Immediate, esthetic tooth replacement with the Hahn Tapered Implant and BruxZir Anterior Solid Zirconia

By Timothy F. Kosinski, DDS, MAGD

With more patients seeking dental implant treatment, it’s no surprise that growing numbers of clinicians are providing this service. The increased demand for implant therapy can be attributed in part to the improved predictability brought about by innovations in implant design.

Additionally, due to advancements in all-ceramic restorative materials, providing esthetic results is easier than ever before. By utilizing the most advanced implants and restorative materials, even experienced implantologists have the potential to benefit from an improved clinical workflow and more esthetic results.

The case report that follows demonstrates immediate tooth extraction and placement of a Hahn Tapered Implant (Glidewell Direct; Irvine, Calif.) in the area of a lateral incisor. A temporary bridge, custom implant abutment and a highly esthetic final crown are utilized to facilitate a natural-looking final restoration.

Case report

A 40-year-old male presented with no medical complications and desired a nice smile for his business interactions. His maxillary left lateral incisor had fractured, with the patient’s excessive parafunction likely a contributing factor. Endodontic evaluation had determined that the lateral incisor was untreatable. The patient accepted a treatment plan in which the lateral incisor would be extracted and an implant immediately placed. Designed to achieve the maximum primary stability needed for immediate extraction and implantation cases, a Hahn Tapered Implant was selected for the procedure.

To begin treatment, the nonrestorable lateral incisor was extracted atraumatically. Removing the tooth in this manner maintained the facial plate of bone as well as the interseptal bone that helps support the interdental papillae. A pilot drill was utilized to create the initial osteotomy approximately 3 mm apical to the adjacent cemento-enamel junction, and a 3.5-mm-diameter Replace Select™ drill (Nobel Biocare; Yorba Linda, Calif.) was used to complete preparation of the implant site. Note that the Hahn Tapered Implant is compatible with widely used surgical instrumentation.

As the implant was threaded into place, its prominent buttress threads engaged the palatal wall firmly. This simplified the effort of preserving the facial plate and positioning the implant in a manner that would foster an esthetic outcome. The tapered body of the implant elevated within a maximum amount of bone, and its widened apex helped establish excellent stability.

Radiography confirmed the implant was placed in an optimal position. A transitional bridge was fabricated to minimize speech problems, help support the soft tissue and maintain a natural emergence profile during the healing period. After four months of healing, the temporary bridge was removed, and an open-tray final impression was taken.

An Inclusive Zirconia Custom Abutment with titanium base was produced by the lab and maintained a natural emergence profile upon delivery. BruxZir Anterior, a monolithic zirconia material specifically formulated for the smile zone, was chosen for the final restoration because of its strength and lifelike esthetics.

The crown, which was digitally designed and milled using CAD/CAM technology, exhibited a precise fit. Final radiography illustrated superb bone preservation at the implant site (Fig. 1). Optimal soft-tissue contours were particularly evident around the beveled edge of the Hahn Tapered Implant. The patient expressed that he was very pleased with the final restoration because of its strength and lifelike esthetics.

Note: See more of this case by visiting www.inclusivemagazine.com.

Fig. 1. Postoperative periapical radiograph illustrates excellent integration of the Hahn Tapered Implant (right) with the surrounding bone in the area of tooth #10. Photos/Provided by Dr. Timothy F. Kosinski.

Fig. 2. The final restoration of tooth #10 exhibited translucency, color and emergence profile similar to natural dentition.
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Piezomed unit: Minimally invasive, maximally effective

By W & H Staff

Current developments focus on minimally invasive procedures with less postoperative pain for the patient and a faster healing time. Piezo technology has increasingly been finding its way into oral and maxillofacial surgery and implantology for more than a decade. Maximum precision in surgical use and gentler treatment for the patient are just some of the advantages of this cutting-edge drive technology, according to the company. With the new Piezomed, W&H can use state-of-the-art ultrasound technology for even the most demanding tasks in bone surgery, providing surgeons with optimal support in their daily work.

“Our product development has a clear aim: to consistently fulfill the many different needs of the patients and also to satisfy the users’ requirements. The new Piezomed minimizes the invasiveness of surgical treatments. Safe working thanks to automatic instrument detection and unique instrument design takes on a completely new meaning for the user,” said Andreas Lette, strategic W&H product manager and head of product innovation.

New dimension in bone surgery

The new surgical instrument from W&H employs state-of-the-art ultrasound technology. High-frequency micro-vibrations enable high-precision incisions while the so-called cavitation effect ensures an almost blood-free surgical site and an excellent view of the treatment area, the company asserts.

In addition to these benefits, W&H offers maximum safety during operation with its patented automatic instrument tip detection. Piezomed detects the instrument during tip insertion and sets the correct power class automatically. This significantly lowers the risk of harming a patient and overloading the instruments, according to the company.

Equipped for any task

W&H offers a selected range of 24 intelligently created working instruments to provide optimum cover for the wide variety of tasks dealt with by surgeons. “For example, the bone saws have a specially developed tooth design that enables bone block harvesting with low bone loss. We also offer a special saw that boasts extremely high-cutting performance,” Lette said. “Many of the surgical instruments developed by W&H are an absolute world first in the global dental sector. Our developments are patented to protect our unique expertise.”

The instruments have another advantage with their efficient cooling concept. The spray exits near the instrument’s work area, thus protecting the instrument from thermo-mechanical material stress. The user benefits from even safer and cooler processing of the operating field, according to W&H.

Piezomed supports the surgeon’s individual way of working with three different operating modes: “Power,” “Basic” and “Smooth.” The operating modes store a variety of performance characteristics. Equipped with a multi-functional foot control, the surgical device offers freedom for the users’ hands.

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X-Nav Technologies launches X-Guide Dynamic 3D Navigation System

System now available in the United States, Canada and Europe

By X-Nav Technologies Staff

X-Nav Technologies, the developer of advanced technology solutions for dental surgery, has announced it has received FDA clearance for its new X-Guide Dynamic 3D Navigation System. The X-Guide system is designed to elevate the surgeon’s control and precision over the entire implant process, including planning and placement. Interactive, turn-by-turn guidance during live surgery gives the ability to visualize precise movements of the handpiece during osteotomy and implant delivery for more exact implant placement, according to the company. It’s like GPS for the drill. This results in the ability to consistently deliver a more desirable functional and aesthetic outcome in dental implant surgeries.

X-Nav Technologies confirms that it has approval to market and sell the X-Guide Dynamic 3D Navigation system to dental clinicians in the United States, Canada and the European community. "Just as cone-beam 3-D imaging has transformed the dental implant process for surgeons and patients, this next advancement in technology will bring more precision and control in transferring 3-D treatment plans to the patient, with ease,” said Ed Marandola, X-Nav Technologies president and CEO.

The X-Guide system makes it easy to be exact, the company says, by providing robust and easy-to-use treatment software plus new, patent-pending X-Point navigation technology — the first, single-view guidance of implant position, angle and depth.

The X-Guide system is designed to be compatible with the most cone-beam 3-D systems. X-Nav Technologies asserts, adding that surgeons do not have to stop at precise planning anymore — now they can place in remarkable detail as well.

Developed in close collaboration with leading oral and maxillofacial surgeons, the X-Guide system promises to deliver what today’s implant clinicians want.

Dr. Robert W. Emery, diplomate of the American Board of Oral and Maxillofacial Surgeons, states: “X-Guide fills the final gap of digital dentistry. Dynamic 3-D navigation allows the dentist to use all the 3-D digital information at their fingertips in real-time to immediately use their cone-beam 3-D scan to plan and place implants. The surgeon can fully guide his or her cases even when clinical alterations are necessary because the system embraces flexibility.”

The X-Nav Technologies leadership includes part of the original team that brought industry-leading i-CAT cone-beam 3-D imaging to the dental industry. The president and co-founder of X-Nav, Marandola, is the former president and co-founder of i-CAT Imaging Sciences International, and X-Nav co-founder Chris Scharff led the i-CAT commercial team as vice president.

For more information on the X-Guide system, visit www.X-NavTech.com.

True flexibility for all types of treatments

By Henry Schein Dental Surgical Solutions Staff

Our latest-generation implant system is intelligent, lean and simple. iSy® has a compact system design, offering you a unique workflow advantage. You will benefit from unsurpassed cost efficiency in each of your implant cases, backed by proven CAMLOG quality.

The unique implant sets and lean componentry allow for total flexibility. With iSy, you have the freedom to choose digital, conventional or combined workflow treatments. Experience a new level of efficiency with the iSy system.

iSy is truly easy. Every implant set contains the components you need to complete an entire case. The iSy dental implants were designed with the needs of your patients and practice in mind. Implement iSy in your next case and discover how total flexibility can revolutionize your practice.

You can choose to restore your case with the included implant base in either a digital or conventional treatment workflow. If you prefer using conventional methods, you can complete your case with prefabricated components or CAD/CAM options. iSy includes treatment flexibility in every package for your benefit and your patients.

The core workflows for implant treatment are: digital, conventional and combined.

1. Digital: A digital treatment workflow can be done with or without the implant base. Transgingival healing provides easy access to the final abutment and allows for optimal hard- and soft-tissue healing.

2. Conventional: A conventional treatment workflow can be done with or without the implant base. Submerged healing allows for undisturbed integration throughout the healing process. A gingiva former will sculpt the soft tissues. When ready for impressions, open or closed tray impression copings are available.

3. Combined: The flexibility of iSy is showcased with this final example. Conventional and digital treatment workflows can be combined to provide a customized final result. The pre-mounted implant base with a multifunctional cap is used to take a traditional impression.

The dental lab will scan the iSy scan post within an implant analog or scan the implant base using the second multifunctional cap. The final result will be a customized restoration made iSy and designed to create satisfied patients. Designed to provide a smoother treatment experience, the iSy system has "simple” built right in to it.

iSy is a high-quality implant system made by CAMLOG. The system was developed in Switzerland and is manufactured in Germany. The cornerstone of CAMLOG is its attention to detail, sustainability and the quality development of its products.

Henry Schein is the exclusive distributor of the iSy system and has a team of highly trained surgical sales consultants to serve as your partner in integrating iSy into your practice.