary instrument to the apex.
2. Crown-down shaping that reduces the engagement of the instrument along the full canal length.
3. Straight-line access.
4. Single usage.
5. The application of minimal apical pressure using a light pecking motion when negotiating apically.
6. Staying centered with minimal lateral brushing.
7. The possible adoption of interrupted rotations (a version of reciprocation that includes full rotations) to reduce torsional stress and cyclic fatigue.
8. The implementation of newer heat-treated alloys that reduce without eliminating instrument separation.

A learning curve that must incorporate so many prerequisites conditions a dentist using a rotary system to be cautious when shaping canals. The result is the creation of conically shaped canals, because deviating laterally from that centered approach increases the chances of instrument separation.

The fact that a good deal of tissue and bacteria exist in lateral spaces is underappreciated in the quest for procedural safety. It is also a fact that the mesio-distal periapical X-ray of a tooth fully obturated from stem to stern without any

obvious distortions is considered proof of a job well done, despite the dearth of information on the shaping and obturation done in the bucco-lingual plane.

Until we develop techniques that can remove tissue and bacteria without any instruments touching the walls of the canals and then obturating them completely, we will remain dependent on metal instruments physically shaping the canals. To resolve the present dilemma, we must primarily have an approach that is virtually immune to instrument separation.

Instruments break for two reasons: excessive torsional stress and cyclic fatigue, both resulting from varying degrees of rotation. If we limit the amplitude of motion to 30 degrees to 45 degrees, we limit the arc of motion to either a 1/12 or 1/8 of a single full rotation, a reduction so significant that neither torsional stress (produced by an instrument locking apically) nor cyclic fatigue (produced by rotations around a curve) becomes a destructive factor.

The fact that an instrument is now virtually free of breakage means the dentist no longer has to employ the precautions that were necessary when using instruments that undergo complete rotations. Straight-line access and crown down preparations are no longer required, preserving more tooth structure in the mesio-distal plane while significantly reducing the incidence of dentinal micro-cracks. Not only is more tooth structure preserved but the integrity of the re-

Here at the AAE

To learn more about tapered stainless-steel relieved reamers, stop by the Essential Dental Systems (EDS) booth, No. 823.

maining dentin is not degraded. Studies have repeatedly shown that small amplitudes of motion are far less likely to induce dentinal damage.

Of most importance, with a 30 degrees to 45 degrees arc of motion, we are now free to work our thinnest O2 tapered stainless-steel relieved reamers vigorously against the buccal and lingual extensions. These are the most appropriate instruments because they will encounter the least resistance when being worked buccally and lingually.

Highly flexible in thin dimensions, stainless-steel relieved reamers maintain a sharp cutting edge, shaving dentin away as they rapidly oscillate in the 30 degrees to 45 degrees reciprocating handpiece at 3,000 to 4,000 cycles per minute. Unlike rotary NiTi continuous or interrupted, we now have a means to shape canals that reflect their original anatomy in larger form, something that can only be done predictably because the dentist knows the instruments will stay intact.

Rotary NiTi for some has proven itself to be more efficient in shaping canals compared to the traditional hand techniques, and the idea of abandoning such an approach may bring back memories of hand fatigue and reduced rates of efficiency. It is a reasonable question to ask whether or not the implementation of 30 degrees to 45 degrees engine-driven reciprocation will impact their expectations of efficiency.

The best way to answer that is for the dentist to realize that after the first reamer is negotiated to the apex manually, all instruments after that are placed in the reciprocating handpiece oscillating at 3,000 to 4,000 cycles per minute. Short arcs of motion utilized at high frequency allow a sequence of instruments to rapidly negotiate to the apex. In fact, the entire glide path preparation, a task often taking a good deal of time prior to the use of rotary NiTi, is now done quickly and efficiently.

To better understand the innate advantages of the use of relieved reamers with short arcs of motion at high frequency, one must appreciate the fact that thin instruments can widen canals beyond their own dimensions. In the thin mesio-distal plane, there is minimal need for that, but in what is often the far wider bucco-lingual plane, a thin, rapidly oscillating reamer can extend the canal preparation several times its own size, extending the

► See TRENDS, page 6

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Requiring only two files, the F360 files use the same torque (1.8 Ncm) and speed values (250-350 rpm); doctors don't need to adjust speed or torque when changing files during the preparation sequence.

Thanks to the small taper of the files (.04), the system is suitable for almost any canal anatomy — whether straight, curved or S-shaped

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Here at the AAE

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features the GPR gutta-percha remover, which maximizes the efficient removal of gutta-percha from endodontic canals undergoing retreatment.

The specialized nickel-titanium bur is engineered with non-cutting edges, enabling gutta-percha to be softened and removed through frictional heat generated from rotation.

Supplied in packages of five, the bur is offered in sizes O25 and O30 GPR.RA.O25 and GPR.RA.O30.

G180A Gates-Glidden Reamer

Designed for tapered reaming in the straight, coronal portion of the root canal, the G180A Gates-Glidden short reamer is constructed of stainless steel.

The bur's total length is only 28 mm (compared to the standard 32-mm length), and it can be applied using the crown-down technique after the canal has been opened.

The reamer is offered in sizes O50, O70, O90, 110, 130, and 150 and is supplied in packages of six. Also available is the G180 standard-length Gates-Glidden reamer.

All of Komet USA's Gates-Glidden burs are color coded according to ISO sizes.

(Source: Komet USA)

-TRENDS, Page 4

mesio-distal preparation along the entire bucco-lingual width. The result is a prepared canal space that reflects to a much larger extent the original canal anatomy in larger form.

Another significant point is that the final canal preparation is the result of a sequence of instruments from glide path up through the final instrument. A curved canal might easily be distorted were it shaped initially with a 30/02 stainless-steel reamer, but when that same canal is shaped via a sequence of instruments, starting with an O6 tipped O2 tapered stainless-steel reamer, the pathway through the curved canal is being increasingly refined, allowing subsequent thicker and somewhat less flexible relieved reamers to faithfully follow the established pathway.

The means exist today to fully shape canals that reflect the original canal anatomy, addressing both the mesio-distal and bucco-lingual planes in a way that respects both the structural integrity of the root and the shaping instruments. The root is left stronger, and the instruments may be used multiple times with significant cost savings. The preservation of dentin combined with increased removal of pulp tissue and the bacteria it supports are consistent with safer, more effective endodontics.

The goal of this article is to inform dentists that less destructive, safer and more effective means exist to cleanse and shape canals, combining reduced loss of dentin with a greater removal of pulp tissue and bacteria.

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Academy of Oral Medicine, Alpha Omega Dental Fraternity and the American Society of Dental Aesthetics. He is also a fellow of the American College of Dentistry (FACD). He is a partner in one of the largest endodontic practices in Manhattan. Musikant's 35-plus years of practice experience have established him as one of the top authorities in endodontics. To find more information from Musikant, visit www.essentialseminars.org, email info@essentialseminars.org or call (888) 542-6376.

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Fotona launches new dental laser for hard and soft tissue

By Fotona staff

Fotona, based in the United States and Europe, launched its new ST PRO Lightwalker dental laser at the Chicago Dental Society's 151st Midwinter Meeting, held recently in Chicago. According to the company, the ST PRO is a full-featured, hard- and soft-tissue dental laser with many of the features of the award-winning Lightwalker ATS.

In a press release, the company said that at an introductory price of \$49,900, the ST PRO should be very attractive to many dentists who might be hesitating to incorporate lasers into their practices because of the cost of higher-priced and less advanced systems.

The ST PRO is an ultra fast Er:YAG dental laser capable of removing cavities without the need for shots and local anesthetic, especially for children, in most cases, according to the company.

The ST PRO also performs the patented and widely researched and acclaimed

Here at the AAE

Check out the new ST PRO Lightwalker dental laser at the Fotona booth, No. 817.

PIPS laser root canals, a wide range of atraumatic bone procedures and non-invasive, blood- and suture-free soft-tissue procedures.

According to the company, the ST PRO includes features such as:

- Powerful 12 watts of Er:YAG energy for ultra-fast cutting.
- Large, user-friendly touchscreen with a wide range of presets.
- The Optoflex delivery system, which the company calls "highly reliable, ergonomic and efficient."
- High-visibility green aiming beam.
- Built-in air supply, eliminating the need for external air connections/supplies.
- Optional Quantum Square Pulse (QSP) and SMOOTH mode for advanced clinical procedures, such as the non-invasive Nightlase snoring treatment.

About Fotona

Fotona (www.fotona.com) has sold more than 25,000 lasers around the world, with direct sales in the United States and distribution in more than 60 countries. Fotona produces award-winning lasers in dentistry, esthetics, dermatology, gynecology and other medical fields.

According to the company, Fotona has one of the most highly educated workforces in the industry, with an exceptionally high number of PhDs specializing in laser and medical technology. Strong R&D capabilities have always been a key competitive advantage of the company, resulting in many patented solutions, including the Optoflex articulated arm, QSP (quantum square pulse) and VSP (variable square pulse) technologies, Fotona SMOOTH mode, Vacuum Cell technology and many more.



The new ST PRO Lightwalker dental laser from Fotona.

Photo/Provided by PRNewsFoto/Fotona

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