Cleaning and shaping with new technology

By Kristine Colker, Managing Editor

From 2:40 to 3:40 p.m. today, Dr. Bettina Basrani will present “Cleaning and Shaping With New Technology.”

Cleaning and shaping a root canal are two inseparable concepts of endodontics. In this session, Basrani will explain how shaping facilitates the penetration of disinfecting solutions into the deepest regions of the root canal system, including those that cannot be reached by instruments.

The Revo S® is a new system and the concept of the asymmetrical cross section and adapted pitch is of particular interest. In this lecture, the guidelines for use of these instruments will be described.

Your DTSC Symposia session is “Cleaning and Shaping with New Technology.” Please tell us a little about what participants can hope to get out of it.

Many nickel titanium systems are available; these instruments must only be considered as a tool and not as the sole factor responsible for success or failure. In addition to the instrument itself, it is the way it is used by practitioners that will influence the result of the endodontic treatment in the short and longer term. A new concept in shaping the canal system and cleaning it will be addressed.

Could you go into a little more detail about the Revo S? What are some of the characteristics that you like about it and does it offer any advantages over other instruments you’ve used?

Launched in 2008, the Revo-S is a leading system in the European market, and the concept of the "asymmetrical cross section" is of particular interest in terms of cleaning.

This sequence with only three Ni-Ti instruments simplifies initial endodontic treatment and optimizes cleaning. The asymmetrical cross-section of the Revo S facilitates penetration by a "snake-like" movement and offers root canal shaping that is adapted to the biological and ergonomic imperatives.

This sequence has a cutting/debris elimination/cleaning cycle that optimizes root canal cleaning by improving the upward removal of the generated dentine debris. It also offers the choice of an apical finishing (AS30, AS40) that is most closely adapted to the anatomical and ecological criteria of the canal.

This system avoids the grooves to be obstructed and thus avoids the extrusion of debris beyond the instrument tip and apical foramen. Finally it reduces the stress on the instrument thanks to the rippling movement of the file along the canal walls; no screwing effect, more flexibility, and better ability to negotiate curves. In my opinion, this is one of the best systems I have ever used.

Would you say your presentation is geared toward a specific audience or is it more general? Is there anything attendees need to know about ahead of time in order to understand it?

The lecture is for the general dentists, the endodontists and the endo residents. Every dentist that wants to know about the new technology of root canal instruments is welcome to the lecture. For sure, the audience will appreciate to know how Revo-S is easy to use and make their daily practice easier and faster.

Would you say that the Revo S has changed how you practice in any way? Revo-S may change the way that general practitioners and endodontists work because with it, only three instruments are used to prepare the canal: it is composed of two instruments for apical penetration (SC1 and SC2), and a recapitulating and cleaning instrument (SU). The area of the apical third is thus shaped to a .06 taper, and an apical diameter of 25/100, which are optimal for debridement and disinfection.

As a conclusion, the development of Revo-S, based on an asymmetry of the blades, has allowed to perform a simplified instrument sequence in order to answer both the biological (efficient shaping and cleaning) and ergonomic (simplification and safety) imperatives which are crucial to perform initial endodontic treatments.

Your session is sponsored by Micro Mega. How did you begin working with the company and what is it that you like about its products and services?

MICRO-MEGA is a very serious company, and it is a pleasure to work with them. The products that they have are great. Their range of products is wide and includes endodontics, obturation, handpieces, contra-angles and hygiene products.

MICRO-MEGA is a 100-year-old company, and its goal is to supply clinicians with instruments but, more importantly, provide them with high-performance operational methods and giving predictable clinical results.

With its merger with Scican, the Canadian company specializing in infection control devices, the group is one of the 10 largest dental equipment manufacturers in the world of innovative products for the dental and medical markets.

If there is one thing you could say to attendees to encourage them to attend your presentation, what would it be?

The presentation will have a clinical emphasis and a clinical application, but I will try to show the relevant references to do an evidence-based lecture.

Is there anything else you would like to add?

Come and see my lecture! You will be surprised!
Paradigm shifts in implant dentistry

By Kristine Colker, Managing Editor

From 4 to 5 p.m. today, Dwayne Karateew, DDS, will present, “Contemporary Concepts in Tooth Replacement: Paradigm Shift.”

In the session, Karateew will explain how the principle focus of implant dentistry has changed significantly from the era of anatomically driven implant placement to the current practice of restoration-driven implant placement.

Your DTSC Symposia session is “Contemporary Concepts in Tooth Replacement: Paradigm Shift.” Please tell us a little about what participants can hope to get out of it. There have been approximately three major paradigm shifts in implant dentistry during the past 30 years, all of which continue to improve not only osseointegration but also implant esthetics.

I will review these changes, drawing attention to what is often missed or overlooked and then, capitalizing on these fundamental shifts in thought and implant design, I focus on what is possible clinically. Demonstrating how to achieve desirable results and also the extent of predictable esthetics, which is always evasive.

Could you go into a little more detail about how today’s restorative-driven implant placement is different from anatomically driven implant placement of the past? Why is this important for clinicians to understand? In the past, implant placement was anatomically driven, meaning that the implant was placed by the surgeon, where the bone was present. It was then placed in the restorative dentist’s hand to deliver the best restoration possible, which often was not optimal.

Today, with the CBCT, CAD/CAM surgical guides, treatment planning software and other tools, we can better understand where the implant is required to be placed. It is the restorative doctor who is driving the treatment planning. The role of the surgeon is simply to place the implant in exactly the correct position spatially and to alter the bone and soft-tissue profile to facilitate this placement.

Would you say your presentation is geared toward a specific audience or is it more general? Is there anything attendees need to know about ahead of time in order to understand it? From feedback I regularly receive, this program is geared to all. Certainly generalists can gain information from the content, but specialists have also said there is excellent information in the content. I try not to differentiate between specialist and generalist as there are exceptional practitioners from both categories.

How did you get involved in implant dentistry? How long have you been practicing? I have been involved in implant dentistry right from dental school (Columbia University DDS) where I was able to watch implants being placed.

At Penn where I completed my certificates in perio and fixed prosth, we, of course, placed a large number of implants. Upon graduation from that program, I entered private practice and my focus is on implant-based dentistry.

I have been the director of implant surgery in PG periodontics at the University of British Columbia and have taught PG prosth at the University of Washington. I now present my original material nationally and internationally.

I have been practicing now for 18 years... wow! Time flies. Am I really that old?

If there is one thing you could say to attendees to encourage them to attend your presentation, what would it be? You snooze, you lose! There are some real gems here in the program. When I see the same presenters time and time again, I always learn something new... this is new, fresh and relevant material for the modern practicing dentist.

Is there anything else you would like to add? Have fun in New York City!

About the speaker

Dr. Dwayne Karateew maintains a high-end, boutique-style, solo practice in Vancouver, concentrating on implant-assisted dental rehabilitation and esthetics. His dental education began in New York City at Columbia University, where he completed his DDS degree, which was followed with a year-long AEGD at the Columbia-Presbyterian Medical Center, also in New York. Karateew then attended the University of Pennsylvania in Philadelphia, where he obtained diplomas in both periodontics and fixed prosthodontics.
Diode lasers: the soft-tissue handpiece

By Fay Goldstep, DDS, FACD, FADFE and George Freedman DDS, FAACD, FACD

While dental lasers have been commercially available for several decades, and their popularity among patients is unparalleled, the dental profession has taken to this treatment modality rather slowly. Lasers have been thoroughly documented in the dental literature. They are an exciting technology, widely used in medicine, kind to tissues and excellent for healing.

So why have they not been more widely embraced by the practicing dentist?

There is a wide perception in the profession that somehow the dental laser is not useful, is too complicated and is too expensive. These parameters have changed forever with the arrival of the diode laser onto the dental scene.

There is now a convergence of documented scientific evidence, ease of use and greater affordability that makes the diode laser a “must have” for every dental practice.

Diode lasers: the science in brief

LASER is an acronym for Light Amplification by Stimulated Emission of Radiation. Lasers are commonly named for the substance which is stimulated to produce the coherent light beam.

In the diode laser, this substance is a semiconductor (a class of materials which are the foundation of modern electronics including computers, telephones and radios). This innovative technology has produced a laser that is compact and far lower in cost than earlier versions.

Much of the research has focused on the 810 nm diode laser. This wavelength is ideally suited for soft-tissue procedures because it is highly absorbed by haemoglobin and melanin.

This gives the diode laser the ability to precisely cut, coagulate, ablate or vaporize the target soft tissue.

Treatment with the 810 nm diode laser (Picasso Diode Laser, AMD LASERS) has been shown to have a significant long-term bactericidal effect in periodontal pockets (Fig. 1).

A. actinomyctetemcomitans, an invasive pathogen associated with the development of periodontal disease and generally quite difficult to eliminate, responds well to laser treatment. Scaling and root planing outcomes are enhanced when diode laser therapy is added to the dental armamentarium.

The patient is typically more comfortable during and after treatment, and gingival healing is faster and more stable.

Diode laser: ease of use

Early adopter dentists thrive on new technologies. They enjoy the challenges that come with being the first to use a product.

Most dentists, however, are not early adopters. During the past two decades, lasers have intimidated mainstream dentists with their large footprint, lack of portability, their high maintenance profile, confusion of operating tips and complex procedural settings.

Common questions: When do I use which tip? What setting works for which procedure? Why do I need a laser when I have been managing well without one?

Enter the diode laser. It is compact. It can easily be moved from one treatment room to another. It is self-contained, and does not have to be hooked up to water or air lines. It has one simple fiberoptic cable that can be utilized as a reusable operating tip.

The units come with several presets, although after a very short time, the operator becomes so comfortable they are rarely needed.

The power and pulse settings are quickly adjusted to suit the particular patient and procedure.

One of the authors is a dentist who does not thrive on the challenge of brand new high-tech, high-stress technology. In fact, having tried many lasers in the past that promised to be user-friendly, they were found to be anything but.

The 810 nm diode laser was a totally different experience; after a brief in-office demonstration, the laser handpiece felt comfortable enough to perform some simple clinical procedures.

Further online training and lecture courses enhanced both clinical comfort level and competency.

Diode laser: affordability

Laser technology has always come with a high price tag.

Manufacturing costs are high and cutting-edge technology commands steep pricing.

Diode lasers are less expensive to produce. Breakthrough pricing for this technology has now reached less than $5,000.

At this level, the diode laser becomes eminently affordable for the average practicing dentist.
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A new era for air abrasion

By Marc Gottlieb, DDS

Air abrasion is a time-tested method for conservative preparation of small lesions in teeth. As well as being a very minimally invasive technique for cavity preparation, it has been shown to increase adhesion strength to enamel, dentin, metal, glass and ceramic substrates.

Early units were very large and very expensive; the size was 3 by 1.5 (footprint) feet, which made mobility in the operatory difficult. Another negative was the “messiness” of non-captured aluminum oxide particles being dispersed around the operatory. Large, obtrusive auxiliary vacuum units were recommended but not frequently used.

Enter the Prep Start H2O with its “water-shrouded” particle beam. The powder nozzle being separated from the annular ring of water does not create a “slurry” but rather a “shower curtain” that contains the ricocheting particles after their impact. The result is the efficiency of dry particle cutting with the benefit of water capture ensuring no airborne dust problems.

Rubber dams are recommended with the new units as the dry particle “trampoline” effect is not encountered with the Danville “water-shrouded” unit. Another benefit of a completely segregated water supply is that water can be heated in a microwave oven prior to use thereby yielding 115-degree water. This minimizes or eliminates the use of anesthetic in most cases.

Fig. 1: Shows recurrent caries on tooth #18, note the old delaminating sealant. (Photos/Provided by Dr. Marc Gottlieb)

Fig. 2: Shows the Prep Start H2O cutting old sealant and new caries out.

Fig. 3: Shows caries detector in use.

Fig. 4: Shows caries detector revealing further prep needed.

Fig. 5: Shows complete removal of caries and old sealant.

Fig. 6: Shows composite material being light cured.

Fig. 7: Shows the finished restoration.

Fig. 8: Shows a ‘clear’ field without powder contamination as was the case in the prior non water shrouded equipment. This procedure was performed without anesthetic.

See Dr. Gottlieb

Dr. Marc Gottlieb will present “The Newest Developments in the Art and Science of Air Abrasion” from 12:50-1:10 p.m. today. Air abrasion has its origin in the 1950s. The years since have seen it come and go in popularity as a tooth cutting modality but never in surface conditioning for adhesion. The advent of the water shrouded particle beam has again ignited interest in techniques to create minimally invasive restorations that are both biomimetic and strong. Burs, whether carbide or diamond, can and do cause crazing and cracking of enamel and dentin; particle ablation does not. The last obstacle to overcome was the dust — that has been accomplished with the “water shroud.”

About the speaker

Dr. Marc Gottlieb was born and raised on Long Island, N.Y., and attended Union College in Schenectady, N.Y. as well as the University of Buffalo School of Dentistry. While at Buffalo, he received many academic scholarships, awards and fellowships. After graduation from dental school, Gottlieb went on to a two year post-doctoral residency program at Long Island Jewish Medical Center. This unique opportunity provided advanced training in anesthesia and all the specialties of dentistry. Gottlieb is currently on staff at Stony Brook University Hospital, maintains a full-time private practice, lectures all across the United States and has authored more than a dozen dental articles.

Fig. 8: Shows a ‘clear’ field without powder contamination as was the case in the prior non water shrouded equipment. This procedure was performed without anesthetic.
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Introduction to CBCT, especially as it pertains to prevention of failures in oral implantology

By Dr. Dov M. Almog

Intraoral and panoramic imaging are not three-dimensional and clinicians can obtain only vague measurements from them due to magnification changes as a result of positioning. They are not efficient for viewing certain pathologies and, because of the limitations, cone-beam computed tomography (CBCT), 3-D imaging technologies started to evolve. CBCT 3-D captures a volume of data and, through a reconstruction process, it delivers images that do not contain magnification, distortion and/or overlap of anatomy.

In recent years, CBCT 3-D started to make big inroads into every discipline in our dental profession, expanding the horizons of clinical dental practice by adding a third dimension to craniofacial treatment planning.

CBCT uses advanced 3-D technology to provide the most complete anatomical information on a patient’s mouth, face and jaws areas, leading to enhanced treatment planning and predictable treatment outcomes. According to dental practitioners using this technology, it makes us more efficient.

Essentially, this was a paradigm shift where measurements and anatomical relationships are precise and provide practitioners clear insight into the patient’s anatomical relationships.

As far as oral implantology, according to Kalorama Information (www.kaloramainsformation.com/pub/1099235.html), it is estimated that growth in implant-based dental reconstruction products will outstrip all other areas in dentistry.

The traditional method of replacing a tooth with a dental bridge has been shown to be problematic, and more permanent solutions are badly needed.

With a rapidly aging population trend in the developed world and the resulting enormous unmet need for teeth replacement, a large number of companies see the opportunity to move into these sophisticated dental techniques.

And indeed, as some have predicted, the growth in dental implant-based procedures increased considerably in recent years.

As a result, there has been a rapid increase in the number of practitioners involved in implant placement, including specialists and generalists, with different levels of expertise. At the same time, we are witnessing a diversity of unusual complications associated with these procedures. A literature and web search revealed several published reports of such complications which include: implant fractures (Fig. 1); impingement on adjacent teeth (Fig. 2); perforating the lingual undercut (Fig. 3); sinus perforations (Fig. 4); and displaced implants into the maxillary sinus (Fig. 5), to name a few.

The clinical management associated with some of these complications is difficult at times and considered very invasive.

Therefore, while the quantitative relationship between successful outcomes in dental implant treatment and CBCT-based dental imaging is unknown and awaits discovery through large prospective clinical trials, I strongly believe that using CBCT and 3-D-based dental imaging is becoming a reliable procedure from a precautionary standpoint based on a series of recent preliminary clinical studies and case reports.

The author strongly believes that by taking a CBCT, 3D-based study prior to placing dental implants, many of the above mentioned complications can be circumvented.

Fig. 1: Implant fracture. (Photos/Provided by Dr. Dov M. Almog)

Fig. 2: Impingement on adjacent tooth.

Fig. 3: Perforating the lingual undercut.

Fig. 4: Left sinus perforation.

Fig. 5: Displaced implants into the maxillary sinus.

About the speaker

Dr. Dov Almog is a prosthodontist representing more than 30 years of diversified professional experience in clinical, academic and research environments. His publications include articles on cone beam CT, dental implants, carotid artery calcifications and practice management, to name a few. In 2003, in acknowledgment for his research on incidental findings of carotid artery calcifications on panoramic radiographs, Almog received the Arthur H. Wuehrmann Award by the American Academy of Oral & Maxillofacial Radiology. Currently, Almog is serving as the chief of the dental service for the U.S. Department of Veterans Affairs at the VA New Jersey Health Care System. His past professional career appointments include associate director of the University of Rochester Eastman Dental Center and associate professor in the division of prosthodontics. He may be contacted at Dov.Almog@va.gov.
Continuing education? Yes, please!

By Robin Goodman, Group Editor

On the second day of the Greater New York Dental Meeting (GNYDM), there were indeed just as many opportunities for continuing education as there were on the first day.

In order to choose one, it is just a matter of what suits your style of learning, of course.

With workshops, luncheon learning, seminars, specialty programs and symposia to choose from, the real problem is finding the time to fit everything in that you would like to take advantage of.

With not one but two Live Dentistry arenas to choose from, these learning locations continue to be a big draw for attendees. Every seat is a good one thanks to the multiple large screen TVs scattered throughout the seating area, as well as the huge screens at the front on either side of the stage.

On Monday morning, while Dr. Stephen J. Gordon worked on a live patient, Dr. Garry Bey explained “The Endo/Restorative Continuum: Modern Techniques and Tools for the General Dentist” that Gordon was demonstrating in the Live Dentistry Arena No. 2.

The glass classrooms Monday were also well-attended and offered a wealth of variety from speakers such as Judy Bendit, RDH, who spoke about “Let’s Get to the Heart of Ultrasonics,” to Dr. Zev Schulhof in the Botox/Dysport workshop on Monday morning. (Photo/Robin Goodman, Dental Tribune)

Dr. Gregori Kurtzman spoke at the DTSC Symposia about “Incorporating New Advances in Dental Materials and Techniques into Your Restorative Practice” on Monday morning.

Over at the DTSC Symposia on Monday, Dr. Gregori Kurtzman spoke on the topic of “Incorporating New Advances in Dental Materials and Techniques into Your Restorative Practice” while Noel Brandon-Kelsch spoke about “Eco-Friendly Infection Control: Understanding the Balance.” Check the program for the complete Wednesday schedules for each educational venue.

Attendees practice their skills in the glass classroom ‘Implant Esthetics Workshop’ with Dr. Frank L. Higginbottom instructing.

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