Clinical benefits of the Inclusive Tooth Replacement Solution

By Darrin W. Wiederhold, DMD, MS, and Bradley C. Bockhorst, DMD

A hallmark of the most successful modern clinicians is the ability to strike a balance between a daily load of 12 to 16 patients and maintaining the same high standard of care. No easy task when it comes to implant cases.

Currently, the manufacturer is responsible for the components, the laboratory for the restoration — after receiving the impressions. Restoratively, that’s like erecting a house on an existing foundation, limiting the builder. Proper esthetics requires soft-tissue contouring that begins at implant placement, making stock components less than ideal.

With the new Inclusive® Tooth Replacement Solution from Glidewell Laboratories, custom-designed temporary components allow for immediate post-extraction provisionalization specific to each patient, and a matching custom impression coping communicating the final gingival architecture to the laboratory. Add the implant, surgical drills, prosthetic guide, final custom abutment and final BruxZir® Solid Zirconia restoration (Glidewell), and the clinician receives all the components necessary to place, visualize and restore the implant.

The Inclusive Tooth Replacement Solution supports a streamlined workflow that ensures predictability and long-term success. Armed with the endgame in mind and the tools and road map to get there, experienced and novice clinicians can place and restore dental implants with more confidence than before.

Implant treatment workflow
- Consultation and data collection
- Day of surgery protocol
- Healing phase
- Restorative phase: final impressions
- Delivery of final prosthesis

Consultation and data collection
For single-tooth replacement or full-mouth rehabilitation, comprehensive treatment planning is paramount. You’ll need:
- Full-arch upper/lower impressions (PVS)
- Bite registration
- Full-mouth radiographs (panoramic and CBCT scan, as needed. Note: If you do not have a CBCT scanner, refer patient to an imaging center)
- Shade match of existing dentition
- Preoperative photos

Once you’ve selected a diameter and length of implant, forward the diagnostic materials (impressions, models, bite registration, shade, implant size) to Glidewell for fabrication of the custom components. The laboratory will pour and articulate the models and assemble the components, delivered to you in an all-inclusive box (Fig. 1):
- Prosthetic guide (Fig. 2a)
- Custom temporary abutment (Fig. 2a)
- BioTemp® provisional crown (Glidewell) (Fig. 2a)
- Custom healing abutment (Fig. 2a)
- Custom impression coping (Fig. 2a)
- Surgical drills (Fig. 2b)
- Inclusive Tapered Implant (Glidewell) (Fig. 2b)
- BioTemps® provisional crown (Glidewell) (Fig. 2a)
- Custom healing abutment (Fig. 2a)
- Custom impression coping (Fig. 2a)
- Surgical drills (Fig. 2b)
- Inclusive Tapered Implant (Glidewell) (Fig. 2b)

Day of surgery protocol
Place the box contents alongside your usual surgical armamentarium. Confirm the prosthetic guide fits snugly around the teeth. Visually confirm the proposed location of the implant osteotomy correlates with your planned location.

After placing the implant, decide based on the level of primary stability whether to place the custom healing abutment or the custom temporary abutment and accompanying BioTemp crown. Either option will begin sculpting the soft-tissue architecture around the implant to develop the future emergence profile.

Here at the AGD
For more information about the Inclusive Tooth Replacement Solution, stop by the Glidewell Laboratories booth, Nos. 527/529.

If there is adequate attached tissue, use a tissue punch to remove the soft tissue over the osteotomy site; otherwise, reflect a flap. Note that the margin of the custom temporary abutment is set at approximately 2 mm.

Depending on the thickness of the soft tissue, the abutment can be adjusted and BioTemp crown relined. The custom healing abutment or BioTemp crown must be 1 mm to 1.5 mm out of occlusion to avoid occlusal stress.

Store custom impression coping with patient chart for the restorative phase.

Healing phase
Schedule monthly follow-up appointments to ensure osseointegration is progressing and to adjust the provisional restoration.

Restorative phase: final impressions
Upon successful osseointegration, the restorative phase begins. Contours of the custom impression coping match those of the custom healing abutment or custom temporary abutment, so it’s simple to remove the custom abutment, seat the impression coping and take an accurate full-arch final impression using a closed-tray or open-tray.

Complete a simple prescription form included with the original box; select your final custom abutment and final shade for your BruxZir or IPS e.max® (Ivoclar Vivadent, Amherst, N.Y.) restorations, and simply forward these items to Glidewell. There are no additional laboratory fees.

Delivery of final prosthesis
On the day of delivery, remove the custom temporary abutment and clean all debris from inside and around the implant. Try in the final Inclusive® Custom Abutment (Glidewell) and BruxZir or IPS e.max crown (Fig. 3). Check the contours, contacts and occlusion and adjust as needed.

The final occlusion should be light on the implant-retained crown, with forces directed along the long axis to minimize lateral forces. The abutment screw is tightened to 35 Ncm, head of the abutment screw covered and crown cemented. All excess cement must be removed. Instruct your patient about home care, and set a recall schedule.
On Jan. 8, 2003, the Directa KUSP Group of reference dentists met in the Strand Hotel in Stockholm where Prof. Dan Ericsson proposed his idea for a combined wedge and matrix in response to a need in the market.

A number of prototypes were made and trials undertaken, and by autumn 2004, when the KUSP Group met in Uppsala, Ericsson had his prototype solution — a thin steel plate attached to a wooden wedge.

The stainless-steel plate could not be glued onto the wooden wedge satisfactorily, but engineering consultants presented a solution with a plastic wedge that could be fused with the metal plate. A manufacturer in Huddinge, south of Stockholm, took the idea onboard, and in 2006, FenderWedge® was born: a combined wedge and protective matrix for use in protecting the adjacent tooth during preparation. “Fender” is a protector on a car or boat.

Encouraged by the technical solution and successful acceptance of FenderWedge in the market, Directa returned to the task of finding a solution to the original concept of a combined wedge and sectional matrix for use with composite fillings. Many trials and clinical tests were made, and the first version of FenderMate® was released at IDS in Cologne in 2007.

At that time, FenderMate needed a retentive ring to hold the stainless-steel plate in position. It was made of dead-soft metal and needed to be burnished to create a contact point. It did not satisfactorily fulfill the high expectations required, and further work and developments were made, under the guidance of Dr. Jan Johansson.

Many further trials, tests and modifications were made to fulfill Directa’s goals of a combined wedge and sectional matrix system that was simple to use, required no retention ring or burnishing, made a good contact point, adapted to the shape of the patient’s tooth and created no cervical overhang.

At IDS in 2009, FenderMate as we know it now was launched. FenderMate accommodates around 60 percent of Class II fillings and is used for molars and premolars.

Because of the success of this unique product, Directa continues today to make further developments to expand its “Fender” line.

Directa CEO Olle Larsson and Directa consultant Dr. Jan Johansson talk about the origins and history of FenderWedge and FenderMate

Here at the AGD
See a FenderWedge for full crown preparations and a FenderMate for primary teeth at booth No. 433. More information about Directa products and distributors may be found at www.directadental.com or by contacting U.S. Sales Manager Frank Cortes at (203) 788-4224 or frank.cortes@directadental.com.
A faster way to seal

For decades, dentists and hygienists have had no alternative but to use harsh phosphoric acid etching to improve the bondability of dental sealants to enamel. In doing so, they have lost countless hours to applying acids, waiting, rinsing and drying.

With all these added steps, perhaps the greater issue is how many failures have resulted from trying to shortcut procedures? Indeed, working with phosphoric acid is always a double-edged sword. If not left on long enough, one risks failure; leave it on too long and healthy enamel is eroded.

Thanks to advances in adhesive technology and a new pit and fissure sealant from Shofu, dental professionals don’t have to choose between a secure bond and lost time and preservation of tooth structure anymore.

BeautiSealant from Shofu is a faster, easier and gentler pit and fissure sealant system that completely eliminates the need for phosphoric acid etch and rinse steps, while still maintaining equivalent bond strengths to acid etched competitors. Considering these steps represent a 40 percent to 60 percent reduction in working time, that extra productivity can go a long way toward keeping a practice profitable. In these difficult economic times, every liberated minute counts.

Fast application

The instructions for BeautiSealant are simple:
- Apply the primer to a clean tooth and leave for five seconds.
- Air-dry five seconds.
- Apply the sealant.
- Light-cure 10 seconds LED (20 seconds halogen).

Secure bond, gentle on enamel

BeautiSealant Primer contains dual-adhesive monomers (carboxylic and phosphonic acid) that thoroughly penetrate and prepare pits and fissures for bonding to the sealant, forming a chemical bond to calcium in the enamel. Unlike traditional sealants, which require phosphoric acid etching, severely demineralizing and dehydrating healthy teeth, Shofu’s self-etching primer is significantly less acidic, helping to preserve healthy tooth structure.

Despite this lack of acid etch and rinse steps and a HEMA-free composition, shear bond strengths remain at levels that meet or exceed market-leading sealants at 19.5MPa.

Smooth application

BeautiSealant Sealant is an easy-to-apply sealant, optimized for smooth, bubble-free consistency. Achieve precise delivery without the common issue of overfilling with a specially designed no-ooze syringe and a tiny 0.27 gauge needle tip. This improved control over the flowability of the sealant allows placement of just the right amount of material, reducing the common occurrence of overfilling.

Sustained remineralization from giomer fillers

Shofu’s proprietary Surface Pre-Reacted Glass (S-PRG) filler particles are not only pre-charged with fluoride during manufacturing, they also recharge when fluoride concentrations in the mouth are high.

Simply put, household dental hygiene products, such as fluoridated toothpaste, allow BeautiSealant to provide sustained remineralization benefits to adjacent tooth structure over the life of the sealant.

In addition to fluoride, S-PRG filler also releases five other ions: sodium, strontium, aluminum, silicate and borate, all with known bioactive properties.

When exposed to concentrations of lactic acid, these ions contribute to an acid neutralization effect that demonstrates the healing benefits of giomers.
New Integrity® Multi-Cure Temporary Crown and Bridge Material is a dual-cure 10:1 bis-acrylic material with improved flexural strength. Integrity Multi-Cure Temporary Crown and Bridge Material can be used as a self-cure material, but it also provides the option to eliminate wait time by light curing each unit for 20 seconds. Integrity Multi-Cure has the fastest cure-time range among leading competitive products.

Integrity Multi-Cure is available in a 76-gram cartridge delivery system with five refill shades — A1, A2, A3.5, B1, and BW — and in an introductory kit including Integrity Multi-Cure material, Integrity TempGrip cement and cartridge dispenser.

For more information, visit www.integritymulticure.com, call (800) 532-2855 or visit the DENTSPLY Caulk booth, No. 702, here during the AGD.

MI VARNISH WITH RECALDENT

GC America has launched MI Varnish™, a 5 percent sodium fluoride varnish with RECALDENT™. MI Varnish is unique compared with other fluoride varnishes, bringing bioavailable calcium, phosphate and fluoride to the tooth surface.

MI Varnish releases high levels of fluoride and works in concert with the sodium fluoride.

MI Varnish is indicated for the treatment of hypersensitive teeth. It is well known that fluoride is an important tool in the fight against caries. Fluoride’s benefits are boosted by calcium and phosphate supplements, helping to maintain a healthy oral environment. MI Varnish with RECALDENT provides these essential minerals to reduce hypersensitivity.

RECALDENT is a milk-derived protein that strengthens teeth by releasing calcium, phosphate and fluoride. MI Varnish is a new addition to the RECALDENT family.

MI Varnish is available in a 50 unit-dose box. The unique unit-dose containers are easy to open and contain enough material for any full-mouth application.

An application of MI Varnish is smooth and dries clear. It comes in a fresh strawberry flavor.

For more information on GC America and its complete product line, visit www.gcamerica.com or stop by the booth, No. 617, here at the AGD.