IMPLANT TRIBUNE

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ICOI Spring Symposium set for Las Vegas



The ICOI's Spring Symposium will take place at the Bellagio Hotel in Las Vegas from May 16–18. Photo/www.sxc.hu

Group's annual event heads to the Bellagio Hotel for a sixth time

By Craig Johnson ICOI Executive Director

hat old bromide, "nothing succeeds like success," is very appropriate when it comes to the ICOI and its devotion to Las Vegas and the Bellagio Hotel. The International Congress of Oral Implantologists (ICOI) will return to the Bellagio for the sixth time as it hosts the spring implant symposium from May 16–18.

Dr. Michael Pikos is the scientific chair for the three-day conference of dental implant continuing education opportunities. The theme for this spring symposium will be "The Maxilla: Single Tooth to Full-Arch Reconstruction."

Attendees will be exposed to a group of experienced private practice and academic-based clinicians who will share their wealth of knowledge in a friendly and scientific environment. The general session will commence at 1 p.m. on Thursday, May 16, and conclude on Saturday, May 18, at 6:30 p.m.

Main podium speakers, in order of their appearance, are Dr. Jaime L. Lozada, Dr. Giuseppe Cardaropoli, Dr. Joseph Kan, Dr. Michael Sonick, Dr. Randolph R. Resnik, Dr. Natalie Wong, Dr. Marc L. Nevins, Dr. Ernesto Lee, Lee Culp, CDT, Dr. Michael Pikos, Dr. Kevin Murphy, Dr. Abdelsalam Elaskary, Dr. George F. Priest, Dr. Alvaro J. Ordonez, Dr. Tara Aghaloo, Dr. Craig M. Misch, Dr. Howard Chasolen, Dr. Aldo Leopardi, Dr. Georgios Romanos, Dr. Paulo Malo, Dr. Carl E. Misch and Arthur W. Curley, Esq. The ICOI designates the scientific pro-

gram for 20 C.E. credits. The general session will be preceded by several pre-symposium workshops that will take place on Thursday morning.

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Blade implants in treatment of thin ridges

Indications and techniques

By Luca Dal Carlo, DDS, Marco E. Pasqualini, DDS, Michele Nardone, Medical Officer, Ministry of Health, Rome, Italy, and Prof. Leonard I. Linkow, DDS

The conception of the endosseous blade implant arose from the intuitions of Prof. Leonard I. Linkow and R. Roberts; its development and diffusion, however, must be attributed to Linkow, who presented it in 1967 and published on the subject in 1968, thereby making it possible to treat the problem of edentulism in tens of thousands of patients from that time to this day.^{1,2}

Given the thinness of the blade, this implant can be used in any alveolar crest, but it is particularly useful in the thinnest, where the use of root-form implants is difficult and needs bone regeneration procedures. When the ridge is thin, it permits tricortical anchorage,³ i.e., the implant is stabilized by press-fit in both the internal and external bone cortex, as well as the deep cortex. This condition

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► See BLADES, page C16





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The lineup of the four-hour presymposium workshops held by the sponsors of this symposium will feature the following:

• Dr. Miguel Stanley will present a course on treatment planning titled "Practice Building Through Simplified Advanced Techniques," sponsored by MIS.

• Dr. David Wong's course, sponsored by DENTSPLY Implants, will cover "Successful Socket Grafting and Ridge Augmentation: Maximizing Predictability in Everyday Implant Situations."

• Dr. Michael Toffler will educate delegates on "Transcrestal Sinus Floor Elevation: Redefining Limitations," in a course sponsored by Hiossen.

• Dr. Carl Misch will discuss "Prosthetic Complications" because of screw loosening, porcelain fracture and residual cement. His course is sponsored by the Misch International Implant Institute. • Dr. Randolph Resnick's four-hour course will discuss "Medical/Dental Emergencies and Complications in Implant Dentistry." The course is sponsored by Salvin Dental Specialties.

• Dr. Michael Pikos will hold a hands-on course dealing with "Extraction Site Management for Implant Reconstruction," sponsored by Osteogenics Biomedical.

• Barb Herzog will deal with "Changes in Latitude, Changes in Attitude: Keeping Pace with How New Technologies Effect Your Financial Arrangements." This course is sponsored by Springstone Patient Financing.

• ZEST Anchors will sponsor Drs. Ara Nazarian and Paresh Patel's workshop, which features narrow-diameter implants, in a lecture on "Utilizing the Next Generation of Narrow-Diameter Overdenture Implants to Expand Your Practice Revenue Opportunities."

In addition to the program for the doctors, the ADIA will present a 2½-day program for team members. On Thursday, May 16, the auxiliary program will feature the following main podium speakers: Teresa Duncan, Carla Frey, Michelle Kratt and Yva Khalil.

On Friday, the auxiliaries will hear lectures from Dr. Mitra Sadrameli, Dr. Avi Schetritt, Dr. Jin Kim, Dr. John Olsen, Dr. Ira Langstein, Dr. Thomas Ford and Dr. Justin Moody. The ADIA program will conclude on Saturday with four certification programs held simultaneously for dental hygienists, dental assistants, practice management coordinators and implant coordinators. This 2½-day program is applicable for 18 C.E. credits.

With more than 12,000 members worldwide, the ICOI is the largest professional dental implant organization and provides vast dental implant continuing education opportunities by sponsoring or cosponsoring many meetings each year.

For more information on this symposium or about the ICOI, visit *www.icoi.org*.





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Scenes from CDA in Anaheim

Implant companies bring newest products to share at Southern California show

The Glidewell staff at CDA Presents in Anaheim stands ready to help attendees pick out technology that will help their practice.



Straumann's Brent Reilly and Tim Graham speak with Dr. Cuong Nguyen, right, on April 11 about the company's implant options at the CDA Presents in Anaheim.

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Emiko Ota and Yukari Aritake at the Osada booth.



Hiossen's Derrick Lee shows attendees the company's CAS Kit at the company's booth.

Photos by Sierra Rendon Managing Editor

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Nobel Biocare approves re-elections, dividends

At its annual general meeting in March, Nobel Biocare endorsed all the proposals put forward by the board of directors, including the approval of a gross dividend. In addition, all board members who stood again were re-elected, the international provider of restorative and esthetic dental solutions has reported.

Daniela Bosshardt-Hengartner, Raymund Breu, Edgar Fluri, Michel Orsinger, Juha Räisänen, Oern Stuge, Rolf Watter and Georg Watzek were re-elected as board members for a one-year term. Franz Maier was elected as a new member.

KPMG, Zurich, was confirmed as auditor for the current financial year. Nobel Biocare announced that the next meeting will be held in March 2014.

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BIOMET 3i, 3M ESPE collaborate to create digital solutions that simplify restorations

BIOMET 3i has announced a new collaboration with 3M ESPE that utilizes the BIOMET 3i patented BellaTek[®] Encode[®] Impression System with the 3M[™] True Definition Scanner to create customized abutments using intraoral impressions, resulting in simplified esthetic restorations.

Utilizing these combined technologies, clinicians are able to make a digital impression of a healing abutment with the use of the 3M True Definition Scanner, which will scan embedded codes on the occlusal surface of the abutment, the surrounding soft tissue and adjacent dentition. These codes provide the necessary information to design and mill the definitive abutment. The process is handled supragingivally by utilizing the BellaTek Encode Impression System, so no removal of the healing abutment is required to create the scan.

Greater patient satisfaction may also occur as intraoral scanning eliminates the need for impression-taking material; some patients find this is a more comfortable experience, according to the company. Patients should also recognize



The 3M True Definition Scanner. (Photo/Provided by 3M ESPE)

time savings as the process is shorter than the typical procedure.

The new 3M True Definition Scanner is designed for accuracy, flexibility and af-

fordability, the company says.

"We are pleased to offer the broadest range of digital solutions, which will lead to esthetic outcomes for patients," said Bart Doedens, president of BIOMET 3i. "This new step forward in impression making offers a win-win experience for clinicians, laboratories and patients."

"This new collaboration is a very important step to digitize implant treatment, and we are happy to add BIOMET 3i as a new trusted connection with the 3M True Definition Scanner," said Dave Frezee, business director, 3M Digital Oral Care, 3M ESPE. "Dentists now have the option to use the 3M True Definition Scanner for the complete implant workflow."

About BIOMET 3i

BIOMET 3i LLC is a leading manufacturer of dental implants, abutments and related products. Since its inception in 1987, BIOMET 3i has been on the forefront in developing, manufacturing and distributing oral reconstructive products, including dental implant components and bone- and tissue-regenerative materials. The company also provides educational programs and seminars for dental professionals around the world. BIOMET 3i is based in Palm Beach Gardens, Fla., with operations throughout North America, Latin America, Europe and Asia-Pacific. For more information about BIOMET 3i, visit *www.biomet3i.com* or contact the company at (800) 342-5454; outside the United States, dial (561) 776-6700.

About 3M ESPE

3M ESPE manufactures and markets more than 2,000 products and services designed to help dental professionals improve patients' oral health. 3M Health Care, one of 3M's six major business segments, provides innovative products and services to help clinicians improve the practice and delivery of patient care in medical, oral care, drug delivery and health-information markets. For more information on the complete 3M ESPE line of dental products, visit www.3MESPE. com or call the 3M ESPE technical hotline at (800) 634-2249. Products are available for purchase through authorized 3M ESPE distributors. 3M and ESPE are trademarks of 3M or 3M Deutschland GmbH.

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Implant Direct

By Implant Direct staff

Implant Direct, the company that revolutionized the implant industry by creating the value-priced segment in 2006, introduces a new online store that will dramatically simplify how implants and auxiliary items are ordered.

Available at *www.implantdirect.com*, the new online store introduces visitors to the latest products, resources and events with an ever-changing homepage display (Fig. 1). Visual selection charts lead clinicians or office staff through the implant selection process, first by identifying the implant system (Fig. 2) and then the correct diameter and prosthetic platform (Fig. 3).

Once on the implant product page, the compatible components, abutments, instruments, biologics and literature are just a click away. There's no need to jump through different product categories or pages — with "all-in-1 shopping," everything can be found all in one spot. The simply smarter system even identifies the related items.

In addition, Implant Direct's new online store allows visitors to:

• watch related 3-D graphic videos without interrupting shopping

• easily switch between different product images or zoom-in for a close-up view

• compare the features and benefits between different products of interest

• move to different categories when desired via the global, top navigation bar • find attachments, international prod-

ucts and education opportunities easily in new, dedicated sections

 look for products quickly with improved search capabilities and new advanced search option

quickly preview cart contents

• keep track of potential future purchases with a wish list

• manage their account and view all recent activity easily from the account dashboard

This new online store, with advanced technological capabilities, represents the latest progression in the web-based business strategy Implant Direct was originally founded upon. The company has long strived to augment the service and support available to dental professionals from the customer service and field teams with online assistance, such as an extensive library of 3-D graphic videos detailing technical procedures and product features.

Implant Direct's implant systems offer surgical and prosthetic compatibility with premium-priced systems as well as significant design improvements for enhanced clinical performance. Implant Direct offers a non-negotiable list price for each item in its broad product range. All-in-1 packaging includes components such as cover screw, healing collar, transfer and final or temporary abutment with the implant for added value.

About Implant Direct

Implant Direct is a joint venture between implantology pioneer Dr. Gerald Niznick and Sybron Dental Specialties (SDS). The venture combines SDS' 100-year history of providing service, quality and innovation to dental professionals, the expansive expertise of its Fortune 500 parent company, Danaher Corporation and Niznick's 33-year history of innovation in the implant industry, with more than 30 patents including the internal, conical connection in 1986 — a cornerstone of modern dental design.

Today, Implant Direct continues those traditions through its commitment to provide high-quality products at valueadded prices with simplified surgical procedures and versatile prosthetic options. The company releases numerous new product lines and line extensions each year while also continually improving its existing product designs, manufacturing processes and online support.



Fig. 1: Implant Direct's new online store at www.implantdirect.com. Photos/Provided by Implant Direct

> Fig. 2: Implant System Selection. Shown here: Legacy System with Dr. Niznick's orginal, internal conical connection interface. Fig. 3: Implant Diameter

Selection. Shown here: Legacy3 implants packaged on a carrier that is transfer and final abutment. Fig. 4: Implant Product Page with all-in-1 shopping.



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Implant position in the esthetic zone

Establishing a treatment plan is paramount

By Siamak Abai, DDS, MMedSc

Since the advent of modern root form osseointegrated implant dentistry in 1952, clinicians have strived for improvements in implant positioning in the esthetic zone to achieve predictable restorative and esthetic 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.¹ The ultimate goal is not only to avoid sensitive structures, but to respect the established biological principles to achieve esthetic 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.²⁻⁴ (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.5 (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.⁶

Apico-coronal criteria

Peri-implant crestal bone stability plays a critical role in the presence of interdental papilla.⁷ 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.⁸ It is suggested an implant collar be located 2 mm apical to the CEJ of an adjacent tooth if no gingival recession is present.⁹ (Fig. 3)

Implant angulation

Implant angulation is particularly important in treatment planning for screwretained restorations. Implants angled too far labially compromise the placement of the restorative screw while implants angled too far lingually can result in 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.¹⁰ 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.¹¹

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.



Fig. 1a: Minimum distance of 1.5 mm between implant and existing dentition. Photos/Provided by Glidewell Laboratories



Fig. 1b: Minimum distance of 3 mm between two adjacent implants.



Fig. 2: Proper labiolingual placement with 1.8 mm thickness of labial bone.



Fig. 3: Lateral view of implant placed with the collar at the level of crestal bone with adjacent teeth CEJ 2 mm coronal to the collar of the implant.



Fig. 4: Proper implant angulation with screw access in the cingulum area.



Fig. 5a: Inclusive Tapered Implant at placement.



Fig. 5b: Inclusive custom healing abutment in place.



Fig. 5c: Contoured soft-tissue sulcus after healing.



Fig. 5d: Screw-retained IPS e.max[®] crown (Ivoclar Vivadent; Amherst, N.Y.) in place.



ig. 5e: PA to verify seating of crown



Fig. 5f: Buccal view of final restoration at delivery.

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represents the optimum to allow immediate loading with a functional provisional prosthesis.

Blade implants are made of titanium. Osseointegration of titanium implants has been confirmed by numerous histological studies, completed with any implant shape. Histological studies on blade implants demonstrate their osseo-integration and thickening of bone tissue around their surface consequent to load.^{9,17,18,19} Figure 1 allows you to appreciate the bone thickening around the neck and body of a blade implant, which represents bone reaction accrued during 11 years of functional work.

Due to the fact that bone response is the same, you can build fixed prosthetic bridges supported by screw and blade implants. Figure 2 has been taken immediately after positioning a screw implant and a blade implant in the superior posterior area, in order to build a threeelements bridge. The blade is leaning on the cortical of the maxillary sinus, engaging it in some points.

Blades allow:

• the possibility of making the most of even the narrowest alveolar crests;

• adaptability to the majority of anatomical conformations;

• valorization of existing tissue and obviation of bone expansion and regeneration procedures;

• mechanical correction of parallelism issues during implant surgery;

• versatility in adaptation to the deep anatomical structures possible by modifying the implant;

• the presence of numerous stabilizing contacts with deep cortical layer;

• the possibility of inserting a part of the implant below the intact cortex (as compared to EDE technique);

• adequate management of attached gingiva during implant surgery; and

• simple surgical technique performed with standard instruments.

Shape modifications

The blade implant can be modified to perfectly suit the deep bone anatomy (Fig. 1), and the body can be curved to follow the anatomical profile. If the abutment needs to be angled, this can be achieved mechanically, up to a maximum of 20 degrees, before the implant is positioned^{4.5} using two pairs of steel pliers, thereby resolving beforehand any problems that could arise because of incongruous abutment positioning (Fig. 3).

Immediate loading

The blade implant can be immediately loaded if adequate stability has been achieved. Anchoring the implant through two cortical layers and in contact with the deeper cortex should confer best stability.

Static and dynamic occlusion should be meticulously checked upon fitting of both temporary and permanent crowns.⁶

Variations

During the years, several authors have proposed variations on the original technique, which fit to certain situations. The technique known as Endosseous Distal Extension (E.D.E.) is particularly useful for treatment of lower posterior sectors featuring scarce bone density.

Used since 1993, E.D.E. was first published in 2001.⁷⁻⁸ The type of blade implant to use is ramus blade, which was



Fig. 1: Photo at seven years and radiograph at 11 years of submerged blade implant positioned in zone 1.2 in 1993. Photos/Provided by Luca Dal Carlo, DDS.



Fig. 2: Blade implant and screw implant inserted in the superior posterior area. Blade's shoulder has been positioned deep inside the bone. The blade engages in some points the cortical bone of the maxillary sinus.



Fig. 3: Blade implant inserted in zone 3.5, where the bone ridge was narrower than posteriorly. Notice how the blade's abutment has been bent to solve parallelism problem, before deep insertion of the implant in the bone.



Fig. 4: Schematic representation of the E.D.E. technique.



Fig. 5: Combination of different implant types in the same clinical case.

conceived during the 1970s by Roberts and Linkow. The technique involves tracing the implant housing mesial to the implant positioning site, so that the blade is gradually rotated distally until it reaches the distal border of the post housing (Fig. 4). In this way almost all of the implant is placed beneath the intact bone and soft tissues. The presence of intact superficial bone tissue posterior to the abutment can be seen upon radiographical examination.

Reliability

Numerous articles have attested to the long-term stability of this type of implant and document the histological confirmation of its osteointegration, without connective tissue interposition at the bone/ implant interface.⁹⁻²²

This kind of procedure is characterized by excellent soft-tissue response.

Conclusions

The blade implant is a valid therapeutic device useful for treating cases with particular anatomical features, such as narrow bone crest and scarce spongy bone in the lower distal sector.

It can be used, due to the numerous forms available, not only in the upper and lower posterior sectors, but also to provide deep anchorage in posterior and anterior (esthetic) sectors alike.

It is therefore a treatment of choice in cases where the outcomes of alternative procedures are less predictable and the procedures themselves are more likely to compromise the integrity of the local bone tissue. Because they induce the same bony reaction, blade implants can be used in combination with other implant types (Fig. 5).

Furthermore, this method offers excellent response of the surrounding soft tissues. To prevent failure, practitioners would be wise to bear in mind that blade implants are not indicated in wide alveolar crests or in areas where bone density is insufficient and the implant cannot engage the deep cortical layer.

It is very important that clinicians who want to learn the blade implant technique carefully follow training courses held by expert fellows, who can teach you how to practice this technique while avoiding some of the mistakes that have caused unfair bad press in the past.

Theoretical and practical courses are organized in New Jersey and Jamaica by Atlantic Dental Implant Seminars (*www. adiseminars.com*), under supervision of Linkow, the blade implants inventor.

References available upon request from the publisher.

About the author

LUCA DAL CARLO, DDS, graduated from the University of Padua (Italy) in 1988. He is the founder of the

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