Three-dimensional diagnostic vision in dental radiography is making waves in dentistry around the world. With multiple indications, we lack clarity with regard to proper indications and guidelines for use of cone-beam computed tomography (CBCT) imaging for dental diagnostics and therapeutic treatment. My journey with CBCT technology began four years ago. I searched for a comprehensive solution to improve patient care and outcomes.

By Neal Patel, DDS

Using Sirona’s Galileos-CEREC Integration (GCI) Software, the clinician can identify the restorative requirements virtually, including emergence profile, depth of restorative interface and proper identification of restorative material thickness around the long axis of the planned implant and abutment. The GCI workflow includes the ability to generate sICAT surgical guides for complete guided osteotomy and implant placement. Photos/Provided by Sirona

Here in Toronto

Visit Sirona in booth No. 903.
New tools on horizon

Sirona is actively working in research and development to add revolution-ary tools onto its 3-D platform. One exciting module is the combination of 3-D surface imaging and 3-D radio-graphic planning. The integration of CEREC CAD/CAM design with Galileos CBCT imaging. The digital integration of these technology platforms enables prosthetically focused implant placement using virtual prosthetic plans generated by CEREC CAD.

This new technique offers the ability to comprehensively plan optimum implant prosthetic and surgical outcomes during the diagnostic and planning phases of the patient’s treatment.

Integration software enables clinician to work virtually

Using Galileos-CEREC Integration (GCI) Software, the clinician can identify the restorative requirements virtually, including emergence profile, depth of restorative interface and proper identification of restorative material thickness around the long axis of a planned implant and abutment.

The GCI workflow includes the ability to generate siCAT surgical guides for complete guided osteotomy and implant placement. According to studies by Dreiseidler et al., the accuracy of implant placement using siCAT guides has been found to be within 500 microns of planned placement.

Smaller, inherent mean-deviation rates at apical end and crestal

The siCAT surgical guide system’s inherent mean deviation rates for the drilled pilot osteotomies are determined to be smaller than 500 μm even at the apical end and within ±18-degree angular deviation. Crestal deviations, in general, are significant-ly lower than the apical deviations.

The release of InLab Abutment enables complete control of final abutment design and fabrication. The integration of multiple technologies by Sirona enables complete control over dental treatment.

Chairside zirconia fix saves time and money

Here in Toronto

Learn all about VOCO and Cimara Zircon and other VOCO products in the VOCO Canada booth (No. 644). You can contact VOCO Canada at (888) 847-0232 or visit the website www.voco.com. You can learn about earning free C.E. credit at www.vocolearning.com.

German manufacturer VOCO, with Cimara Zircon, is introducing a new complete chairside zirconia repair system to restore fractures in zirconium dioxide veneers and crowns in a few simple steps.

The system saves time because there is no need for removal of the old restoration, impression taking, making the provisional and requiring a second appoint-ment. It saves money because there are no lab bills.

The kit includes: special zirconia grinding burs, a primer that is specifically de veloped to bond to zirconium dioxide, an adhesive that bonds to all light-, dual- or self-cured composites, and GrandioSO nano hybrid composite for the final es-thetics.

The primer/adhesive system is also available as a separate item and can be used to increase the bond strength of new zirconium dioxide restorations when using resin cement.

The repair with Cimara Zircon creates a permanent bond between zirconium dioxide ceramic and composite.

The kit, specially designed for zirconia repair, includes all the matching ma-terials and results in much higher shear bond strength values than other repair systems that are designed only for traditional ceramic repair.

(Source: VOCO)
Dental Savings Club has a wide variety of dental instruments and other products at great savings, thanks to a unique web-based automated ordering system that minimizes expenses and passes savings to customers.

**WOlf handpieces**

Despite the fear it might invoke in patients, the conventional drill remains one of the most important instruments in a dental practice. Although maintaining and repairing these vital instruments can be pricey, such preservation is necessary because of frequent usage and the need for steam autoclaving after each use. Dental Savings Club is already known for great savings on KUT carbide and diamond rotary instruments, Kopy impression material and Hugs and Kisses hygiene instruments and whitening products.

The WOlf handpieces line builds on this reputation for cost efficiency. These lightweight handpieces are available for most systems (KaVo, NSK, W&H, Midwest, Star and 4-hole systems). They are well-balanced and include swivel capability (although couplers are not included), push-button chucks, fiber optics with LED beams (for shadow-free visibility) and a triple-port water spray. WOlf handpieces are known for their low maintenance and repair costs. Their power output is at 18 watts, and the handpiece spins at 400,000 rpm. Best of all, you can purchase a new WOlf handpiece for far less than it costs to repair many name-brand handpieces.

**KOPY impression material**

The name says it all: It implies this material will copy your preparations and margins exactly as they are — and it does. This material is manufactured in the United States and sold by a company based in Canada. Various setting times and viscosities are offered in the Kopy line. For example, for a full-arch impression, this vinyl polysiloxane (VPS) material has 4.5-minute setting time (2.5-minute working time) for the monophase (medium body) as well as both the heavy body and light body materials (wash) so it will accommodate any impression technique. For single crowns there is a similar variety of viscosities, and the setting time is listed as a fast set of just 2.5 minutes. Color differentiation is good, and it pours nicely. To round out the product line there is a bite registration material that sets in just 50 seconds; and there is an alginate replacement material cleverly named “Algn8” that has a working time of 90 seconds and sets in 2.5 minutes. It is competitively priced for replacing conventional alginate. Alginate substitute advantages include: There is no immediate pour needed; it remains stable for weeks; and it can be poured multiple times (up to five times per the manufacturer).

Currently, the product is available in only 50-ml cartridges, but bulk cartridges should be available soon. For those who still use putty, Kopy also has a nice quality putty available in tubs for mixing by hand.

The Dental Savings Club sums up its high-tech, automated business model as: “More products. Less money.”

(Source: Dental Savings Club)
Shofu will be demonstrating its revolutionary product BEAUTIFIL Flow Plus during the Ontario Dental Association Annual Spring Meeting at booth No. 1127 this year. Newly approved in Canada, this radiopaque injectable hybrid restorative combines mechanical properties that rival leading hybrids, with the superior adaptation that can be achieved only with a flowable delivery. Approved for all indications (Class I-V), this new concept avails new clinical techniques that promise to revolutionize how restorations are performed, while at the same time, provide a host of benefits and advantages over traditional hybrid layering techniques.

All-in-one base, liner and restorative

Traditional methods of filling and packing hybrids can be time consuming, presenting technique-sensitive issues that may result in post-op sensitivity and/or failure of the restoration. With BEAUTIFIL Flow Plus, material can be syringe-delivered where needed and cured in two-millimeter increments all the way up to the occlusal surface. See Figure 2 and Figure 3, Class I restoration, before and after. Using a single material not only simplifies the steps to perform restorations, it also reduces inventory needs and helps facilitate both setup and clean-up — making for a more productive office.

Flowable adaptation with the strength of a hybrid

The flowable consistency of BEAUTIFIL Flow Plus provides superior adaptation to tooth structure when compared with hybrids. Because the material is flowed into the preparation, rather than being packed as with hybrids, dentists can achieve a tight marginal seal with minimal instrumentation. This helps reduce the occurrence of voids inherent in traditional hybrid packing techniques. Unlike other flowables on the market, BEAUTIFIL Flow Plus is approved for all indications, making it perfectly suited for those difficult to reach Class IIs.

In addition to superior adaptation, BEAUTIFIL Flow Plus was specifically designed to stand up to the rigors of the occlusal surface and marginal ridge. High filler content and unique chemical properties ensure that clinicians have all of the material strength found in leading hybrids. Internal studies confirm that compressive strength, flexural strength, toothbrush wear and other mechanical properties are clinically equivalent to leading hybrids on the market. Using this new approach, dentists can now achieve better adaptation, with a stronger material, in fewer and less complicated steps.

It just stays put

One of the many distinguishing features of BEAUTIFIL Flow Plus is that it stays where you put it. Older-generation flowables tend to spill out of the prep, BEAUTIFIL Flow Plus provides precision stacking capabilities with no slump. This is particularly important when working at awkward angles or with fidgety patients. Two distinct viscosities add to dentists’ treatment options. See Fig. 4, F00/F03 material. “F00” Zero Flow (0.0 mm of flow held vertically for one minute) is ideal for stacking, especially in the marginal ridge. “F03” Low Flow (3 mm of flow held vertically for one minute) handles more like a traditional base or liner. That said, the mechanical properties for both viscosities are similar and can be used interchangeably. Both F00 and F03 display self-leveling characteristics that make polishing easier than ever.

Clinically proven benefits

Shofu’s proprietary GLOMER technology utilizes “Surface Pre-Reacted Glass” (S-PRG) filler, providing a wealth of benefits for high-caries-index patients. Simply put, S-PRG filler is composed of a glass core with a surface-modified layer that protects the durability and aesthetics of the glass from moisture, while still allowing beneficial ions to travel freely between the S-PRG filler and the oral environment. Many competitive restoratives release fluoride initially, but deplete their charge within a matter of weeks. With S-PRG technology, fluoridated products, such as toothpaste and mouthwash, recharge the filler material, providing sustained preventative benefits over the life of the restoration.

Numerous independent clinical studies show S-PRG fillers to display biomimetic properties that help protect the restoration and surrounding tooth structure from harmful bacteria. Studies on BEAUTIFIL Flow Plus’s sister product, BEAUTIFIL II, a hybrid restorative, highlight these results. As published in JADA, a University of Florida study found that restorations containing S-PRG filler showed no failures, no secondary caries and no post-op sensitivity over an eight-year period. Because the material is flowed into the preparation, rather than being packed as with hybrids, dentists can achieve a tight marginal seal with minimal instrumentation. This helps reduce the occurrence of voids inherent in traditional hybrid packing techniques. Unlike other flowables on the market, BEAUTIFIL Flow Plus is approved for all indications, making it perfectly suited for those difficult to reach Class IIs.

A 13-year recall of these patients is currently under way.

Quality and durability

For decades, Shofu’s “Brownies,” “Greenie” and other polishes have been synonymous with quality and durability in dentistry. While many companies would be complacent as the “go-to” polishing company, Shofu has been on a mission to change dentistry for the better with innovative chemical restoratives such as BEAUTIFIL Flow Plus. Exceptional strength, handling and unique bioactive filler technology make it a product worth seeing for yourself.

**Fig. 1:** Newly approved in Canada, BEAUTIFIL Flow Plus radiopaque, an injectable hybrid restorative, combines mechanical properties that rival leading hybrids. Photos/Provided by Shofu

**Fig. 2:** Figs. 2, 3: Before (Fig. 2) and after (Fig. 3) Class I restoration shows BEAUTIFIL Flow Plus can be syringe-delivered where needed and cured in two-millimeter increments all the way up to the occlusal surface.

**Fig. 3:**

**Fig. 4:** “F00” Zero Flow (0.0 mm of flow held vertically for one minute), left, is ideal for stacking, especially in the marginal ridge. “F03” Low Flow (3 mm of flow held vertically for one minute), right, handles more like a traditional base or liner.

**Fig. 5:** Radiopacity of F00 and F03.
Key lessons learned in the training trenches

Hands On Training Institute keeps improving ‘sweet spot’

By Ken Hebel, BSc, DDS, MS, Certified Prosthodontist

If asked “What’s your key lesson learned after teaching and practicing implant and restorative dentistry those past 25 years,” my answer is “Find the sweet spot in course content and delivery that gives dentists the confidence to go back to their offices and immediately implement what they learned.”

All the training in the world does dentists no good if they can’t go back to their practices and immediately apply what they’ve learned to improve patient care and grow their practice. The obstacles to effective application are usually:

1. A lack of confidence in their ability to apply what they were taught, caused by too much confusion about what they learned.
2. The inability to recall what they were taught because of how the information was delivered to them.
3. Or, the information was more theoretical than clinical.

At Hands On Training Institute, we knew we hit the sweet spot when more than 95 percent of our graduates were implementing implant dentistry in their practice almost as soon as they got their suitcases unpacked. Some faster than that. How did we build this kind of confidence and ability? Simply put, Dr. Reena Gajjar and I continuously evolved our training from old-school techniques to embrace theoretical than clinical.

To clarify, courses, even if taught by multiple instructors, must carry the same concept and ideas throughout in order to be clearly understood. Like a child stacking blocks, each lesson must build upon the prior lesson for dentists to understand the message and see a clear path toward the goal. If a student receives a disjointed, disconnected sequence of lessons or modules, confusion results.

Using our key observations, we evolved past PowerPoint decks toward using high-quality graphics. We wanted to put the best graphics out there because people learn better with relevant images. We began using black and white then color images. We produced high quality, live surgical videos with narration and animations. We used advanced software and created custom animations, thus using a combination of methods to deliver the information in a more understandable way.

At a major meeting in Liverpool, England, I was invited to lecture about patient education marketing. I introduced the premise that if a patient isn’t educated about a procedure and doesn’t know what’s going on, can a dentist expect that patient to buy into a procedure? To showcase my point, I covered the video portion of my presentation so that only the narration could be heard. Later, I unmasked the video animation. The difference between the low-value learning (narration only) and the high-value learning (adding video) had tremendous impact on the audience. Animations sit in a room subjected to little visual stimulation have the same low-value learning experience, which is why we keep stepping up our content delivery. And we noticed something.

What we noticed, after increasing multimedia content delivery to include a four-volume manual set with colored images and captions to give the complete flow of information for the course, was that almost all the students were scribbling less and paying attention more! We received feedback that students could actually listen and not take notes. Taking notes had distracted them from the content, and now they were confident they could reference the manuals later if needed.

And so we observed and evolved once more. Our newest innovation, MyDentalPad, which we introduced at the Midwinter Meeting in Chicago earlier this year, is also featured in our exhibit hall booth for the Ontario Dental Association Annual Spring Meeting (booth No. 324).

MyDentalPad is a fully loaded digital tablet that enables dentists and their staff to easily carry 11 days of implant training material, to have available when they need it.

Here in Toronto Learn all about the Hands On Training Institute’s unique and proven training setting in implant dentistry at booth No. 324. You can contact them at (888) 806-4442, or visit handsontraining.com.

To deliver high-quality, live surgical videos with narration and animations, we used advanced software and created custom animations, thus using a combination of methods to deliver the information in a more understandable way.

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