Implant position in the esthetic zone

By Siamak Abai, DDS, MMEdSc

Since the advent of modern root form osseointegrated implant dentistry in 1992, clinicians have strived for improvements in implant positioning in the esthetic zone to achieve predictable restorative and aesthetic results.

Years of clinical experience in congruence with controlled clinical studies have helped establish parameters as a guide for these results. Establishing a treatment plan and clinical protocol prior to implant placement is paramount.

Treatment planning traditionally begins with comprehensive medical and dental evaluations, articulated diagnostic casts, radiographs, cone-beam computed tomography (CBCT) scans and a diagnostic wax-up. Patient demands must be taken into consideration prior to surgery, and pre-surgical mockups may be necessary to convey the information to the patient.

The advancement of CBCT technology has led dentistry into a new realm of dimensional accuracy. In combination with the use of a surgical or guided stent, proper 3-D positioning of an implant has led to more accurate clinical results.

The importance of the implant position can be manifested in the four dimensionally sensitive positioning criteria: mesiodistal, labiolingual and apico-coronal location, as well as implant angulation. The ultimate goal is not only to avoid sensitive structures, but to respect the established biological principles to achieveesthetic results.

Mesiodistal criteria
Correct implant position in a mesiodistal orientation allows the clinician to avoid damaging adjacent critical structures. A minimum distance of 1.5 mm between implant and existing dentition prevents damage to the adjacent teeth and provides proper osseointegration and gingival contours (Fig. 1a).

Distances of less than 3 mm between two adjacent implants leads to increased bone loss and can reduce the height of the inter-implant bone crest. A distance of more than 3 mm between two adjacent implants preserves the bone, giving a better chance of proper interproximal papillary height (Fig. 1b).

Labiolingual criteria
An implant placed too far labially can cause bone dehiscence and gingival recession while an implant placed too far lingually can cause prosthetic difficulties. A thickness of 1.8 mm of labial bone is critical in maintaining an implant soft-tissue profile (Fig. 2).

Labially oriented implants compromise the subgingival emergence profile development, creating long crowns and misalignment of the collar with respect to the adjacent teeth.

Apico-coronal criteria
Peri-implant crestal bone stability plays a critical role in the presence of interdental papilla. Implants placed too shallow may reveal the metal collar of the implant through the gingiva. Countersinking implants below the level of the crestal bone may give prosthetic advantages but can lead to crestal bone loss.

The ideal solution would be the placement of an implant equicrestal or subcrestal to the ridge. However, the existing microgap at the implant abutment junction leads to bone resorption because of peri-implant inflammation. It is suggested an implant collar be located 2 mm apical to the CEJ of an adjacent tooth if no gingival recession is present (Fig. 3).

Implant angulation
Implant angulation is particularly important in treatment planning for screw-retained restorations. Implants angled too far labially compromise the placement of the restorative screw while implants angled too far lingually can result in an unhygienic and unesthetic prosthetic design.

For every millimeter of lingual inclination, the implant should be placed an additional millimeter apically to create an optimal emergence profile. In general, implant angulation should mimic angulation of adjacent teeth (Fig. 4). Furthermore, maxillary anterior regions require a subtle palatal angulation to increase labial soft-tissue bulk.

Inclusive Tooth Replacement Solution
The Inclusive® Tooth Replacement Solution was developed by Glidewell Laboratories as a complete, prosthetically driven method of restoring missing dentition. The solution is composed of treatment planning, implant placement, patient-specific temporization and the definitive restoration (Figs. 5a–5f).

When utilizing the comprehensive range of Inclusive Digital Treatment Planning services, the clinician has absolute and precise control of each step. The clinician has control of the four dimensions of implant placement in the esthetic zone, creating a consistently predictable result.

To read the full article, go to www.inclusivemagazine.com. References are available from the publisher.
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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 19.5 MPa.

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, potassium, calcium, 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.
DEXIS showcases the ‘Art of Imaging’

By DEXIS staff

DEXIS is exhibiting a new product here at the CDA Presents in booth No. 1330. When it comes to the “Art of Imaging,” the company has set the gold standard in the field of dental digital intra-oral technology.

The new product offering, DEXIS go®, is an innovative addition to the legacy DEXIS has established during the last 15 years. Also in the booth, you will find the recently released DEXIS® Imaging Suite, which brings exciting new features, including a cosmetic imaging module, added video capabilities in DEXimage and integration with select 3-D products. DEXIS invites you to visit and witness these works of art for yourself.

Introducing DEXIS go: Patient communication with a personal touch

DEXIS go is a sleek, engaging new way for dental professionals to communicate with patients using an iPad®. This companion app to the DEXIS® Imaging Suite software (10.0.5 and higher) was designed to provide a vibrant visual patient experience around image presentation in support of clinical findings and treatment recommendations.

The new graphical environment, which presents beautifully on the iPad’s retina display, models its parent program, allowing DEXIS go to function as an imaging hub, displaying all radiographic and photographic images within a patient’s record via the practice’s WiFi network.

DEXIS users will find a comfortable familiarity with its simplicity and quad environment. They will also find that it’s been infused with a modern flair and elegance.

This familiarity of functionalities extends to support of both landscape and portrait orientations; multi-touch gestures, the ability to swipe, pinch-to-zoom and pan through images; and applications of the ClearVu™ enhancement tool.

In addition, images displayed on an iPad can be mirrored on the practice’s widescreen TV using AirPlay®. What’s more, this amazing technology is absolutely FREE to registered DEXIS Imaging Suite users and is now available in the Apple App Store.

Dr. Christopher Anderson of Marietta, Ga., said, “I’ve found DEXIS go to be like a portable consult room — the data is with you wherever you go. It’s great for patient education.”

Don’t have DEXIS Imaging Suite but still want to experience DEXIS go? Then, “go” ahead! The app includes a set of sample patients and images that can be used to test the app, even without having DEXIS Imaging Suite installed.

Here in Anaheim
To check out the DEXIS go for yourself, stop by the DEXIS booth, No. 1330.

Orascoptic launches its online loupe builder

Orascoptic announces the launch of the new Orascoptic Online Loupe Builder, making it possible for you to build and see your own personal dental loupe before you buy.

The Orascoptic Online Loupe Builder allows dental professionals to see a chosen loupe being built in a three-part process and customize a loupe to fit their personal needs. The Orascoptic Online Loupe Builder gives clinicians the opportunity to select preferred magnification, frame style and frame color, as well as a companion headlight system.

The Orascoptic Online Loupe Builder can be used prior to a complimentary fitting appointment with an experienced member of the Orascoptic sales team. If you are unsure of your specific needs and preferences, the Orascoptic sales team will guide you through the process.

Orascoptic has made it easier than ever to build the perfect dental loupe. Try it today at www.orascoptic.com/loupe-builder.

Here in Anaheim
To check out Orascoptic’s selection of dental loupes, stop by the booth, No. 1206.

Spencer Ellena of Orascoptic helps a CDA attendee find the best loupes for her at the company’s booth, No. 1206, on Thursday. Photo/Sierra Rendon, Dental Tribune
Patients come first at MDT

By Millennium Dental Technologies Staff

Our guiding principles at Millennium Dental Technologies (MDT) have always been, “It’s all about the patient” and “The patient comes first.” This has been the case in all of our clinical activities as well as corporate mission statements and business decisions.

Research and what’s in the patient’s best interest have been MDT’s driving forces since the beginning. As a result, the LANAP® protocol is a real-world clinical protocol, time tested during 21 years in private practice and research validated, which meets one component of the definition of true evidence-based dentistry. All that is a critical factor in our success.

The ADA defines evidence-based dentistry as one that combines the clinician’s own expertise (based on knowledge, experience, and technology) with evidence (through scientific literature) and the patient’s needs/wants.

We are the longest existing dental laser manufacturer in the world (with the same name, the same founders, the same management team, the same device and the same value proposition), no other dental laser manufacturer has invested the steady commitment, the years, the energy and the hard dollars in scientific and clinical research.

MDT also offered the first product enhancements, starting 13 years ago with a six-month return guarantee on the LANAP clinical results. There is no other manufacturer, in any medical or dental field, that has guaranteed a clinical outcome. MDT guarantees the LANAP protocol will result in 50 percent pocket reduction by regeneration versus subtraction.

Research supports the LANAP protocol

In the last 14 years, 268 positive patient outcomes have been published in peer-reviewed journals.

In 2012, the results of a long-term tooth survival study by Lloyd Tilt, DDS, MS, were published in the March/April issue of General Dentistry. A second human histology study by Marc Nevins, DMD, MMSc, was published in the 2012 September/October issue of the International Journal of Periodontics and Restorative Dentistry.

In addition, there was the university-based, five-site, multi-center, prospective, blinded clinical study we launched in 2011. The study is NIH registered and FDA-designed. To read it, visit www.clinicaltrials.gov and search for “LANAP.”

Five-star training

As part of the PerioLase® Periodontal Package™, clinicians receive five days of exceptional training through the Institute of Advanced Laser Dentistry. We have more than 30 clinical instructors overseeing our live-patient training, with a three to one student-to-instructor ratio. Clinicians treat three different patients with varying degrees of periodontitis during their training continuum. All patients are provided by the IALD as part of our comprehensive training support and receive one year of complimentary follow-up care. To date, the IALD has provided more than $6 million in free periodontitis surgery for infection control and follow-up care.

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Dr. Piyush Karia is the creator of the new two-step whitening system, SmileFusion™, which offers results within two minutes of treatment and is safe for sensitive teeth. To hear more about the non-chemical whiteners, stop by booth No. 586.

New products, new marketing

Wouldn’t your patients love to have their canker sores healed in one day (and pain stopped almost immediately)? Stop by the Quantum Health booth, No. 1621, to hear about its one-day treatment for canker sores.

Patients come first at MDT

Here in Anaheim

To learn more about Millennium Dental Technologies, stop by the booth, No. 556.

Clear aligner therapy

Clear aligners provide a discreet alternative to metal braces, offering the benefits of straight teeth without embarrassment. They’re practically invisible, and they’re removable, so it’s much easier for patients to take care of their teeth. In 2007, Dr. Willis Pumphrey and a group of doctors introduced ClearCorrect to keep clear aligner systems, stop by booth No. 586.

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