Restorative-driven implant dentistry: the future is now

By Ronald W. Konig, DDS, FAGD, LVIF

The science of implantology has continued to evolve through the years and is one of the fastest-growing segments in our profession. The focus of implantology seems to have emerged from simply getting the implant in the bone to proper placement with bone grafts and, finally, to creating excellent long esthetics and function.

In other words, the days are gone when we try to place the implant and then make the esthetics and function work.

This article reviews a case in which a central incisor is extracted and an immediate implant is placed followed by an immediate temporary crown on the implant. The patient presented with a high smile line that displays the entire tooth when smiling, thereby creating the challenge.

**Case prep**

An iCAT scan was taken to evaluate the bone around the tooth prior to extraction and implant placement. From the diagnostic casts a stent was made to use for the provisional restoration.

Great care must be taken when extracting the tooth so that tissue architecture and interproximal papilla is preserved (Fig. 1).

An Astra Implant, 4.0 X 15 mm, was used in this case. After placement, a temporary abutment was placed and prepped outside of the mouth to the gingival margin. Luxa-temp provisional material was used to fabricate the temporary crown.

The temporary crown was taken out of occlusion and the interproximal contacts were slightly opened. The crown was carefully polished so that no tissue irritation would occur (Fig. 2). This photo was taken immediately after the surgery and temporary placement.

After three months of integration, the temporary was removed and a fixture level impression taken, so an Atlantis Custom Anatomical Zirconium abutment could be fabricated. The

Fig. 1: Immediate implant placement. (Photos/Provided by Dr. Ronald Konig)
Scenes from the ICOI

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The impressions were sent to our lab technician, who then poured the model with the implant lab analog in place and sent it to Atlantis with the correct prescription. In this case, a zirconium anatomical abutment was prescribed with the facial margin prescribed for 1 mm subgingival and the lingual margin .75 subgingival.

Atlantis then sent the case back to our lab technician, who made the case ready to fabricate the crown. Photographs to assist with shade selection were also enclosed with the case. An Empress crown was then fabricated and the case returned to my office. The Atlantis Abutment was tried in (Fig. 3). Note the excellent tissue contours and the width of the custom abutment (a discussion of custom abutments is below).

The crown was then placed and custom shaded. On most anterior cases, custom shading by painting the desired porcelain shades on the crown in the mouth and then re-firing the crown allows for subtle changes that can truly enhance the final outcome. After re-firing, the crown bonded into place.

Figure 4 exhibits the completed restoration at the time of cementation. Careful observation reveals an intact papilla, correct anatomic contours of the abutment, healthy and firm gingival tissues and an excellent shade, contour and glaze effect that blends with the natural dentition.

Discussion

- **Implant type:** There are distinct advantages to using bone level implants in the anterior area, especially with immediate extraction and placement cases. This allows for the use of custom abutments, which mimic the anatomy and shape of the natural tooth.

- **Abutments:** Many companies make custom abutments. Atlantis is an exceptional company that will work with your lab, and its work is outstanding. The company fabricates anatomical abutments to the correct shape and width of the tooth at the gingival margin. As indicated above, specifications to the placement of the margin enhances the health and esthetics of the crown. The use of custom abutments, such as Atlantis, is almost a “no-brainer” and the costs are similar to stock abutments of major implant companies.

- **Soft tissue:** Using the immediate extraction/implant placement/immediate provisionalization technique allows for the preservation of soft tissue and papilla architecture. Using a “plastic” temporary abutment that can be prepped allows for fabrication of a nicely contoured provisional crown that prevents the collapse and deterioration of these structures.

- **Esthetics:** The advent of custom zirconium abutments allows the use of all-ceramic crowns. Emax and Empress restorations are two systems that allow control of the translucency, glaze and custom shading.

Implant esthetics and use is on the rise as patients are more educated and savvy than in the past. This is an exciting time to be doing implants and restorative care. Patients like not using a flipper for the interim period. These techniques allow the dentist more predictable and successful restorative prosthetics.
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Materialise Dental triples its range of Universal SurgiGuide drill-key diameters

Due to the huge success of Universal SurgiGuide® since its launch one year ago, Materialise Dental has recently expanded its range of Universal SurgiGuide drill-key diameters to include up to 45 different ones — 16 “Regular Platform” drill diameters ranging from 2.0 to 3.5 mm, and 27 “Wide Platform” drill diameters ranging from 2.0 to 4.6 mm.

This expansion of available drill diameters allows for accurate guidance of an even wider range of drills, adding to the flexible nature of the Universal SurgiGuide system.

A Universal SurgiGuide can be used with any standard implant surgery kit and is ideal if the clinician’s implant company does not offer a guided surgery kit or if he or she works with various implant brands.

The Universal SurgiGuide system is compatible with all implant systems and provides for a flexible drill sequence thanks to a set of drill keys that is composed based on the clinician’s preferred drill sequence. Additionally, any angle and any position in the patient’s mouth can be reached thanks to a special Universal SurgiGuide handle.

Every implant case asks for a tailored approach. That is why Materialise Dental not only offers different SurgiGuide types of support (bone-, mucosa- and tooth-supported SurgiGuide drill guides), but also a variety of SurgiGuide solutions (SAFE, Universal and Pilot SurgiGuide®). Special SurgiGuide types, such as guides for zygomatic implants and bone reduction guides, are also available.

Regardless of which SurgiGuide type of support and solution is selected, there’s something for every case, and esthetic perfection can be realized in a remarkably more time- and cost-efficient environment.

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Materialise Dental recently announced the appointment of Dr. Berthold Reusch as general manager for Germany, Austria and Switzerland.

Reusch brings more than 17 years of global marketing, sales, clinical and business management experience in the field of dental materials and digital dentistry.

Most recently, Reusch worked for the dental division of 3M ESPE where he was director of operations for the digital imaging device business which he successfully developed outside the United States.

From 2007 to 2009, Reusch was a member of the executive management team of Brontes Technologies, a 3M company based in Boston, building the digital impressioning business in the U.S.

As general manager at Materialise Dental GmbH, Berthold and his team will further develop the SimPlant® and SurgiGuide® business within the German, Austrian and German-speaking Swiss markets.

SimPlant dental implant treatment-planning software allows clinicians to plan the ideal location of implants while taking into account vital anatomical structures and clinical and esthetical considerations. SurgiGuide, for which the company has partnered up with various implant companies and which offers solutions for every implant case, subsequently provides the link between implant planning and actual surgery.

With SimPlant and SurgiGuide, dental professionals have a flexible treatment-planning system at their fingertips to guarantee predictable and safe implant treatment regardless of the clinical situation.

Reusch received his diploma and PhD (Dr. rer. nat.) in physics from the University of Tübingen, Germany, and then went on to receive his MBA, with an emphasis in marketing and international business management, from the business school at the Catholic University of Eichstätt.

When asked about his new position, Reusch said: “I’m very enthusiastic to join Materialise Dental, an innovative and technologically driven organization. I’m looking forward to undertaking the challenging task of heading my division and — together with my team — offering our customers the most innovative and advanced products to meet their computer-guided implant dentistry needs.”

(Source: Materialise Dental)
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OCO Biomedical releases the 2.2 and 2.5 mm I-Micro dental implant to meet customer demand

OCO Biomedical, one of the world’s leading manufacturers of dental implants and attachment systems, recently announced the availability of its new 2.2 mm and 2.5 mm I-Micro dental implant.

Available in both crown and bridge and O-ball, priced favorably at $49 per implant, the I-Micro is an economical solution and an ideal alternative to Imtec and Intra-Lock’s mini dental implants without the costly investment of new instrumentation.

“The development of the I-Micro dental implant, in large part, because of overwhelming customer demand for a dental implant smaller than our 3.0 mm I-Mini,” said Dr. David D’Alise, president and founder of OCO Biomedical.

“The I-Micro dental implant is really the first step in the logical progression to larger implants and fills a unique niche in the mini dental implant market. Dentists have made it clear to us that they’re tired of the indifferent corporate attitude characteristic of larger dental implant manufacturers and distributors where dentists constantly deal with purchases on backorder and meager customer service. We want dentists to know more about OCO Biomedical and to understand that, as a smaller company, we will recognize the needs of the dental implant community and can offer a more personalized experience to our customers.”

The I-Micro is solidly machined at OCO Biomedical with grade 5 titanium — the threads finished with the company’s proprietary surface treatment — and uses the same wrenches and drivers as Imtec MDI and Intra-Lock MDL but offers a more aggressive thread pattern for added stability.

OCO Biomedical’s new 2.2 mm and 2.5 mm I-Micro dental implant features:

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- I-Micro analog has both a crown and bridge head and an O-ball head, thus simplifying the restoration process, reducing cost and streamlining inventory tracking
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- I-Micro analogs are $18 each

About OCO Biomedical:
OCO Biomedical is a U.S.-based company with customers and distributors worldwide. It develops, manufactures and markets the highest quality dental implants, surgical instrumentation and attachment systems at some of the most competitive prices in the industry. Its dental implant systems are truly unique. For more information on OCO Biomedical, the Dual Stabilization8, I-Mini and I-Micro dental implant systems or to register for one of our educational “Dynamics of Simple Implant Placement and Restoration” courses, visit www.ocobiomedical.com or call (800) 228-0477.
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