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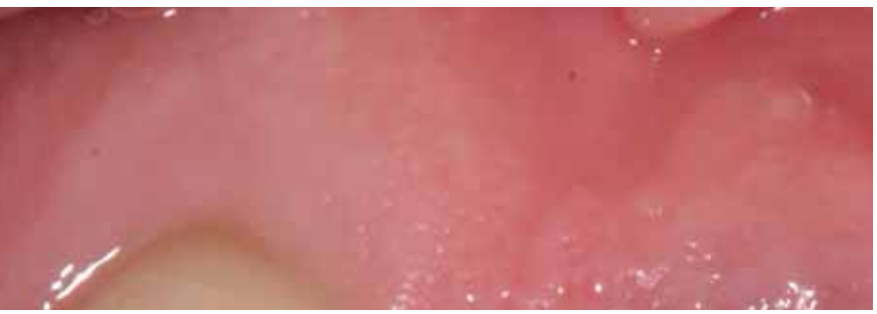
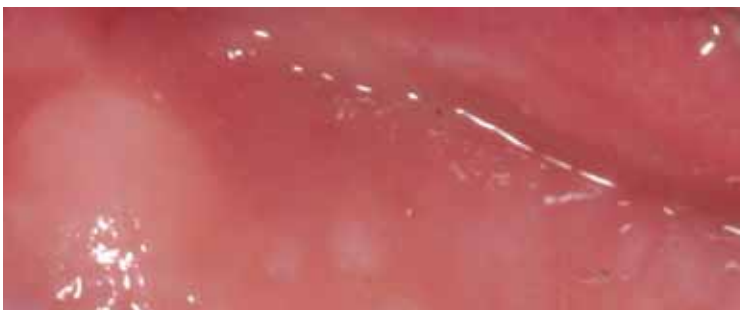
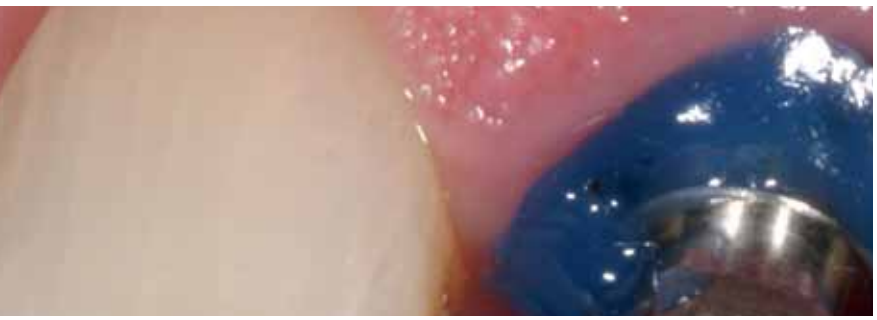
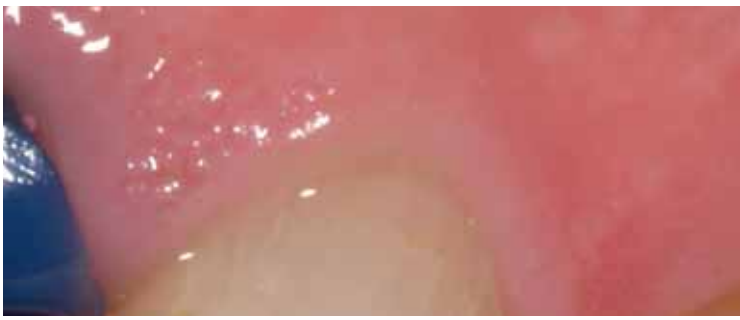
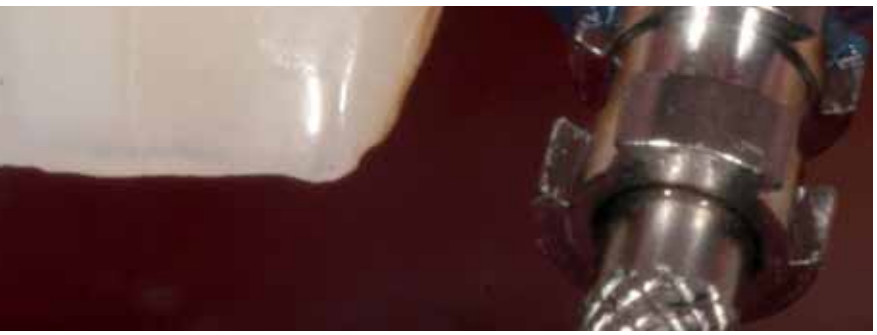
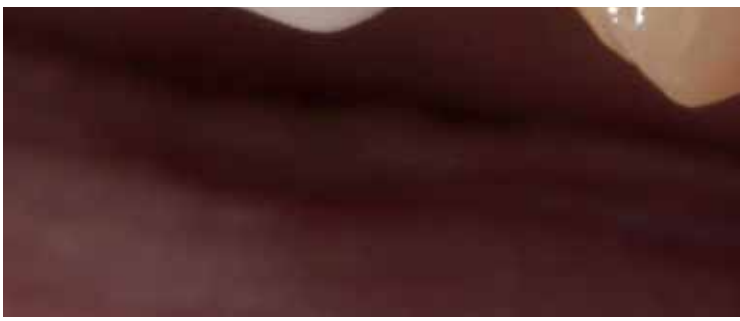
# EDI Journal

European Journal for Dental Implantologists



TOPIC

## Illusion of Nature

Non-invasive esthetic rehabilitation

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# Brave New World of Cross-border Medical Services?

This March, the International Dental Show (IDS) 2009 will open its gates in Cologne – an important international marketplace designed to offer guidance to promising new technologies and a "festival of innovations, trends and ideas", but also a meeting place for the top players in the dental field and for dental care providers within the various national healthcare systems. Quality and innovation should be the determining factors for medical services in a competitive European market.

In July 2008, the European Commission finally presented its promised proposal for a "Directive on the application of patient's rights in cross-border healthcare". The proposal is intended to respond to rapid changes in the social and economic fields. The proposed directive covers cross-border health services that patients may obtain outside their home country.

Since 1998, the rulings by the European Court of Justice have consistently upheld the view that healthcare services are covered by the freedom to provide services, which is one of the four European fundamental freedoms (the other three being the freedom of movement of goods, the freedom of establishment and the freedom of capital movement). Unfortunately, only 30 percent of all EU citizens are aware that they have a right to obtain healthcare services in other EU member states. The healthcare system of the home state, whether organized directly by the state or on the insurance principle, must ensure that the patient is reimbursed – and that even if these services are provided within the home state.

Reality, unfortunately, looks quite different. In Germany, the major players in statutory health care have turned the state into an instrument for erecting hurdles to discourage patients from opting for reimbursement. For example, patients are forced to pay a ten percent administrative surcharge, and any option for reimbursement will apply to all services for the entire year. For many patients, this acts as a clear deterrent. And now, on 31 March, the umbrella organizations of the healthcare insurers are planning to submit a "Practical Report" to the German parliament via the German Ministry of Health, reporting on the small number of patients availing themselves of the options of Section 13 of the German Social Code, Book V, with the intention of having the entire section deleted. This section governs the procedure for cost reimbursement within the statutory health insurance system; it had been modified in 2004, at the instigation of the EU, such that all patients now once again have the right to opt for cost reimbursement for their medical or dental treatment.

As already stated, patients are often unaware of the reimbursement option; unfortunately, many German physicians and dentists shy away from informing their patients about this payment modality for outpatient medical treatment. Due to misguided ethical inhibitions, they want to avoid any impression of dishonesty that might arise from their pointing out the limits of the services and prescriptions available.

It has been estimated that only one percent of all Europeans make use of cross-border healthcare services. The "EU Directive on the application of patient's rights in cross-border healthcare" threatens to go under in the usual regulation mania. Brussels wants to establish European reference networks within the member states "to help realize the potential of European cooperation regarding highly specialized healthcare for patients and for healthcare systems from innovations in medical science and health technologies". A similar approach is planned for the future development and operation of a network for health technology assessment. Member states are to be required to collect statistical data for monitoring the provision of cross-border healthcare, the modalities of the treatments provided, the providers, the patients, the cost and the outcomes and to provide them to the European Commission on an annual basis. Against the backdrop of this bureaucratic outrage, it is difficult to recognize the original good intentions of providing mobility to patients.

*Sincerely,*
*Christian Berger, Kempten/Germany*
*President of BDIZ EDI*

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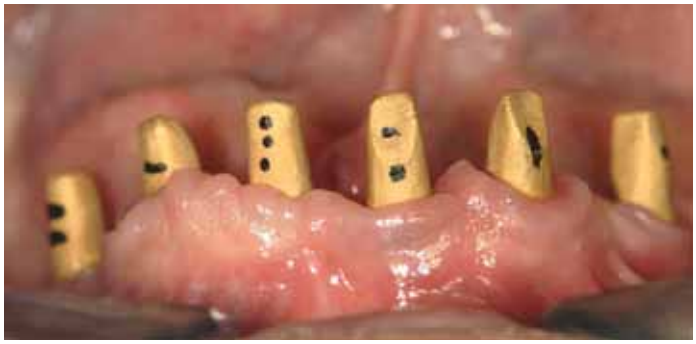

*Computer-guided Flapless Surgery, page 58*
*AGC copings for the maxillary abutments.*

***Please Come And Visit Us At The IDS Meeting — Cologne 24–28 March: Hall 4.2 (Aisle G 030/J 039)***

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EDI

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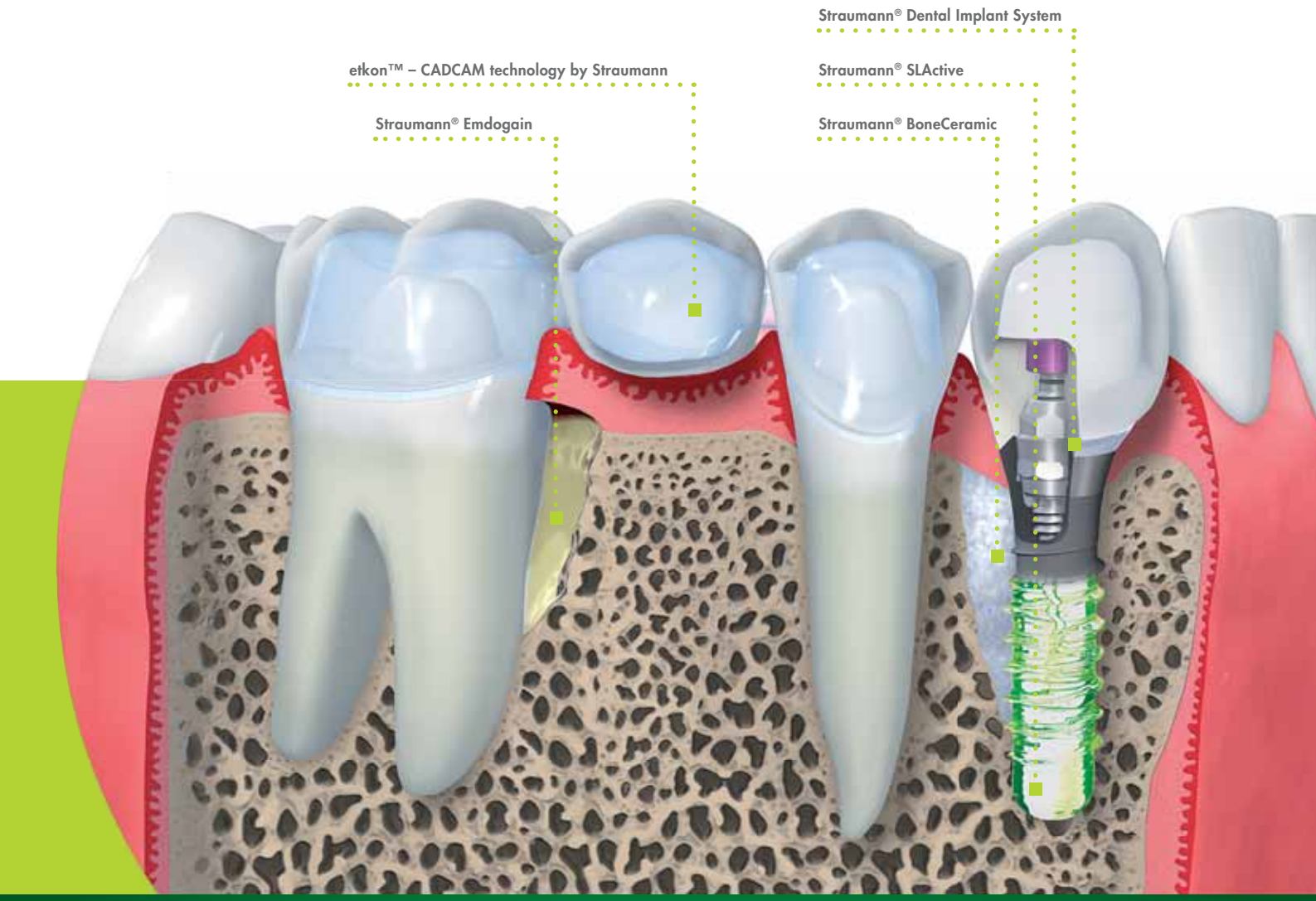
# WHATEVER **YOUR PATIENTS** NEED

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FOR DENTAL PROFESSIONALS

Kicking off IDS 2009

# The Future of Dentistry

**On 24 March 2009, IDS 2009 will open its gates in Cologne – an important international marketplace designed to offer guidance to promising new technologies and a "festival of innovations, trends and ideas". IDS 2009 is sure to present new revelations for implantologists, manufacturers, dental technicians, dealers, dental receptionists, dental assistants, clinicians, practitioners, researchers, scientists and of course the political representatives of the dental sector.**

## IDS at a glance



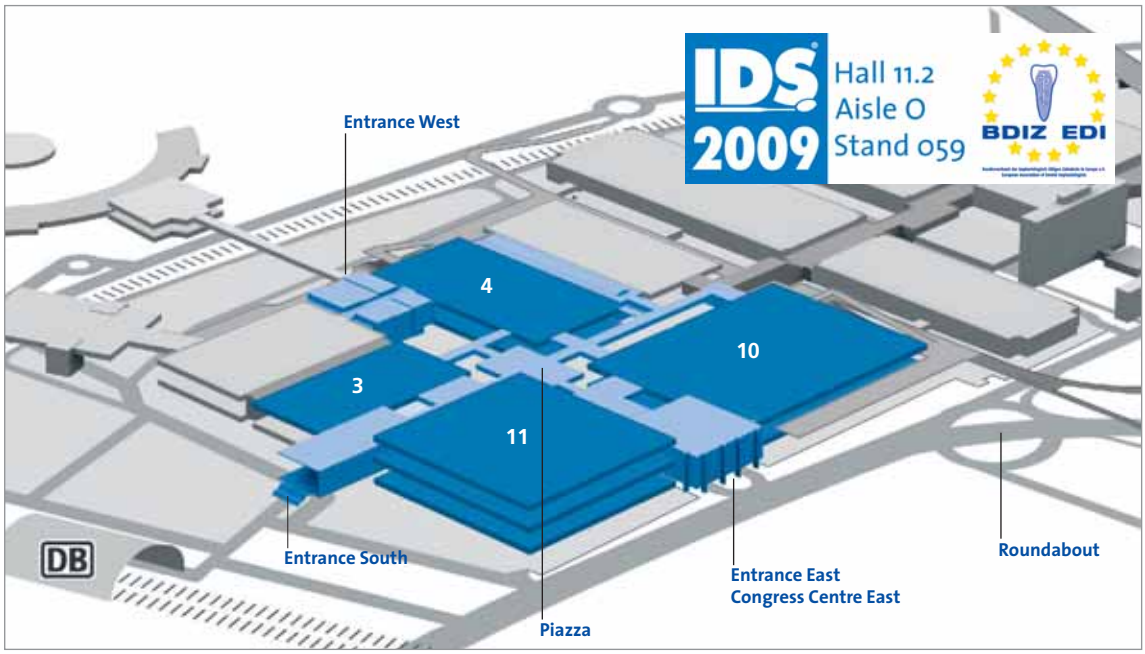
Approximately 1,800 exhibitors from 55 countries will be presenting themselves on 14 hectares/35 acres of floor space. 1,100 innovations have been announced. The 33rd International Dental Show – IDS – is gearing up to get underway. It is organized by GFDI Gesellschaft zur Förderung der Dental-Industrie mbH, the commercial enterprise of the Association of German Dental Manufacturers (VDDI) and staged by Koelnmesse GmbH, Cologne.

## Only a few steps to the Cologne Messe/ Deutz train station

The organizers are promising an all-new experience, a more contemporary atmosphere than two years ago. The Messeboulevard – main artery of the fairgrounds – will be guiding visitors easily and make for short trips between halls. At the same time, it is an exclusive service and shopping promenade, which begins at the new south entrance, the gateway to downtown Cologne and to the Cologne Messe/Deutz train station.

This leading international dental trade show will be held in halls 3, 4, 10 and 11.

Speaker's Corner in Hall 3.1, right next to the south entrance, will be active and alive on all days of the trade show. Here, IDS exhibitors will be presenting new products, services and procedures. The first day



of the fair, 24 March, is reserved exclusively for dental retailers and importers. From 25 to 28 March, IDS will be open to the public.

More than 200 new exhibitors are expected. Currently, the largest contingents hail from Germany, Italy, the U.S., Switzerland, South Korea and Great Britain. Morocco and Singapore will be participating for the first time.

**Opening hours**

24 to 28 March
Visitors: 9 am to 6 pm
Exhibitors: 8 am to 7 pm

BDIZ EDI, too, will be present at IDS again, this year with a joint stand with Ratajczak & Partners, the office of BDIZ EDI legal counsel *Dr Thomas Ratjaczak*. ■

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A short interview with BDIZ EDI president Christian Berger

# Dental Hub IDS Cologne

**IDS Cologne is an important hub for BDIZ EDI when it comes to keeping in touch with the protagonists of the dental industry, and particularly with implant manufacturers, producers of imaging systems, industry media and the representatives of professional associations and organizations. BDIZ EDI has been present and visible at IDS Cologne for many years. We have asked the president of the association some questions.**

*Christian Berger*

***What is the current situation on the German and international implant markets?***

In early January, BDIZ EDI met with leading representatives of the large implant manufacturers. The global financial crisis has its implications on the implant market, especially since the patients themselves have to foot the bills for implantological treatment, without being reimbursed by insurance or healthcare funds. For this reason, there is a trend toward placing fewer implants and restoring them with less complex superstructures.


***What do you think are the main current trends in oral implantology?***

Current developments in imaging technologies will be of tremendous importance for diagnostics, treatment planning and treatment execution, although most of these procedures and equipment continue to be very expensive for an individual dental office to invest in. Not least because of the uncertain economic situation, the funds available to dentists for capital investment are limited. But we do expect that the new technologies will become more widespread, and greater production volumes will have to be reflected in lower prices. Innovations in the field of implant surfaces also open up encouraging perspectives in oral implantology. On the other hand, the day when implants will be replaced by teeth by genetic engineering is likely to be very far in the future.

***What does BDIZ EDI expect of IDS 2009?***

Financial crisis or not, IDS 2009 will still present a wealth of innovations, and a visit to this dental show will be worthwhile for any dentist. BDIZ EDI will be presenting the new edition of its accounting and billing manual, which will offer up-to-date and comprehensive guidance for dentists, independent of whether or when the new GOZ will take effect (GOZ is the German standard fee schedule for dentists, applicable to private patients, including patients with private health insurance).

***Does the draft GOZ influence dentists' curiosity?***

We certainly see a discrepancy here. On the one hand we have all these new technological options and innovations, and on the other hand we have the economic aspects. The valuations for oral implantology services overall have actually been noticeably reduced in the draft GOZ presented by the German Ministry of Health. Example: The old GOZ item 901 "Preparing a bone cavity for an endosseous implant" was effectively reduced by 110 points and GOZ 902 "Inserting a gauge to examine the bone cavity" was reduced by 805 points. Only very simple implant procedures have received a higher valuation in the new GOZ item 840, but this is only true if none of the ancillary treatment steps have to be performed; these used to be billable separately but are now included. If we consider that implant-supported restorations mean a significant improvement in the quality of life for an increasingly aging population, we see that the German Ministry of Health completely disregards the treatment wishes and requirements of this segment of the population. A large number of services not previously contained in GOZ but build an analogy with other fee schedules has now be included in the new GOZ, but these, too, were devaluated – without any comments or rationale given by the authors of the draft.

***Mr Berger, thank you very much for this interview.*** ■

BDIZ EDI at IDS 2009

# Meeting Point Implantology

**It is widely known that BDIZ EDI is not prone to pursuing a closed-shop policy. This was amply demonstrated by the curricula modules in continuing education; and this was also frequently demonstrated by BDIZ EDI joining forces with other associations and organizations to stand up against impending trouble when it comes to the draft new German standard fee schedule for dentists, GOZ. This openness and transparency is physically reflected by the BDIZ EDI stand at IDS 2009.**

Asking about the philosophy of a stand at a trade show – its art, its architecture, its craftsmanship – might be a bit highbrow. But of course the stand has a concept that reflects the principles of BDIZ EDI. The association represents competence, especially in the areas of science, clinical practice, the law and accounting and reimbursement procedures; it is member-driven and service-oriented and cherishes open communication channels with other professional organizations. It is not afraid of taking a stand and does so quickly and on the basis of sound research – whether we are talking about GOZ or about questions in dentistry. This is what the BDIZ EDI stand had to represent visually.


*The joint stand of BDIZ EDI and Ratajczak & Partners 2009.*

For the first time, BDIZ EDI has a joint stand with Ratajczak & Partners, the office of BDIZ EDI legal counsel *Dr Thomas Ratjaczak*. As an expert in medical law, *Ratajczak* has long been a competent partner for the BDIZ EDI board and members and an experienced and well-versed legal counsel. The Meeting Point Implantology unites and reflects the competence of both partners. There are no walls and no barriers, no demarcation lines – openness and transparency predominate. The stand allows visitors to look again and look through, to walk in and walk through, rather than letting them wait at a counter. Only the shade of the carpet shows where BDIZ EDI ends and where R&P begins. The unifying element of the two worlds is the Dental Services Company (SZD), whose work closely involves both partners: SZD was founded as a wholly-owned subsidiary of BDIZ EDI to assist clinical

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STABILITY at insertion

**Immediate loading**
RELIABILITY of the treatments

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**Universal Connection**
LONG TERM peace of mind

**Loading resistance**
STRENGTH of material

**RBM surface treatment**
PREDICTABLE osseointegration

**Implant morphology**
STABILITY at insertion

**Immediate loading**
RELIABILITY of the treatments

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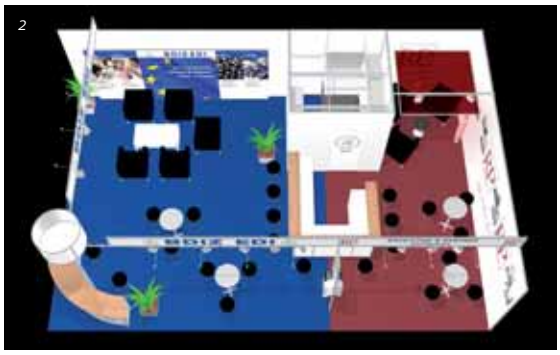




*Figs. 1 to 3*
*The stand from different perspectives.*

*Fig. 4*
*The stand of BDIZ EDI at IDS 2007.*

implantologists in matters relating to treatment plans and cost estimates as well as accounting and billing matters. Ratajczak & Partner is a cooperative partner of SZD.

One important challenge in the implementation of this concept was to communicate the message to visitors that an uncompromising service orientation is the mission of both partners. This was achieved by a high level of transparency and openness, designed to pave the way for frank and rewarding discussions – between you, the board of BDIZ EDI and the representatives of R&P. Welcome to Hall 11.2, Aisle O, Stand 059! ■

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New products at IDS

# Dramatic Developments in Many Areas

**IDS 2009 will once again be presenting innovations – from stem-cell technology and human, bovine and vegetable bone replacement materials to innovative implant geometries and materials. Some of these developments open up new alternatives to classical procedures such as sinus floor elevation.**

Progress has also been made in the field of implantological instruments such as atraumatic extraction forceps or improved round hollow osteotomes. Optimized procedures for preserving the alveolar process, for bone augmentation or for alveolar distraction osteogenesis will also be presented. A further focus will be on state-of-the-art bioengineering procedures for osteogenesis – including adult stem-cell technology. Manufacturers will be showing their latest developments for using bone marrow stem cells and other osteogenic factors and their integration into scaffolds (support membranes). Bioabsorbable rods or membranes, in some cases made of collagen or mucous material, will also be hot topics at IDS.

High-resolution CT navigation procedures in combination with laser-scanned casts have now made their way into oral implantology. Used in conjunction with other diagnostic high-tech methods such as digital x-ray, oral implantologists can now work with extremely precise stereolithographic drilling templates that enable the preparation of the implant bed with a degree of precision hitherto unknown.

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*On 24 March 2009, IDS 2009 will open its gates in Cologne.*

## CAD/CAM

Only a few years ago, the computer-aided production of dental restorations was considered an exceptional procedure suited mostly for digital-technology enthusiasts. Today, however, these high-tech procedures predominate in prosthetics and, increasingly, in oral implantology: More than 25 million all-ceramic restorations have been manufactured with the help of CAD/CAM technology – and counting. "The influence of modern high-tech procedures has significantly changed the workflows in dental offices and laboratories. Dental users now have methods at their disposal that facilitate rapid design and production of crown and bridge frameworks as well as complex implant-supported superstructures", said *Dr Martin Rickert*, chairman of the board of VDDI (Association of German Dental Manufacturers).

Many companies in the dental industry have invested in this development. Ceramic materials such as zirconia are not the only possible materials; non-precious alloys such as cobalt-chromium and titanium alloys, as well as pure titanium, are also increasingly used. However, processing them requires highly specialized hardware and software – starting with high-resolution, three-dimensional digital imaging using powerful CCD sensors and photodiodes, and proceeding to laser scanners (which today can handle up to 100,000 data points per second) and finally to special CAD programs that can turn the digital data generated from physical dies or casts into a virtual diagnostic cast. Even the occlusal characteristics of antagonists and adjacent teeth as well as the total pattern of contacts can now be generated by the computer.

## Ceramics and aesthetics

Restorations with high-performance zirconia ceramics frameworks and built-up or overpressed ceramic veneers currently represent one of the most ambitious areas in prosthodontics. New materials are also constantly being developed in the area of aesthetic acrylic veneers. The latest composite materials offer previously unknown abrasion resistance as well as the necessary shade reliability. State-of-the-art veneers, which can now be manufactured from pressable ceramics, high-fusion veneering ceramics or composite, are of course also represented.

Oral implantologists will rapidly encounter the displays of planning software and guided-surgery approaches. There are clearly delimited as well as comprehensive approaches. Drilling templates can be produced in the laboratory or (based on exported data) by service laboratories. Telescopic prostheses can be reworked into temporary prostheses stabilized with the aid of mini-implants, in cases where an abutment has been lost. Implant manufacturers in particular will be presenting a large number of innovations. ■

*Implant manufacturers will be presenting a large number of innovations at IDS 2009.*


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## Implantology guide

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| AESCULAP AG | 10.1 | C + D | 020/046/029 |
| Alpha-Bio tec. | 04.2 | G | 020 |
| ANTHOGYR | 11.1 | C + D | 040/041 |
| Aseptico, Inc. | 10.2 | T | 015 |
| Astra Tech AB | 03.2 | A + C + E | 010/019 |
| AVINENT IMPLANT SYSTEM, S.L. | 0.41 | E | 048 |
| B.T.I. Deutschland GmbH | 0.32 | E + F | 020/029 |
| BEGO Bremer Goldschlägerei Wilh. Herbst GmbH & Co. KG | 10.2 | M + N | 018/019/020/ 029/028 |
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| BioHorizons GmbH | 0.41 | C | 050 |
| BIOMATLANTE SAS | 11.3 | D | 073 |
| BIOMET 3i | 04.2 | G + J | 030/039 |
| BIOTECK s.r.l. | 11.2 | L | 052 |
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| BPI Biologisch Physikalische Implantate GmbH & Co. KG | 04.2 | N | 060 |
| B-Productions GmbH | 10.2 | R | 068 |
| bredent medical GmbH & Co. KG | 11.1 | B + C | 010/019 |
| BTI Biotechnology Institute, S.L. | 03.2 | E + F | 020/029 |
| BTLock s.r.l. | 11.1 | H | 016 |
| C. Hafner GmbH + Co. KG Gold- und Silberscheideanstalt | 10.2 | R | 011 |
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| Dr. Ihde Dental GmbH | 10.2 | O | 069 |
| Dyna Dental Engineering b.v. | 10.2 | S + T | 068/069 |
| EQUINOX MEDICAL TECHNOLOGIES BV | 10.1 | C + D | 030/031 |
| Gebrüder Martin GmbH & Co. KG | 04.1 | A | 030 |
| General Implants GmbH | 11.1 | E | 021 |

PEOPLE HAVE PRIORITY

# The leading light

## Surgical instruments with self-generating LED

IDS 2009

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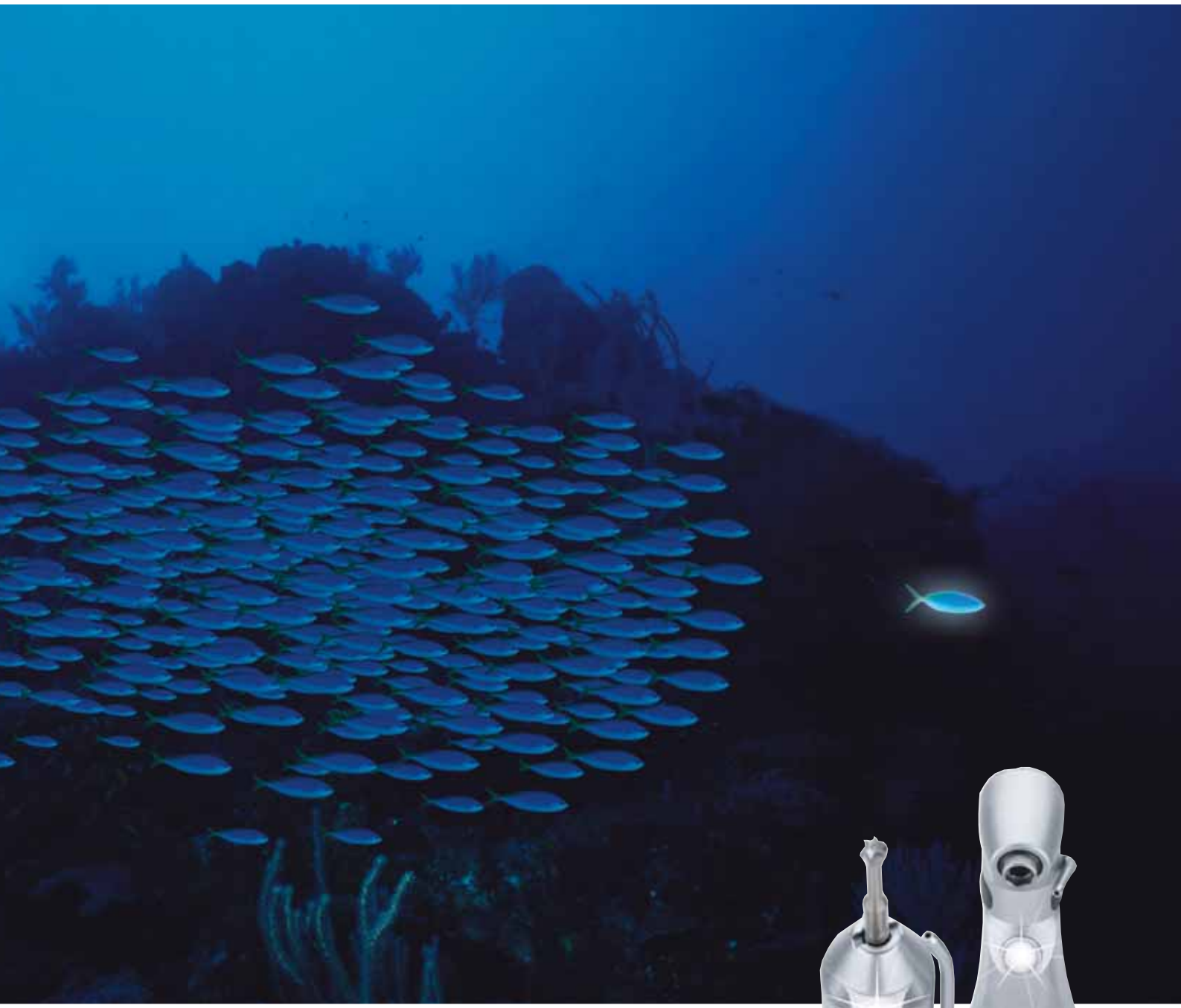

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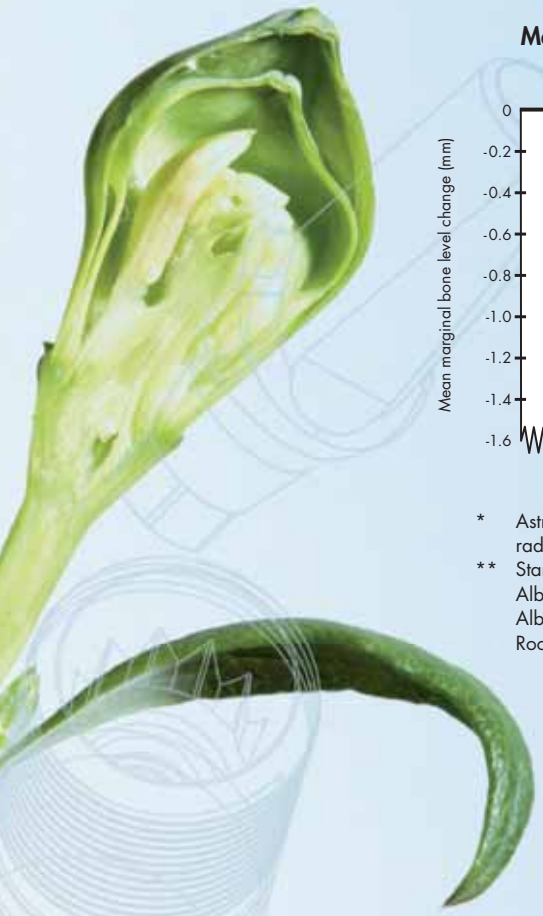

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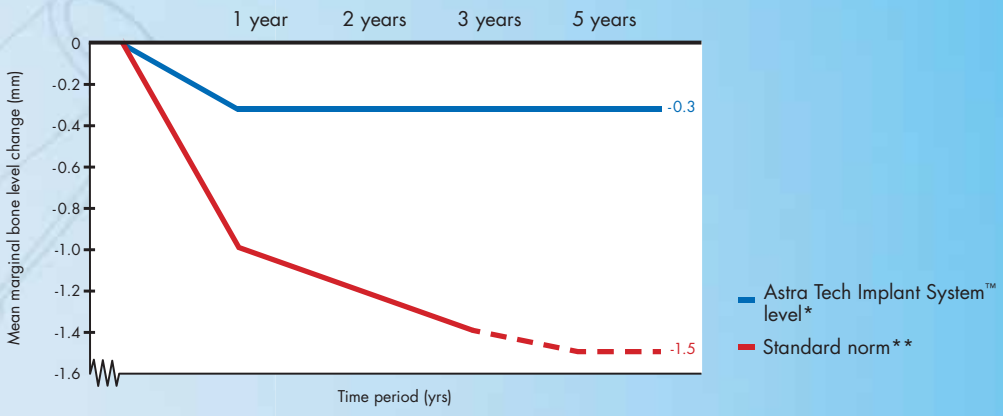


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Albrektsson T. and Zarb G.A., Int J Prosthodont 1993;6(2):95-105
Roos J., et al., Int J Oral Maxillofac Implants 1997;12(4):504-514

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*20 years of BDIZ EDI will be celebrated in Munich.*

Preview of the 13th BDIZ EDI Symposium in Munich

# 20 Years of BDIZ EDI

**Birthday time! On 9/10 October 2009, we will be celebrating 20 years of BDIZ EDI in Munich, the capital of Bavaria. This year's BDIZ EDI symposium – the 13th so far! – will offer a cavalcade of everything the association has to offer: information on scientific findings, the law, accounting and reimbursement procedures, and plenty of services for its members. The focus of the two-day symposium will be on imaging technologies and on oral implantology today and tomorrow. For 20 years now, BDIZ EDI has been a trailblazer for clinical oral implantology in Germany and, since 2004, throughout Europe.**

The history of BDIZ EDI is the history of oral implantology. When the German Federation of Dental Implantologists in Private Practice (Bundesverband der niedergelassenen implantologischen Zahnärzte, BDIZ) was founded in 1989 by practicing dentists, there were plenty of problems that required attention: It had barely been five years since oral implantology had obtained scientific recognition, and there were heated discussions on indications and payment and reimbursement issues. The clinical dentists who founded BDIZ did not want to watch the development of oral implantology in Germany from the sidelines. One of the reasons for founding BDIZ was that oral implantologists did not feel themselves represented in and by the dental professional bodies. The evaluation of implantological cases by dental experts unfamiliar with the new field was also viewed most critically. Who these pioneers were and how the history of the BDIZ EDI unfolded will be recounted in detail in our anniversary issue entitled "20 years of BDIZ EDI" to appear in September this year.

## Recent developments under scrutiny

Just how rapidly and successfully oral implantology has grown since *Formiggini* presented the first screw implant in 1946 is evidenced by the fact that implants are today the restoration of choice for most patients and that between 10 and 15 percent of all dentists in Germany are clinically active in oral implantology today – and most of these are in turn members of the BDIZ EDI. The annual symposia of the BDIZ EDI reflect recent developments and put them to the test: immediate restoration and immediate loading, ceramic versus titanium and, last year, peri-implantitis as the most recent hot topic.

In October 2009 in Munich, we will be focusing on 3D diagnostics and computer-assisted oral implantology. For the first time this year, our association will be organizing this event jointly with an internationally renowned professional society that has made a name for itself in the field of computer-assisted

implantology. International speakers will be highlighting the chances and limits of the new technologies in terms of potential clinical benefits, usability issues, indications and contraindications and, not least, radiation levels.

## Revealing the secrets of 3D

Once again this year, *Prof Joachim Zöller*, vice president of BDIZ EDI, will be in charge of the scientific program. As director both of the Department of Oral and Maxillofacial Plastic Surgery and of the Interdisciplinary Policlinic for Oral Surgery and Implantology at the University of Cologne, he wants to demystify the role and the potential of imaging technologies in oral implantology. Will state-of-the-art 3-D imaging really make the work of the implantologist simpler and more efficient? Where are the limits of periapical and panoramic radiography, and where does three-dimensional radiography come in? Questions are also certain to be asked on price-performance ratios and on the radiation levels of digital volume tomography (DVT). We are looking forward to the experts' reports!

## "GPS" for the oral cavity

The GPS (Global Positioning System) helps motorists reach their destination by a safe and simple route and without traffic jams. In oral implantology, navigation systems can help position implants perfectly. Computer-assisted intraoral navigation helps minimize the uncertainties associated with impending implant surgery. The 13th BDIZ EDI Symposium will forge the link between implantological diagnostics and clinically applicable achievements in computer science as they relate to the fields of oral surgery and general medicine. One of the tasks will be to identify where and how computer-assisted intraoral navigation can be integrated into the treatment workflow.

## Workshops

Various manufacturer workshops on Friday will facilitate a more in-depth approach to the symposium's topics, especially with a view to 3-D technologies. In addition, BDIZ EDI will be offering its first motivational workshop specifically for dental assistants. You will find the program for the Munich symposium online, at www.bdizedi.org, Events.

## The dentist of the future

Following the German federal elections in September, a symposium in Munich will be the first opportunity for a first post-election discussion of the situation of our profession. What will the dentist of the future be like? Will he or she be an employee or an entrepreneur? Which directions will political developments take? And what chances does the individual dentist in private practice have for economic survival within the German healthcare system? The Health Politics Forum on Friday will also address the German standard fee schedule for dentists, GOZ, with special emphasis on implantological issues.

## In the heart of Munich

A 20th anniversary is certainly reason enough to throw a party. Germany's southernmost metropolis offers the perfect setting for this. The two-day symposium will be held right in the centre of Munich, in one of the newest hotels in town – Sofitel Munich Bayerpost, located directly at the central train station, is all new and stylish, offering the perfect ambience for a congress. Presentations will be held by international speakers; simultaneous interpreting will be available. The gala dinner will be held at a restaurant that is one of the highlights of the Munich restaurant scene. Ever heard of Lenbach? Well – we will not be revealing anything more at this time. More information will be available online soon – and of course in the next issue of the EDI Journal.

*The Sofitel Munich Bayerpost is located directly at the central train station.*

# Preliminary Program

## Friday, 9 October 2009

9.00–12.00 am: Pre-congress workshops especially on 3-D imaging systems and computer-guided technology

**1.00 pm: Health Politics Forum**
The dentist of the future – the future of dentists

- *Christian Berger*, president of BDIZ EDI
- *Dr Wolfgang Heubisch*, Bavarian State Minister of Science, Research and the Art, Munich
- *Dr Peter Engel*, president of the German Chamber of Dentists, Cologne
- *Professor Norbert Klusen*, chief executive of the private health insurance company Techniker Krankenkasse, Hamburg

**Panel discussion**

- *Carlos Gebauer*, solicitor for insurance law, Duisburg
- *Dr Wilfried Beckmann*, president of the association of German private dental practicioners, Gütersloh
- *Dr Thomas Ratajczak*, legal advisor of BDIZ EDI, solicitor for health care and social law, Sindelfingen
- *Dr Willy Oggier*, health economist, Switzerland

**Panel discussion**

**BDIZ EDI General Meeting**

8.00 pm: **Gala dinner**

## Saturday, 10 October 2009

**Scientific program**
3D diagnostics and computer-assisted oral implantology

- Chair: *Professor Joachim E Zöller*, Cologne
- Welcome address: *Christian Berger*
- *Dr Guido Schiroli*, Genua, Italy
- *Dr Scott Ganz*, Fort Lee, New Jersey, USA
- *Dr Eduardo Anitua*, Vitoria, Spain
- *Professor Andrzej Wojtowicz*, Warsaw, Poland
- *Professor Antonio Felino*, Porto, Portugal
- *Dr Detlef Hildebrand*, Berlin, Germany
- *Dr Claudio Cacaci*, Munich, Germany
- *Dr Paulo Malo*, Lisbon, Portugal
- *Professor Hakan Özyuvaci*, Istanbul, Turkey
- *Professor Stefan Haßfeld*, Dortmund, Germany
- *Professor Vitomir Konstantinovic*, Belgrade, Serbia

**Final discussion**
*Professor Joachim E Zöller*

There will be a dental exhibition on both days.

---

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**An der Esche 2**

**53111 Bonn**
**Germany**

Please register the following persons for the **13th BDIZ EDI Symposium** (Munich, 9/10 October 2009). I understand that the registration is binding.

Please complete or tick as appropriate

Family name_____ Title_____ Given name_____ ☐ Dentist/physician ☐ assistant ☐ Member BDIZ EDI ☐ Non-member

Street address_____ Postal code/City_____

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☐ Please enter my order for ____ tickets for the evening program on 9 October.
☐ I will be attending the General Meeting.

BDIZ EDI would like to refer you to its Terms and Conditions for the **13th BDIZ EDI Symposium**.
For rates and the symposium program, please visit www.bdizedi.org.

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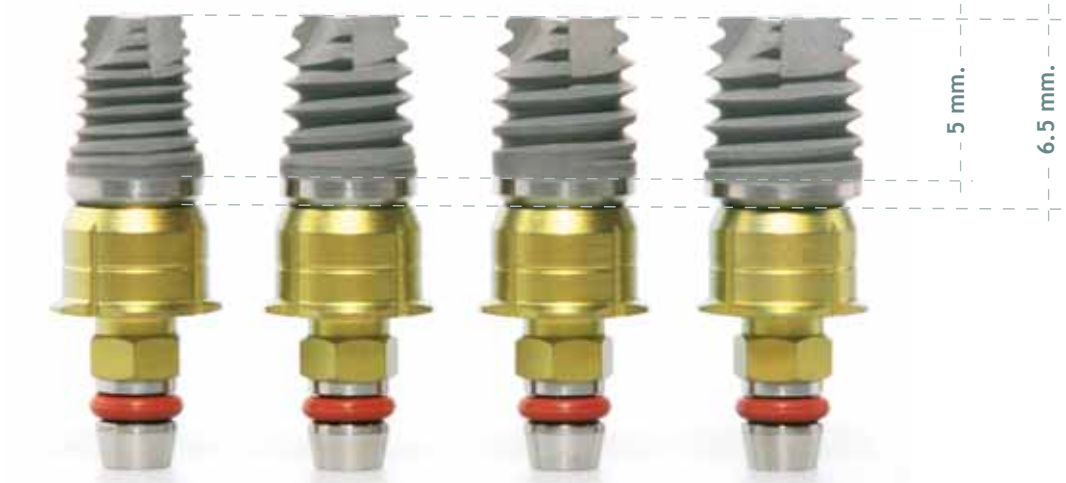


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Third BDIZ EDI
Mediterranean Symposium

# Update Implantology 2009

**Following the successful events in Montenegro and on Crete, BDIZ EDI is now heading for the Third BDIZ EDI Mediterranean Symposium. "Update Implantology 2009: Diagnostics and treatment planning, therapy and recall, accounting and legal issues" – this is the title of the symposium. The venue will be Vouliagméni on the Saronic Gulf near Athens. The symposium will take place on 11 April 2009.**

*The venue for the symposium and for recreation is the five-star Westin Astir Palace Hotel.*

BDIZ EDI will continue its proven concept to hold certain continuing education courses outside Germany in the year 2009. This concept helps promote the exchange of ideas within Europe. This year's Mediterranean Symposium will be held in Vouliagméni, Greece. If you are looking to combine a top-notch dental education event with a family vacation, then the Third BDIZ EDI Mediterranean Symposium is the place to go.

## International exchange of ideas

Attendees can expect a symposium characterized by top-notch international speakers dealing among other things with 3-D systems and exciting new topics in oral implantology as well as an exchange of ideas between the speakers and participants from all over the world. New technologies will be on the agenda, as will be user-friendliness, indications, radiation levels and, of course, interdisciplinary approaches.

The symposium will be held jointly with the Greek dental publisher Omnipress, who will be responsible for the "Greek" part of the event. The venue for the symposium and for recreation is the five-star Westin Astir Palace Hotel, located directly on the coast only 25 km from Athens. Vouliagméni, a luxury suburb of Athens, has been called the gem of the Athenian Riviera, enjoying more than 300 days of sunshine per year and dream beaches. During the Olympic Games of 2004 in Athens, Vouliagméni was the site of the Triathlon competitions. ■

# PREMIERE

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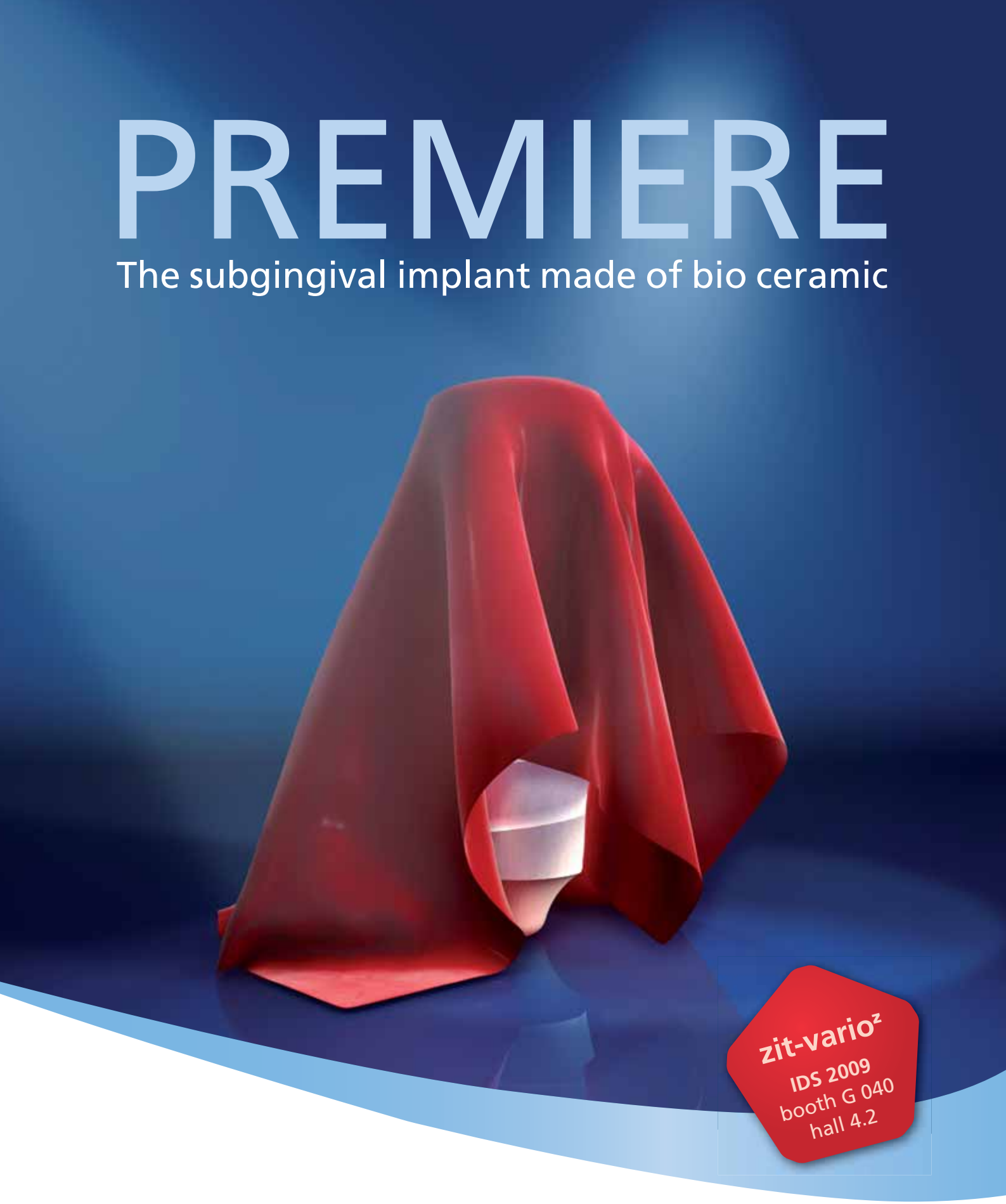


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11 April 2009

# 3rd Mediterranean Symposium of BDIZ EDI

**Immediate function therapy – single teeth and edentulous jaw – when and how?**
*Dr Stavros Pelekanos*, Assistant Professor of the Department of Prosthodontics, University of Athens

**The TEAM-ATHENS-CONCEPT – Planning and implementation of implants in complex cases – a team approach**
*Dr Ioannis Fakitsas*, oral surgeon, Athens

**Reliable methods in biological bone tissue regeneration**
*Prof Dr Dr Joachim E Zöller*, University of Cologne

**Adequate planning – the challenge in maxillofacial implantology**
*Prof Dr Vitomir Konstantinovic*, University of Belgrade

**The TEAM-BERLIN-CONCEPT – Planning and implementation of implants in complex cases – a team approach**
*Dr Detlef Hildebrand*, Berlin

**Field report on Straumann Bone Level Implants**
*Dr Holger Janssen*, Berlin

**Decision making: Keeping the tooth or placing an implant?**
*Christian Berger*, oral surgeon, Kempten

**Relocation of endodontics in the new map of dentistry**
*Dr Constantine Laghios*, Athens

**Low-level laser in implantology – evidence-based medicine?**
*Dr Julia Kenter-Berg*, Cologne

**Platform-switching with Camlog case reports of the single-center pilot study**
*Dr Ralf Masur*, Bad Wörishofen

**Reflections of 3-D imaging on oral surgery and implantology**
*Prof Dr Hakan Özyuvaci*, Istanbul

**Implant and abutment materials: Effect on osseointegration and soft-tissue integration**
*Dr Stratis Papazoglou*, Assistant Professor, University of Athens

**Biologic basis and clinical techniques for ultimate esthetics around implants**
*Dr Spyros Karatzas*, Periodontist, Athens

The symposium will be held in English.

**FAX your registration to**

**BDIZ EDI**

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## REGISTRATION

**Third BDIZ EDI Mediterranean Symposium (11 April 2009)**

**Registration fee: Euro 145 per person for the one day symposium.**

**Please note that travel and accommodation are not included. Please make your own reservations at the hotel (Phone: +30 210 8902-000).**

☐ I will be attending the Third BDIZ EDI Mediterranean Symposium (11 April 2009).

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[1] **Surgical and Mechanical Techniques to Increase Stability of Dental Implants**. Kharouf, Zeineb; Oh, Hyeong Cheol; Saito, Hanae; Cardaropoli, Giuseppe; Bral, Michael; Cho, Sang-Choon; Froum, Stuart; Tarnow, Dennis. Ashman Department of Periodontology and Implant Dentistry, New York University. Research presented at the AO Boston 2008.

[2] **Implant Design and Its Effect on Preservation of Crestal Bone Levels**. Jang, Bong-Joon; Pena, Maria Luisa; Kim, Mean Ji; Eskow, Robert; Elian, Nicolas; Cho, Sang-Choon; Froum, Stuart; Tarnow, Dennis. Ashman Department of Periodontology and Implant Dentistry, New York University. Research presented at the AO Boston 2008.

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BDIZ EDI recommendations to the Consensus Conference Implantology

# Review of the Classes of Indications in Oral Implantology

**BDIZ EDI has reviewed and updated the classes of indications for standard treatment situations in oral implantology. The classes of indications are designed to serve as guidelines for treatment providers, valuators, and reimbursement agents in their evaluation of cost estimates, invoices and expert opinions. The reviewed text was submitted to the other professional associations that make up the Consensus Conference Implantology and recommended for adoption.**

The classes of indications in oral implantology were last reviewed in 2002. They should not be construed as rigid prescriptions, but as treatment recommendations for the "normal" cases within each class.

"The ideal treatment of tooth loss is to replace each individual tooth by an implant, with the exception of the third molar of each quadrant, which does not usually require replacement. But because the ideal treatment may not always be feasible for a variety of reasons (including anatomical, but also financial reasons), the following recommendations are being made for standard treatment situations." This is the wording of the preamble of the classes of indications document as reviewed by BDIZ EDI.

Since 2002, various new procedures, but also new types of implants, have become established in oral implantology. The review takes account of these developments. In anterior maxillary tooth loss, the advent of reduced-diameter implants mandated a re-evaluation. The recommendations for the partially edentulous jaw now take into consideration the prognosis of abutment teeth. The recommendations for the distally edentulous jaw now take into consideration tooth 7.

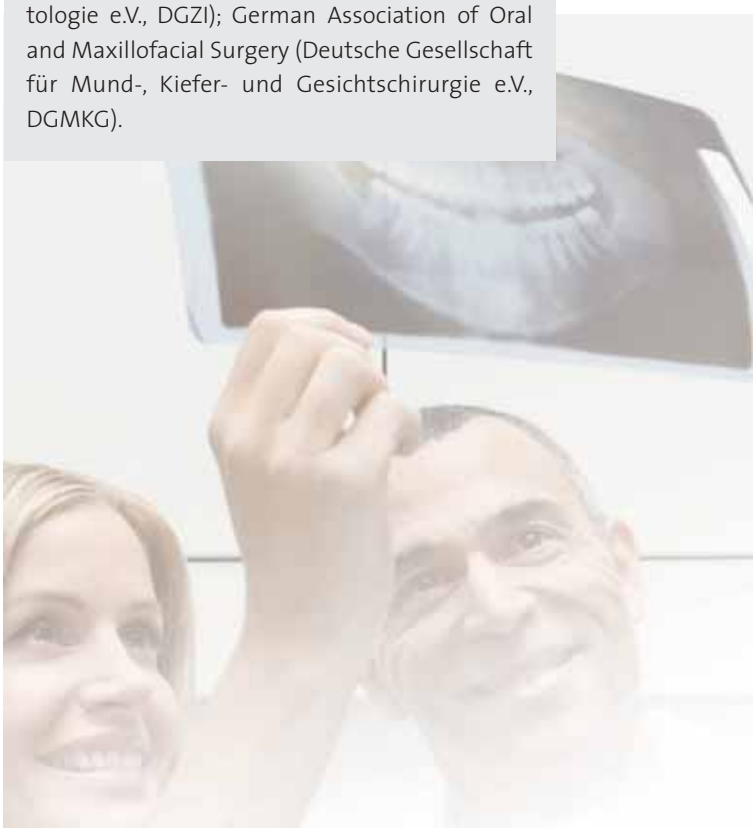
As BDIZ EDI president *Christian Berger* motivates the review: "Our focus is on quality in dentistry. This means that oral implantology has to be based on up-to-date scientific evidence."

## Classes of indications

On 17 September 2008, BDIZ EDI reviewed and updated the classes of indications for standard treatment situations in oral implantology as follows. ■

### After our copy deadline...

... the four other professional associations that make up the Consensus Conference Implantology amended the proposals made by BDIZ EDI and jointly arrived at a more restrictive classification of indications. These organizations are: Professional Association of German Oral Surgeons (Berufsverband Deutscher Oralchirurgen, BDO), German Association of Oral Implantology (Deutsche Gesellschaft für Implantologie im Zahn-, Mund- und Kieferbereich e.V., DGI); German Association of Dental Implantology (Deutsche Gesellschaft für zahnärztliche Implantologie e.V., DGZI); German Association of Oral and Maxillofacial Surgery (Deutsche Gesellschaft für Mund-, Kiefer- und Gesichtschirurgie e.V., DGMKG).



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*Kim M et al. Effect of Bone Mineral with or without Collagen Membrane in Ridge Dehiscence Defects Following Premolar Extraction. In Vivo. 2008; 22(2): 231-6. The use of Geistlich Bio-Gide® resulted in significantly higher bone density vs. each group ($p < 0.01$).

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## Preamble

The ideal therapy of tooth loss is to replace each individual tooth by an implant, with the exception of the third molar of each quadrant, which does not usually require replacement. But because the ideal treatment may not always be feasible for a variety of reasons (including anatomical, but also financial reasons), the following recommendations are being made for standard treatment situations.

## Classes of indications for standard rehabilitative treatment in oral implantology

**Class I: Single-tooth replacement**

**Class I a: Anterior restorations**
If maxillary anterior teeth are missing and the adjacent teeth do not require treatment:
→ 1 implant for each missing tooth

If mandibular anterior teeth are missing and the adjacent teeth do not require treatment:
→ 1 implant for each missing tooth, taking the specific anatomic situation into due account

**Class I b: Posterior restorations**
If individual teeth are missing from an otherwise complete dental arch and the adjacent teeth do not require treatment, each missing tooth should be replaced by an implant.

**Class II: Partially/ distally edentulous jaw**

**Principle:**
When placing implants in partially edentulous jaws, the opposing dentition must be taken into due consideration at the treatment planning stage. The rules of conventional prosthodontics apply.

- For a fixed restoration, 8 abutments are required in the maxilla and 6 abutments in the mandible. Natural abutments may be included if they are located in a favourable position from a structural point of view and have a favourable prognosis.
- For a removable restoration, 6 abutments are required in the maxilla and 4 abutments in the mandible. Natural abutments may be included if they are located in a favourable position from a structural point of view and have a favourable prognosis.

**Class II a: Distally edentulous jaw (shortened arch)**

| | |
|---|---|
| Tooth 8 missing | No indication for implants |
| Teeth 7 and 8 missing | Indication for 1 implant |
| Teeth 6 to 8 missing | Indication for 1–2 implants |
| Teeth 5 to 8 missing | Indication for 2–3 implants |
| Teeth 4 to 8 missing | Indication for 3 implants |

**Class III: Edentulous jaw**

Required to support a **fixed restoration:**

| | |
|---|---|
| In the edentulous maxilla | → 8 implants |
| In the edentulous mandible | → 6 implants |

Required to support a **removable restoration:**

| | |
|---|---|
| In the edentulous maxilla | → 6 implants |
| In the edentulous mandible | → 4 implants |

# 3rd Mediterranean Symposium of BDIZ EDI

## 3D-Implantology

## Vouliagmeni, Greece
## Hotel Westin Astir Palace*****

## Symposium 10-11 April 2009




BDIZ EDI will continue its proven concept to hold certain continuing education courses outside Germany in the year 2009. This concept helps promote the exchange of ideas within Europe. This year's Mediterranean Symposium will be held in Greece – in the vicinity of Athens. If you are looking for high-class continuing education event and at the same time a relaxing environment for the whole family, then this symposium will be right for you.

**The symposium with Greek and German renowned speakers will be highlighting the chances, but also the limits of new technologies in terms of usability, indications and contraindications, radiation levels and –especially – interdisciplinary aspects.**

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**Registration fee: 145,- Euro (no later than 31 January 2009)**
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21 to 23 May in Poland

# Eighth OSIS EDI Congress in Jurata

**The National Polish Implantology Association OSIS EDI will be holding its Eighth Annual Congress in Jurata, Poland, 21 to 23 May 2009.**

Right from the start, its congresses have addressed interdisciplinary issues. For three days, international experts will be presenting clinical cases and scientific and technical innovations. The congress will take place in the Neptun Bryza hotels in Jurata, a small town on the shore of the Baltic Sea that has long been regarded as Poland's most fashionable seaside resort, frequented by an artist elite – and even by the Polish president during his time off. Several five-star hotels dot the beaches.

The opening ceremony at 9 am on Friday will be held by *Professor Andrzej Wojtowicz*, president of OSIS EDI. Congress attendees will receive an overview of dental developments in Europe. ■

*Professor Andrzej Wojtowicz*

## More Information

Wydawrichwo Kwirtesencja
ul. Rozana, 02-569 Warzawa
Phone: +48 22 845 05 53, 845 69 70, 880 05 02

## Congress schedule

| | | |
|---|---|---|
| **Thursday, 21 May** | 6:30 pm – 9:00 pm | **Interdisciplinary Workshops** |
| **Friday, 22 May** | 9:00 am – 3:00 pm | **Session I:** Trends in oral implantology<br>Speakers: *Professor Tomas Albrektsson* (Sweden), *Professor Markus Hürzeler*, *Dr Paolo Malo* (Portugal) and others |
| | 3:00 pm – 5:30 pm | **Session II:** Experience in clinical procedures in implantology<br>Speakers: *Professor Sami Sandhaus* (Switzerland), *Professor Stanislaw Majewski*, *Professor Andrzej Wojtowicz* (Poland) and others |
| | 6:00 pm – 8:00 pm | **Special Workshop** with *Professor Markus Hürzeler*:<br>Esthetics in Oral Implantology |
| **Saturday, 23 May** | 9:00 am – 6:00 pm | **Session:** Optimized concepts in implant prosthetics<br>Speakers: *Dr Hubert Kubica*, *Dr Jean P Bernard*, *Dr Jörg Neugebauer* (Germany), *Professor Matthias Kern*, *Professor Andrzej Wojtowicz* and others |
| | 6:00 pm – 9:00 pm | **Hands-on Workshops** |

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Obituary

# Ernst-Helmut Pruin

**On 14 December 2008, Professor Ernst-Helmut Pruin died, 95 years old, at the end of a long and productive life.**

*Ernst-Helmut Pruin* was not only an unusually hard-working and successful dentist. He also made outstanding contributions to his profession above and beyond his clinical activities. When the formerly separate groups of academic and vocational dentists were united in the German state of Bremen in 1953, *Pruin* played an important role. The construction of Bremen's first House of Dentists, the building where the legal organizations representing the profession presided, was also based on his plans.

Starting in 1959, he was President of the Bremen Chamber of Dentists for 20 years. At a federal level, he contributed toward the development of the German standard schedule of dental fees (GOZ), the dentists' pension funds, the dentists' group insurance contract, continuing-education regulations and the curricula for the training of dental assistants. As a physician in the army (Reserve Officer) with the rank of colonel, he worked for equality between dentists and physicians in the German armed forces. Upon his retirement, he was awarded the Golden Needle of Honour of German Dentists for his services.

*Ernst-Helmut Pruin* is rightly called one of the pioneers of dental implantology. From 1967 on, he investigated all the implant procedures then known outside Germany performing his own research and developing his own concepts such as the "needle street" in the anterior mandible that carried his name. He wrote the first textbook on oral implantology in the German language and passed on his knowledge to his fellow dentists in hundreds of presentations and seminars. He was a co-founder and teacher at Akademie Praxis und Wissenschaft, the training academy of the German Society of Oral, Dental and Craniomandibular Sciences, which made him an honorary member in 1991.

*Professor Pruin* remained intellectually active and was a sought-after expert until very late in his life. He considered it his greatest success that dental implantology, once scorned by academia, now has its established place in the dental armamentarium, contributing to better patient care. We will hold his memory in our hearts with fondness and respect.

*Dr Peter Boehme, Bremen* ■

*Professor Ernst-Helmut Pruin*

# Willi Schulte

**In early December, Professor emeritus Willi Schulte, father of the Tübingen implant, died in Tübingen, almost 80 years old.**

With his thirst for research and his commitment for oral implantology, *Professor Schulte* was a trendsetter. His life was dedicated to academic research and education. *Professor Schulte* leaves behind a unique scientific legacy. A director of numerous multicentre scientific working groups and initiator of the only German special research institute on implantology at the University of Tübingen, he was considered a pioneer of this discipline. It was at his instigation and based on his studies that the Tübingen implant for immediate placement was developed, at the time an exciting novelty because it used a new, tissue friendly implant material – alumina ceramics. *Professor Schulte* and his team developed the Periotest system, the first system to produce exact and comparable measurements of implant stability. His work set new standards and won him the highest international renown, as his honorary memberships in numerous professional associations all over the world bore witness to. For more than 25 years, *Willi Schulte* also left his mark on professional politics in Germany on a state and federal level. A tangible expression of gratitude and the appreciation of his commitment was the gold medal of honour of the German Dental Association. He was also decorated with the Cross of Merit, First Class of the Federal Republic of Germany.

*AWU* ■

*Professor Willi Schulte*

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# Europe-Ticker

## CED demands of Brussels: Tooth bleach not to be available over-the-counter

The Council of European Dentists (CED) supports an expert opinion by the Scientific Committee on Consumer Products (SCCP) on tooth bleaches and demands that tooth-bleaching products, which have a hydrogen peroxide content of between 0.1 and 6 percent and therefore pose a potential risk to consumers, should not be available over the counter. The CED welcomed the decision on the part of the European Commission to confirm the SCCP paper and its request to the SCCP to publish a final opinion. The CED suggested that the EU Commission should call for a vote on appropriate changes of the Cosmetics Directive as soon as possible, calling upon the Member States to work for a positive result. The SCCP paper, which dates back to December 2007, points out that the potential risk might be reduced if the bleaching products were to be used only following a clinical examination and if the frequency and duration of their application were to be restricted.

*Source: CED* ■

## Swedish Ministry of the Environment: Total ban on amalgam

The Swedish government wants its total ban of all products containing mercury, to take effect on 1 June 2009, to be viewed as a strong signal to other countries, according to a press release of the Swedish Ministry of the Environment of 15 January 2009. The press release explicitly mentions the use of dental amalgam fillings. Sweden consistently continues its policy, pursued since the 1990s, to implement a ban on the manufacture and sale of certain products containing mercury, including thermometers and other measuring devices and electronic components.

*Source: Press release of the Swedish Ministry of the Environment · adp Newsletter* ■

## Czechia to assume the presidency of the EU Council: Healthcare to top Czech agenda

In January 2009, the Czech Republic took over the presidency of the EU Council from France. Until its tenure ends in June, Czechia is planning on driving seven health initiatives, of which the most important one is the Directive on patient's rights in cross-border healthcare, a draft version of which was proposed by the EU Commission last summer.

The Directive specifically aims at simplifying the procedure for obtaining reimbursement for medical treatments performed abroad and making more information about the range of available services and patient's rights in the event of treatment errors available to patients. The Czech government supports this proposal, as the agenda of the EU Presidency states. At the same time, however, increased patient mobility must not adversely

influence the quality of healthcare and patient safety. In addition, the Czech presidency wants to address the issue of financial sustainability of the national healthcare systems and investigate how the available financial base of the health care system can be concentrated to meet the challenges of an aging population, medical progress and rising patient expectations.

*Source: Various media* ■

## Grand Coalition renewed in Austria: Aiming to heal the sick healthcare funds

A Grand Coalition is once again ruling Austria. Its new Minister of Health is *Alois Stöger* of the Social Democratic Party. Following the failed healthcare reform and the physicians' strikes last summer, *Walter Dorner*, president of the Austrian Medical Association, now hopes for a more cooperative effort. In a press release, *Dorner* called the new healthcare minister a pragmatist and a sufficiently experienced and competent person. *Stöger* is 48 years old, a toolmaker and lathe operator by training, a union functionary and, since mid-2005, a representative of the Upper Austrian Regional Healthcare Fund with more than a million policyholders. "My career has been dominated by education", *Stöger* said about himself. Among other things, he completed a course of distance learning in the field of social practice. During the coalition negotiations, the Social Democrats and the Austrian People's Party had agreed, among other things, to embark on rehabilitating the healthcare funds, which have run up a deficit of more than € 1.2 billion.

*Source: Der Standard* ■

## Ban on outside ownership: EU Commission sues France

The EU Commission has sued France before the European Court of Justice for passing another ban on outside ownership for pharmacists and physicians: In France, biomedical laboratories must be operated by so-called clinical biologists, who are either pharmacists or physicians. Approximately 800 pharmacists carry this professional designation. No clinical biologists can own shares in more than two laboratories, while corporations may own at most a 25 percent share in each laboratory. According to the Directorate General for the Internal Market, these limitations are incompatible with the freedom of establishment. An international corporation had complained to the EU Commission, who in turn instigated infringement procedures against France in April 2006. On receiving the reply by the French government, the second admonitory letter to France was sent out as early as December 2006, with a reply coming in February 2007. Following negotiations with the EU Commission, the French government promised to change the offending provisions by early 2009. Following a number of hearings, a bill was drafted and submitted to the French Parliament, whose members, however, refused to approve it, obviously trying to avoid having corporations enter the healthcare sector.

*Source: Various media/Apotheke Adhoc* ■

## Barack Obama and healthcare: Health insurance for all?

US President *Barack Obama* is planning on allowing the health protection scheme for socially disadvantaged children take effect. But not only that – he wants affordable health insurance for all. In 1993, *Hillary Clinton*, then head of a healthcare task force, had failed to gain Congress approval for a radical reform of the health care system, against resistance of the Republican Party and the corporate health insurers who make large profits with expensive private health insurance. So the status quo remained in place, with the result that 46 million Americans are not covered by health insurance. Companies that succumb to the recession leave workers behind who have not only lost their job but also their access to health care. For them, any illness is a major step in the direction of personal bankruptcy. The protection by the state-run programs Medicare and Medicaid, created in the 1960s by President *Lyndon B. Johnson*, afford only rudimentary protection as they apply only to pensioners, the disabled and the poorest of the poor. They do not offer any support to the majority of the population. *Obama* wants to remedy the deficiencies of *Johnson's* social legislation while at the same time learning from *Clinton's* mistake. *Clinton* had tried to implement mandatory health insurance, while *Obama* supports voluntary participation. Instead of polarizing, *Obama* wants to forge alliances. He proposes a middle road between a completely state-run and a completely privatized healthcare system, expanding the scope of the public programs and allowing them to compete with the offerings of the private sector. At the same time, it is planned to force even smaller employers to offer health insurance to their employees. The independent Tax Policy Center has estimated that *Obama's* plan will reduce the number of uninsured Americans by 30 million within ten years at a cost of $1.6 billion. Experts are critical as to whether this proposal has any chances of being realized amid the most serious economic crisis in decades.

*Source: Various media* ■

Green Paper lists future challenges

# Europe to Promote Healthcare Professions

With its "Green Paper on the EU Workforce for Health", the European Commission is making another attempt to expand its competences in the healthcare sector. That despite the fact that the EC Treaty states that the principal responsibility for organizing and delivering healthcare services lies with the member states. A striking point is that the Commission seems to base its deliberations on a healthcare concept with a focus on employees rather than self-employed persons. It does not differentiate between healthcare professions.

Those who want to look more closely at the hypothesis of the Green Paper will also have to read the White Paper "Together for health" published in autumn 2007. In this work, the Commission explains its strategic approach to Community healthcare policy and makes concrete suggestions. The strategy is based on common values and principles for the healthcare systems of the EU member states that are not defined by European law but by a series of decisions by the ministers of health. As the European Council stated in June 2006, these values and principles include universality, access to high quality care, distribution fairness/equality and solidarity. A common healthcare policy wants to "take the rights of citizens and patients as its starting point".

## Demographic changes and the healthcare system

In July 2008, therefore, the Commission presented a draft "Directive on the application of patient's rights in cross-border healthcare" intended to increase patient mobility. It is currently being discussed by the European Parliament. Unlike this specific legislative act, the Green Paper on the EU healthcare workforce addresses the question how healthcare services can be provided for an aging European society. After all, the number of people over 65 years will grow by almost 67 million by 2060.

In addition to demographics, the heterogeneity of the workforce – different levels of knowledge and expertise – and the low popularity of the healthcare professions with the younger generation constitute special challenges. This is compounded by the problems related to the migration to and from the EU, especially immigration from poorer countries. Seen in this light, the demand for a "high-quality workforce" is a quite ambitious goal.

## Green Paper calls for a "high-quality workforce"

Whether a sufficient number of healthcare workers can be attracted in the future will depend on how successfully young workers can be recruited and held and how much is invested in existing healthcare staff. According to the Commission, this includes both a capacity increase in healthcare education facilities and intensive continuing education. But Brussels would not be Brussels if it did not immediately suggest the formation of a new authority: A "Monitoring Centre for the healthcare workforce" is to support the member states in planning the future development of the healthcare workforce. In addition, the flow of data is to be improved in order to obtain reliable indicators for the future demand for healthcare workers. Whether this will ultimately create as much as a single job remains to be seen.

Despite the increasing demand for qualified personnel within the EU, the Commission is set to do everything to avoid a "brain drain" from developing countries to Europe. Two years ago, Brussels suggested applying ethical standards to the hiring of highly qualified healthcare workers from third countries in order to limit the negative influence of migration on precarious healthcare systems in developing countries.

## Relieving the burden on the self-employed

Not until the very end does the Green Paper address the entrepreneurs for the creation of jobs in healthcare. Small and medium enterprises are the driving forces of growth and employment – this is as true in the healthcare sector as elsewhere. Improving the conditions for entrepreneurs in healthcare is therefore an important contribution toward increasing the healthcare workforce. Unfortunately, the Commission's suggestions in this area are limited to "promoting entrepreneurship" and "examining the barriers to entrepreneurial activity in the health sector". That is far too little to master the immense challenges facing the member states in the healthcare sector. ■

*Peter Knüpper, solicitor*
*Joint practice of Dr Rehborn*
*Munich, Germany*

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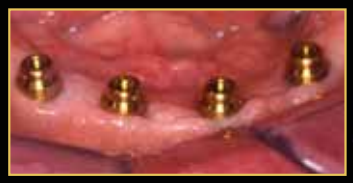

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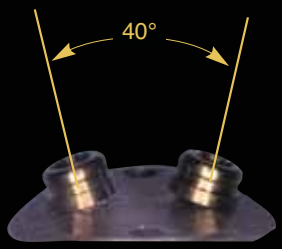


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An ECJ decision and its consequences for the pursuit of the dentist profession

# Potential Abuse of the Process for the Recognition of Professional Qualifications

In its judgment dated 29 January 2009 pertaining to case C-311/06, Consiglio Nazionale degli Ingegneri (National Council of Engineers) vs. Ministerio della Giustizia (Ministry of Justice) and *Marco Cavallera*, the European Court of Justice has put a stop to a method for circumventing certain minimum requirements for pursuing a regulated profession in a Member State.

*Mr Cavallera* is an Italian national. At the end of a three-year course of study, he obtained a degree in engineering from the University of Torino. According to Italian law, a person pursuing the profession of mechanical engineer, in addition to possessing a pertinent university diploma, must pass the State examination and be listed in the register of engineers, although the latter provision is a mere formality. As *Mr Cavallera* had not passed a State exam, he did not meet the requirements for taking up the profession of mechanical engineer in Italy.

*Mr Cavallera* applied for homologation of his Italian qualification by the Spanish Ministry for Education and Sciences to have that Italian qualification treated as equivalent to the corresponding official Spanish university degree. That application was granted by the Ministry. As Spain – as opposed to Italy – does not require a State examination for a person to be entitled to pursue the profession of engineer, he was subsequently enrolled in the register of one of the Catalan Chambers of Engineers (Colegios de ingenieros técnicos industriales). *Mr Cavallera* was therefore entitled to pursue the regulated profession of industrial technical engineer in Spain.

In turn, *Mr Cavallera* subsequently sought recognition of his Spanish certificate in Italy, in order to enable him to enrol in the Italian Register of Engineers. In particular, the Italian National Council of Engineers voted against this recognition. The Consiglio di Stato, as the competent court of appeal, decided to stay its proceedings because of legal doubts and to refer the problem to the ECJ for a preliminary ruling to determine whether a "reverse recognition" must be granted.

The recognition of diplomas obtained in Member States is the subject of various European Directives. Engineering diplomas are covered by the Council Directive 89/48/EEC of 21 December 1988 on a general system for the recognition of higher-education diplomas awarded on completion of professional education and training of at least three years' duration. The first paragraph of Article 3 of that Directive gives any applicant who holds a "diploma", within the meaning of that Directive, enabling him to pursue a regulated profession in a Member State, the right to pursue that profession in any other Member State.

With its reference to the ECJ for a preliminary ruling, the Italian court sought guidance on whether that Directive can be construed to allow holders of university diplomas such as *Mr Cavallera* who do not meet the national requirements for pursuing a profession but who have obtained a certificate from a different Member State that attests the right to pursue that profession, to have their certificates recognized by their own Member State as sufficient qualification for taking up that profession. The ECJ rightly answered this question in the negative, putting a stop to potential abuses of the Directive. According to the court, the concrete case does not come within the scope of Directive 89/48/EEC, as the Spanish homologation certificate is not a "diploma" within the meaning of that Directive. A certificate attesting professional qualifications can only be treated as a "diploma" for the purposes of that Directive if those qualifications were acquired, wholly or in part, under the education system of the Member State that issued the certificate in question. The recognition in Spain of the university diploma obtained in Italy does not meet this requirement.

In effect, the ECJ has stated that the definition of the concept of "diploma" set out in the Directive does not include a certificate issued by a Member State that does not attest any education or training covered by the education system of that Member State and is that not based on either an examination taken or professional experience acquired in that Member State.

The judgement must be seen against the background of potential abuses of Directive 89/48/EEC. To accept that the Directive may be relied on in the circumstances underlying the judgement would be tantamount to allowing a homologation

procedure in another Member State to be used to gain access to a regulated profession that is otherwise denied pursuant to national legislation. The Directive embodies the principle that Member States must be able to reserve the option of fixing the minimum level of qualification necessary for the pursuit of a regulated profession to guarantee the quality of services provided in their territory. Directive 2005/36/EC on the recognition of professional qualifications that replaced Directive 89/48/EEC on diplomas in 2005 also incorporates a similar principle in its eleventh recital.

The central assertion made by the judgement is applicable to the regulations governing dentists (Directive 2005/36/EC). Here, too, circumvention of the qualification requirements for the pursuit of a regulated profession in a Member State must not be permitted. Consequently if an aspiring dentist holds a university diploma that does not entitle him to pursue the profession in his own Member State but acquires homologation of this diploma in another Member State in which the threshold for entering the profession has been set lower than in his own Member State, he is only entitled to pursue the profession only in the recognizing Member State. The prerequisites for pursuing the profession set by his own Member State remain unaffected. Shortening the overall education period would require the university diploma itself to have been obtained in another Member State. Unlike a homologation certificate, this university diploma documents attest to education and training covered by the education system of the Member State in question, making it a "diploma" pursuant to Directive 2005/36/EG, which must be recognized by the home Member State. ■

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# Computer-guided Flapless Surgery

Matteo Danza, MD[1], Tania Sinderowsky[2], Francesco Carinci[3], Guido Schiroli, MD, DDS[4] and Professor Stefano Fanali[5]

**Over the past few years, numerous international companies have been working on the development of software for computer-assisted implant planning [1,2] as well as on systems that let the dentist transfer this information from the computer to the patient's mouth [3,4]. Thanks to recent progress achieved in this field by Materialise (Louvain, Belgium), we now have a precise and complete treatment protocol at our disposal that facilitates not only the meticulous interactive planning of implant-supported restorations on the basis of image data obtained by computed tomography (CT), but also the implementation of the results in clinical reality, with customized surgical guides fabricated by a stereolithographic process [5].**

Numerous other branches of surgery have also benefited from the remarkable increase in computer-related activities within oral implantology [6-8]. The methods were extensively studied by numerous authors within the framework of the European project initiated in 1997, called the PISA project. The main objective of this project was the testing and validation of potential clinical applications. The protocol was studied in all conceivable clinical situations: on complete or partial maxillary or mandibular dentures, with vertically or laterally inserted implants, in the edentulous jaw [9,10], with zygomatic implants [11], with conventionally loaded one-stage or two-stage implants and with immediately loaded implants. The results were so convincing that these techniques are today routinely utilized clinically.

The case presented here is a typical example of how the protocol is applied and outlines the procedures required to take advantage of these new technological tools.

## Case report

A female patient approximately 50 years of age presented at our clinic for advice regarding her precarious masticatory situation, but above all for possible solutions of the problems she had in her social life. The patient was working in the health sector, in constant contact with the public, and she suffered from a serious anxious depression syndrome.

As so often in these cases, the first part of the elicitation of the patient's medical history revolved around her bad experiences that had kept her from consulting a dentist for several years. The patient otherwise was in good general health, but was receiving psychiatric medication for her depressive syndrome.

Clinically, the patient presented with a highly precarious situation in the maxillary arch, with mobile provisional bridges that frequently loosened while the patient was speaking and with a generally compromised periodontal status with severe mobility of her residual teeth in both jaws. Furthermore, pronounced vertical and horizontal atrophy of the posterior regions was evident in both mandibular segments (Figs. 1 to 4).

An orthopantomograph (Fig. 5) was taken to provide detailed information on which to base a treatment plan; it confirmed that the periodontal tissues of all teeth were compromised and that a comprehensive implantological rehabilitation of both jaws would be required.

The patient accepted the proposal of implant-prosthetic treatment, but she indicated that she was opposed to any type of regenerative treatment, in particular to the bilateral augmentation of the maxillary sinus we had proposed and also to any vertical augmentation in the posterior mandible. Another condition was that the patient did not want to be subjected to extensive postsurgical waiting periods and definitely not to any periods, however short, without any restorations in place.

The treatment we suggested in accordance with the patient's requests after a meticulous examina-

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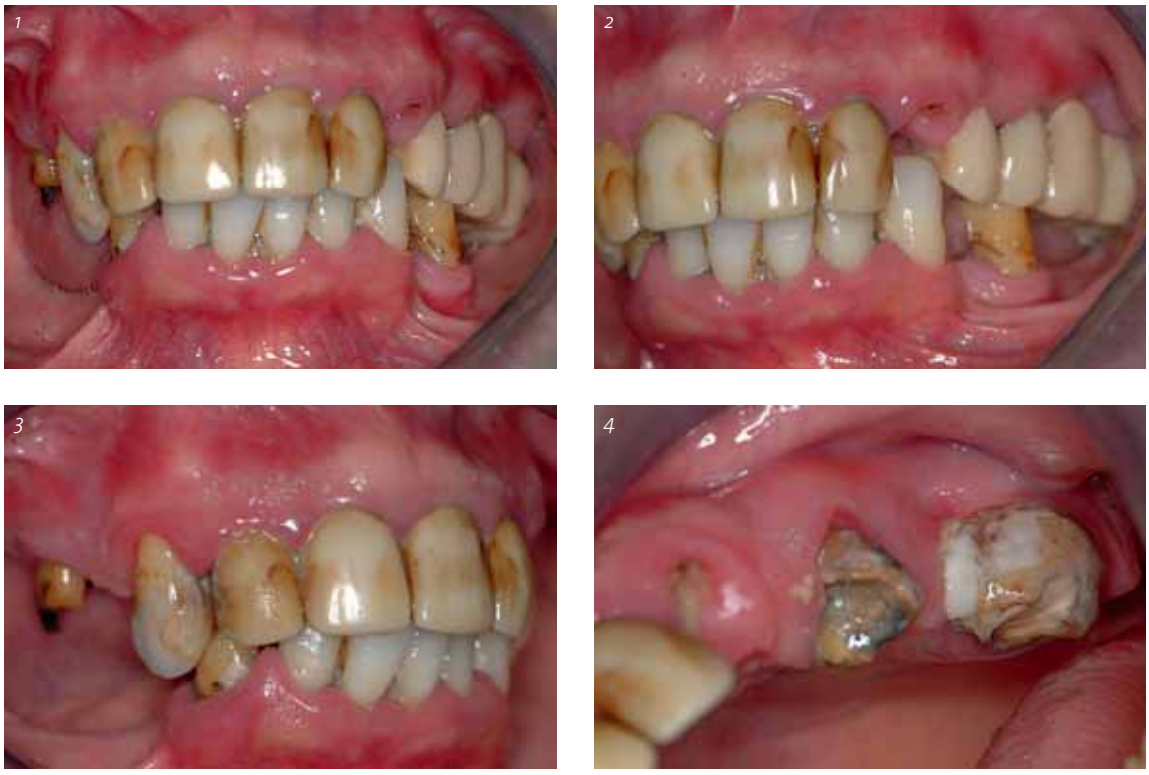


*Figs. 1 to 4 The clinical examination showed the precarious condition of the patients' restorations and pronounced vertical and horizontal atrophy in both mandibular segments.*

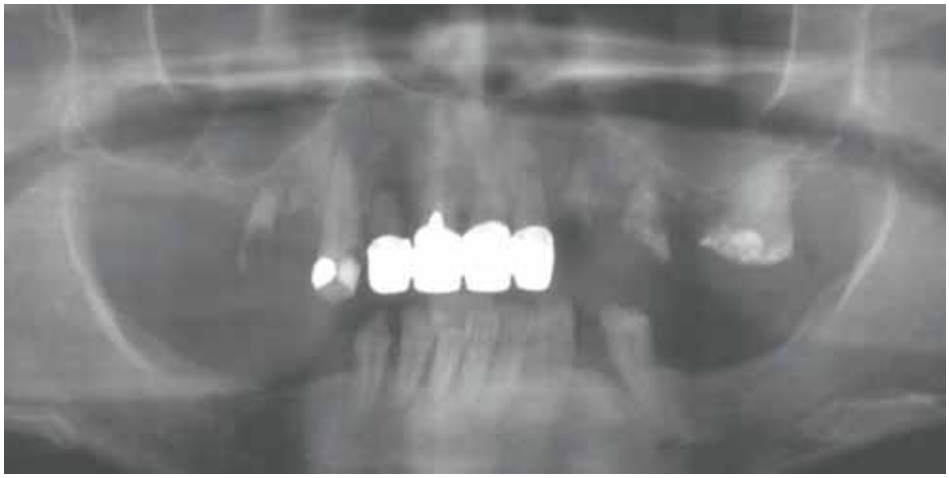


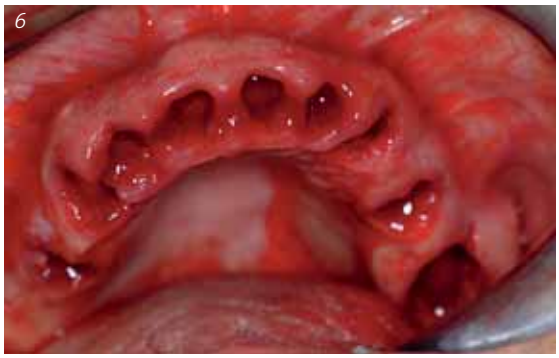
*Fig. 5 Baseline orthopantomograph.*

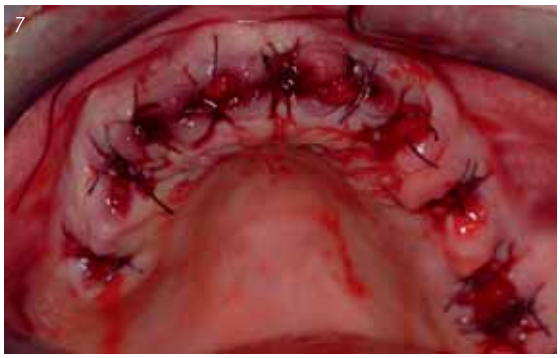
tion consisted of complete implant-supported dentures for the maxilla and the mandible, using a computer-assisted approach to treatment planning and atraumatic surgery. The plan called for the placement of six implants each in the maxillary and mandibular arches, to be loaded immediately on placement with fixed denture prefabricated on the basis of data obtained from the SurgiGuide [12-17]. To be able to perform an atraumatic flapless procedure, it is necessary to transition through a phase with a conventional removable denture immediately after the extraction of the residual teeth, to remain in place during the entire time required for the soft tissue to heal.

The patient embraced this project with enthusiasm and signed an informed consent form, and the treatment was begun immediately.

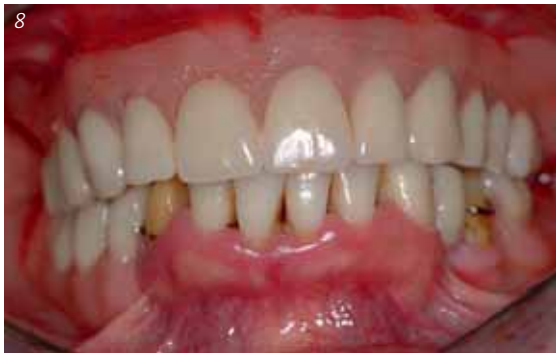
The first step was a preparatory periodontal treatment to reduce the activity of periodontal disease and to improve the prognosis of the subsequent treatment steps.

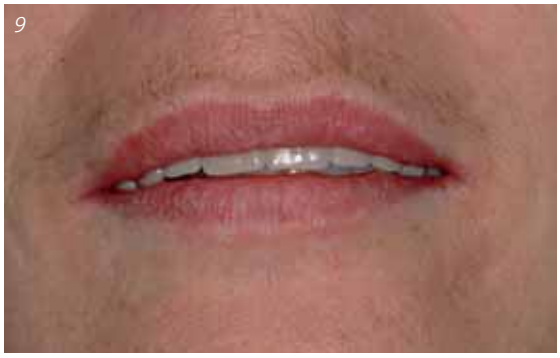
After four weeks and antibiotic preparation (amoxicillin 3 g one hour before the procedure), we proceeded to extracting the residual maxillary teeth. The extractions were performed with the utmost caution, using the appropriate bone levers and syndesmotomes [18].



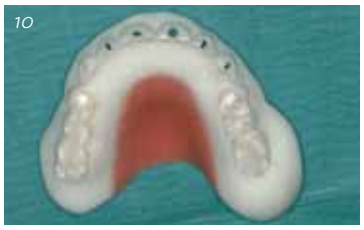


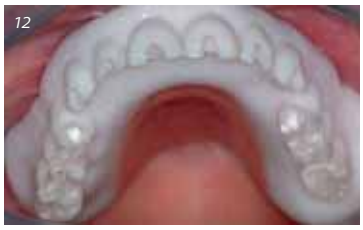
*Figs. 6 and 7 Following the extractions of the teeth. Accurate sutures in place.*

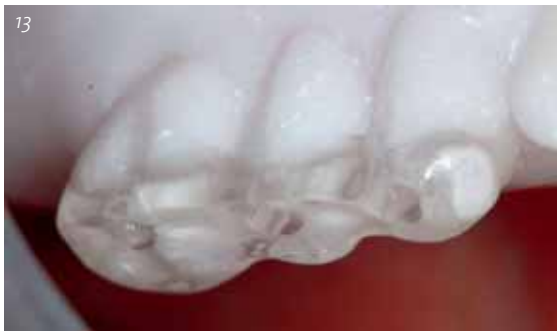




*Figs. 8 and 9 The complete mandibular immediate provisional denture and the clinical situation following the tooth extractions.*







*Figs. 10 to 13 The radiopaque denture for scanning with radiographic findings and occlusal augmentations.*

The post-extraction sockets were carefully cleaned by curettage and closed with wedges of native collagen (Gingistat, Vebas), then sealed with resorbable sutures (Figs. 6 and 7).

Immediately following the extractions, a complete denture, rebased with a soft liner, was inserted, along with a partial denture for the mandible that served the dual purpose of stabilizing the maxillary denture and of rebalancing the occlusal plane (Figs. 8 and 9).

After six weeks with the denture in situ and good healing progress below the maxillary denture after the later had been re-rebased with a rigid material, we duplicated the denture, constructing a radiopaque denture for scanning purposes (Figs. 10 to 13). This denture was the key element of the entire procedure; it encoded all the information required to implement the treatment plan and to fabricate a perfect mucosally supported SurgiGuide.

The radiopaque denture plays an important role in that it allows the fixed restoration to be fabricated ahead of time, before the actual surgery, thus synchronizing the surgical and the prosthodontic phases of the treatment [5].

The radiopaque denture was executed in a mixture of acrylic resin and barium sulphate ($BaSO_4$) with different mixing ratios that yielded two different degrees of opacity. In our case, the denture teeth were realized with a 30% admixture of $BaSO_4$, while the denture base contained only 10% $BaSO_4$. The gradient between different barium sulphate percentages was important during the segmentation phase to create the various guides/stents [23].

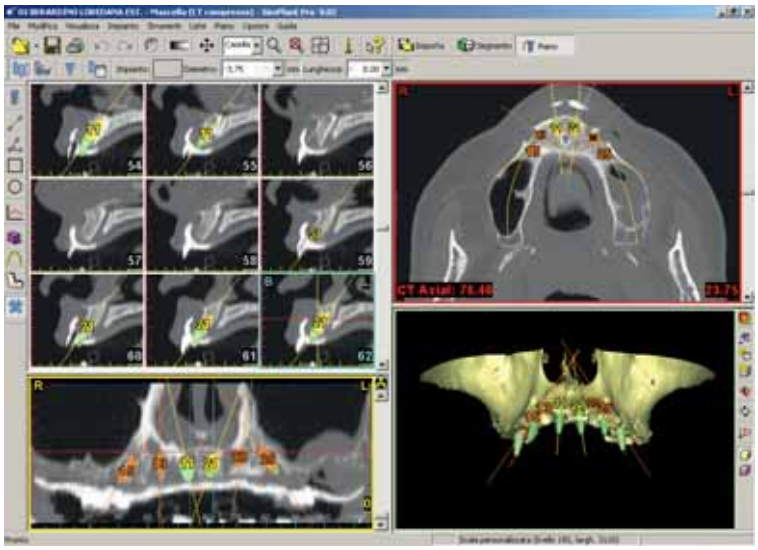
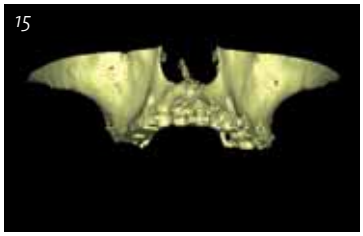
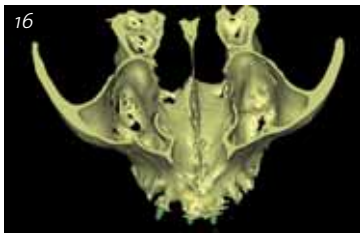
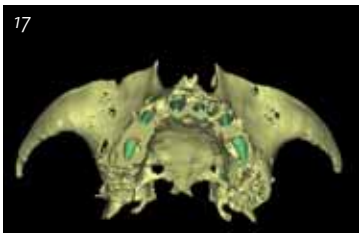
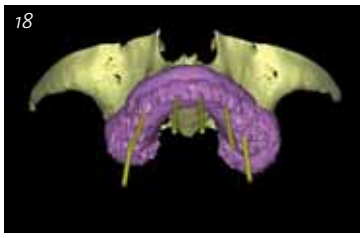


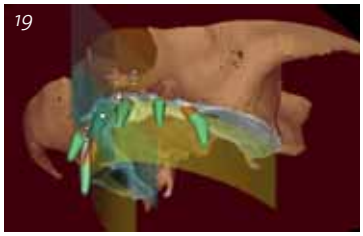
*Fig. 14 SimPlant screenshot giving an idea of the on-screen planning process. It shows, at a glance, the axial sections and (top right) the transaxial sections for image number nine, representing progressive vertical sections of the panoramic curve that was determined at the outset that the planning stage, the panoramic section that represents the plane intersecting the panoramic curve (continuous yellow line) and a three-dimensional model with the virtual treatment planning completed.*

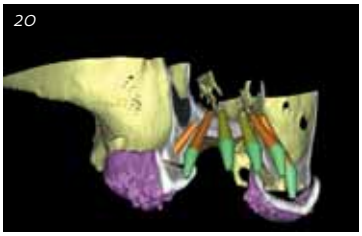


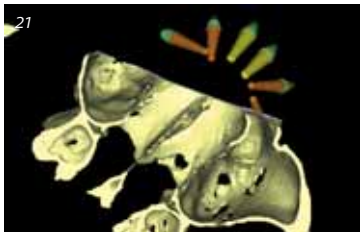



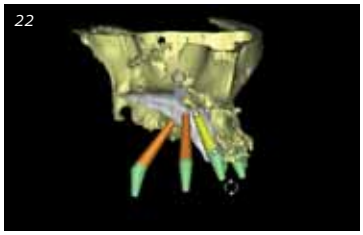



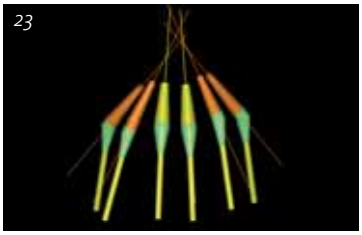



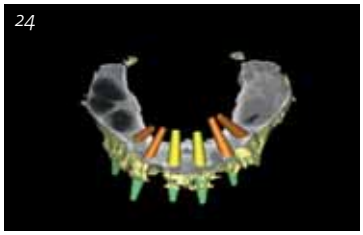




*Figs. 15 to 24 represent various aspects and details of computer-assisted treatment planning for the maxilla: with Figures 15 to 18 showing the three-dimensional model of the maxilla by itself, the maxilla complete with the planned implants, a cranial view that demonstrates numerous details of the maxillary anatomy and a frontal-occlusal view with the representation of the radiopaque denture: Note the exact correspondence between the drill holes in the scanning denture and the extensions of the implants. Figure 19 shows the vertical planes calculated by SimPlant for this three-dimensional model. Figures 20 to 24 show various software options for creating sections at every level, with a three-dimensional visualization of the orientations of the planned implants and a characteristic depiction of the individual implants in this particular pyramid-shaped configuration.*

The following CT exam of the patient with the radiopaque denture in place (saving the data obtained to CD-ROM in DICOM format) allowed us to further plan the details of the treatment [24], which consisted of inserting six implants in the maxillary arch at positions 15, 13, 11, 21, 23 and 25. The distalmost implants were inclined distally to avoid the maxillary sinus and to create slightly distalized prosthetic abutments on which to construct a biomechanically stable fixed complete denture (Fig. 14). The SimPlant interactive dental implant treatment planning tool let us work three-dimensionally to select implants of the appropriate diameters and lengths as a function of the available vertical and transversal bone supply. In addition, the tool helped us optimize the directions, angulations and emergence profiles to accommodate the prosthetic aspects of the case [25] (Figs. 15 to 24).

After scanning, the resultant data were transmitted to the rapid prototyping centre of Materialise, resulting in SurgiGuides with mucosal support for the flapless preparation of the implant sites to the appropriate diameters and lengths, as shown by the screenshot in Figure 25.

The SurgiGuides (Figs. 26a to d) were first used in the laboratory for the fabrication of the abutments and the circular provisional denture; subsequently, they were used intraorally for the surgical procedure itself.

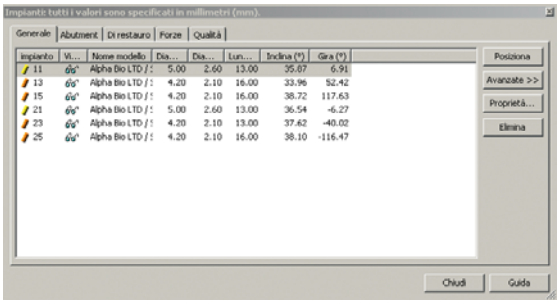
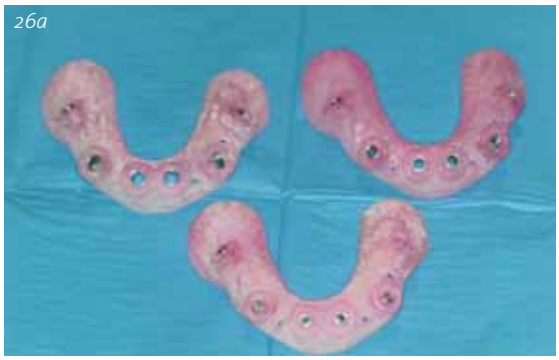
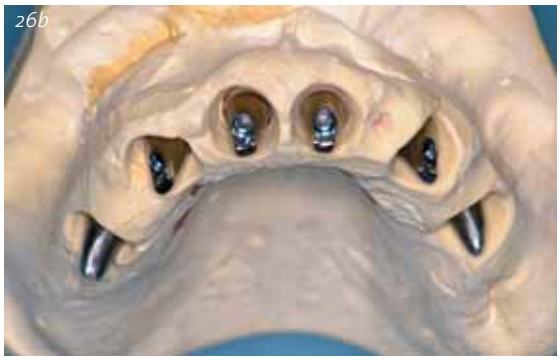
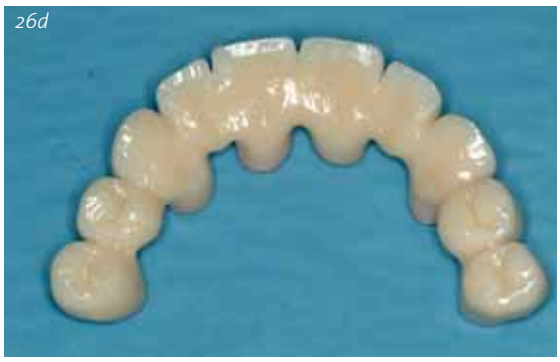



*Fig. 25 List of the implant treatment stages as developed on-screen.*








*Figs. 26a to d The SurgiGuides and the restorations fabricated prior to the actual surgical intervention. The SurgiGuides were placed on the master cast and permitted the preparation of implant sites identical to the intraoral implant beds. Based on laboratory analogues simulating the positions of the implants in the mouth, the corresponding abutments and a circular provisional denture were created in acrylic resin.*

Once the provisional denture had been completed, the patient was called in for the surgical appointment. At that time, eight weeks had passed since the extraction of the teeth, and the mucosal tissues exhibited excellent healing and epithelialization (Fig. 27a).

The first 2-mm SurgiGuide was used to mark the tissues at the insertion sites and then served as a drilling stent for the pilot drill of the appropriate diameter, facilitating guided preparation of the implant bed (Figs. 27b to d).

The preparation was successively enlarged and deepened using a sequence of three SurgiGuides and their corresponding drills until the projected depth of the implant beds was obtained (Figs. 28a to e).

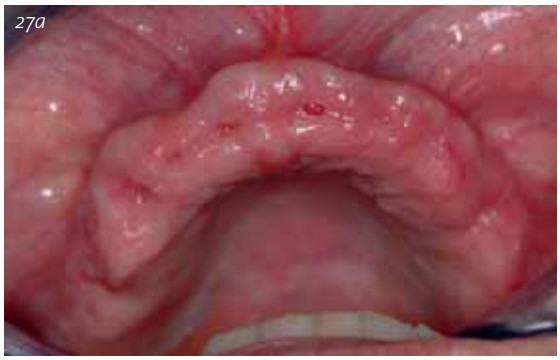
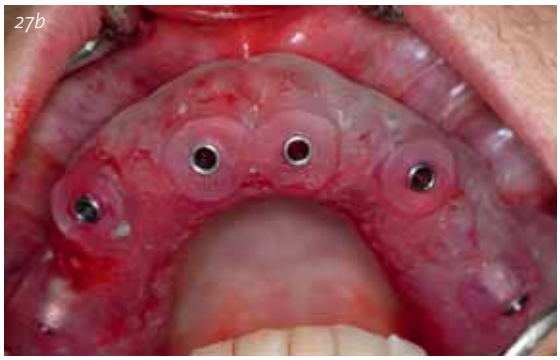
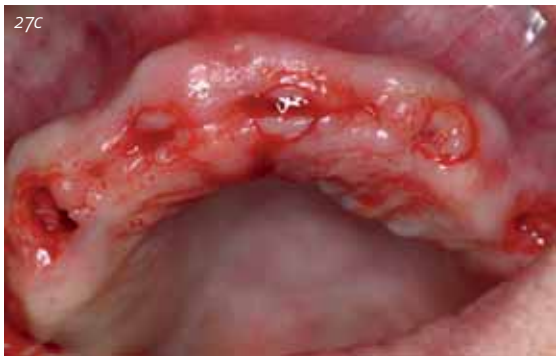
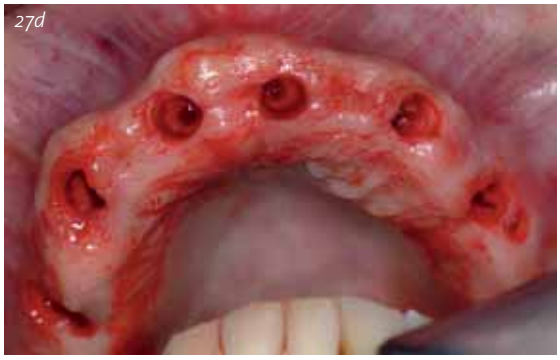



*Fig. 27a View of the soft tissue, two months after tooth extraction. Note the excellent re-epithelialization and the pronounced keratinization of the tissues healed under the prosthetic load.*

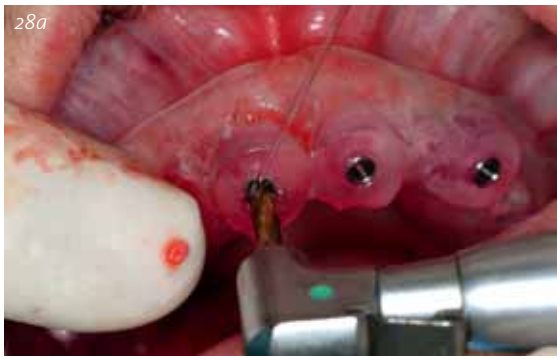
*Figs. 27b to d Insertion of the SurgiGuide in the oral cavity followed by tissue markings and circular mucotomies.*



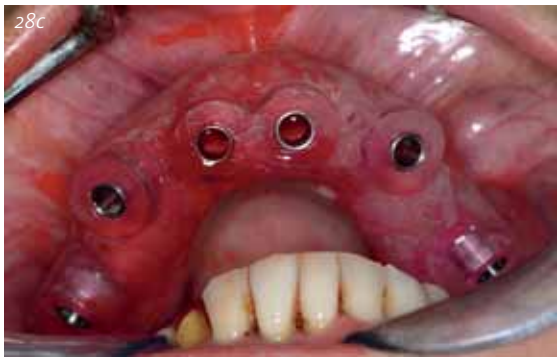



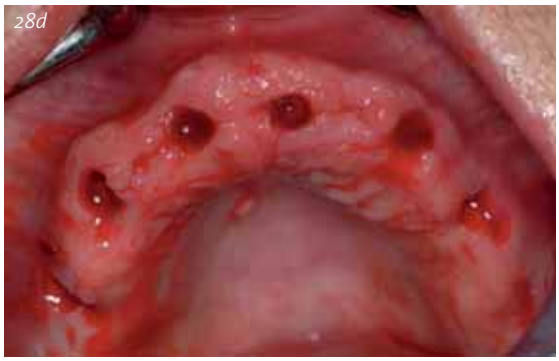



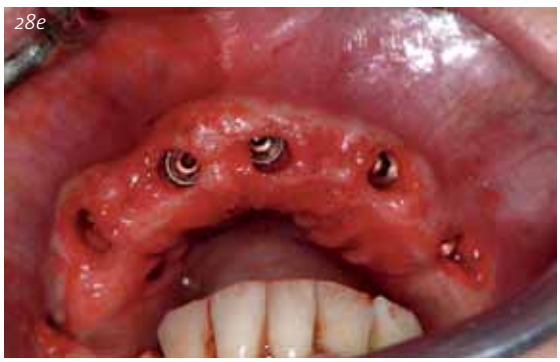

*Figs. 28a to e Various steps of the guided surgical procedure, followed by implant insertion.*

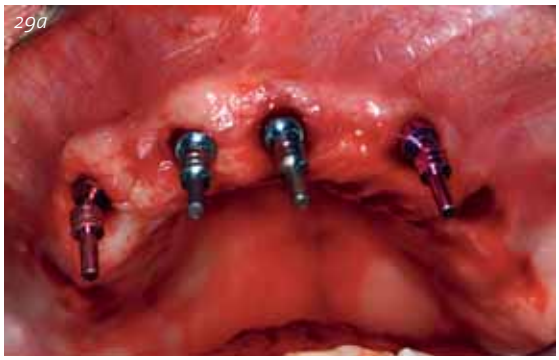


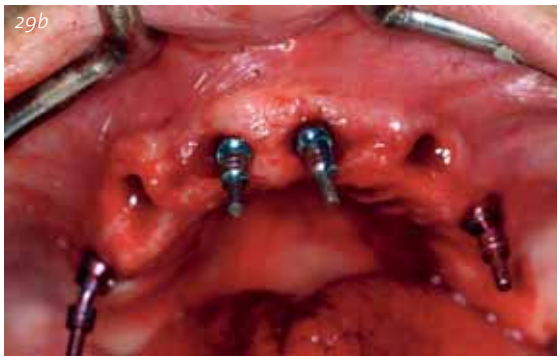




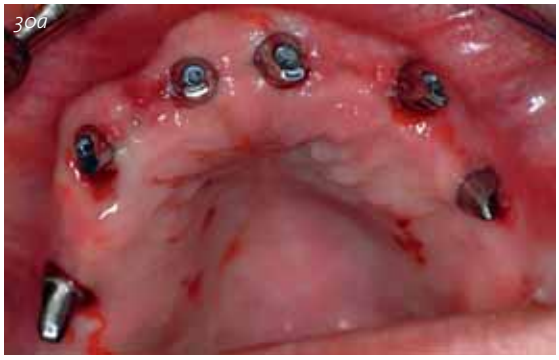



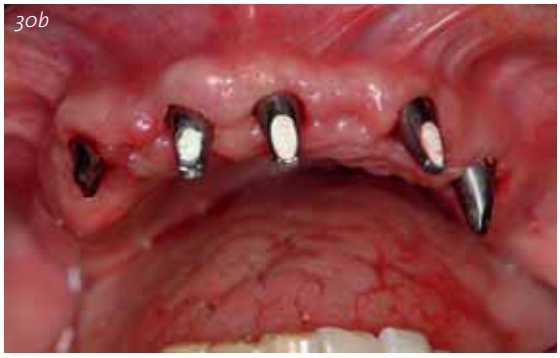





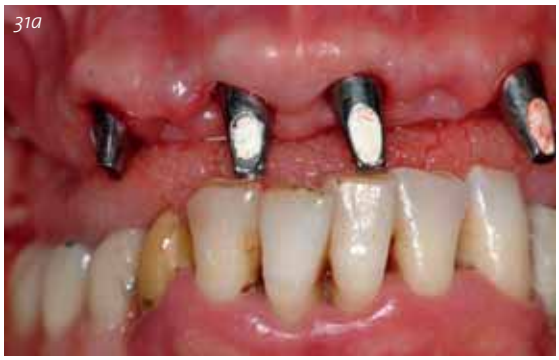



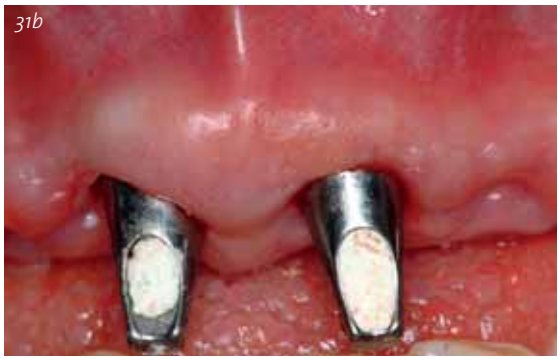

*Figs. 29a and b The Paraguide system in place ensuring an optimized emergence profile of the prosthetic abutments.*



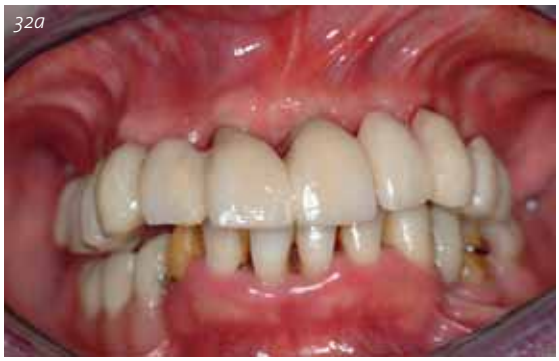



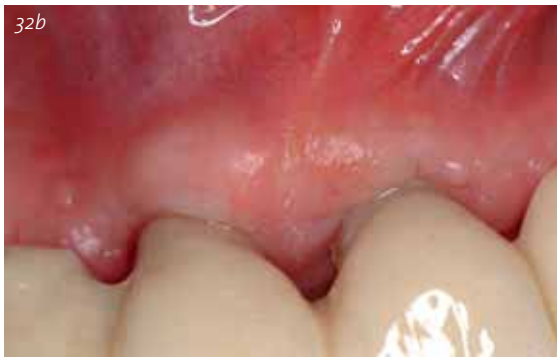

*Figs. 30a and b These abutments were prefabricated before the actual surgery. They were connected to the implants and are ready for the placement of the provisional denture.*




*Figs. 31a and b Status of the soft tissues immediately after connecting the abutments to the implants.*



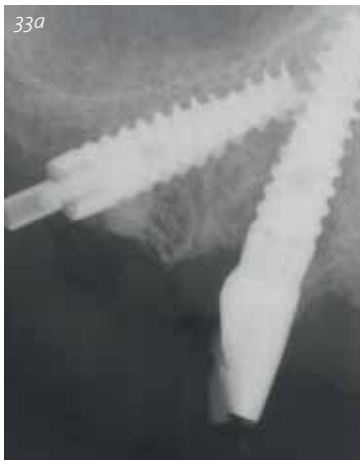

*Figs. 32a and b The immediate provisional denture delivered immediately following the surgical procedure.*

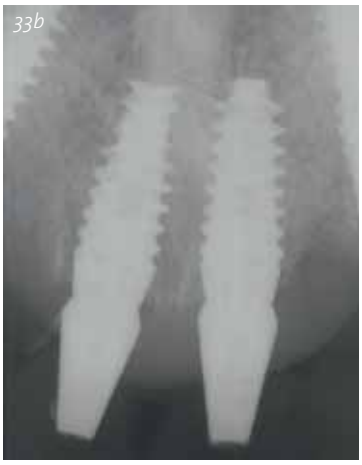
The implants themselves (SFB, Alpha Bio Implant) were inserted, and all of them attained primary stability as defined by a torque of the micromotor controller set (Nobelpharma) of > 45 Ncm.

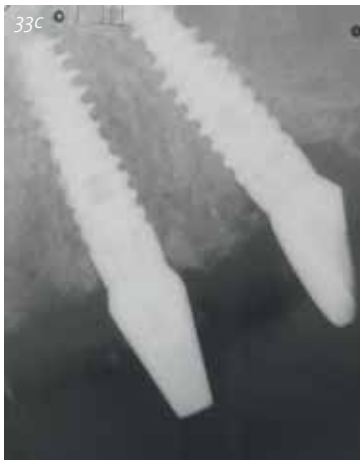
Using a very simple, intelligent and efficient system, the Paraguide system (Alpha Bio Implant), we optimized the orientation of each implant's hex for an ideal prosthetic emergence profile (Figs. 29a and b) and connected the previously fabricated abutments (Figs. 30a and b).

Figures 31a and b show some details of abutment emergence profiles immediately after insertion and their occlusal relation to the antagonists. The status of the tissue bears witness to the advantages of computer-guided flapless surgery.

To deliver the provisional restoration, some very minor modifications where required due to the excessive angulation of the distal implant at site 15, but the patient was able to leave the clinic with an implant-supported complete fixed provisional restoration in




*Figs. 33a to c Postoperative radiological situation.*

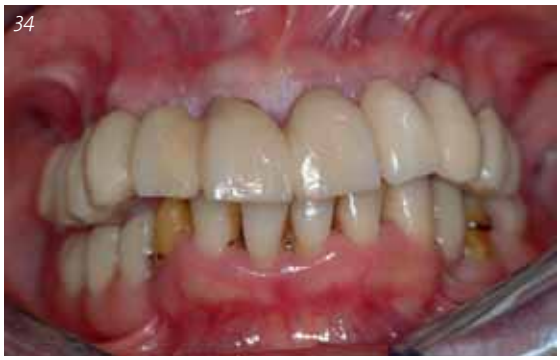



*Fig. 34 Clinical situation at three weeks.*

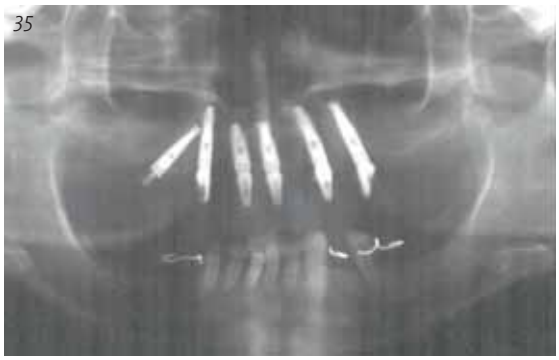
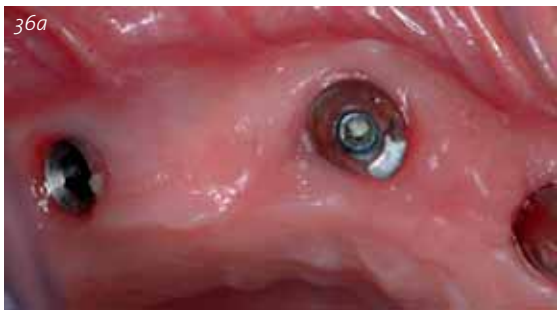



*Fig. 35 Orthopantomograph taken six weeks after the surgical procedure.*






*Figs. 36a to c Surprisingly healthy and stable soft tissues six weeks after implant placement.*

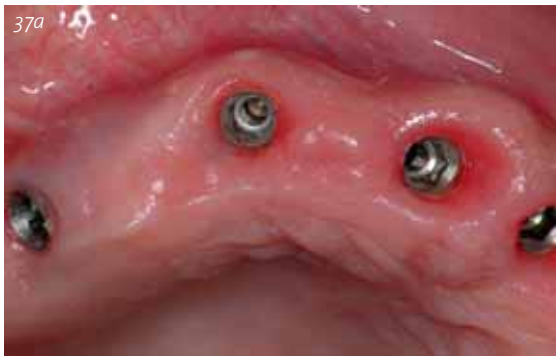
place (Figs. 32a and b), following a procedure that she found hardly traumatic at all and which took only three hours, of which only the first 40 minutes had been dedicated to surgery. The remainder of the time had gone to the necessary prosthetic adjustments, during which the patient felt completely at ease and was even able to rise from her chair and chat with the treatment team.

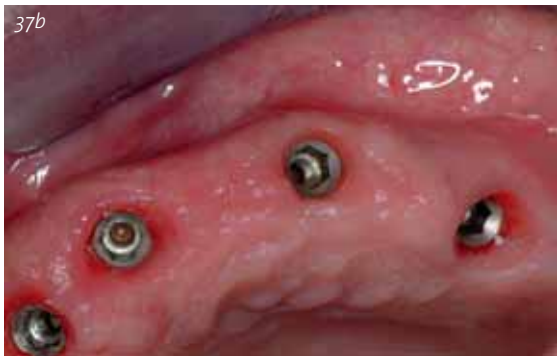
At the postoperative radiological follow-up (Figs. 33a to c), the implants appeared well-placed and in accordance with the original treatment plan.

The postoperative stage was uneventful; at the eight-day recall, the patient expressed her surprise over how much had been achieved and reported to be completely asymptomatic with no signs of inflammation. She was subsequently placed on weekly recalls, which were also uneventful (Fig. 34).

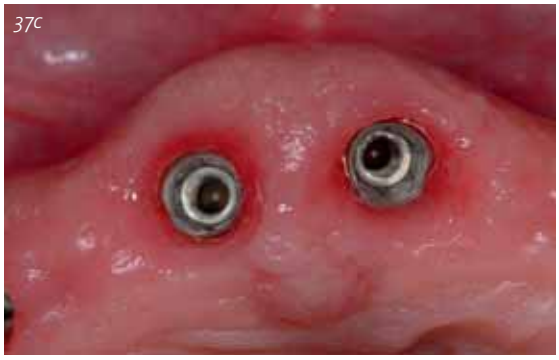
At six weeks after the procedure, no problems of any kind had occurred, and the radiological follow-up was also reassuring (Fig. 35).

Also at six weeks after the procedure, we took a position impression of the implants to fabricate a new provisional restoration capable of conditioning the soft tissues even better than the previous one. When we removed the first provisional, the healing process had already progressed beautifully, with the keratinized tissues being surprisingly stable (Figs. 36a to 37c).

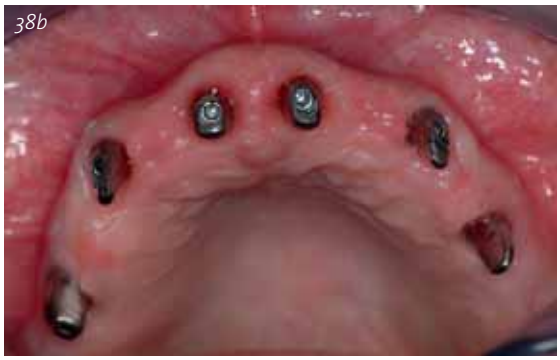


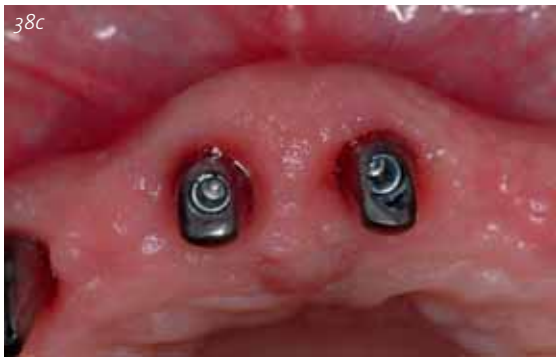

*Figs. 37a to c View of the transmucosal abutments after removal of the provisional abutments six weeks after implant placement.*

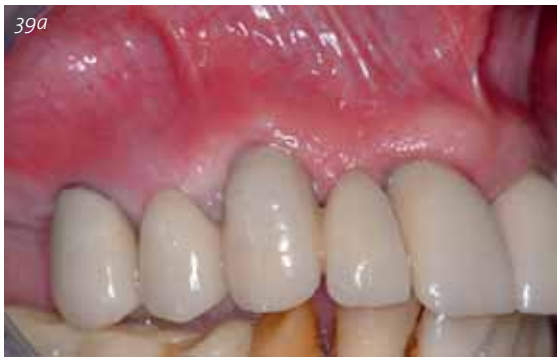



Based on the new impression, we fabricated six new abutments and a new resin provisional to serve the important purpose of tissue conditioning ahead of the insertion of the definitive restoration (Figs. 38a to 39c). At the time of inserting the new provisional for the maxilla, the complete mandibular immediate provisional denture had also been prepared and was ready for loading.

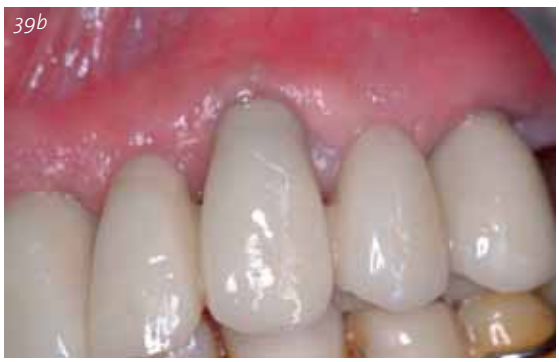



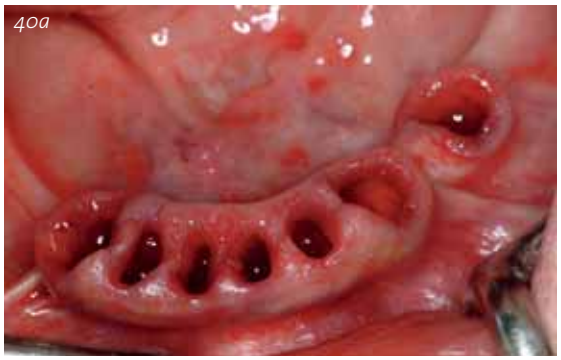

*Figs. 38a to c The new abutments.*



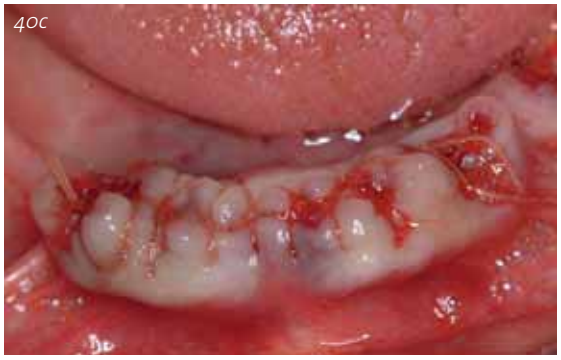



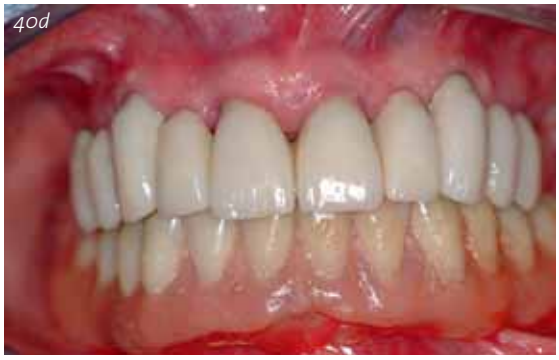

*Figs. 39a to c The new provisional.*








*Figs. 40a to d Tooth extraction, wound suturing and rebasing of the provisional lower complete denture.*

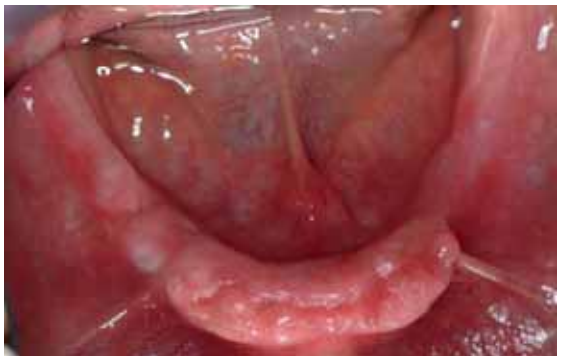
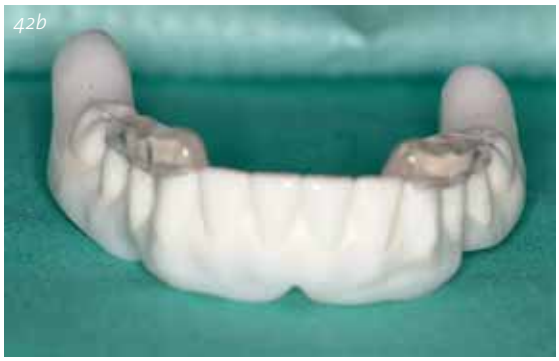


*Fig. 41 Soft tissue healing six weeks after tooth extraction.*

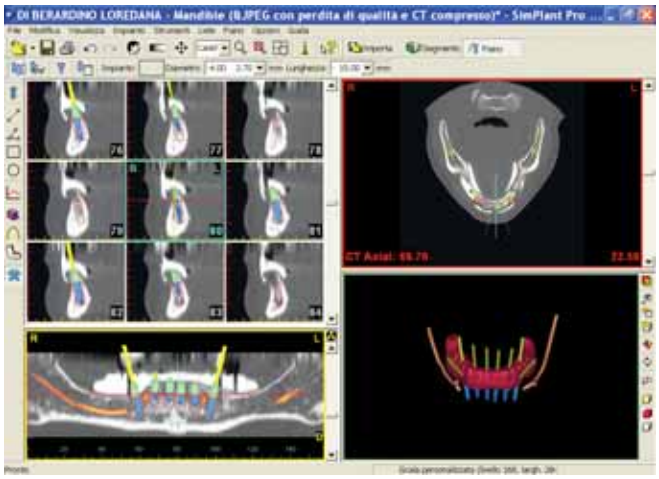

*Figs. 42a and b The mandibular radiopaque (scanning) denture.*

The procedure for the mandible was the same as that for the maxilla: extractions, provisional removable complete denture, scanning denture, treatment planning using SurgiGuide and finally the surgical procedure itself. We thus proceeded with the extraction of the mandibular teeth, socket cleaning, insertion of collagen, precision suturing and rebasing of the previously fabricated complete denture (Figs. 40a to d). After mandibular loading, the same six-week period was sufficient for the soft tissues to heal satisfactorily, and we could proceed with the duplication of the complete denture to obtain a radiopaque denture with the same characteristics as described above (Figs. 41 to 42b).




*Figs. 43a to c Occlusal augmentation of the radiopaque denture using pure acrylic resin.*

*Figs. 44a to c Some of the many imaging possibilities available during the virtual planning stage. They demonstrate the amount of detail available for each individual implant and for the individual anatomic structures involved.*



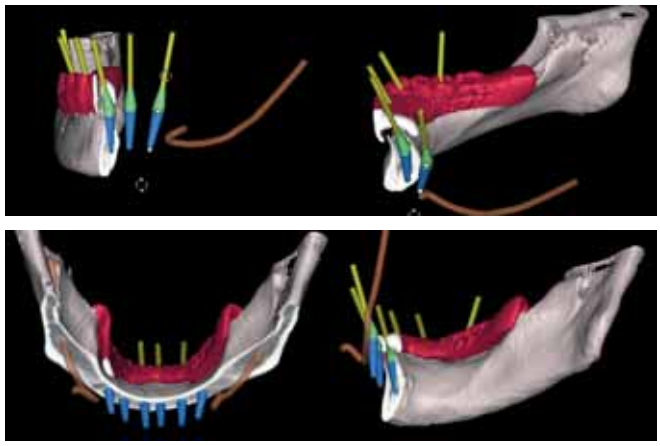


*Fig. 44a*

Having obtained the CT scan with the radiopaque denture in place, which gave us the DICOM data for the mandible that were then imported into SimPlant, we were able to execute the virtual treatment planning for the mandibular aspect of the procedure.

A special trick as the radiopaque denture is prepared for scanning is to build up a small amount of acrylic resin without barium sulphate on top of the denture itself in order to avoid superimposition of the images of the two dental arches as the axial scanner passes the occlusal plane (Figs. 43a to c).

In this manner, we obtained a three-dimensional model of the mandible on which the implants could be inserted virtually using a number of tools offered by the software. Figures 44a to c illustrate some of the many imaging possibilities available during the virtual planning stage and demonstrate the amount of details available for each individual implant and for the individual anatomic structures involved.

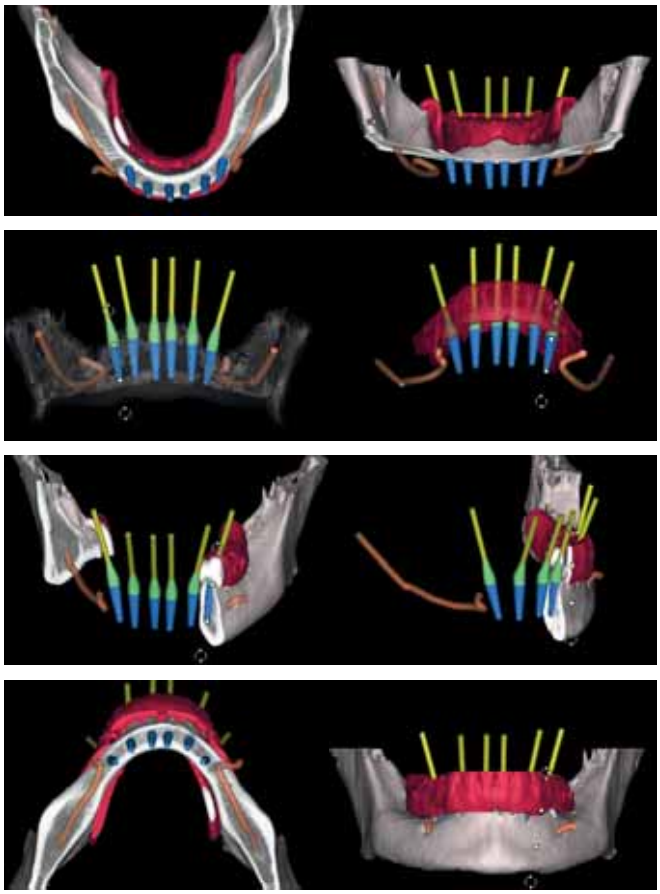


Fig. 44b

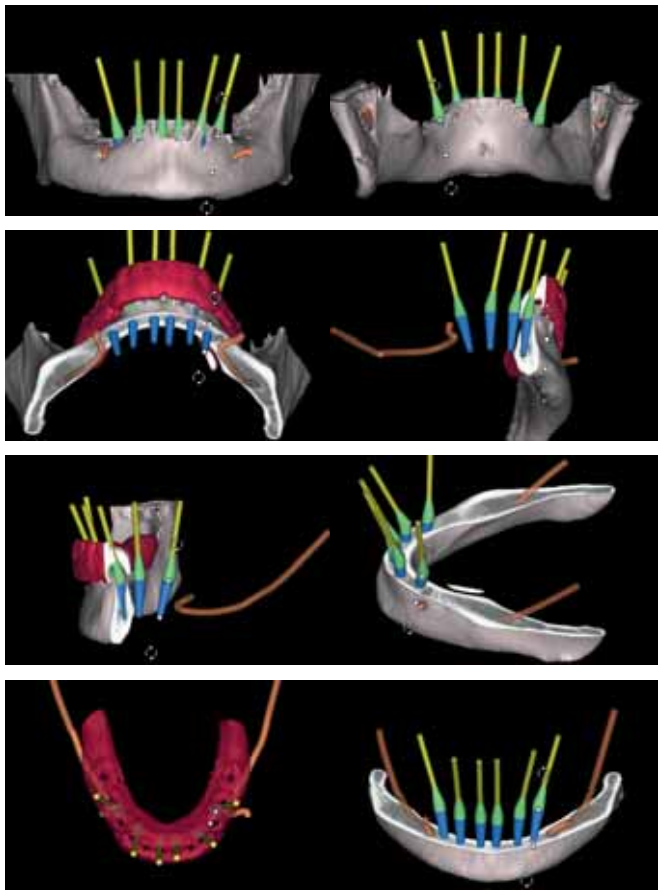
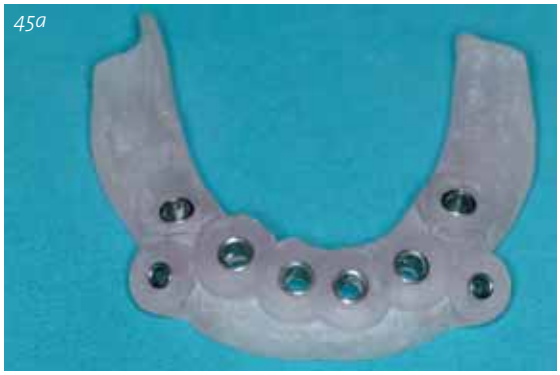
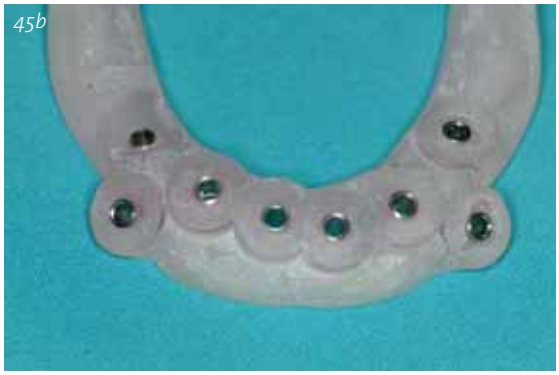


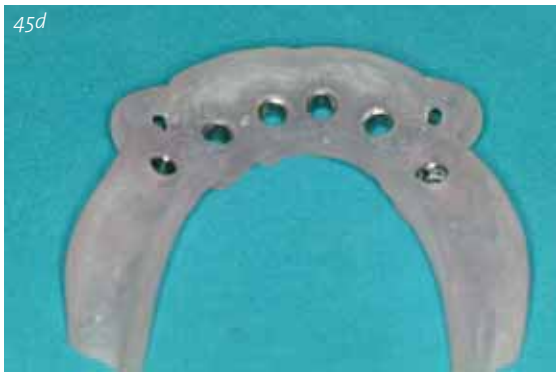
Fig. 44c

Figs. 45a to d The SurgiGuides were created by a stereolithographic process (RPT) on the basis of the scanned data.

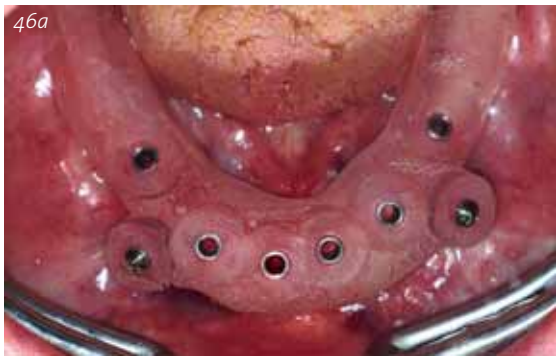


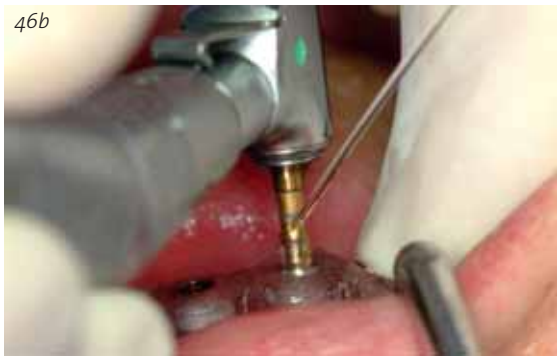





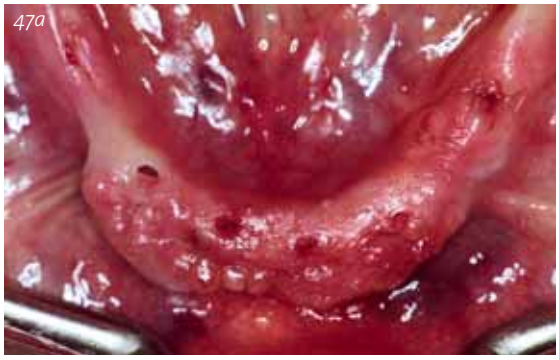


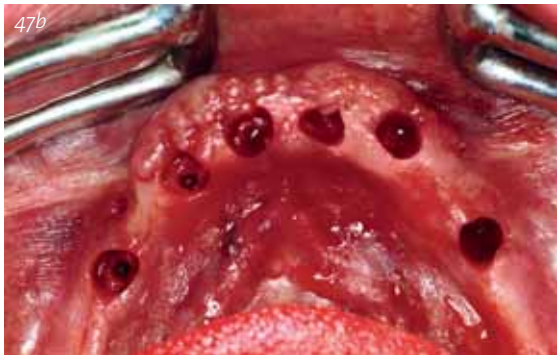

The next step was to obtain the SurgiGuides in the same manner as described for the maxilla, with which we implemented the treatment plan in clinical reality (Figs. 45a to d). The mucosa-supported SurgiGuides with access holes for stabilization screws greatly assisted in the surgical steps.



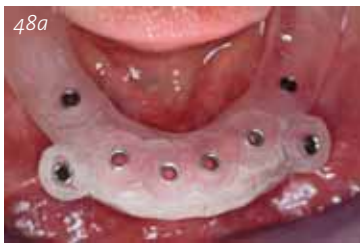



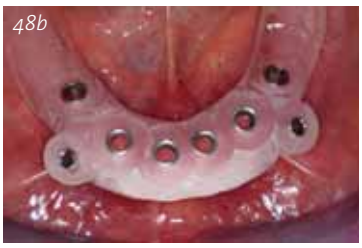

*Figs. 46a and b SurgiGuide with apertures 2 mm in diameter for marking the point of first access with a corresponding drill.*



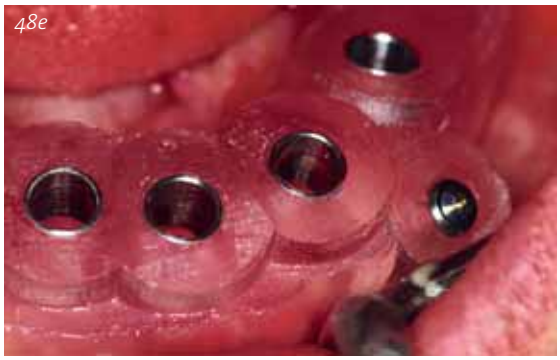




*Figs. 47a and b Markings on the mucosal tissue and circular mucotomies corresponding to the future implant sites.*





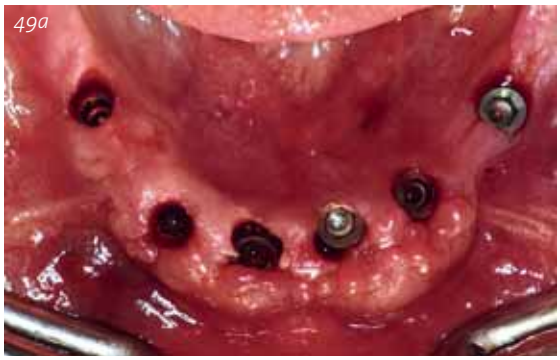




*Figs. 48a to e The SurgiGuides; the images illustrate how the stents are connected to the mandibular bone.*

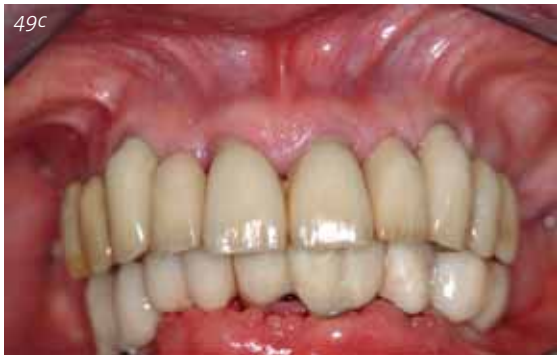
The SurgiGuide – first in the laboratory for fabricating of the provisional restorations, then intraorally for positioning the implants – allowed us to perform a guided insertion of six implants using a flapless transmucosal technique, followed by loading with a provisional screw-retained implant-supported bridge in occlusion with a provisional circular denture, also supported by six implants, executed two months before using the same computer-assisted technique.

On placement of the SurgiGuide in the oral cavity, we were able to produce markings in the soft tissue indicating the future mucotomy sites (Figs. 46a to 47b).

Having used additional SurgiGuides during implant bed preparation, we inserted the six mandibular implants planned and connected them to the screw-retained circular denture that had been fabricated prior to surgery (Figs. 48a to 50d).

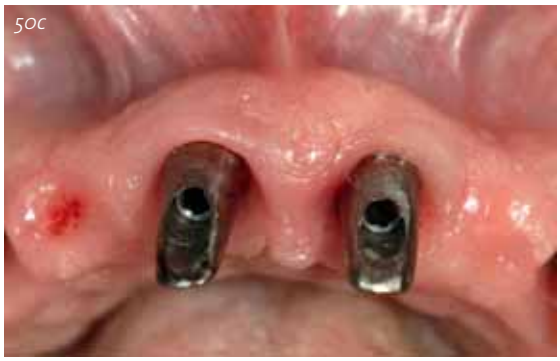






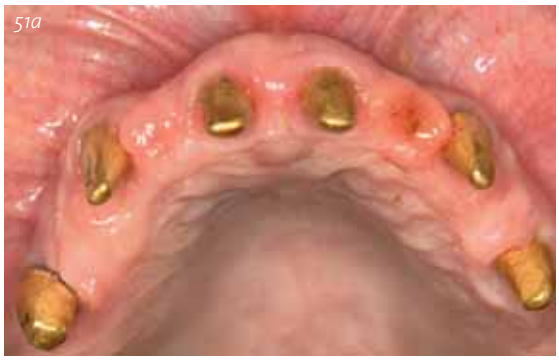

*Figs. 49a to c The implants have been placed, the provisional denture previously fabricated has been screw-connected to the implants and is now in occlusion with the implant-supported denture in the opposing jaw inserted two months before.*

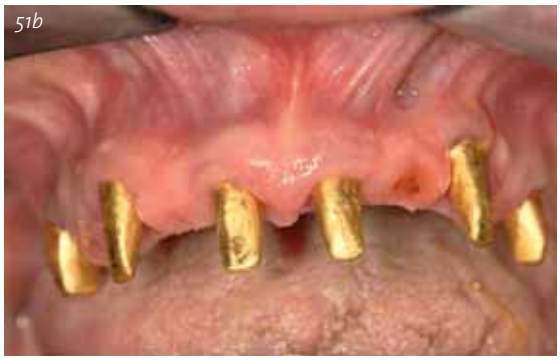




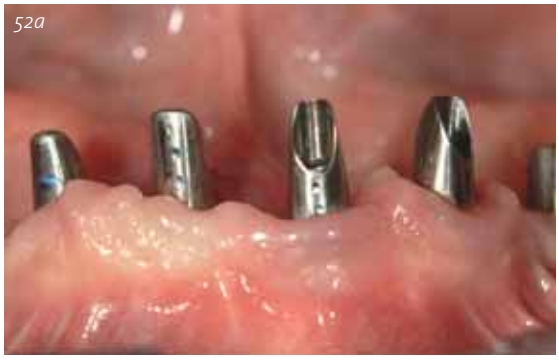


*Figs. 50a to d The definitive maxillary implant abutments: note the excellent healing status and keratinization of the peri-implant soft tissues.*




*Figs. 51a and b AGC copings for the maxillary abutments.*





*Figs. 52a and b Abutments and tissue maturation in the mandibular arch.*

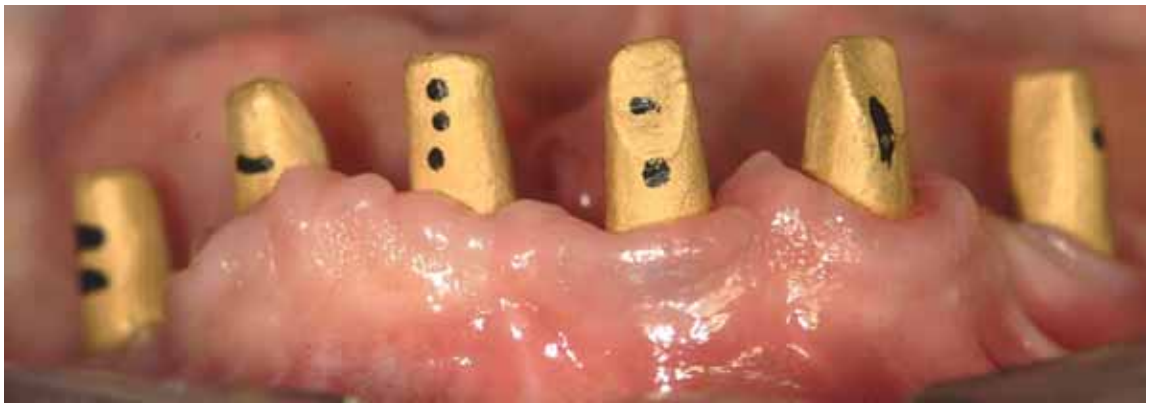


*Fig. 53 AGC copings for the maxillary abutments.*

The following prosthetic steps, performed after a period of two months of hard-tissue and soft-tissue maturation, finally culminated in the realization of the definitive metal-ceramic implant-prosthetic rehabilitation of both jaws with circular dentures supported by implants, cemented using passivization copings produced using the AGC electroplating technique [26].

The total treatment period was approximately six months, during which the patient never reported any discomfort. Figures 51a to 54 document the principal phases of the prosthetic treatment and the resulting aesthetic and functional result. The patient was satisfied (Figs. 55a to 57).

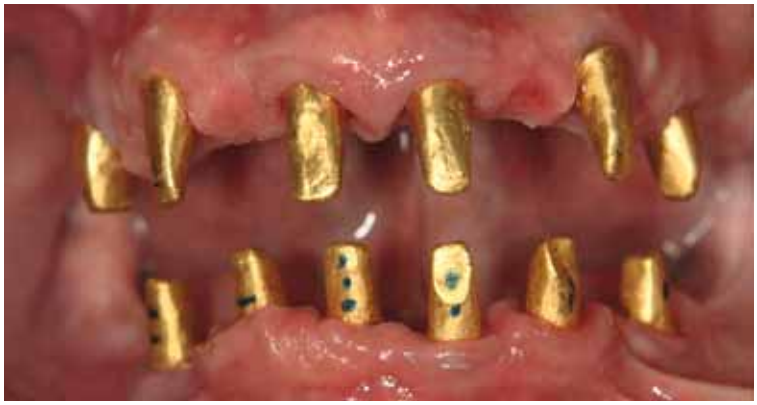
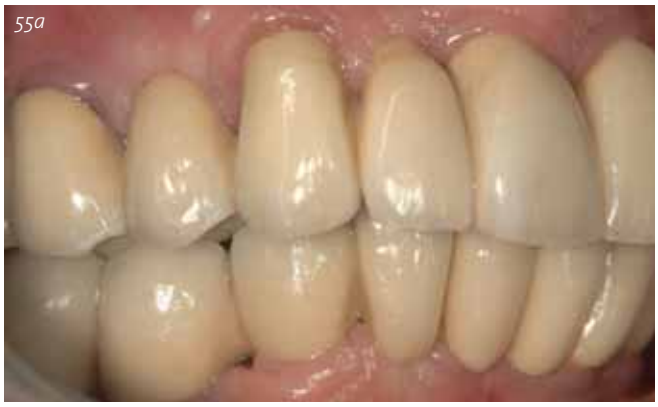
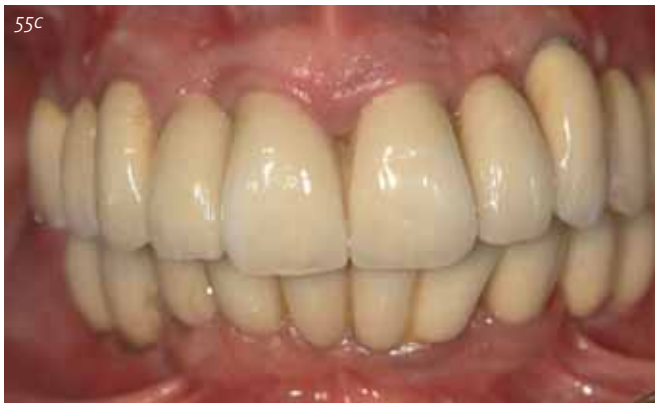
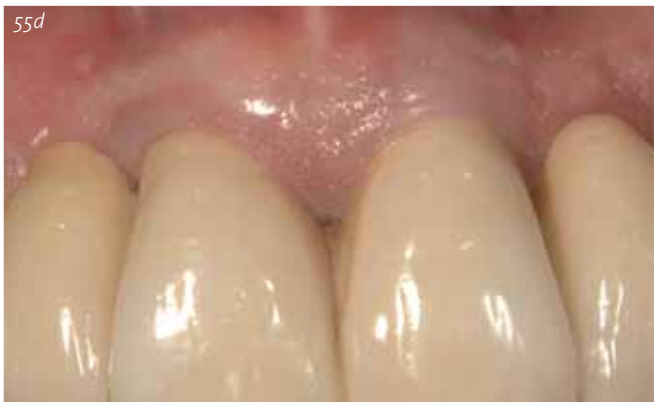


*Fig. 54 Maxilla and mandible shown together.*

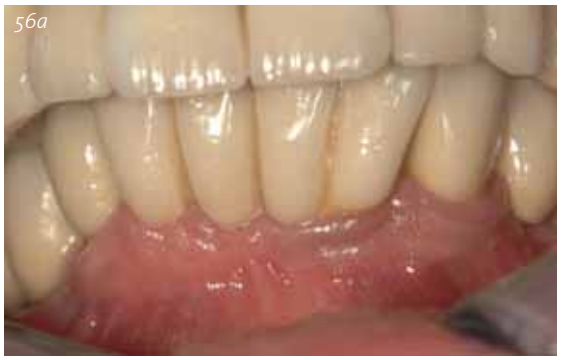






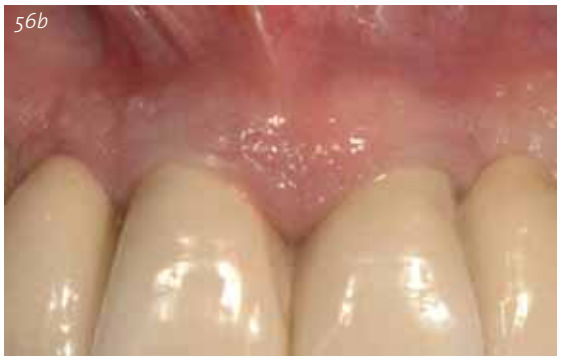



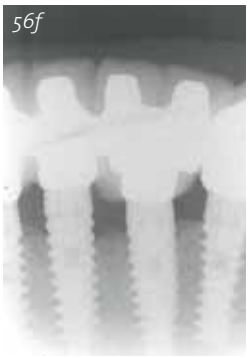

*Figs. 55a to d  The definitive ceramically veneered rehabilitation and a detail view of the entering incisal papillae.*

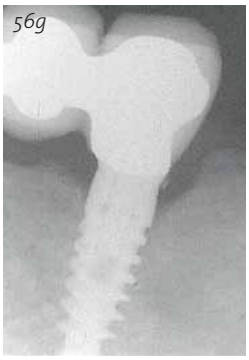









*Figs. 56a to g  Clinical and radiological follow-up two years after surgery.*

*Fig. 57 Aesthetic impression of the definitive rehabilitation.*

## Conclusions

The case presented here nicely exemplifies the methods available today for linking surgical guides or stents to a computer-assisted treatment plan based on a three-dimensional virtual cast obtained by a high-resolution CT scan.

These tools can achieve remarkable accuracy and a close correspondence between the treatment plan and the clinical positions of the implants.

Even complex cases can be treated using this simple approach, with minimally invasive surgery and immediate loading with a previously fabricated denture. The method is highly reliable thanks to the software for computer-assisted implant planning used, the use of which we would like to help spread.

A computer-assisted approach to oral implantology lets us perform complex implant-prosthetic rehabilitations in a minimum of time with a minimum of risk, offering functional and aesthetic predictability and great patient satisfaction. ■

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Fax: +39 085 4225381

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Literature review and clinical procedures with a twelve-month follow-up

# Immediate and Delayed "All-on-Six" Rehabilitation of the Atrophic Maxilla with Tilted Implants

Dr Ilaria Franchini, Dr Luigi Daverio, Dr Roberto Castellaneta, Dr Maria Cristina Rossi, Dr Tiziano Testori and MDT Tiziano Tosini, Milano/Italy

**State-of-the-art implant treatment provides simple and individualized implant-supported restorations while reducing the number of surgical sessions and optimizing both function and aesthetics. But this requires a successful cooperation between the surgeon, the prosthodontist and the dental technician and a clear focus on the prosthetic rehabilitation.**

A careful and accurate diagnosis and precise planning of the prosthetic design render the rehabilitation of the edentulous patient predictable. Implantological and prosthetic treatment alternatives for the completely edentulous jaw differ between the maxilla and the mandible [1,2] (Tab. 1). Fixed implant-supported hybrid restorations as described by *Brånemark* require the insertion of four to six parallelized implants in the intraforaminal area. The literature reports implant success rates of 95 percent and prosthetic success rates of 100 percent over ten to 15 years [3,4].

Fixed hybrid dentures require a bilateral posterior cantilever design that – depending on the anatomy of the anterior alveolar ridge (round or flat) and on the position of the genial foramen or the maxillary sinus – may reach or exceed a critical length of 15 mm and may impart serious loads on the implants, the implant/denture connection and the peri-implant bone [5].

Implant-supported fixed restorations for the edentulous jaw are often subject to anatomic limitations in the posterior regions, limitations that are presented by the mandibular canal and the genial foramen (mandible) or the maxillary sinus (maxilla). Posterior tilting of the distal implants reduces the length of the cantilever segments, allowing it to be lengthened without any sinus lift, bone augmentation or transposition of the mandibular nerve [6,7]. The tilting technique has three advantages:

1. Added distal implant support with consequent shortening of the distal extension segment,
2. Increased implant length, and
3. Implant retention in the dense bone adjacent to the anterior sinus wall along with improved primary stability [8,9].

From a biomechanical point of view, the distalization of the implant platform reduces the moments of force and improves load distribution.

The insertion of six implants in the anterior maxilla, with the two distalmost implants tilted distally along the mesial wall of the maxillary sinus, allows the construction of a fixed hybrid prosthesis called "Marius bridge" by *Fortin et al.* [8], after the first patient rehabilitated with this type of fixed restoration. It combines the patient comfort of a fixed prosthesis with a partial reconstruction of the hard-tissue and soft-tissue anatomy without bone grafting [8]. The authors report 97 percent survival rates for the implants and 100 percent survival rates for the prosthesis [9].

While more and more scientific evidence indicates that immediate loading offers predictable results and achieves osseointegration in the mandible [10-12], the maxilla, because of its anatomy and morphology, historically causes problems in this respect [13,14]. Rigid implant splinting protects the bone-implant interface from functional overload and prevents

*Tab. 1 Alternative implant-supported prosthetic rehabilitations of the edentulous jaws.*

| edentulous mandible | edentulous maxilla |
|---|---|
| 2 implants & overdenture | 4 implants & overdenture |
| 4–5 implants & fixed/removable hybrid implant-supported prosthesis | 6 implants & fixed/removable hybrid implant-supported prosthesis |
| 6–8 implants & fixed implant-supported prosthesis | 6–10 implants & fixed implant-supported prosthesis |

| (n) | author | follow-up | mandible | maxilla | I / D | success | | | | bone loss | | BIC | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | | upright | tilted | prosthesis | failure | BIC | U / T | I | D |
| 23 | Grunder, 2001 | 2 y | | x | I | 87,50% | | 100% | | similar | | | |
| 28 | Testori et al., 2001 | 4 mo | x | | I | | | | | | | 78-85% | |
| 8 | Fortin et al., 2002 | 5 y | | x | I/D | 97% | | 100% | early / 3y | | | | |
| 27 | Testori et al., 2002 | 2 mo | x | | I/D | | | | | | | 64,20% | 38,90% |
| 10 | Testori et al., 2003 | 48 mo | x | | I | 98,90% | | 100% | 3 we | similar | | | |
| 12 | Testori et al., 2004 | 12-60 mo | x | | I | 99,40% | | 100% | | similar | | | |
| 11 | Testori et al., 2004 | 8-65 mo | x | | I | 97,40% | | 100% | 2 mo | similar | | | |
| 21 | Balshi et al., 2005 | 1-5 y | | x | I | 99% | | 100% | | | | | |
| 24 | Calandriello & Tomatis, 2005 | 1 y | | x | I | 96,70% | 96,7% | 100% | | similar | | | |
| 20 | Degidi et al., 2005 | 5 y | | x | I | 98% | | 100% | 6 mo | | | | |
| 22 | Ostman et al., 2005 | 12 mo | | x | I/D | 99,2% / 100% | | 100% | | similar | | | |
| 29 | Romanos et al., 2005 | 2-10 mo | x | x | I | | | | | | | 66,805% | |
| 26 | Cannizzaro et al., 2007 | 12 mo | | x - post-ex | I | 96,30% | | 100% | | | | | |
| 18 | Capelli et al., 2007 | 40 mo | | x | I | 97,59% | | 100% | 12-18 mo | | similar | | |
| 19 | Daverio et al., 2007 | 12 mo | | x | I/D | 98,07% / 100% | 100% | 100% | 2 mo | | similar | | |
| 25 | Testori et al., 2008 | 12 mo | | x | I | 90,80% | | 100% | 12-18 mo | | similar | | |

*I = immediate loading*
*D = delayed loading*
*U = upright implant*
*T = tilted implant*
*y = year/s*
*mo = month/s*
*we = week/s*

*Tab. 2 Schematic revision of the literature references in the text (n) about immediate loading procedures and tilted implants displaying implant and prosthetic success, peri-implant marginal bone resorption and bone-implant-contact (BIC).*

implant micromovement, facilitating predictable immediate loading in the maxilla [15].

Immediate loading requires precise presurgical planning, a suitable device to transfer the prosthetic design from the cast to the radiograph, an appropriate surgical procedure and finally the use of a temporary restoration [16]. The cervical emergence profile of the prosthesis is the critical element. The space defined by the tooth crowns/implants/abutments/residual ridge determines the choice of the restorative solution. Immediate placement of a provisional prosthesis directly conditions the peri-implant marginal tissue for the desired emergence profile as early as during the first healing phase [17]. Other advantages of the immediate loading protocol include shorter treatment times, less postsurgical discomfort and the immediate rehabilitation of the masticatory function as well as of phonetic and aesthetic aspects.

Immediate loading of the edentulous maxilla shows 87.5 to 98.9 percent implant success and 100 percent prosthetic success, both with tilted and non-tilted implants [18-25] and post-extraction (immediate) implants [26] (Tab. 2). Implant failures are above all early failures [10,11,12,19]. The resorption of the marginal bone around the implants is similar for immediate loading and delayed loading [10,11,12,22, 23,24,25] and for tilted vs. non-tilted implants [18,19, 24,25]. Histological examination shows bone-implant contact (BIC) of 64.2 percent and 85 percent after two and four months of immediate loading compared to 38.9 percent after two months of delayed loading [27-29] (see Tab. 2).

| | patient A | patient B |
|---|---|---|
| anamnesis | phobic patient<br>diabetes I | smoking (n>10)<br>osteoporosis – oral bisphosphonate therapy |
| clinical diagnostic phase<br>(Figs. 1, 2) | skeletal and soft tissue analysis<br>inter-maxillary relation (1a)<br>residual tooth elements<br>incongruent fixed prosthesis (2a) | skeletal and soft tissue analysis<br>inter-maxillary relation (1b)<br>edentulous maxilla – reduced resorption (2b)<br>removable total prosthesis |
| instrumental diagnostic phase<br>(Figs. 3, 4, 5) | cast model – facebow<br>verification inter-maxillary relation<br>articulator<br>set-up (3a)<br>provisional prosthesis<br>--<br>surgical device (4a)<br>radiographic analysis (5a) | cast model – facebow<br>registration inter-maxillary relation<br>articulator<br>wax-up (3b)<br>provisional prosthesis (4b)<br>esthetic-functional verification<br>surgical device<br>radiographic analysis (5b) |
| I surgical phase<br>(Figs. 6, 7, 8 9b, 10b, 11b) | dental extractions<br>immediate – delayed implants (6a, 7a)<br>-- | --<br>delayed implants (6b, 7b, 8b, 9b, 10b, 11b) |
| II surgical phase<br>(Fig. 12b ) | | implant exposure &<br>creation attached gingiva (12b) |
| I prosthetic phase<br>(Figs. 9a, 10, 11a) | screwed provisional prosthesis (8a, 9a)<br>immediate loading procedure (10a, 11a) | screwed provisional prosthesis<br>delayed loading procedure |
| II prosthetic phase<br>(Figs. 12a, 13, 14, 15, 16, 17) | cemented definitive prosthesis<br>(12a, 13a, 14a, 15a, 16a, 17a) | cemented definitive prosthesis<br>(13b, 14b, 15b, 16b, 17b) |
| maintenance phase<br>& follow-up | hygiene instruction & motivation<br>individualized recall | |

*Tab. 3 Schematic representation of the two different clinical procedures: immediate loading **(patient A)** and delayed loading **(patient B),** and their iconographic correspondence.*

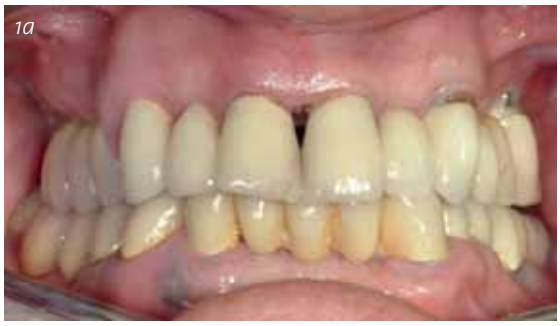
The aim of the present paper is to clinically examine two different "All-on-Six" rehabilitation approaches for moderately atrophic maxillae using tilted implants, to compare treatment durations and immediate vs. delayed loading and to evaluate implant success rates and marginal bone resorption.

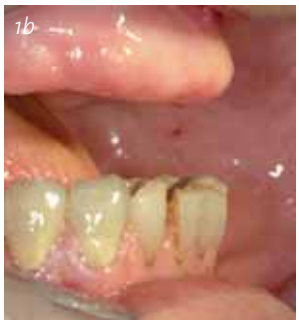
## Materials and methods

Two different clinical approaches were used (Tab. 3): for patient A, immediate post-extractive implants followed by immediate loading; for patient B, a traditional protocol with delayed implant insertion at the first surgical stage and implant uncovering at the second surgical stage followed by delayed loading. The patients each received six Camlog Root-Line implants (Camlog Biotechnologies AG, Switzerland). A careful anamnesis as well as the patient's wishes both justified the two different approaches. Surgery on patient A, who presented with phobias, occurred in conscious sedation with the support of an anaesthetist. The fact that oral bisphosphonates (alendronate, 1 tablet/week) had been taken by patient B for the preceding two years precluded sophisticated regenerative techniques, even in the absence of solid scientific evidence. A scrupulous clinical and instrumental analysis (Figs. 1 to 4) gave legitimation to a precision design for an implant-supported prosthetic rehabilitation and defined the surgical and technical aspects.

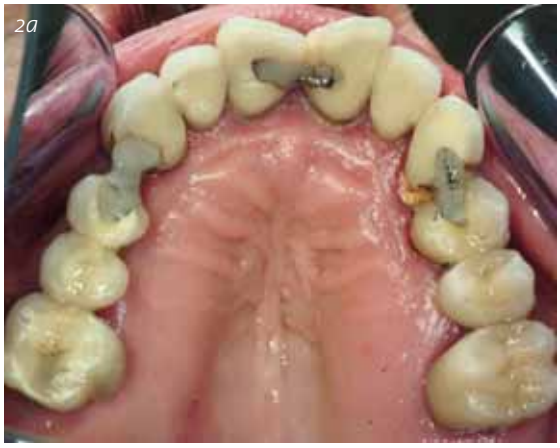
The indication for a fixed rehabilitation cemented on custom abutments for both patients was justified by the intermaxillary relation and by adequate support by the oral and perioral soft tissues (see Figs. 1a and b). The bone volume of surgical interest was outlined by the lateral wall of the nose, by the anterior recess of the maxillary sinus and by the residual alveolar ridge. Significant bone resorption at the premolar level was not a part of this clinical indication. The tilted implant had to be of maximum length to exploit the whole length of the mesial wall of the maxillary sinus up to the lateral wall of the nose. The planning for the bilateral tilted implants was followed by the planning of the intermediate ones, respecting the implant axis and the inter-implant spaces according to the prosthetic design.

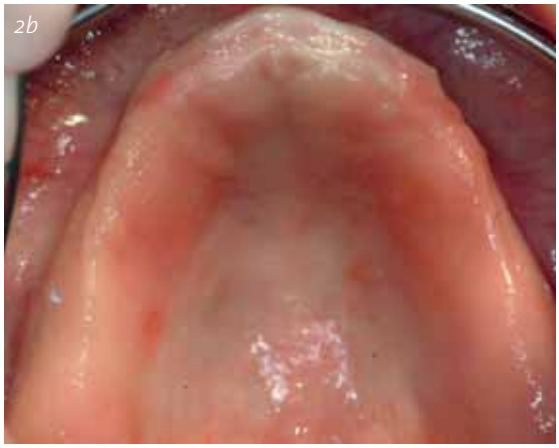
The surgical phase began once the superstructure design had been precisely defined and a surgical stent was realized (Figs. 3 and 4).



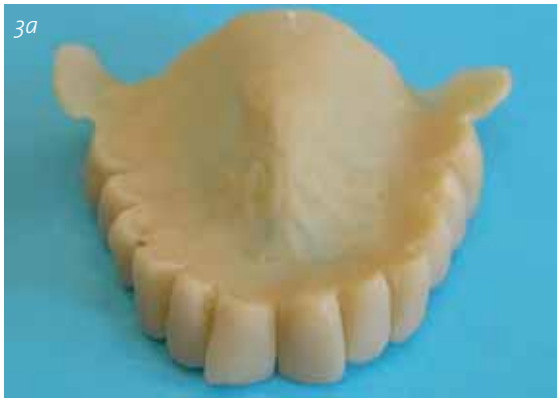



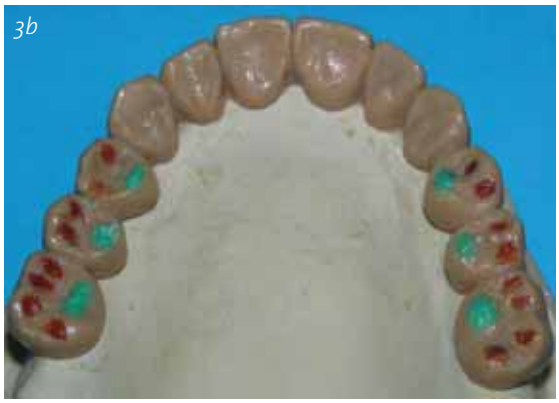

*Figs. 1a and b Clinical analysis, frontal (a) and lateral (b) view.*



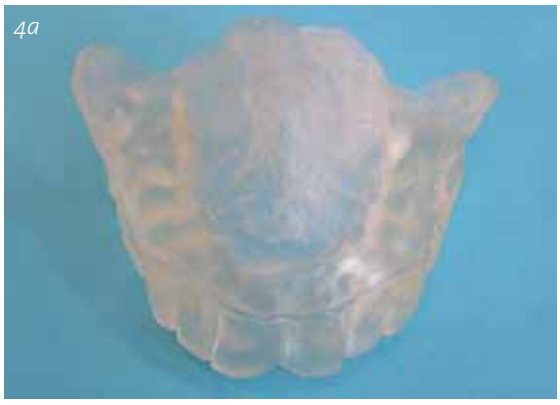



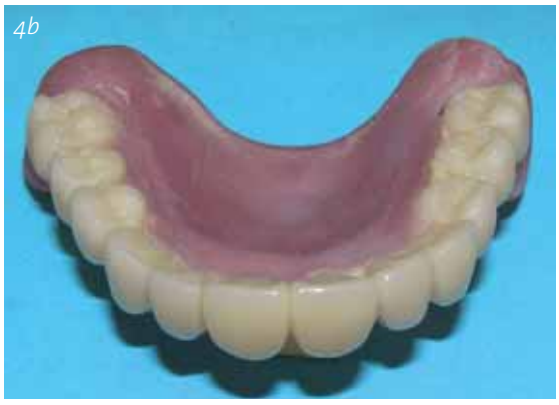

*Figs. 2a and b Clinical analysis, occlusal view.*



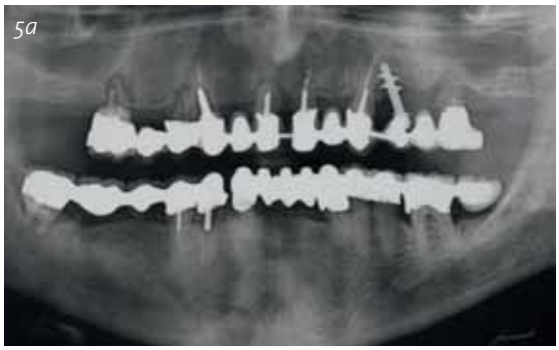



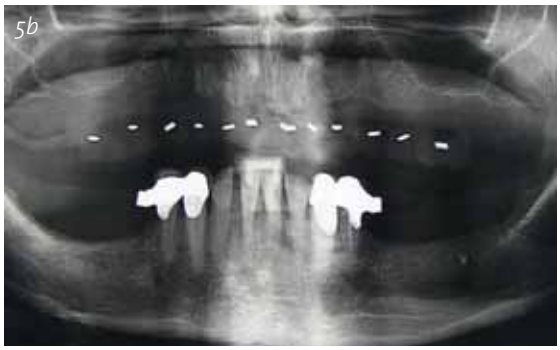

*Figs. 3a and b Set-up (b) and wax-up (a).*



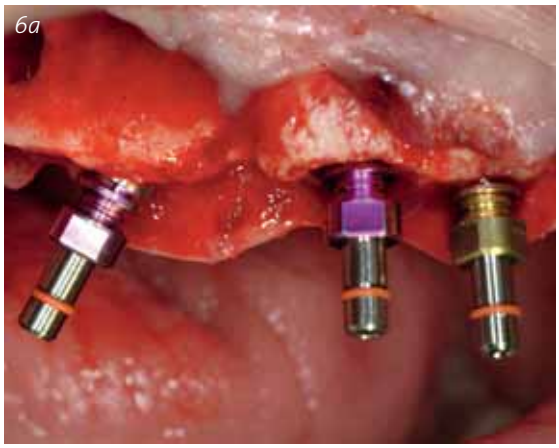




*Figs. 4a and b Surgical device (a) and provisional prosthesis (b).*



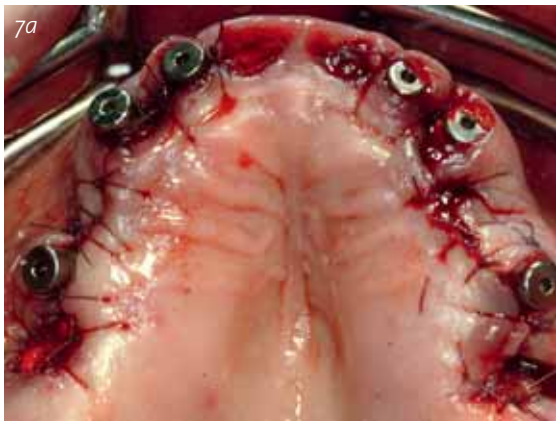



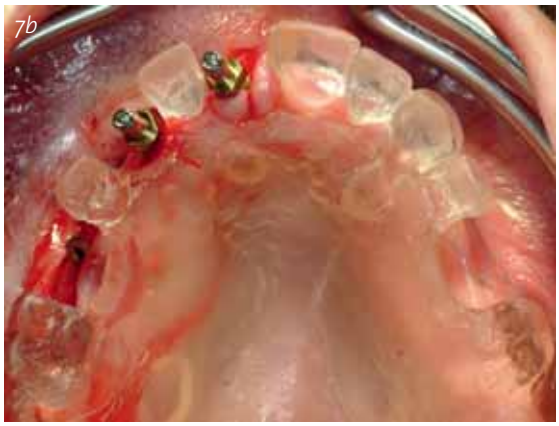

*Figs. 5a and b Radiographic analysis (a) with surgical stent (b).*





*Figs. 6a and b Tilted implant placed at height of the premolar (a) and upright implants placed in the premaxilla (b).*



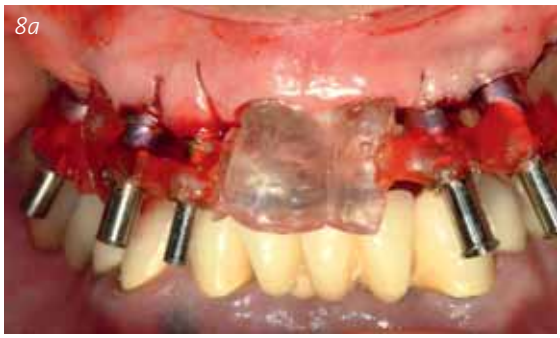



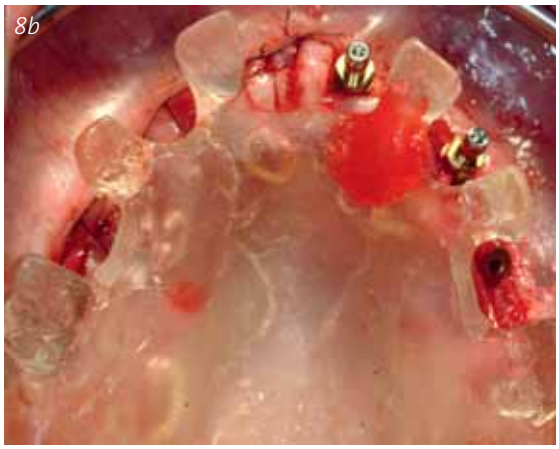

*Figs. 7a and b Bilateral surgical approach.*

The radiographic and CT analyses facilitated exact surgical planning (Fig. 5). The bilateral surgical approach, where possible, is more conservative for the tissues and less traumatic for the patient. Raising a full-thickness flap through a crestal incision and mesial and distal releases expose the area of the maxillary sinus. A diagnostic antrostomy of the maxillary sinus, extended mesially adjacent to the anterior sinus wall, may help identify and control the correct implant location. According to the prosthetic design, the emergence of the implant should be placed in the second premolar area, with a 30 to 35 degree inclination from the vertical upright plane (Fig. 6a).

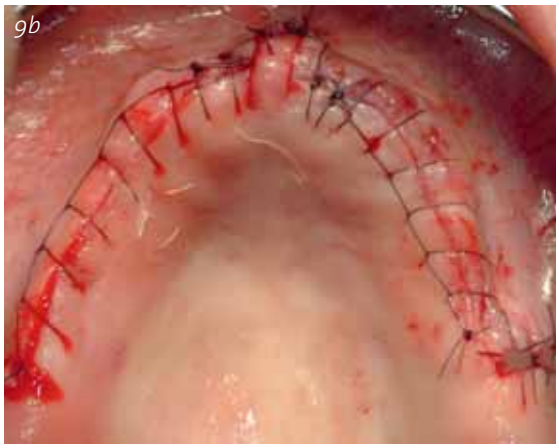
Once the first tilted distal implant was placed, the surgical procedure continued according to the prosthetic design with the placement of the implant in the central or lateral incisal area, prosthetically guided with the help of the surgical stent (Figs. 6b, 7b and 8b). The intermediate implant is generally placed in the canine region. Root-form implants are particularly suitable for this kind of placement thanks to their geometry. The reduced apical shape of these implants allows their correct placement, avoiding contacts between them and bone perforations in the restricted apical zone of the maxillary base. Once the implant placement is completed, the sinus antrostomy can be sealed with collagen sponges without invading the sinus cavity in case of accidental perforation. Procedure B ends with suturing and a radiographic check (Figs. 9b, 10b and 11b).

The immediate-loading procedure A required recording the implant position immediately after placement using a custom stent/impression tray (Fig. 8a) that

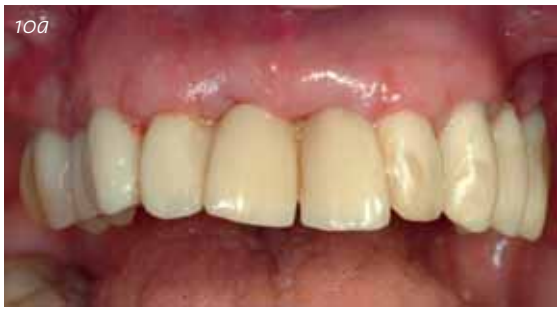


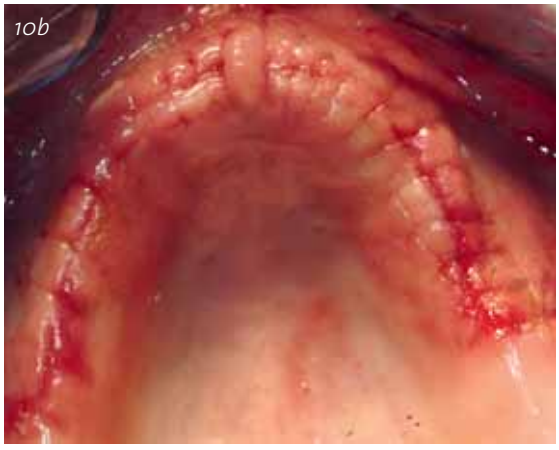




*Figs. 8a and b Registration of the implant position (a) and control of the implant surgical stent (b).*

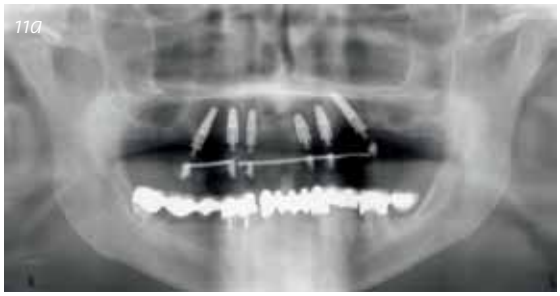



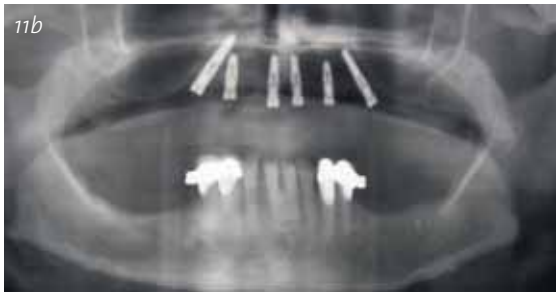

*Figs. 9a and b Provisional prosthesis (a) and sutures (b).*



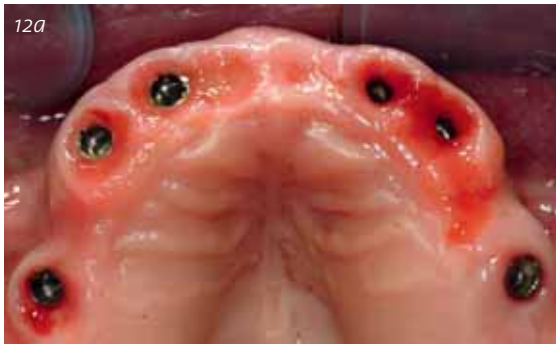

*Figs. 10a and b Positioning of the screwed provisional prosthesis (a) and suture removal (b).*

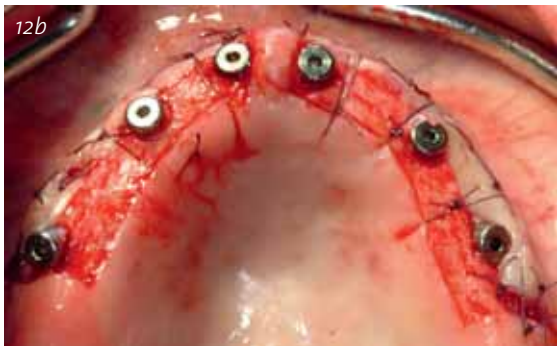


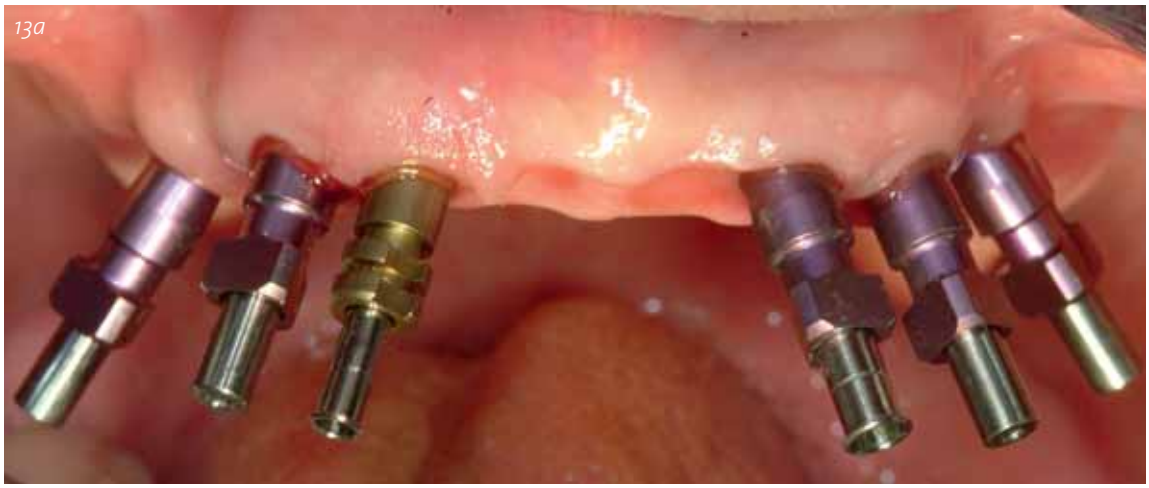

*Figs. 11a and b Radiographic control after surgery.*

allows the assembly of the cast directly in the articulator and provisionalization by inserting abutments into the previously completed provisional full-arch restoration (Fig. 9a). The placement of the provisional screw-retained prosthesis four hours after surgery ended with the radiographic check (Figs. 10a and 11a).

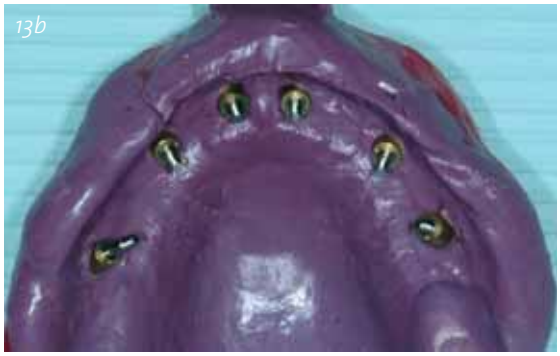



*Figs. 12a and b Healing and maturation of the soft tissue (a) and implant exposure (b).*




*Figs. 13a and b Copying placement (a) and impression-taking (b).*



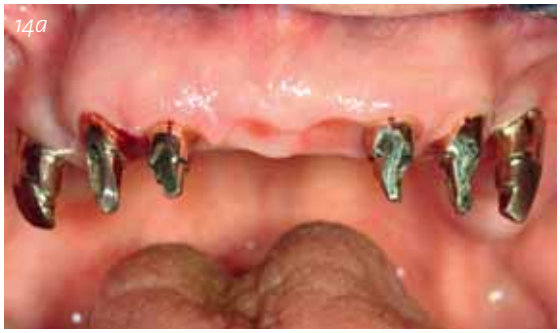

Once the implant had osseointegrated, procedure B required a second surgical phase to uncover the implants according to the standard rules of periodontology (Fig. 12b), followed by healing and maturation of the soft tissue aided by placement of a fixed temporary prosthesis that can be screw-retained or cemented depending on aesthetic requirements and the necessities of tissue conditioning.

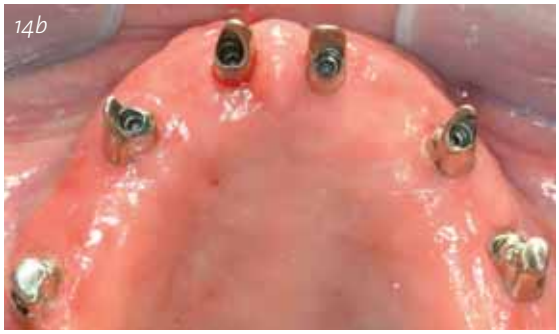
Procedure A required the removal of the temporary restoration and an impression (Figs. 12a and 13a). The fixed prostheses (A and B) were cemented on custom abutments (Figs. 14 to 16).

The correct placement of the full-arch restorations, the degree of osseointegration and the peri-implant marginal bone resorption were periodically checked clinically and radiographically (Fig. 17). The marginal bone resorption is measured radiographically on orthopantomographs using a software-integrated and appropriately calibrated digital measurement program at the implant platform level, mesially and distally, at the times of implant placement, impression-taking, placement of the final prosthesis and during recalls (every six to twelve months).

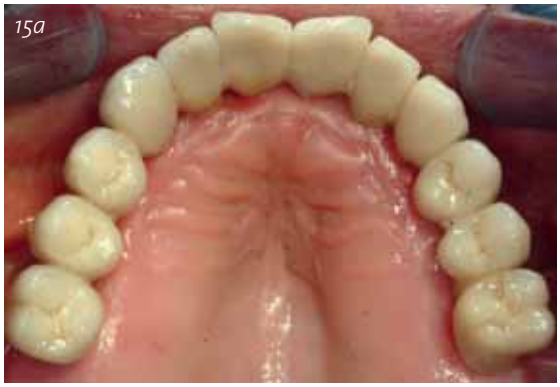
## Results

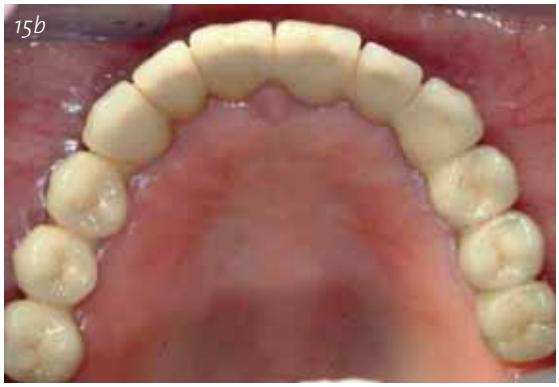
During the twelve-month follow-up period, no implant failures and no prosthetic complications were recorded. Both patients stated their complete satisfaction with their individual treatment options, methods and timing and with the functional and aesthetic result.



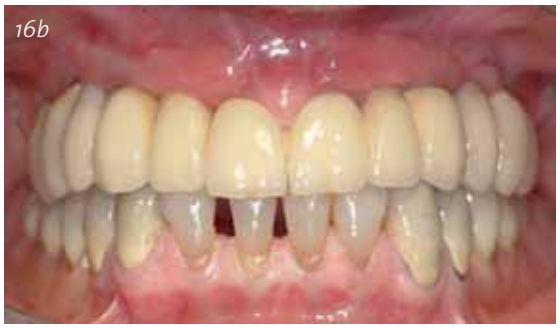




*Figs. 14a and b Positioning of the definitive individualized abutments, frontal view (a) and occlusal view (b).*

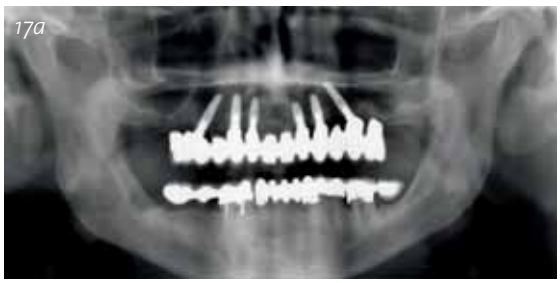


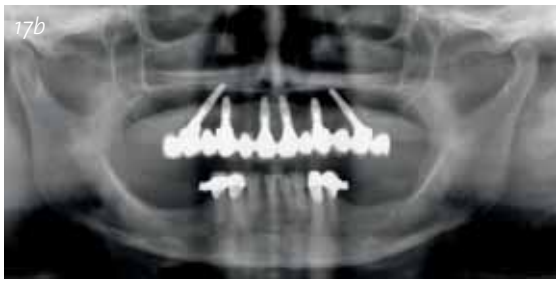




*Figs. 15a and b Final prosthesis in situ, occlusal view.*


*Figs. 16a and b Final prosthesis in situ, frontal view.*




*Figs. 17a and b Radiographic outcome.*

Marginal bone resorption, measured mesially and distally on each implant, was within the physiological range of 0 to 1.4 mm, seemingly increasing from implant placement to impression-taking, but then decreasing and stabilizing over time, becoming less pronounced around tilted than around non-tilted implants, both with immediate and delayed loading. This agrees well with the data obtained from the literature. These preliminary results need more clinical confirmation and further investigation to achieve statistically significant results for scientific evidence.

## Discussion

The rates of implant and prosthetic success recorded in the literature review [8,18,19] and in the clinical cases have shown that (1) the inclination of the implant axis relative to the surrounding bone and the occlusal plane is not a determinant for implant or prosthetic failure and that (2) implant tilting is not a determinant for marginal bone resorption. Implant treatment planning for the residual bone of the premaxilla cannot ignore the parameters of prosthetically

guided implantology. An accurate diagnosis must precede the assembly of the casts in the articulator using a facebow and the creation of a custom set-up. A correct three-dimensional implant placement has to establish a suitable emergence profile of the implant platform into the prosthetic arch and appropriate tilting of the implant axis relative to the occlusal plane. The results from the literature (see Tab. 2) and from the clinical cases confirm the predictability of implant-supported fixed restorations for the edentulous maxilla with distally tilted implants, with both immediate and delayed loading, reducing the need for bone augmentation and post-surgery discomfort and shortening treatment times. Peri-implant measurements show a level of bone resorption similar to that described in the literature, and overlapping shapes, both in tilted and non-tilted implants and in immediate and delayed loading. Peri-implant bone resorption is a physiological process that decreases with time and also depends on the individual response of the organism and on the patient's habits and oral hygiene. Regular follow-ups must include customized maintenance programs and standard checks of the clinical and radiographic implant parameters.

## Conclusions

The literature review and the clinical cases define a suitable protocol for an implant-supported rehabilitation of the completely edentulous maxilla. The placement of six implants in the pre-maxilla, two of them tilted distally along the maxillary sinus anterior wall, eliminates problems of bone atrophy in the posterior areas and renders advanced surgery with tissue grafts unnecessary, allowing the rehabilitation of the masticatory and phonetic function and aesthetics using a fixed implant-supported prosthesis. Literature data on tilted and non-tilted implants underline the overlapping of peri-implant resorption of the marginal bone, refuting the hypothesis that tilted implants are more prone to failure because of their angle to the bone crest, to the occlusal plane and to the main direction of functional load [6,7, 18,19]. ■

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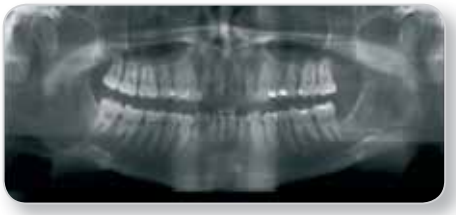

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Non-invasive esthetic rehabilitation

# Illusion of Nature

Dr Roy Samuelsson, DDS and Svein Thorstensen, MDT, Oslo/Norway

**In modern restorative dentistry, natural and long-lasting esthetics join function and longevity as important treatment goals. Having this in mind and at the same time aiming for minimal invasiveness can put the clinician into an intriguing challenge.**

The simplest solution to replace a missing/failing tooth and/or to fulfill the patient's esthetic preferences is often a conventional fixed dental prosthesis, perhaps combined with full crowns on neighboring teeth. In the short term, this would perhaps deliver good results, provided it is performed with the utmost precision and care for the surrounding soft tissues, something which is in fact rarely seen in everyday practice. However, if the patient was made aware of the future esthetic risk, the invasiveness, and destruction of sound tissues (note tooth 13 in the older FDP, Fig. 1), he or she might hesitate to go along with such treatment.

Implant treatment does not necessitate the destruction of neighboring teeth and represents a non-invasive procedure in this respect. Nevertheless, in implant treatment as well as in conventional FDP, the supportive (or lack of) tissues will add to the esthetic challenge of achieving a pleasing end result when scrutinized with a critical eye. Augmentation may be called for, meaning additional surgical intervention that in turn adds to the risk of unexpected complications. The following case will illustrate ways of pleasing the patient with less invasiveness using techniques and materials that minimize the risk of complications and increase the likelihood of an esthetically pleasing outcome (Figs. 1 to 18). ■

With acknowledgment to *Hans R. Haanæs*, DDS, Professor for Oral and Maxillofacial Surgery, Department of Oral Surgery, Faculty of Odontology, University of Oslo, Norway.

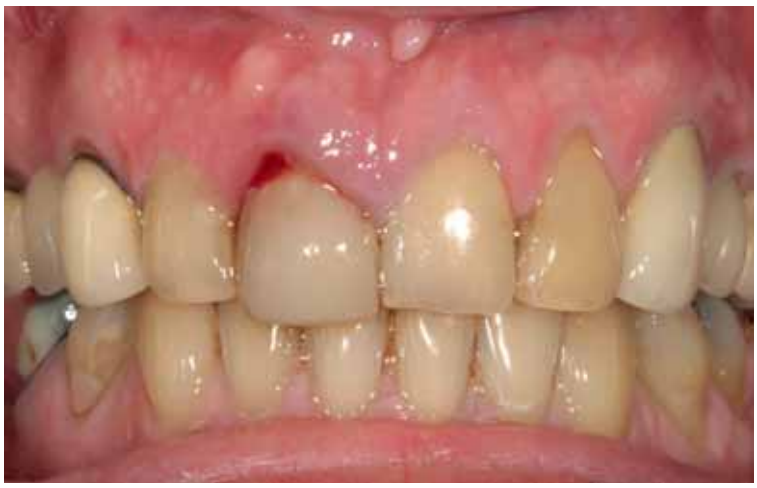

*Fig. 1 Acute consultation, tooth 11 is mobile and tender.*

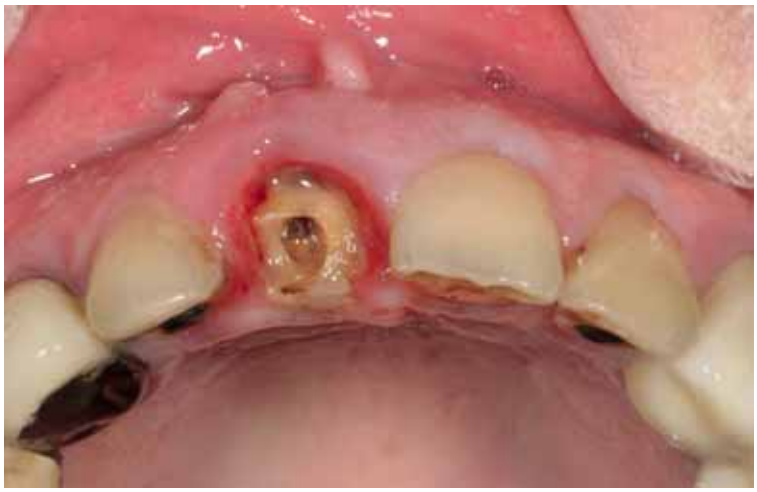

*Fig. 2 The clinical inspection reveals combined horizontal and vertical root fracture.*

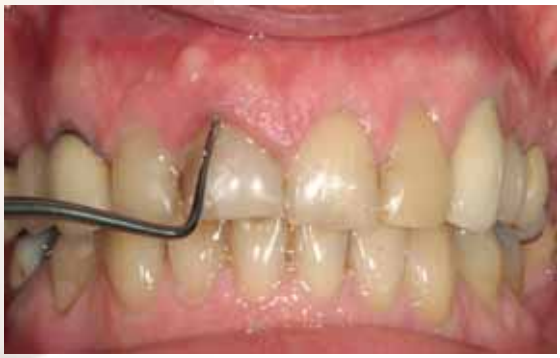

*Fig. 3 Provisional restoration. A combined horizontal and vertical root fracture has caused bone destruction buccally and there is pus upon probing. Tooth 11 is untreatable and will be extracted orthodontically.*

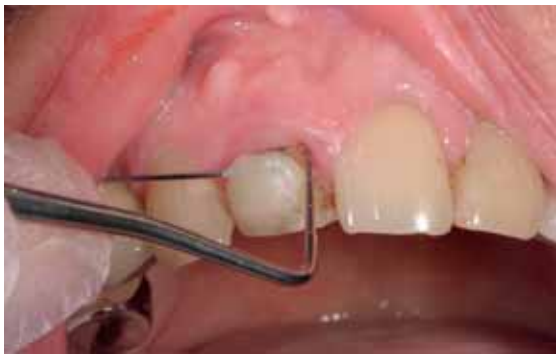

*Fig. 4 After almost three months of extrusion excess hard and soft tissues are evident buccally and also good conditions for extraction and immediate installation of an implant.*

*Fig. 5 The implant is installed and a healing abutment placed.*

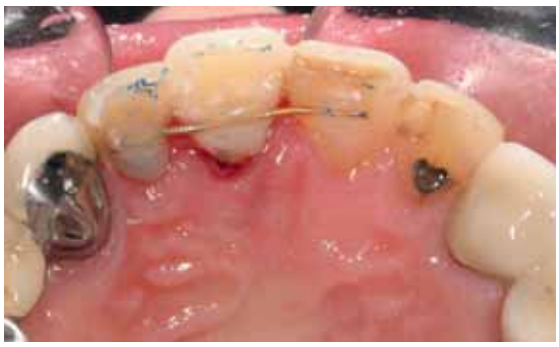

*Fig. 6 The patient is provided with a bonded temporary restoration.*

*Fig. 7 Four months after implant installation. The implant shows good stability and healed soft tissues.*

*Fig. 8 The healing abutment has created nice soft tissues which will be conditioned with a temporary construction in order to create an emergence profile.*

*Fig. 9 TempDesign in place before cutting it into a proper length. An acrylic crown form will be used together with cold cure acrylic.*

*Fig. 10 The finished temporary crown ready for insertion.*

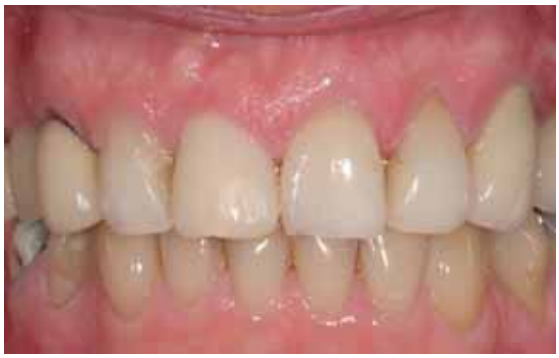

*Fig. 11 A few months later the gingival margin has stabilized and we are ready for finalization of the restoration. The other teeth have been bleached.*

*Fig. 12 An impression is taken at implant-level and the created emergence profile is transferred to the model.*

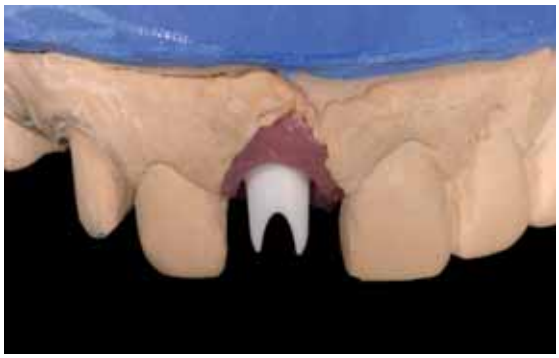

*Fig. 13 The model is scanned and an Atlantis abutment in zirconia is produced and delivered to the technician.*

*Fig. 14 Ready for try-in of the Atlantis abutment.*

*Fig. 15 Atlantis abutment in zirconia custom made for this specific case.*

*Fig. 16 Try-in of abutment.*

*Fig. 17 Finished treatment. An all ceramic crown is fabricated and cemented onto the Atlantis abutment.*

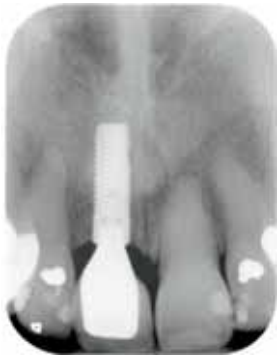

*Fig. 18 X-ray of the finished case.*

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Three years follow-up of a zirconia implant

# High-Tech Aesthetics

Rami Sarkis, DDS, MSc, Beirut/Lebanon

**A lost single maxillary anterior, unless replaced at an early stage, will sooner or later result in alveolar atrophy. This can cause serious problems from both a functional as well as an aesthetic point of view. When the root of a tooth is lost and the alveolar socket is nearly undamaged, it is important to prevent the collapse of the alveolar bone and the surrounding soft tissues by immediately placing a dental implant.**

The material of choice for dental implants is titanium. The grey color of titanium might present an aesthetic problem in the maxillary anterior region when the soft-tissue status and aesthetic parameters are unfavourable. Tooth-coloured implant materials that improve the aesthetic appearance while at the same time being highly biocompatible and withstanding the forces present in the oral cavity might be a solution. Today's material of choice for dental implants with these properties is zirconia.

## Objective

The objective of this case report is to evaluate the clinical outcome three years after immediate placement of a cylindrical zirconia 3Y-TZP dental implant with a rough surface and simultaneous use of bone-augmentation biomaterials in the anterior maxilla.

## Materials and methods

A flapless surgical procedure was used for the extraction of a maxillary left central incisor fractured due to trauma, followed by immediate placement of a one-piece roughened-surface cylindrical zirconia implant (zit-z, ziterion, Uffenheim, Germany) in the undamaged socket and simultaneous use of a bone-augmentation biomaterial (Bio-Oss, Geistlich, Wolhusen, Switzerland) to fill voids and gaps between the implant surface and the surrounding alveolar bone on the coronal aspect. A zirconia all-ceramic crown was delivered after a healing period of six months under unloaded and protected conditions.

## Case report

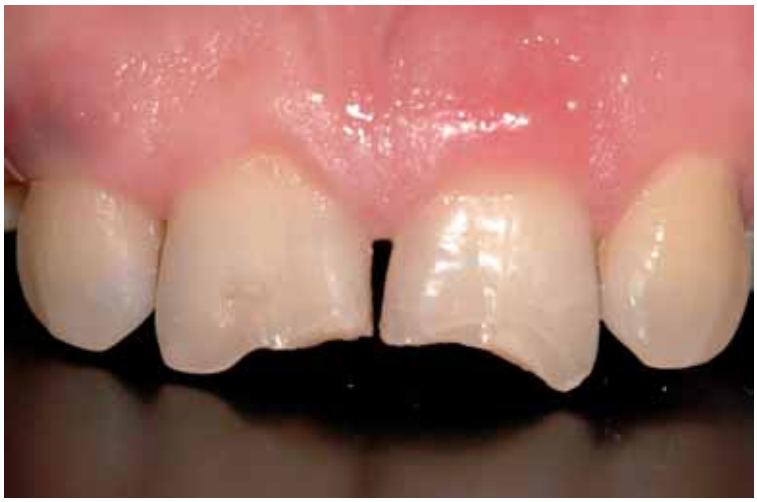


*Fig. 1 The traumatized upper left central incisors 21 and 11.*

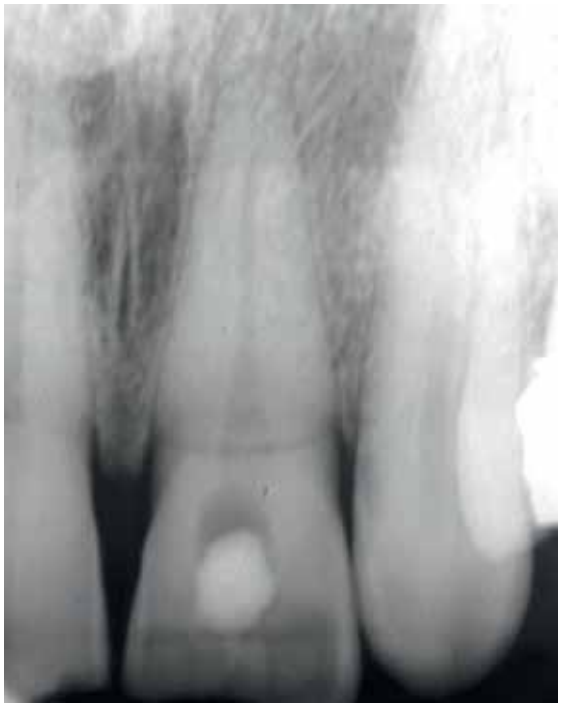


*Fig. 2 A horizontal root-level fracture on tooth 21 was detected.*

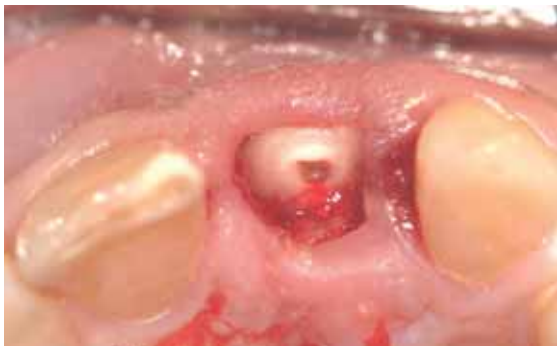


*Fig. 3 Root of tooth 21 scheduled for extraction.*

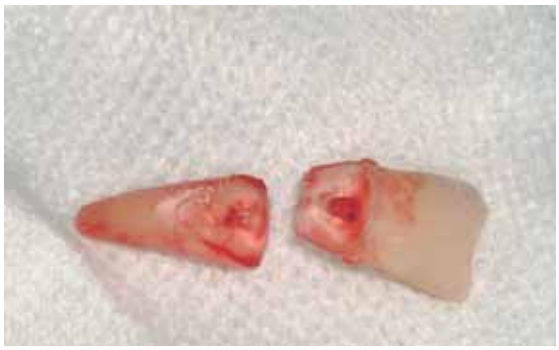


*Fig. 4 Careful extraction of the remaining part of the root.*

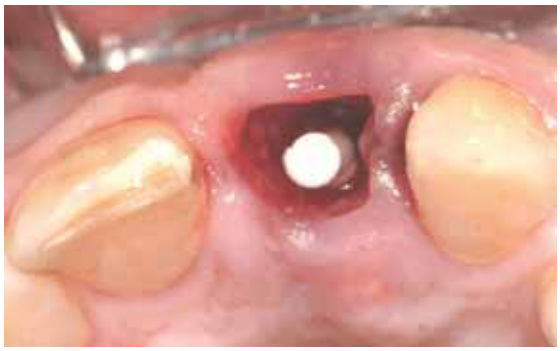


*Fig. 5 The alveolar socket was large. No socket defect and no loss of buccal bone were observed. The direction of the preparation was moved toward the palatal side following the golden preparation rules for immediate implant placement.*

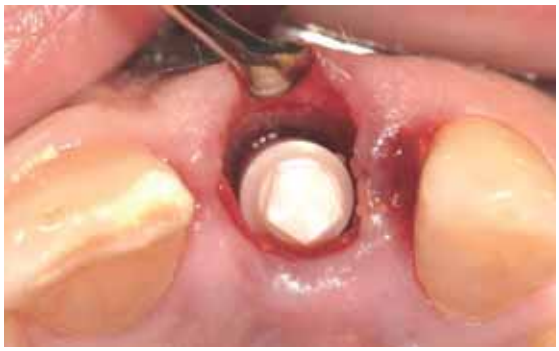


*Fig. 6 An immediate 3Y-TZP zirconia dental implant (zit-z, ziterion, 13 mm long, 4 mm in diameter) was inserted in the prepared site at a torque of 35 N.*

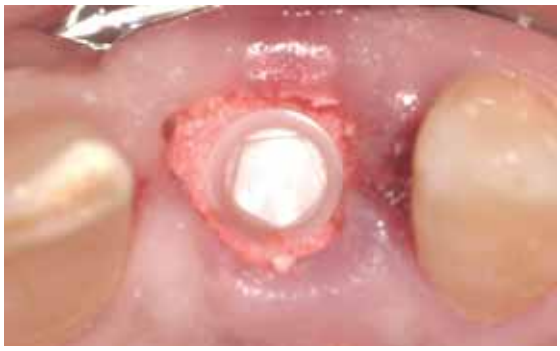


*Fig. 7 The remaining bone defect was filled with a bone replacement material (Bio-Oss, Geistlich). The biomaterial was overfilled to the most coronal part of the polished neck of the implant. No protective membrane was used in this clinical situation.*

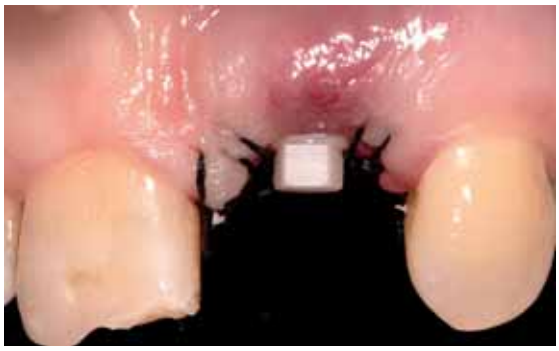
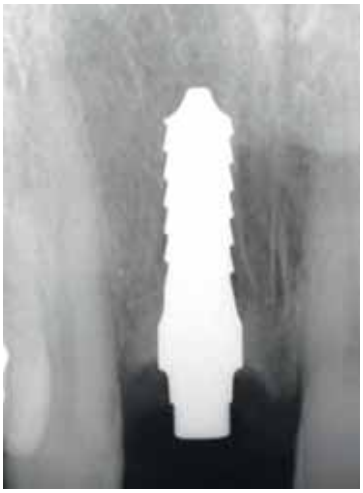


*Fig. 8 The mucosa was carefully fitted around the neck of the implant using sutures, which were removed after ten days.*

*Fig. 9 Radiographs were taken immediately after implant placement. Note the condensed biomaterials at the coronal aspect and the bone morphology at the mid-apical aspect of the implant. The crown of the extracted tooth was modified to serve as a provisional restoration protecting the implant during the healing period.*



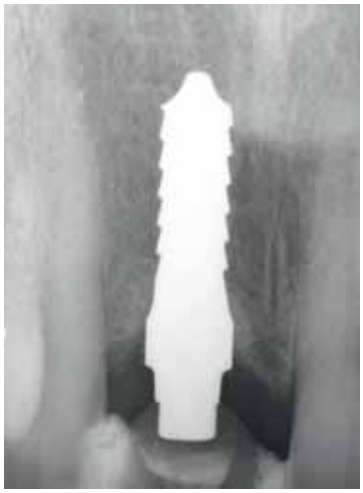


*Fig. 10 Radiograph at six months. Note the perfect bone healing in the mid-apical part. With one-piece implants, special care must be taken to avoid premature loading.*

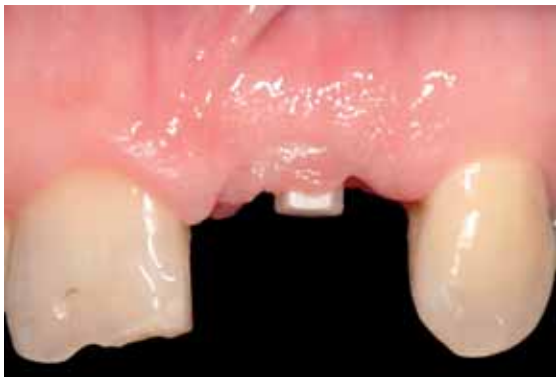


*Fig. 11 The implant has a highly polished neck of 1.5 mm, allowing a tight connection of the circular collagen fibres and epithelium of the mucosa. Note the creeping attachment on the zirconia surface, which confirms the findings of several studies about the excellent affinity of the soft tissue and a certain degree of direct attachment to a zirconia surface.*

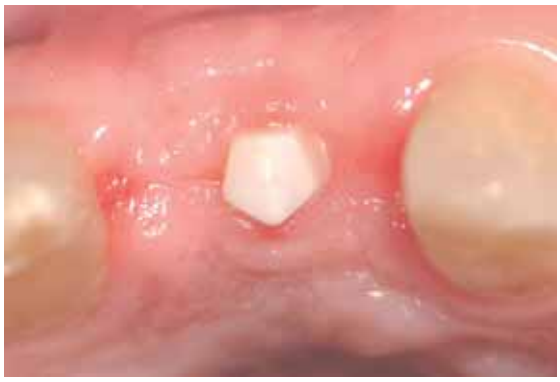


*Fig. 12 Occlusal view of the pentagonal connector of a zit-z zirconia implant six months after implant placement.*

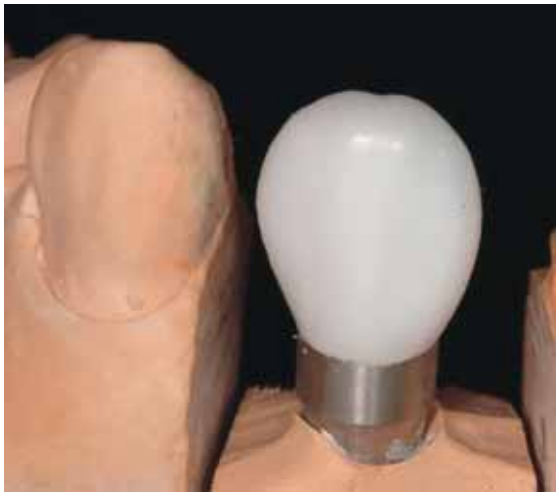


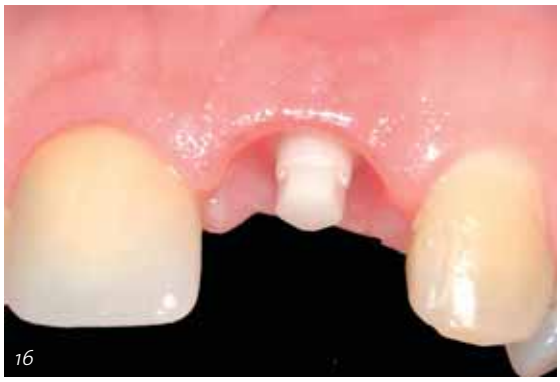
*Fig. 13 A conventional impression of the implant (open tray technique) was taken. A CAD/CAM zirconia framework (Procera, Nobel Biocare, Göteborg, Sweden) was checked against the implant replica to evaluate its fit and marginal integrity.*

*Fig. 14 Radiographic examination of the adaptation of the zirconia coping on the pentagonal connector of the zirconia implant.*

*Fig. 15 Ceramic build-up layering and final zirconia crown.*

## Discussion

The clinical images demonstrate that all-ceramic single-tooth restorations are characterized by appealing aesthetic results, high levels of biocompatibility and an excellent clinical aesthetic success rate. While zirconia implants have so far been used mostly experimentally and only few clinical cases are presented in the literature, the biocompatibility of zirconia seems very similar to that of titanium, and the restorative structures appear capable of withstanding occlusal forces over a long period. The zit-z implant design is based on a one-piece toughened zirconia implant. The implant is transmucosal and therefore exposed to the oral cavity immediately after placement. This necessitates special attention to prevent occlusal loads during the healing period in order to protect the bone apposition process to the implant surface.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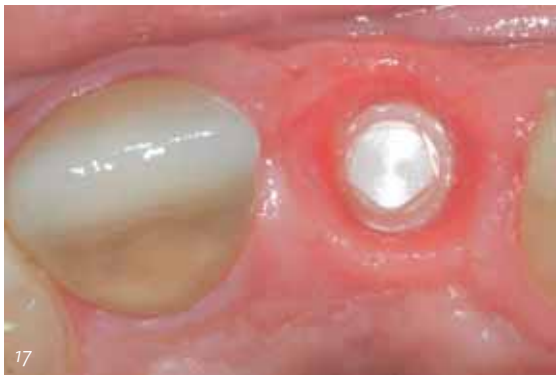
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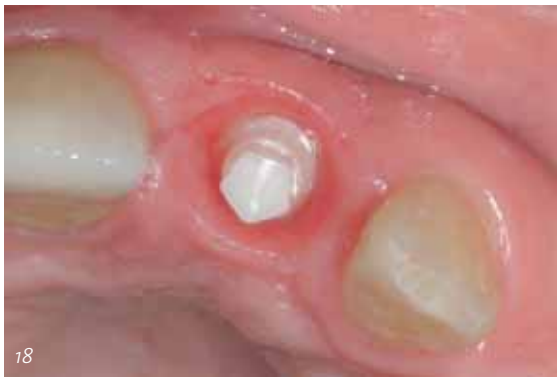
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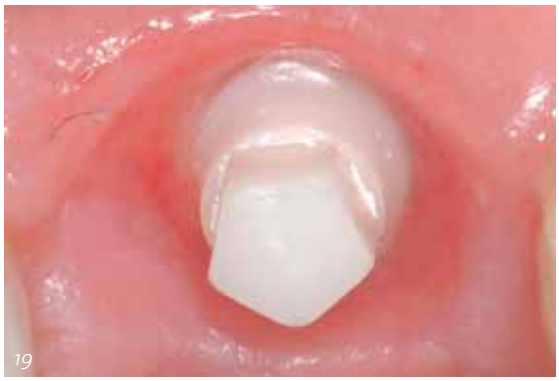
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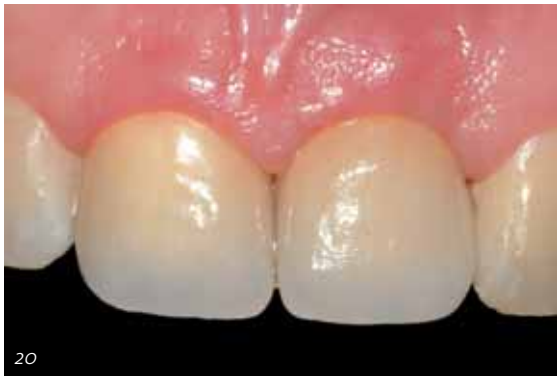
*Figs. 16 to 19 Pink aesthetics and emergence profile: The colour of the overlaying oral mucosa is an "ideal pink". The highly polished ceramic surface of the transmucosal part of the zirconia implant (coronal part of the abutment) contributes toward a healthy gingival margin. The ideal placement of the implant palatally to the adjacent teeth and the perfect vertical and horizontal position of the implant's prosthetic neck work in favour of soft-tissue healing and an ideal emergence profile – both aesthetic prerequisites.*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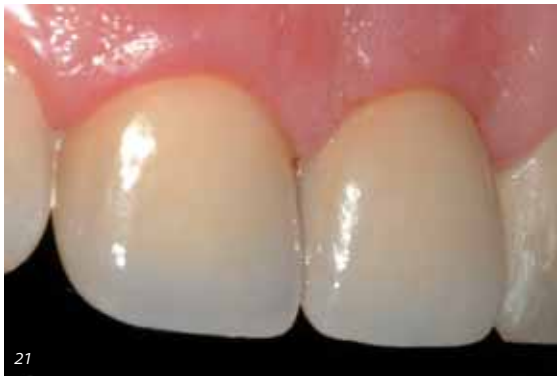
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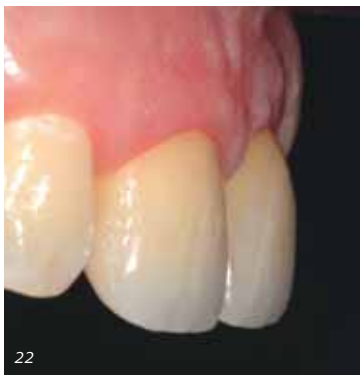
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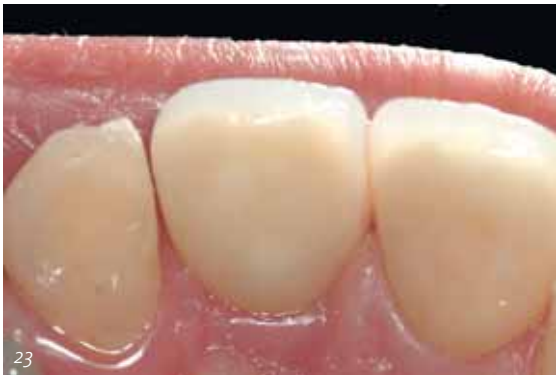
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*Figs. 20 to 23 An excellent aesthetic and functional result was achieved with the zirconia crown. No clinically discernible bone resorption or soft-tissue recession was observed after two years.*

*Fig. 24 Radiographs were taken immediately after implant placement, at the moment of the final evaluation and at the periodical clinical controls.*

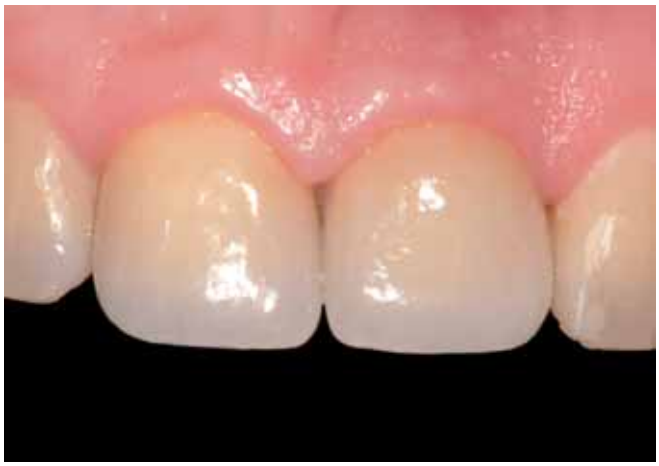

*Fig. 25 Clinical situation at three years follow-up.*

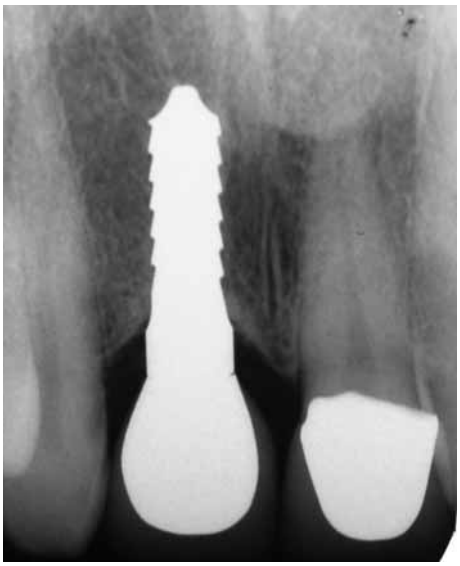

*Fig. 26 Radiographic examination at three years follow-up. Bone stability directly at the 1.5 mm polished neck limit.*

## Conclusion

The preliminary results of this clinical report show that cylindrical zirconia implants with roughened surfaces placed simultaneously with bone-augmentation materials can be a viable aesthetic alternative for immediate tooth replacement in the anterior maxilla. This approach will maintain the function and volume of the alveolar bone, as well as preserving the contour of the mucosal soft tissues. Further research is needed to evaluate the long-term success rates for this technique. The treatment method presented would offer an optimal foundation for aesthetic restorations of anterior missing teeth using zirconia implants and all-ceramic zirconia crowns or bridges. ■

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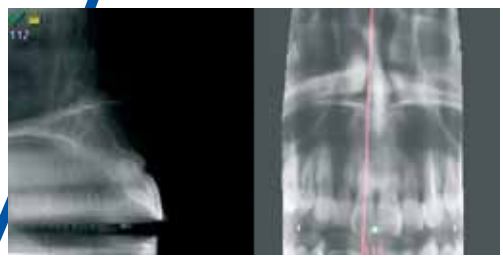

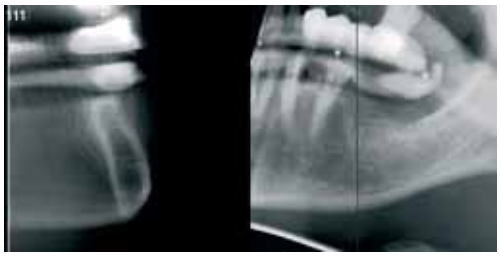

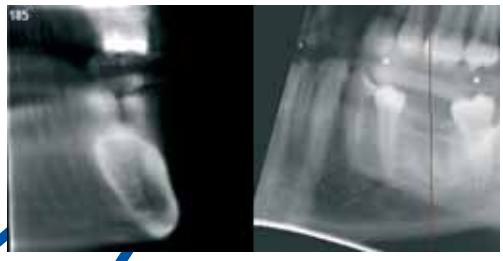

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Bone splitting as a transversal augmentation method

# Optimizing the Implant Bed

Dr Dr Andres Stricker, Konstanz/Germany

**Bone splitting is a method for transversal augmentation ahead of preparing an implant bed. The method presented in this article allows for a simultaneous procedure. Andres Stricker explains the classic steps of the method, including a variant that allows a better assessment of bone width in cases of severe atrophy.**

Modern implantology endeavours to restore structures destroyed by tooth loss. The implant insertion is no longer dictated by the existing bone support, but depends on the most favourable position in terms of prosthetics. Therefore many implantations must be accompanied by augmentation. The latter should ensure the long-term stability of the implant bed, however without overstretching the patience and pain tolerance of the patient over the period beginning with the healing phase and ending with the eventual result.

## Primary and secondary augmentation

A narrow maxillary or mandibular alveolar process with a residual bone width of less than five millimetres is an indication for a transversal augmentation. After implant placement, the bony foundation must still be at least one millimetre wide around the inserted implants, both on the vestibular and on the lingual aspect.

Various surgical techniques for transversal extension have been described in the literature. A distinction is made between primary/simultaneous and secondary, that is delayed, augmentation procedures. On the one hand we have block augmentation and horizontal distraction osteogenesis as secondary techniques, while on the other hand we have primary augmentation methods such as guided bone regeneration (GBR) or bone-splitting with or without interposition. The secondary techniques involve an initial block augmentation or distraction in the mandible before the actual implantation is carried out in a separate second step.

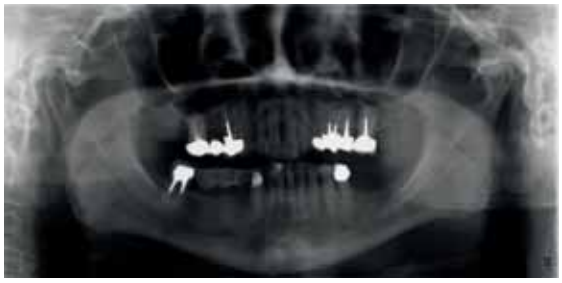

*Fig. 1 Preoperative OPG with sufficient vertical, but poor transversal bone support.*

## The bone splitting method

The simultaneous technique of bone splitting involves the following procedure (Fig. 1): The bone is split longitudinally, motor-assisted or manually, using rotary or ultrasound-powered instruments and then distracted by osteotomes. The implant is inserted in the resulting cavity. The voids between the implants can be filled with autologous bone or bone-replacement material. The vestibular lamella should be well-perfused, which can only be ensured if its pedicles remain.

In the presence of borderline atrophies, however, this procedure is difficult to accomplish, since the bone width can not be reliably determined with the periosteum still in place. Any premature or uncontrolled fracturing increases the risk of failure (Fig. 2), which is why we argue in favour of a different method of bone splitting for such indications.

## Special procedure for borderline atrophies

The procedure starts by preparing the mucoperiosteal flap with two- or threefold periosteal slits. This is done right at the beginning of the procedure because periosteal slitting at a later stage would cause stronger haemorrhaging into the wound area. Also, this method allows tension-free flap adaptation during wound closure. The vestibular lamella is completely displayed and the transversal situation is examined. The residual transversal bone is split by

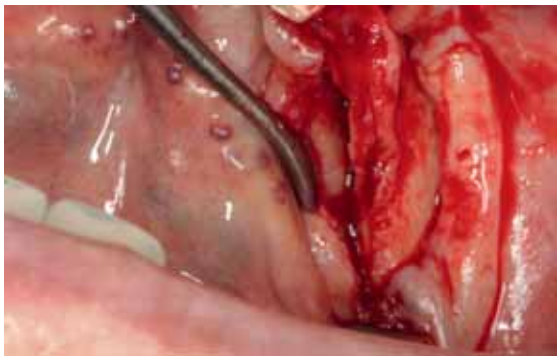

*Fig. 2 Intraoperative situation with borderline transversal bone support.*

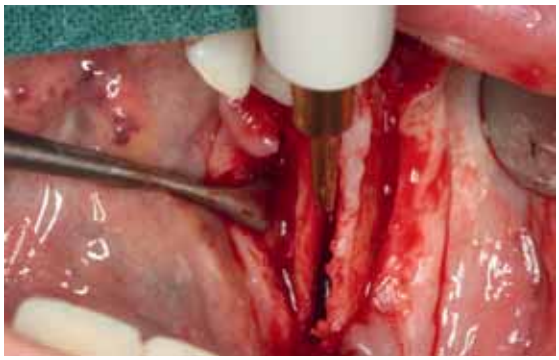

*Fig. 3 Initial bone splitting using the Piezosurgery device.*

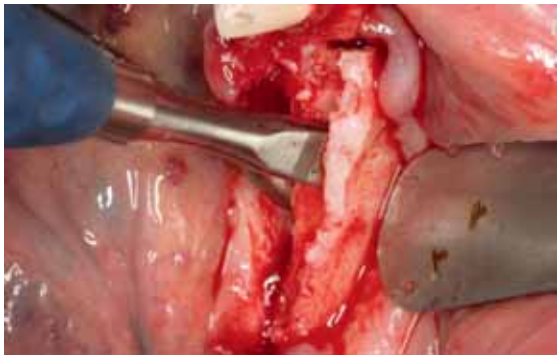

*Fig. 4 Application of the Aesculap osteotome.*

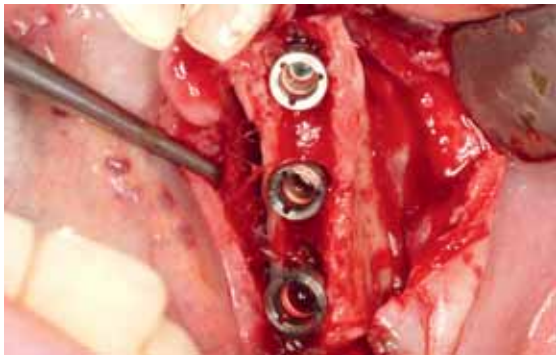

*Fig. 5 Situation after implant insertion.*

*Fig. 6 Securing the membrane with nails.*

the Piezosurgery device as shown in Figure 3. The buccal lamella should be thinner than the lingual lamella. Ideally, the ratio between the lingual and buccal lamella should be two-thirds to one-third because it is much easier to secure the buccal segment against the lingual or palatal segment by means of an osteosynthesis screw in the unfortunate event of spontaneous fractures of the split bone segment.

The Piezosurgery allows carrying out bone incisions in a bone-preserving manner. The operating method is perceived as more gentle by the patient, as forceful hitting movements against the patients jaw are avoided. The patient must be asked, before embarking on this procedure, whether he or she carries a pacemaker because the ultrasound vibrations would cause systemic complications in pacemaker patients.

With the longitudinal ultrasonic incision completed, well-defined relief incisions are made in the mesial and distal region at a distance of at least 1 mm from the adjacent teeth so that these teeth are not damaged proximally and basally in the root region. Initial transversal widening is carried out with osteotomes (Aesculap, Tuttlingen, Germany) before the step osteotome is inserted at the predefined implantation site (Fig. 4).

The step osteotome has to be applied such that the shorter peg with the larger planar surface sits on the vestibular side and the initial notch is created on the lingual side. Peg movement into the vestibular lamella follows 4 mm further down. This results in a preparation with a starting point for a pilot drill of 2 mm in diameter. Alternatively, in a maxilla with D-3 bone quality, the implant bed can be prepared with a bone condenser (see Figs. 11 and 12).

This procedure involves a risk of bone trauma that may be caused by the movement and luxation of the buccal bone segment, leading to long-term absorption, which in turn could result in an increased rate of implant loss (Fig. 5). To compensate for this, we recommend strengthening the lamella with bone-replacement material and a membrane on the vestibular side, since a thicker buccal lamella can prevent absorption (Fig. 6).

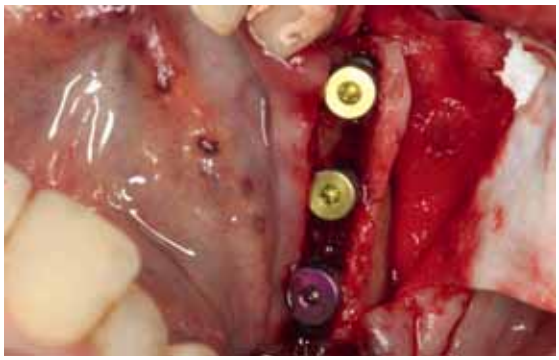

*Fig. 7 Secured membrane prior to implantation of the replacement material.*

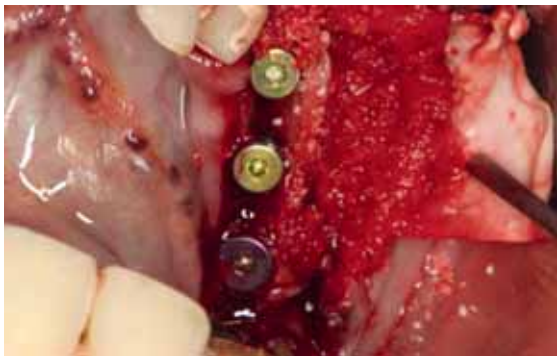

*Fig. 8 Insertion of the replacement material buccally.*

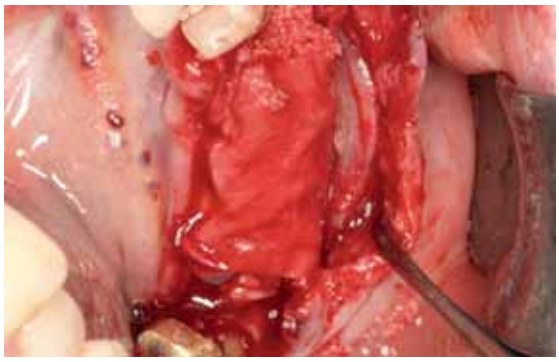

*Fig. 9 Securing the membrane in the labial periosteal pouch.*

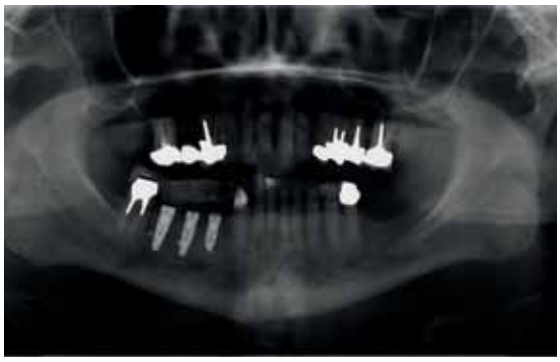

*Fig. 10 Postoperative OPG.*

After that, the implants are inserted in the bone, taking care to ensure good primary stability, followed by securing the collagen membrane from the cortical lamella with a basal pin, as shown in Figure 7. The membrane is prepared and flipped buccally. The bone-replacement material, which is based on tricalcium sulphate and hydroxylapatite, is introduced as shown in Figure 8. The membrane is readapted lingually via the augmented buccal lamella (Fig. 9).

The procedure concludes with the provision of a tension-free 5-0 suture (Fig. 10).

After a healing phase of four to a maximum of six months – depending on the existing support bone of the implant bed – the healed implant is exposed. The restoration can follow two weeks later.

## Discussion

The aim of the splitting technique is to create a new implant bed on the alveolar process. A lateral augmentation or distraction osteogenesis could be considered as alternatives.

The lateral augmentation is an augmentation procedure that requires a long healing phase prior to implant insertion. This means that the secondary implant insertion is carried out three to six months after the initial bone transplant. Simultaneous implantation in conjunction with bone transplants has been unsuccessful. For the lateral augmentation one can use either particulate materials or bone blocks. Particulate material requires mechanical retention by GBR membranes.

Lateral block augmentation has the disadvantage of resorption, which can amount to 20 to 30 percent after twelve months.

Bone splitting is carried out simultaneously in normal cases. The indication is soft bone that allows for osteocompression or a Grünholz fracture. Implants in the maxillary bone following interpositional augmentation have shown success rates of between 86 and 99 percent.

For this procedure, the buccal lamella is osteotomized longitudinally and carefully mobilized vestibularly, by analogy with a Grünholz fracture. The void between the buccal and lingual cortical lamellas is filled with autologous, allogenous or alloplastic materials.

In the mandible, there is a very high risk of fracture of the osteotomized buccal segment, since due to the strong corticalization and mineralization of the buccal lamella, this bone is less flexible and therefore more prone to fracture. The splitting technique along the longitudinal axis thus has to be combined with relief incisions or relief cuts in the vertical direction.

*Fig. 11 The Aesculap step osteotome.*

*Fig. 12 Detail of the Aesculap step osteotome.*

In surgical terms, bone splitting following a slightly lingualized crestal incision of the mucoperiosteal flap is carried out to expose the width of the alveolar process. The true width can be clinically determined only by the vestibular denudation of the bone. It is important that the adaptation of the lingual periosteum is maintained. In some cases it is only barely exposed to find a pouch for the subsequent membrane insertion.

The step osteotome is applied immediately before implant placement to create the proper conditions for implant bed preparation with minimal ablative effect. After that, the standardized drills or – especially in the maxilla – osteotomes can be used to prepare the bone bed to the definitive implant diameter.

To adapt the vestibular alloplastic material, the membrane should be basally secured with a pin to prevent muscular movements on the buccal side and to keep the material from migrating underneath the membrane. With this combination – a primary-stable implant over a stabilized augmentate at the secured vestibular lamella – first results have shown good implant bed stability and shorter treatment times to achieve the definitive result. ■

**Contact Address**

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Wessenbergstraße 6
78462 Konstanz
GERMANY

ADI Biennial Congress, 7 to 9 May 2009, ICC, Birmingham

# International Implant Meeting


**EDI Journal readers are warmly invited to register for the UK's major international implant meeting of 2009 – the ADI Biennial Scientific Team Congress and Healthcare Exhibition in Birmingham. The combination of high quality science and dedicated streamed programmes for the entire dental implant team has elevated the status of the ADI Congress to a prominent position in the world meeting arena. Added to which, innovative evening social events and an extensive technical exhibition attract over 1,000 attendees every two years. This major event enables members, implant team staff and professional colleagues to renew friendships, discuss topical issues and catch up with the latest developments in this constantly growing specialty.**

Organised by the ADI as part of its continuing post-graduate implant education programme, this major ADI event offers education for every member of the implant team. Clinical cases and research will be presented by leading implant exponents chosen for their ability to deliver generic material of scientific and educational value. Twelve key international speakers have been invited to present the plenary scientific programme with eleven international and national speakers presenting the specialised DCP programmes for the two full days 7 and 8 May. On Saturday, 9 May, delegates have a further opportunity to extend their knowledge by attending a choice of tailored industry workshops and masterclasses.

Dental implantology is a team specialty – the 2009 congress programme continues to uphold and endorse this ethos. The recent compulsory DCP registration recognises the important role played by the trained team. By attending the ADI Congress, every delegate will be assured of receiving verifiable CPD, crucial for individual maintenance on the GDC register. It has never been more timely for all professionals involved in the provision of implant treatment to keep up to date with current implant thinking and to ensure that each individual team member is competently trained to deliver the highest quality standard of care to patients.

To complement the science, the ADI warmly welcomes all delegates to the complimentary reception at the Birmingham Museums and Art Gallery on the first night of the congress and urges all teams and industry colleagues to join them at the fabulous 'American Pie Party' night on Friday, 8 May.

**Plenary Programme Speakers:**
Professor J Khoury, Germany
Juergen Mehrhof, Germany
Lambert J Stumpel, USA
Matteo Chiapasco, Italy
Saevar Petursson, Iceland
Jan Kielhorn, Germany
Professor Tomaso Vercellotti, Italy
Kenneth S Hebel, Canada
Paolo Trisi, Italy
Thomas von Arx, Switzerland
Ronald G Presswood, USA
Professor Mark Thomason, UK

*SIS* ■


## More Information and Registration

**Association of Dental Implantology UK**
98 South Worple Way East Sheen · London SW14 8ND · UK
Phone: +44 20 8487-5555
www.adi.org.uk

3RD MEDITERRANEAN SYMPOSIUM OF BDIZ EDI

# Update Implantology 2009

## Diagnosis and treatment planning, therapy and recall, accounting and legal issues

**Symposium: 11 April 2009**

Prof Dr Dr J.E. Zöller, Germany

Prof Dr H. Özyuvaci, Turkey

Prof Dr V. Konstantinovic, Serbia

Dr S. Pelekanos, Greece

Dr R. Masur, Germany

Ch. Berger, Germany

Dr D. Hildebrand, Germany

Dr S. Papazoglou, Greece

Dr C. Laghios, Greece

Dr I. Fakitsas, Greece

Dr S. Karatzas, Greece

**11 April 2009**

**Vouliagmeni, Greece**

**Westin Astir Palace Hotel*****

## SCHEDULE OF EVENTS

**Saturday, 11 April 2009**

| | |
|---|---|
| 9 – 9.15 a.m. | **Welcoming address** Christian Berger, Yannis Roussis |
| 9.15 – 9.45 a.m. | **Immediate function therapy – single teeth and edentulous jaw – when and how?** Dr Stavros Pelekanos, Asst. Prof University of Athens |
| 9.50 – 10.20 a.m. | **The TEAM-ATHENS-CONCEPT – Planning and implementation of implants in complex cases – a team approach** Dr Ioannis Fakitsas, oral surgeon, Athens |
| 10.25 – 10.55 a.m. | **Reliable methods in biological bone tissue regeneration** Prof Dr Dr Joachim E. Zöller, University of Cologne |
| | **Coffee break** |
| 11.20 – 11.50 a.m. | **Adequate planning – the challenge in maxillofacial implantology** Prof Dr Vitomir Konstantinovic, University of Belgrade |
| 11.55 – 12.25 p.m. | **The TEAM-BERLIN-CONCEPT – Planning and Implementation of implants in complex cases – a team approach** Dr Detlef Hildebrand, Berlin |
| 12.30 – 1 p.m. | **Field report on Straumann Bone Level Implants** Dr Holger Janssen, Berlin |
| | **Lunchtime** |
| 2 – 2.30 p.m. | **Decision making: Keeping the tooth or placing an implant?** Christian Berger, oral surgeon, Kempten |
| 2.35 – 3.05 p.m. | **Relocation of endodontics in the new map of dentistry** Dr Constantine Laghios, Athens |
| 3.10 – 3.40 p.m. | **Low-level laser in implantology – evidence-based medicine?** Dr Julia Kenter-Berg, Cologne |
| | **Coffee break** |
| 4.05 – 4.35 p.m. | **Platform-switching with Camlog case reports of the single-center pilot study** Dr Ralf Masur, Bad Wörishofen |
| 4.40 – 5.10 p.m. | **Reflections of 3-D imaging on oral surgery and implantology** Prof Dr Hakan Özyuvaci, Istanbul |
| 5.15 – 5.45 p.m. | **Implant and abutment materials: Effect on osseointegration and soft tissue integration** Dr Stratis Papazoglou, Asst. Prof. University of Athens |
| 5.50 – 6.20 p.m. | **Biologic basis and clinical techniques for ultimate esthetics around implants** Dr Spyros Karatzas, Periodontist, Athens |
| 6.20 – 6.30 p.m. | **Discussion and summary** Prof Dr Dr Joachim E. Zöller |

The symposium will be held in English.

BDIZ EDI

## INTRODUCTION

**Christian Berger**
*President of BDIZ EDI*

Following the successful events in Montenegro and on Crete, BDIZ EDI is now heading for the Third BDIZ EDI Mediterranean Symposium on the shore near Athens. „Update Implantology 2009: Diagnostics and treatment planning, therapy and recall, accounting and legal issues" – this is the title of the symposium. It will be held in Vouliagmeni on the Saronic Gulf near Athens. The symposium will take place on 11 April 2009 (the Western Easter week). The venue for the symposium and the recreation is the five-star Westin Astir Palace Hotel, located directly on the coast only 25 km from Athens. Vouliagmeni has been called the gem of the Athenian Riviera, enjoying more than 300 days of sunshine per year and dream beaches. If you are looking to combine a top-notch dental education event with a family vacation, then the Third BDIZ EDI Mediterranean Symposium is the place to go.

**Professor Dr Dr Joachim E. Zöller**
*Head of Scientific Program*

Attendees can expect a symposium characterized by top-notch international speakers dealing among other things with 3-D systems and exciting new topics in oral implantology as well as an exchange of ideas between the speakers and participants from all over the world. New technologies will be on the agenda, as will be user-friendliness, indications, radiation levels and, of course, interdisciplinary approaches. BDIZ EDI will continue its proven concept to hold certain continuing education courses outside Germany in the year 2009. This concept also helps promote the exchange of ideas with oral implantologists around the Mediterranean Sea.

## WESTIN ASTIR PALACE

*During the Oympic Games of 2004 in Athens, Vouliagmeni was the site of the Triathlon competitions.*

*A white dream: the lobby of Westin Astir Palace Hotel*

*Meeting point at night and day: swimming-pool and terrace*

The symposium will be organized by Bundesverband der implantologisch tätigen Zahnärzte in Europa / European Association of Dental Implantologists (BDIZ EDI) in collaboration with the Greek dental publisher Omnipress. The Symposium will be held in English.

## REGISTRATION

### 3rd Mediterranean Symposium of BDIZ EDI

**11 April 2009, Westin Astir Palace Hotel / Vouliagmeni, Greece**

**Registration fee:** Euro 145 per person for the one day symposium. I hereby register for the Third Mediterranean Symposium of BDIZ EDI (Vouliagmeni, 11 April 2009)

Please note that travel and accommodation is not included. Please make your own reservations at the Hotel (phone: +30 210 89 02-000)

Family name and given name _____

Street address _____

Postal code, city and country _____

Contact/phone and E-Mail _____

Date _____ Signature _____

**PLEASE SEND VIA FAX TO: +49 89 720 69 023**

BDIZ EDI
Bundesverband der implantologisch tätigen Zahnärzte in Europa e.V.
European Association of Dental Implantologists

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8th Biomet 3i Iberica Symposium

# Technological Advances and Clinical Revolution


**The 8th Biomet 3i Iberica Symposium – Madrid, 15/16 January 2009 – was held under the motto of "Technological Advances and Clinical Revolution". The symposium drew an audience of almost 3000, making it one of the largest corporate events in implant dentistry in Europe. The symposium brought together professionals from all aspects of implant therapy: laboratory technicians, oral hygienists, restorative dentists and dental surgeons.**

To accommodate the various workshops, this year's symposium started a day earlier than usual. Thursday afternoon was dedicated to a workshop entitled Implantology for Beginners, led by *Dr Manuel García Calderón* and his team. Two workshops were held on Friday, the Advanced Dental Surgery workshop hosted by *Prof Luis Blanco* and *Dr Juan López-Quiles* and the Dental Practice Management Workshop held by *Dr Manuel Menéndez*.


The Saturday workshops were dedicated to auxiliary personnel, one for dental hygienists held by *Dr Ignacio Corral* and *Dr Pedro Buitrago* and one for dental technicians held by *August Bruguera* and *Justo Rubio*. The workshop schedule concluded with the Guided Surgery workshop held by *Dr José Carlos Moreno*, *Dr Damián Manzano* and *Dr Ángel Silván*.

On Thursday, the 1st Seminar on Practice Management was held in parallel to the symposium, featuring prominent speakers such as *Prof Nueno* from IESE Business School. During this seminar, Biomet 3i presented the Unique Practice Positioning Program, UP3, developed to encourage and assist dental practices with their marketing efforts. It turned out to be a great success and generated high expectations among the audience.

On Friday morning, the ordinary symposium sessions were kicked off by *Dr Sclar* with a presentation on how to achieve natural aesthetics with dental implants, including a live surgery broadcast from La Paz Hospital. Well-known international speakers on Friday and Saturday were *Dr Ronnie Goené*, *Dr Mithridade Davarpanah* and *Dr Otto Zuhr*. The list of outstanding national speakers included *Dr Jose Antonio Arruti*, *Dr Manuel Berrazueta*, *Prof Luis Blanco*, *Dr Alfonso Borja*, *August Brugera*, *Dr Miguel Burgueño*, *Dr Jordi Cambra*, *Dr Juan Carlos de Vicente*, *Dr Javier González*, *Dr Jaime Jiménez*, *Dr Carlos Labaig*, *Dr Fernando Luengo*, *Dr Félix Mañes*, *Dr Luís Martín*, *Dr Victor Méndez*, *Dr Jose Manuel Navarro*, *Dr Manuel Neves*, *Dr Celsaltino Remedios* and *Justo Rubio*. The presenters were *Prof Mariano Sanz* and *Dr Jaime Gil*. As at past symposia, Friday night's "Pacha Party" brought together Biomet 3i staff and clients in celebration of a lively and instructive symposium.

Biomet 3i has already begun to prepare for next year's 9th Iberica Symposium, which is sure to bring together the big family of implantologists and their teams again. *STE* ■

7th Update Seminar on maxillofacial, head and neck surgery in Morelia, Mexico

# Implantology Talks Spanish

**Like every other year, Professor Carlos Navarro Vila, Head of the Department of Maxillofacial Surgery at the Complutense University of Madrid and Chief of Service of the Gregorio Marañón University General Hospital in Madrid, organized an update seminar on surgical topics related to the field, in cooperation with the Latin-American medical associations.**


*Organizers Professor Navarro and Dr Martinez.*

After Bogotá, Colombia for the previous Update Seminar, this year's seminar was organized in collaboration with the Mexican Association of Oral and Maxillofacial Surgery with great support by its president, *Dr Alejandro Martínez Garza*. Throughout the years, the seminars have been a wonderful opportunity for an exchange of information between Spanish and Latin American dentists and have often yielded in closer international contacts in the individual and institutional levels – such as temporary residencies of foreign dentists in Spain or various lively contacts between associations, hospitals and individuals and publications.

With over 700 dentists registered for the event – mostly from Mexico but also from other countries in the area such as Venezuela, Panama, or Cuba – and over 50 lecturers from Spain and from Mexico, the event offered something to everyone. A very intensive three days were filled with lectures from 8 am to 8 pm, with topics organized by groups – oncology, traumatology, and implantology figuring prominently among them.

In addition to *Professor Navarro* himself, renowned speakers from Spanish universities and from hospitals all around Spain held presentations – with names like *Gregorio Marañón*, *La Paz*, *La Fe*, *Quirón* and many others. Dentists working in Spain in private practice presented practical approaches to oral implantology for smaller clinics and dental offices.

After three days of intensive lectures and social activities, attendees especially appreciated having had the opportunity to exchange information with international colleagues in their own language. It was noted that most general clinical procedures in implantology tend to be quite similar in all countries, but that a seminar of this type gave attendees the opportunity to learn from other, greatly experienced dentists and to hear about more complex cases in larger public hospitals in Spain. With the Internet and abundant publication activity, any dentist can learn much about current methods and procedures; on the other hand, there is rarely any opportunity to hear a first-hand account of spectacular TMJ treatments, mandibular reconstructions with fibula grafts and implants, cleft lip and palate, and more.

The Spanish dentists were particularly impressed with the high level of experience and knowledge achieved by their Latin American colleagues.

Compiling the proceedings of previous congresses over the years, the second reviewed, corrected, and extended edition of the Treatise on Oral and Maxillofacial Surgery was presented at the event. Edited by *Professor Carlos Navarro Vila*, the work was coordinated by *Drs Fernando García Marín* and *Santiago Ochandiano*, authorities in the field that have brought together the expertise of some of the most highly renowned Spanish-language specialists on both sides of the Atlantic. *STE* ■

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# REVOLUTION IN YOUR HANDS

Quintessence Publishing – 60 years

# "Meet the Experts" in Berlin

**The world of dentistry met in Berlin on January 22 to 24 – and offered an impressive sight of the international dental scene: More than 3,000 attendees from 36 countries, 167 speakers from 25 countries and 125 exhibitors had come together to celebrate the 60th anniversary of Quintessence Publishing. "Meet the Experts" – the congress participants were able to do this in six major auditoriums concurrently and in 26 workshops.**

This was a joint event that also encompassed the 23rd Berlin Dental Congress, the 19th Berlin Congress for Dental Technicians, the 38th German Congress for Dental Assistants, the 21st Symposium of Practical Orthodontics, the 9th Endodontic Symposium, the 3rd Periodontal Symposium, the 5th International Annual Springtime Conference of the German Association of Esthetic Dentistry and the PreMaster Program 2009 kickoff event of the Federal Association of Dental Students in Germany. Speakers from all over the world demonstrated a tremendous amount of commitment and presentational skills, as well as the highest levels of scientific achievement and technical expertise, covering the entire field of dentistry and dental technology from clinical presentations and current research and results all the way to innovations that will blaze the trail to our dental future.

## "Master Builders of Knowledge"

A thousand guests attended the opening ceremony and the festive celebration of the 60th Quintessence anniversary, including the presidents and chairs of numerous associations and professional societies and many CEOs representing the dental industry. The testimonial lecture, held by *Professor Wolfgang A. Herrmann*, president of the University of Excellence Munich, on the topic of "The Future of the University – The University of the Future" marked the high point of the evening. Publisher *Dr H. W. Haase* made it a point to thank all those who had so cogently expressed the spirit of this anniversary event in their messages. In his concluding remarks, Quintessence Junior Publisher *C. W. Haase* bridged the gap between the generations by emphasizing our debt to tradition and our obligation to the future: The "Master Builders of Knowledge," he said – the international authors representing academic research and clinical practice – were the ones who gave the Quintessence Publishing Group, all of whose 14 member publishing houses were represented, its unmistakable high professional profile. As *Klaus Wowereit*, mayor of the German capital Berlin, said in his foreword to the printed program: "Berlin is now well on its way toward reclaiming its place as the centre of the German publishing industry."

*Dr H. W. Haase*

*At the hands of Dr Wolfgang Schmiedel, president of the Berlin Dental Chamber, Dr Erika Reihlen received the 2009 Ewald Harndt Medal for her contributions to the dental profession.*


*Dr Stefano Gracis*


*Dr Ueli Grunder*


*PD Dr Ronald E. Jung*


*Dr Tidu Mankoo*

## Award for work in the service of prevention

The anniversary congress also encompassed the 23rd Berlin Dental Congress. At the hands of *Dr Wolfgang Schmiedel*, president of the Berlin Dental Chamber, and in the presence of the Presidents and Honorary Presidents of the German Dental Chamber, Berlin-based Dentist *Dr Erika Reihlen* received the 2009 Ewald Harndt Medal for her outstanding contributions to the dental profession. In his laudation speech, *Schmiedel* praised *Reihlen* for her multifaceted involvement and committed honorary work in the service of dental health in children and adolescents, and particularly for her instrumental role in the development and establishment of professional group prevention in Germany. From 1985 to 1989, *Reihlen* had been Vice President of the working group on paediatric dentistry and prevention within the German Society of Oral, Dental and Craniomandibular Sciences (DGZMK). She had founded, assisted and finally directed the LAG Berlin over a period of 17 years. In all her various capacities, she had always been an activist for dental prevention throughout Germany and beyond. In her acceptance speech, *Reihlen* reminded the audience that the development of group prevention and the promotion of dental health, which is still associated with a person's educational background, is far from being completed; it was still necessary to fight for the preservation and, ultimately, expansion of the relevant programs.

## Aesthetics and implantology

Given the enormous wealth of different presentations by high-profile speakers, it proved to be very difficult to decide where to go. Aesthetics and implantology? Or oral surgery? Or prosthodontics? Or endodontics? *Dr Stefano Gracis* of Milan, Italy, focused on the aesthetic success of implants from the prosthodontic point of view, presenting a variety of clinical cases to show solutions for situations with less-than-ideal implant positions. According to *Gracis*, who is the current President of the Italian Academy of Prosthetic Dentistry (AIOP), the chances to fabricate aesthetically satisfactory implant-supported restorations will largely depend on whether the supporting implants are optimally positioned and on how much supporting bone and soft tissue is available. *Dr Ueli Grunder*, Past President of the Swiss Society of Oral Implantology (SSOI) and Past President of the European Academy of Esthetic Dentistry (EAED), spoke on optimizing aesthetics in the partially edentulous jaw through implant-supported solutions. "If there is not enough bone in the buccal region to support the papilla, the papilla will be lost", was *Grunder's* simple credo. The determining factor for the long-term success of implant-supported solutions, he said, was to know the prosthodontic options ahead of performing the implant surgery, because any deviation from the ideal treatment will be final and cannot be remedied.

*Dr Ronald E. Jung*, Vice Chairman of the Department of Fixed and Removable Prosthodontics and Dental Material Sciences, University of Zürich, Switzerland, let the audience participate in the decisions and strategies for the right selection of implant abutments. He said that there were two important choices: that between a prefabricated and a customized abutment and that between a ceramic and metal abutment. The success of aesthetic implantological treatment, he pointed out, begins with a correct assessment of the risks to be made during the first treatment session. Decisions on treatment timing, the choice of implants and the management of the soft and hard tissues must all be based on an individual risk analysis. *Jung* emphasized important strategies for choosing the right abutment based on the results of a number of scientific studies, including his own, arriving at the overall conclusion that titanium, alumina and zirconia have excellent properties from a biological point of view, but that the most important factor determining their choice was their clinical performance.

*Dr Siegfried Marquardt*

*Dr Gaetano Calesini*

*Dr Frederico Ferraris*

*Prof Dr Andrzej Wojtowicz*

*PD Dr Dr Karl Andreas Schlegel*

## Important: Biological factors

*Dr Tidu Mankoo* of Windsor, England, President of the EAED, presented contemporary implant concepts for the aesthetic zone as exemplified by complex pieces from his own clinic. According to *Mankoo*, biological factors with the potential to jeopardize the treatment outcome must be recognized and reflected during the treatment-planning phase. An interdisciplinary approach was the key to treatment success, he said, vividly demonstrating this by a number of clinical cases ranging from single-tooth implants to complex complete rehabilitations of an edentulous jaw. He named forced extrusion prior to tooth extraction as a key factor for optimizing soft-tissue aesthetics and advocated the use of inorganic bone replacement material of bovine origin for better stability and an abutment position 3 mm apically and 2 mm palatally from the definitive gingival margin.

Possibilities and limits in implant aesthetics were demonstrated by *Dr Siegfried Marquardt* of Tegernsee, Germany. Simple cases, he said, often distracted from the recognition that the overall number of problems had not decreased. Especially in connection with prosthodontic rehabilitations aiming at sophisticated aesthetics, oral implantology still presented an ample number of challenges despite all the progress made, said *Marquardt*. Presenting a number of everyday clinical cases, he showed how complicated it can be to resolve the problems that present, at the same time demonstrating potential predictable and successful solutions. He also tried to answer the question as to exactly when an implant should be placed and whether bone resorption could be prevented by immediate implant placement. He admitted that his clinic also experienced a trend toward tissue recession following immediate placement. The determining factor, *Marquardt* said, was soft-tissue management: "Our clinic uses the punching technique for pre-implantological soft-tissue prophylaxis."

## Edentulous site enhancement (ESE)

*Dr Gaetano Calesini* of Rome, Italy, spoke about old problems and new solutions in aesthetic oral implantology. He described the prerequisites for surgical and prosthodontic treatment using a systematic regenerative approach called "edentulous site enhancement" (ESE). This approach, he commented, generated a morphological reconstruction of the surrounding tissues, addressing the hard and soft tissues in a single surgical step and treating the placement of the implant itself as a part of the anatomical redesign. He called ESE a three-dimensional increase in the volume of bone and soft tissue to be achieved by and during implant placement – available in most clinical situations, independently of the implant system used.

*View of the dental exhibition.*

*An attentive audience.*

Aesthetic restorations made of different metal-free materials were presented by *Dr Frederico Ferraris* of Alessandria, Italy. New developments in composite chemistry, he said, had resulted in materials that were much more satisfactory from an aesthetic point of view than those of only a few years ago. As innovative examples he cited refraction indices similar to that of natural enamel. Silica-based ceramic materials facilitated excellent aesthetic results thanks to their translucency. He mentioned polycrystalline ceramics, impervious to mechanical challenges, as one of the outstanding developments in recent years. He said that CAD/CAM technology greatly simplified the handling of this material, allowing treatment providers to realize a number of different restorative approaches using metal-free materials.

*60th anniversary of Quintessence.*

## Tissue engineering

The aesthetic-implantological sessions continued on Saturday. The presentations by *Professor Andrzej Wojtowicz* of Warsaw, Poland, and by *Dr Karl Andreas Schlegel*, Erlangen, Germany, on tissue engineering should be mentioned by way of example. *Wojtowicz* reported on the efficacy of stem cells, PRP, CSF-1 and integrin-layering scaffolds on bone augmentation as exemplified by his own in-vivo and in-vitro studies. Within the framework of his results, he compared the efficacy of adult stem cells CD34+ and bone precursor cells with PRP, finding that there were no major differences between the two groups. Six months postoperatively, no differences were discernible between intact bone and augmented bone in either of the groups. *Wojtowicz*, who is president of OSIS EDI, the Polish partner association of BDIZ EDI, concluded that PRP had adapted to their environment more quickly than the stem cells.

*Schlegel* spoke on "Growth factors, tissues off the shelf – future or vision?" He showed how biologically active techniques can be employed and for which groups of patients they are indicated, but he also pointed out the current limits of these techniques.

These presentations and the entire Quintessence online education site are available to members of the BDIZ EDI. To register at www.quintessenz.tv, keep your BDIZ EDI membership number ready.

*AWU* ■

Institute for Dental Implantology (IZI) in Limburg

# International Meeting on “Sheep Hill”

**The world assembled in Limburg: The Institute for Dental Implantology (IZI) at the Schafsberg (“Sheep Hill”) Health Center was the venue for a meeting of twenty dentists from eight countries. Dr Roland Streckbein (Limburg) and Dr Rainer Hassenpflug (Diez) were able to welcome guests from Jordania, Libya, Syria, Malta, Cyprus and Greece as well as Sweden and Germany. For some time now, the implantological training classes of the IZI have been greatly appreciated by attendees from all over the world who not come to only familiarize themselves with the most recent professional standards and scientific findings, but also to visit picturesque Limburg and its vicinity.**

As a “trade centre” for the most recent findings of present-day dentistry, IZI holds an average of five scientific meetings each year, attracting more than 200 physicians and dentists to the banks of the Lahn River. Each time, the focus is on a transfer of knowledge between research and clinical practice and the exchange of ideas between experts. Thanks to the cooperation with the Steinbeis University of Berlin and the German Association of Implantology (Deutsche Gesellschaft für Implantologie, DGI), the meetings are a recognized academic platform, especially for international guests.

As early as in 2001, IZI inaugurated targeted training classes for continuing education for physicians, dentists and dental technicians at an academic level. Late last year the Institute found a permanent home at Schafsberg Health Center. At the time it had been

praised by leading experts of universities and education centers as a center of competence in oral implantology in Germany and beyond. For example, *Professor Johann Löhn*, president of the Steinbeis University of Berlin, called IZI “a joint venture project in oral implantology that is unmatched not only in Germany”. *STE* ■

*State-of-the-art medical technology eye to eye with the Limburg Cathedral: Twenty dentists from eight countries had come to Limburg for a weekend to learn more about the most recent developments in dental diagnosis and therapy – and got the chance to discover the sights of Limburg...*

# Astra Tech Signs Dental Implant Research Agreement with University of Zürich

**Astra Tech AB has signed a three-year agreement with the University of Zürich covering research projects in the field of implant dentistry and related sciences, including product development and international training and education.**

"We are delighted to have entered into this collaboration," says the President & CEO of Astra Tech, *Peter Selley*. "It gives us access to even more state-of-the-art competence in the field of implant dentistry and material sciences, as well as possibilities to enhance our training and educational activities at an international level."

*Peter Selley* continues, "Astra Tech has a strong focus on research and development and we invest significant resources in scientific and clinical documentation activities. This agreement shows how we can join forces with the expertise within the academic field in this very important area for mutual benefit."

*Professor Christoph Hämmerle*, Chairman of the Clinic for Fixed & Removable Prosthodontics and Dental Material Science at the university's highly regarded Center for Dental and Oral Medicine and Cranio-Maxillofacial Surgery, says: "To ensure optimal developments for the benefit of patients worldwide, it is important for us to have a fruitful collaboration with reliable industry partners who focus on sound scientific and clinical developments in the field of implant dentistry."

The first project at the University of Zürich is a clinical study evaluating the use of short implants to avoid the need for bone augmentation procedures. Bone grafting is a costly procedure, which lengthens total treatment time and increases the surgical exposure of the patient. Astra Tech has recently launched a short, 6 mm, implant and the study will generate data on its efficacy, particularly on its ability to replace bone grafting procedures. ■

## More Information

**Astra Tech AB**
www.astratech.com

# Camlog under New Leadership

**After five years of successfully heading the Camlog Group, Jürg Eichenberger stepped down as Chief Executive Officer of Camlog Biotechnologies AG, Basel/Switzerland, at the end of last year. He maintains his function as Chairman of the Board of Directors of Camlog Holding AG. In the years from 2003 to 2008, decisively shaped by Jürg Eichenberger, the international Camlog Group has continuously developed above market average.**

As of January 2009, *Dr Michael Peetz* has been appointed new CEO of Camlog Biotechnologies AG. He is exceptionally experienced and qualified to succeed *Jürg Eichenberger*. From 1990 to 2008, *Dr Peetz* held important executive positions with Geistlich Pharma AG, Wolhusen/Switzerland. As a Managing Director, Chief Operating Officer, and member of the Executive Board, he led Geistlich Biomaterials into the position of the world-wide leading provider of Regenerative Products and turned this division into a profitable and internationally significant business unit.

*Dr Peetz* is also founder and a member of the Board of Directors of the Osteology Foundation and a member of its Scientific and Education Committees. He was the initiator of a series of world-wide recognized Osteology congresses with more than 2,500 participants.

Headed by the new CEO, the proven Camlog team will continue to reinforce and expand their international market positions. ■

## More Information

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info@camlog.com · www.camlog.com

# New Camlog Distributor for Denmark

**Camlog Biotechnologies AG, Basel, Switzerland, has established an exclusive cooperation with EltiDent ApS, Greve, Denmark, with effect from January 2009.**

EltiDent ApS was founded in 2008 by *Elsebeth Harbo* and *Tina Møller*. The dynamic new company focuses on supplying Danish dental implant specialists with Camlog products and comprehensive Camlog services. Neither *Elsebeth Harbo* nor *Tina Møller* are newcomers to implant dentistry. On the contrary, together they stand for 20 years of expert experience in the Danish implant market and have achieved a solid reputation of customer-oriented professionalism, reliability and efficiency.

Camlog and EltiDent are looking forward to bringing the whole range of Camlog Implant System advantages to Denmark for the benefit of dental implant experts and their patients. ■

## More Information

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### MD 20

No. 2268

**3'030.- €**

**Micro Motorsystem MD-20**

For oral, jaw, and facial surgery, ear, nose, and throat medicine, and neurosurgery.
1 contra-angle and 1 motor is included

### MD 10

No. 2012

**2'550.- €**

**MD-10**

Brushless Motor System for all implantings and surgical tasks under OR conditions.
1 contra-angle 32:1 is included

### AF 30

No. 1368

**2'650.- €**

**Router AF-30**

Precision unit for measuring, blocking, and routing (router head accepts spindles, drawing tools, and measuring tools)

Contra Angle - **No. 5054-5068**
4:1 / 16:1 / 32:1 / 64:1 / 128:1
**from 350.- €**

Contra Angle - **No. 5050**
Power Transmission 1:1
**295.- €**

Handpiece 1:1 - **No. 1710**
**290.- €**

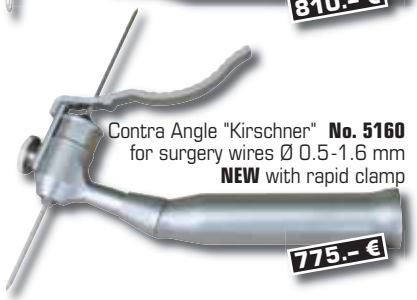
Angled Handpiece for ENT - **No. 1960**
**570.- €**

Mucotome - **No. 1970**
**895.- €**

Micro-Jigsaw - **No. 5040**
**810.- €**

Sagittal-Saw - **No. 5110**
**810.- €**

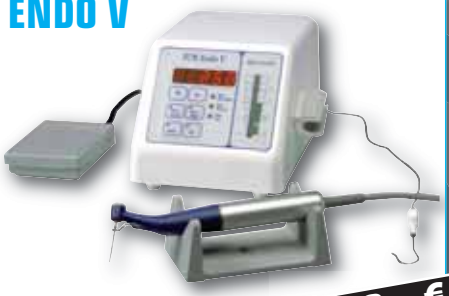
Oscillating Micro-Saw - **No. 5090**
**810.- €**



Contra Angle "Kirschner" **No. 5160**
for surgery wires Ø 0.5-1.6 mm
**NEW** with rapid clamp
**775.- €**

134°C = sterilizable / autoclavable
(valid for all items shown in this box)

### ENDO V



No. 1536

**1'470.- €**

**TCM Endo V with Apex Locator**

Microprocessor-controlled motor system for the easy preparation of root canals.

### ENDO III

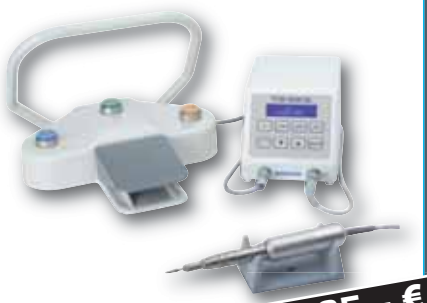
No. 1530

**965.- €**

**NM-3000 - Motor System**

Universal and torque-controlled Motordrive for light grinding and routing tasks.

### TCM 3000 BL



No. 3285

**2'025.- €**

**TC Motor 3000 BL with brushless Motor**

The microprocessor-controlled Motor System developed for oral, jaw, and facial surgery, and neurosurgery. aesthetic-plastic surgery and dermatology, for drilling, grinding and milling.

### NM 3000

No. 1000

**800.- €**

**NM-3000 - Universal Motor System**

for light grinding and routing tasks as a table-top model with on/off foot pedal or vario-foot pedal, foot controller, or knee controller. Available with your choice of the micro-motor 31 or motor handpiece 38.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Interview with AnnaKarin Lundgren, DDS, PhD, Head of Scientific Management, Business Unit Dental, Astra Tech

# Time to Set a New Standard

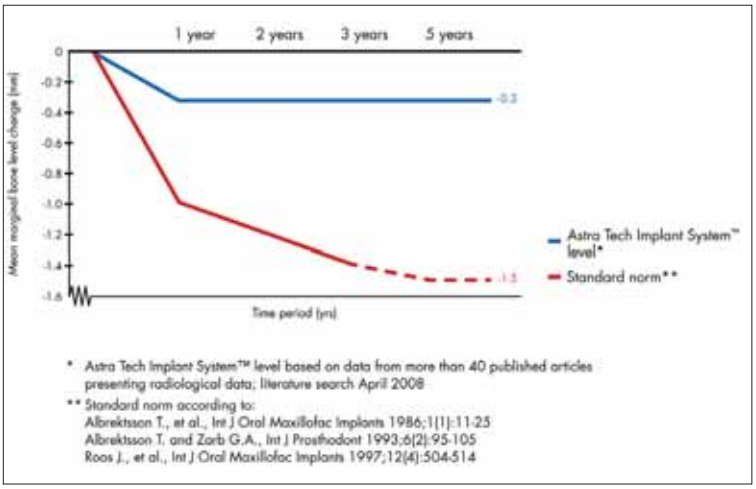
**At their World Congress in Washington, DC in June 2008, Astra Tech broke the news that they are challenging the current standard for implant treatment success regarding the maintenance of marginal bone levels. The current industry standard, based on research on other implant systems, accepts a mean bone level reduction of about 1.5 mm after five years.**

***Why do you think it is necessary to set a new standard?***

The current industry standard was set in 1986 and much has happened since then. In 1986 a number of success criteria were set to measure and follow up the treatment in order to evaluate the safety, efficacy and predictability of dental implants. Originally the focus was on restoring function, but today the focus is just as much on esthetics and to facilitate treatment for both the clinician and the patient. Over the years both the methods and the products in implant treatment have developed and improved. We think that the standard norm should be updated and reflect what is possible to achieve today. There are no reasons why the clinician or the patient should settle with less than the best.

***What gives Astra Tech the self-confidence to call your findings a new standard in marginal bone level maintenance?***

We have always had a strong focus on research, science and documentation. Following the development regarding the maintenance of the marginal bone level on our own system for many years, we always knew that the marginal bone level on Astra Tech Implant System has been extraordinary well maintained. We have now summarized it in an organized and structured manner, compared it to the standard norm, and we are ready to present our excellent data to the dental implant community. It turns out that the Astra Tech Implant System shows a marginal bone level reduction of only 0.3 millimeter or less over a five-year period. That is a performance indicator at least three times superior to the industry norm, which is a bone loss of 1.5 millimeter. This means that dental professionals should challenge old truths and demand more of their implant system, both in terms of documentation and results, all for the benefit of the patient.




* Astra Tech Implant System™ level based on data from more than 40 published articles presenting radiological data; literature search April 2008

** Standard norm according to:
Albrektsson T., et al., Int J Oral Maxillofac Implants 1986;1(1):11-25
Albrektsson T. and Zarb G.A., Int J Prosthodont 1993;6(2):95-105
Roos J., et al., Int J Oral Maxillofac Implants 1997;12(4):504-514

***We are talking millimeters, how important is it really?***

For the individual patient, a bone loss of 1 millimeter can be the difference between success and failure. If it is a compromised case with limited amount of bone, each millimeter is worth a lot for the final outcome. In the molar region, that millimeter can be the difference between being able to replace function or not. In the esthetic zone, 0.5 millimeter can be the difference between a healthy natural soft tissue and a black triangle between the teeth.

***Professor Tomas Albrektsson, Biomaterial Research at The Sahlgrenska Academy, University of Gothenburg, Sweden, was one of the authors of the scientific article from 1986 where the current standard norm was set; how did he react to your challenge?***

He agreed that it might be time to reconsider the old standard from 1986, and that a new standard should perhaps only allow 50 percent or less of the bone resorption currently accepted as a successful result.

***Are you going to promote a new consensus meeting to set a new standard?***

I don't think that an implant company should do that. We can present our own documentation, but a consensus meeting and a new standard for implant treatment should be developed and set by the dental academic society.

***How did you come to the conclusion that Astra Tech Implant System only has a bone level reduction of 0.3 millimeter or less over five years?***

The graph on page 100 illustrates our results and the standard norm. We summarized all our prospective radiographic studies on our implants with Conical Seal Design, Connective Contour and MicroThread with complete study cohorts and where a standard implant surgery had been performed. This resulted in twelve scientific articles, which the results are based on.

***How do you think that the competitors will react to this?***

Hopefully, they will examine and present their own documentation on marginal bone levels compared to the standard norm and to us, the Astra Tech standard. If they don't have any documentation, it is about time that they get started.

***Dr Lundgren, thank you for the interview.*** *STE* ■

Apliquiq and Inicell by Thommen Medical

# Conditioning Technology for More Implant Stability and Enhanced Osseointegration

**Apliquiq and Inicell, the innovation is in the conditioning. The centrepiece of the innovation is Apliquiq. This innovative applicator makes effective chairside surface conditioning fast and intuitive. In a matter of seconds, the conditioning agent hydroxylates the implant surface to achieve the super-hydrophilicity of the Inicell surface. This surface type is the result of consistent ongoing development based on Thommen Medical's well-proven sandblasted and thermally acid-etched implant surface. The Inicell surface is distinguished by excellent wettability, which enhances implant stability, and by improved osseointegration in the early healing phase.**

The combined use of air-abrading and thermal acid-etching has become a standard method of processing implant surfaces. Thommen Medical can rely on over 20 years of experience with this approach. The resultant implant surface has a microrough texture with the major advantage of offering an excellent functional and structural union at the implant-bone interface.

Osseointegration is greatly influenced by the chemical properties of the implant surface. A major factor in successful implant healing is surface wettability. Commercial titanium implants tend to be hydrophobic, meaning that water is repelled from their surface (Fig. 1). Still, hydrophilic or superhydrophilic surfaces are generally thought to be preferable, as they will normally offer spontaneous and thorough contact with physiological liquids. In addition, hydrophilic surfaces are believed to preserve both the function and the exchange of adsorbed proteins, which is conducive to the regenerative processes involved in osseointegration.

The new Inicell surface has been developed by expanding on these physicochemical insights in a consistent fashion. It combines the advantages of established and well-documented microrough surface topographies obtained by sandblasting and acid-etching with the benefits of a significantly enhanced surface energy (Fig. 2).

The superhydrophilic properties of the Inicell surface account for its high surface energy. Enossal surfaces thus created will get thoroughly wetted by physiological tissue liquids, most important among them being the blood inside the implant socket (Fig. 3). Inicell will enter into primary contact with its immediate environment of physiological protein solutions, tissue liquids and blood spontaneously and thoroughly. Indirect contact is established with the surrounding tissue. A different situation is encountered on conventional microrough surfaces. Due to the presence of non-wetted cavities, only part of the enossal surface is initially available for primary contact, which means that only part of the conventional implant surface is available for immediate integration with the physiological environment. Micrographs of a model substrate are provided to illustrate the primary contact offered by Inicell as compared to sandblasted acid-etched surfaces following contact with a physiological protein solution. The Inicell surface (Fig. 4, left) exhibits a complete and homogenous protein film, indicating full contact with the physiological protein solution; the reference surface (Fig. 4, right) shows incomplete contact and a non-homogenous protein film. The result suggests advantageous protein adsorption for Inicell.

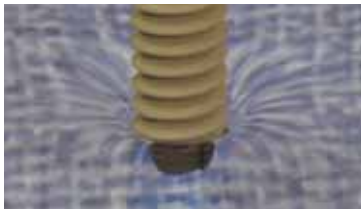


*Fig. 1 Hydrophobic (water-repellent) implant.*

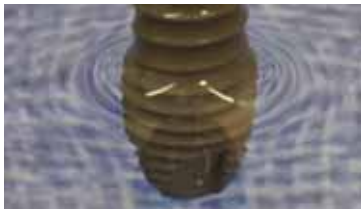


*Fig. 2 Hydrophilic (spontaneously wetting) implant.*

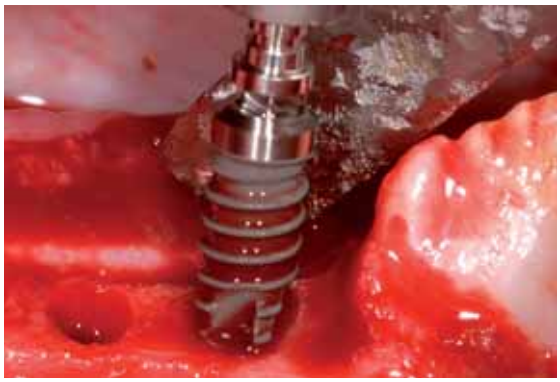
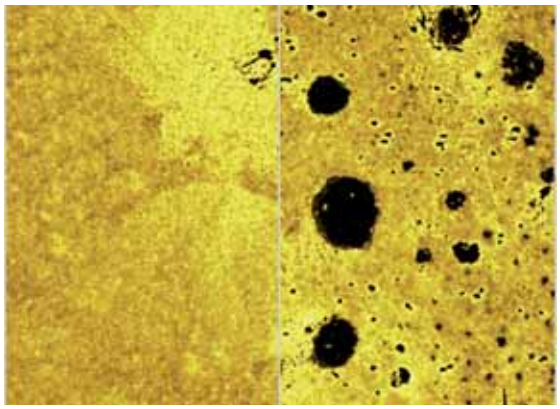
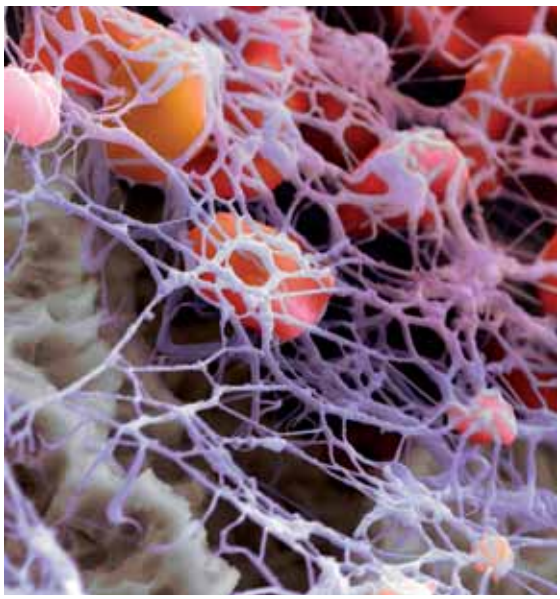


*Fig. 3 Physiological primary contact: Inicell surface (left) and unconditioned surface of Thommen Medical (right). Images: Prof Uwe Eckelt, Dr Dr Bernd Stadlinger, Dr Roland Mai, University of Dresden.*

*Fig. 4 Microscopic image of model substrates covered with physiological protein solution. Left: Inicell surface, right: existing unconditioned surface of Thommen Medical.*





*Fibrin network retention on Inicell surface. Initial blood contact leads to fibrin network formation. Fibrin network anchors directly to micro-rough surface – essential for successful bone formation and osseointegration*[1]*.*
*(© Martin Oeggerli 2008 / www.Micronaut.ch)*

[1] *Lang, N. P.; Araùjo, M.; Karring, T. In Clinical Periodontology and Implant Dentistry, Bard, Lindhe, J.; Karring, T.; Lang, N. P.; Eds.; Blackwell: 2003; pp 867–896.*

Preliminary results of in-vivo studies demonstrate that, in comparison with acid-etched implant surfaces, the Inicell surface will promote osseointegration by allowing a faster rate of new bone formation around the implant. The same investigations have shown that reduced periods of implant healing are possible with implants featuring an Inicell surface. Protocols of this type can be implemented without compromising on reliability, which remains at the same high level also offered by conventional sand-blasted and thermally acid-etched surfaces.

## Apliquiq, the first chairside implant conditioning system

This applicator (pat. pending) makes effective chairside surface conditioning fast and intuitive. Apliquiq contains the implant and healing cap in a dry state, and the liquid conditioning agent in a sealed cartridge. Simply push the cartridge and shake the applicator to condition the implant and create the Inicell surface in seconds.

## First presentation worldwide at IDS 2009

Apliquiq and Inicell will be introduced to the world in the spring of 2009. A first presentation of both innovations takes place at the International Dental Show (IDS) in Cologne, Germany, March 24 to 28, 2009. Visit the Thommen Medical booth: Hall 4.2, Corridor M, No. 090. Visit www.inicell.info for further information on Inicell and Apliquiq. ■

## More Information

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Kodak 9000C 3D by Carestream Health

# Completed X-ray System for the Dental Practice

**With Kodak 9000C 3D, Carestream Health has completed its modular extraoral X-ray system. The same applies for the new 9000 class flagship as for the X-ray units already on the market: Innovative technology and simple handling at an affordable price.**

*The Kodak 9000C 3D system combines panoramic, cephalometric and 3D imaging in a very small space.*

The success story continues: Following the launch of the basic X-ray units Kodak 9000 and Kodak 9000 3D in November 2007, the Canadian-French medical company Carestream Health has now brought the Kodak 9000C 3D onto the market as a 3-in-1 solution for every dental practice. Since the basic systems have been met with a very positive response among the expert community and especially the Kodak 9000 3D has managed to establish itself in practices with big success within short time, Carestream Health anticipates even greater popularity for the complete X-ray system.

The Kodak 9000C 3D system now offers three X-ray technologies in a single unit and is therefore ideally configured and designed for diagnostic needs, both for dentists and orthodontists, as well as for oral and maxillofacial surgeons: Panoramic, cephalometric and 3D imaging are combined in a very small space. This makes the all-in-one alternative the most multi-facetted solution in the 9000 series, satisfying almost all the doctor's extraoral requirements.

During the conception phase of the system line, the Carestream developers advanced a number of innovations to market maturity in their Paris lab, which impressively reflect the company's philosophy and standards. The performance profile and the requirements were defined in collaboration with dentists and university hospitals: The Kodak 9000C 3D is designed to effectively support the doctor in diagnosis and treatment planning, helping them with patient information, as well as optimising and reducing treatment times through its fast and uncomplicated use.

State-of-the-art solutions were found for all three imaging units, so the Kodak 9000C 3D system is set to be the reference in its class for years to come. Panorama imaging produces a complete denture overview with accurately adjustable focus areas and offers simple and precise positioning. The user-friendly operating interface simplifies practical use and diagnosis for the doctor. The face-to-face design – the doctor and patient see each other – helps improve communication. There are also two laser beams in the ear-eye and median-sagittal planes to help achieve correct positioning and obviate the need for repeated images.

*The X-ray unit can be set up in a tight space.*

INNOVATIONS

# SEVEN
# Highly Successful MIS Implant

The MIS SEVEN implant has a highly advanced surface with a high rate of successful osseointegration (98%), which was validated by extensive worldwide research and clinical studies in cooperation with world-class universities and scientific research institutes. Its unique geometrical design gives the SEVEN implant the important features of simple, quick and safe insertion, high primary stability, and compatibility in the most complex cases in every area of the jaw.

Innovation Movement by MIS...

The MIS SEVEN implant is the only implant system in the world that comes with a specially designed and sterilized final drill, allowing a short and safe drilling procedure.



MIS offers a wide range of innovative kits and accessories that provide creative and simple solutions for the varied challenges of implant dentistry. To learn more about MIS visit our website: www.mis-implants.com.

CE 0483, ISO 9001:2000, ISO 13485:2003

MIS
Make it Simple

*A specially focussed field of view of 50 x 37 mm guarantees a high resolution image volume with a maximum resolution of 0.076 mm.*

Cephalometric imaging excels by virtue of its diversity of projections and software functions. "One-shot" technology reduces imaging time to one second, in contrast to conventional scan systems that require the patient to remain motionless for 8 to 14 seconds, and ensures high quality images. The innovative automatic fixed-point recognition function and the compact, user-friendly design round off the performance spectrum.

Kodak 9000 3D imaging allows dynamic 3D examinations to be performed in less than two minutes. The low radiation exposure, true to the ALARA principle (As Low as Reasonably Achievable), with a maximum of 1.8 times a panorama image dose means the radiation exposure is up to thirty times lower than with comparable systems. In order to achieve this hitherto unparalleled low dose in the patient's interest, the Carestream developers selected a specially focussed field of view of 50 x 37 mm, which guarantees a high resolution image volume with a maximum resolution of 0.076 mm and is also ideal for the most challenging dental applications, such as endodontics and individual implants.

The key requirement in all development stages of the Kodak 9000 system was to only deploy technologies that guarantee outstanding image quality in every mode. This is why the system includes a high frequency generator, a CCD sensor and spinal column shadow compensation.

The developers also had the principle of simplicity truly in mind for the software. Flexible, functional and above all comprehensive – these requirements had to be met. So the software is equipped as standard with an implantation planning module to identify the precise placement of the implant, to perform distance and angle measurements and to be able to mark the mandibular canal. In addition, the size and shape of implants can be displayed as realistically as possible in the simulation. This presents the medical professional with all the necessary tools – additional implantation software is superfluous.

Reliable and correct diagnoses become part of everyday life in the practice with the Kodak 9000 system. Particularly the combination of the various imaging modules in a single unit offers the doctor all available options for accessing the X-ray system necessary for individual treatment at any time. And: Thanks to a series of automated programs and computer-based sensor selection, the risk of damaging the most sensitive and expensive component of the unit is minimised.

Another advantage of the 9000 class is its compact construction. The X-ray unit can be set up in a tight space and the installation itself is so uncomplicated that the system can be assembled in the dental practice within a day.

The Kodak 9000 Extraoral X-ray Imaging System line will form the centrepiece of the Carestream Health presentations at the IDS (Hall 10.2, Aisle T, Stand 040). By way of another innovative novelty, the company unveils the large volume Kodak 9500 Digital Volume Tomography 3D system for full skull imaging on the first occasion in Europe. ■

## More Information

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TiXos

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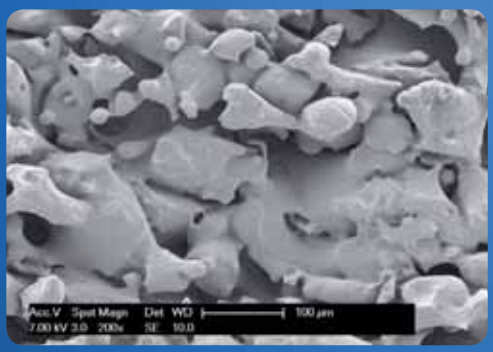
# The new LEADING surface

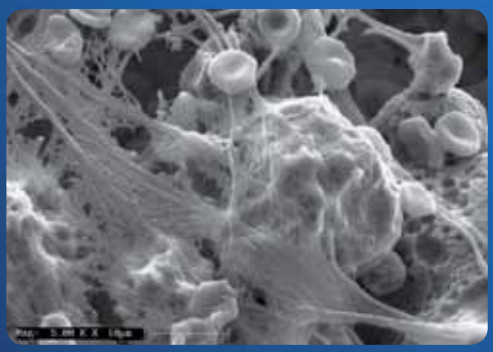
Predetermined geometry of the surface

Interconnected cavities and pores

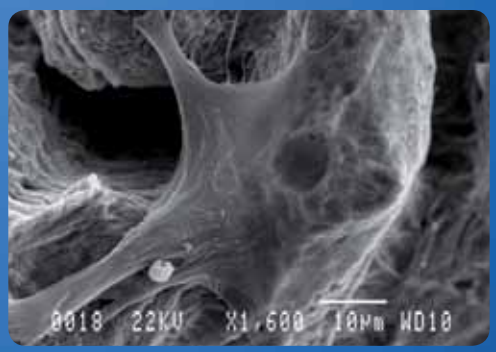
Innovative production process:
computer designed, laser created implant



Immediate 3D organization of fibrin network

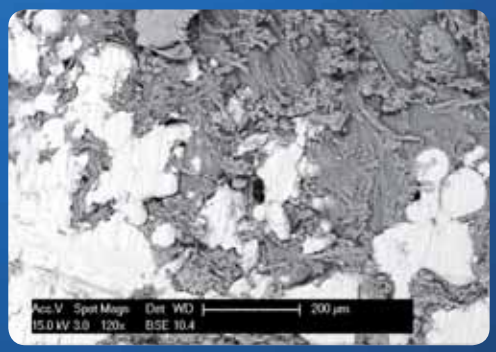


High adherence and cells activity




High porosity of surface

Fast bone growth (dark) inside cavities and pores of sintered titanium surface (clear)



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Innovations by Bego Implant Systems

# New Products to Enrich the Market

**At IDS 2009, Bego Implant Systems will present a number of additions to its range of implant products.**

## Locator system

Since late 2008, the Locator abutment for Bego Semados S and RI implants has been available. Advanced methods for retaining an implant-supported cover denture may greatly improve a patient's masticatory function. The Bego Locator makes it easier for patients to insert the denture while at the same time reducing the wear and tear on the components. Given the wide selection of possible retention modes and angulations, nearly every case can be treated individually according to the needs of the patient.

## Implant-prosthetic kit

The new and ergonomically improved Bego prosthetic kit consists of an ergonomically shaped aluminium insert to accommodate the patented Bego ratchet/torque spanner, two hex wrenches 1.25 mm (short/long), and one slot screwdriver (long). Additional tools can be positioned according to the specific requirements.

## Mini-/Osseo$^{Plus}$

The system-independent Osseo$^{Plus}$ instrument kit was developed in cooperation with *Dr Roland Streckbein* of Limburg, Germany. It allows a controlled preparation of the implant bed for subsequent insertion and can be utilized independent of the implant system used. The bone-spreading and bone-condensing tools included allow a minimally invasive preparation of the bone, greatly facilitating the procedure even in patients with complicated indications.

## Bego Semados Mini implant range

Bego Implant Systems was the first company in the dental industry to develop and market high-performance based on bionic principles. Implants of around 3 mm and below in diameter now attain dynamic load values that are comparable with those achieved by standard implants with diameters of 3.5 mm or above. The Bego Semados Mini implant system consists of the implant itself, a matching bar system made of Bego Wirobond MI alloy, a Wirobond MI abutment for restoring narrow single-tooth gaps in the anterior region and even a ball connector, offering a viable alternative to conventional and often demanding and expensive treatment approaches using standard implants.

## New implant/abutment solutions

For surgeons, the abutment line creates space for non-irritating acquisition of the soft tissue, stabilizes the tissue and helps prevent soft-tissue erosion. A new CAD/CAM abutment base allows users to provide CAD/CAM prosthetic solutions on Bego Semados implants using various popular scanning and production systems.

## Bego Academia Implantology

In 2008, Bego Implant Systems opened Bego Academia Implantology, a new institute for continuing education for dentists and dental technicians in Limburg. The institute offers state-of-the-art equipment. It is headed by *Dr Roland Streckbein* and his team, who run it together with the Institute for Dental Implantological Continuing Education (IZI FW). It offers microscope workbenches, 3-D planning stations, state-of-the-art digital volume tomography and a dental laboratory. Its closeness to the St. Vincenz hospital gives the institute access to the required clinical infrastructure.

## Cooperation between Bego Implant Systems and Osstell

Bego Implant Systems has begun distributing the Osstell Mentor System for objective measurements of primary stability and osseointegration. The highly compact system takes its measurement by magnetic resonance process without physical contact. It is an ideal complement to the Bego Implant System range of products and services. ■

## More Information

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Technologiepark Universität
Wilhelm-Herbst-Straße 1
28359 Bremen · GERMANY
www.bego-implantology.com

Encode Complete Restorative System, Tapered Implant and Endobon Xenograft granules by Biomet 3i

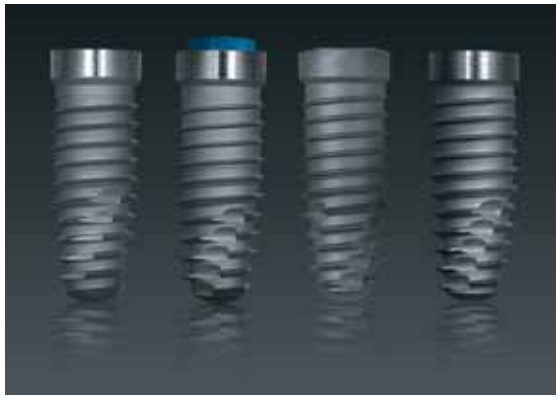
# Enlarged Product Portfolio

**At IDS 2009, Biomet 3i will be presenting a wide range of innovative products for dental implantologists.**

## Encode Complete Restorative System

Biomet 3i, following an integral approach to bone and soft tissue preservation using simplified clinical procedures, is pleased to offer dental professionals a new restorative solution: The Encode Complete Restorative System eliminates implant-level impressions. The clinician simply makes a supragingival impression of the Encode healing abutment. Codes embedded on the occlusal surface of the abutment communicate implant depth, hex orientation and platform diameter and interface (Certain Internal Connection or External Connection). This information allows Biomet 3i technicians to create a patient-specific anatomic abutment with appropriate margin heights and a natural emergence profile, while a robot inserts the implant analogues into the master cast. The proprietary Robocast Technology delivers a patient-specific abutment packaged with a gold screw and a master cast ready for the fabrication of the final restoration. Encode abutments will be available in a titanium version for all Biomet 3i implants starting in March 2009. The launch of the zirconia abutment version is expected for summer 2009.

To achieve maximum restorative flexibility and take advantage of the benefits of this technology, all that is required is replacing the regular healing abutments with the new Biomet 3i Encode healing abutments.



## The Biomet 3i Tapered Implant

Each element of the Biomet 3i Tapered Implant system is designed for optimal performance and maximum primary stability.

- With a true tapered shape that closely approximates the shape of a natural root and an innovative thread design: thread angle, depth and pitch produce a “bite in bone” response with high initial stability along the entire implant, while maximizing the initial bone-to-implant contact.
- All the surgical instruments – quad-shaping drills, depth/direction indicators and bone taps – as well as the implants themselves have been meticulously engineered to ensure matching diameters, lengths, and macrogeometries.

The combination of these features makes this implant the ideal solution for all cases where a high initial stability is desired, such as immediate and accelerated loading protocols, immediate placement in extraction sockets, or implants placed in simultaneous grafted sites or in soft bone.

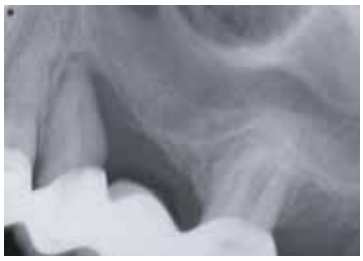


*Fig. 1 Preoperative periapical radiograph showing insufficient bone quantity in the maxillary left posterior quadrant.*

*Fig. 2 Endobon Xenograft granules placed into the bone defects and sinus window.*

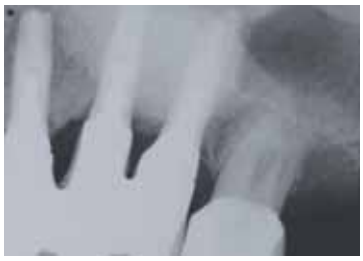


*Fig. 3 Periapical radiograph, 15 months after grafting and nine months after implant placement.*

## Endobon Xenograft granules

The Endobon Xenograft granules are a Biomet 3i product for guided bone regeneration, supported by over ten years of clinical use and numerous clinical studies.

Endobon Xenograft granules are bovine-derived hydroxyapatite granules that allow bone to grow directly on the ceramic surface and through the entire graft. The mineralized Endobon granules provide a non-resorbable, osseoconductive scaffold for the regeneration of bone defects and effective space maintenance. Endobon is fully deproteinated in a two-step high-temperature manufacturing process that eliminates bacteria, viruses and prions. Endobon has excellent handling characteristics for easy transfer to the defect site. Endobon is offered in three convenient configurations: 0.5, 1 and 2cc for better adaptation to the bone defect. ■

### More Information

**Biomet 3i**
www.biomet3i.com

The product information produced here editorially is based on information provided by the manufacturer and has not been checked by the editor for its accuracy.

zit-vario-z by ziterion

# New Subgingival Ceramic Implant

**At IDS Cologne, ziterion GmbH will be celebrating the kick-off of the first subgingival ceramic implant made of zirconia: zit-vario-z, a true alternative to subgingival titanium implants.**

The new zit-vario-z implant is the latest member of ziterion's "one system – two worlds" implant family, consistently and purposefully developed as an integrated system since 2005. For the first time, a complete implant system is now on the market that has been developed with ceramic aspects in mind, consisting of identically designed transgingival and subgingival titanium and zirconia implants. This further underscores the position of ziterion in the vanguard of research, development and production when it comes to ceramic implants made of zirconia.

In dynamic loading tests, the implant/abutment connections of subgingival titanium implants with a diameter of 4 mm have shown average loading capacities of 200 to 300 N after five million loading cycles. This value defines the lower loading limit at which implant fracture does not occur; it has been defined by the ISO 14801 standard for all implants.

In developing the zit-vario-z subgingival zirconia bioceramic implant, ziterion has succeeded in more than doubling the strength of the connection between the implant and the abutment to 600 N. Fractures of zit-vario-z implants can be excluded for all practical purposes if the implant is placed as per the manufacturer's recommendation.

The parallel-walled implant design with its microthreaded crestal segment and a well-defined rough surface replicates the proven designs of the existing ziterion implants made of ceramic or titanium.

The conical yet antirotational implant/abutment connection with its integrated platform switch represents the state of the art in oral implantology.

The abutment is permanently secured by a well-defined adhesive connection inside the implant. All available abutments are designed such that manual preparation is not required; the abutments can be restored using current CAD/CAM procedures.

The zit implant system, whose scope has now been further broadened by the introduction of the zit-vario-z implant, covers a broad range of indications across all segments of oral implantology. The zit implant system gives operators the convenience of a compatible single-source system characterized by great variability and flexibility.

The system covers both low-cost standard restorative approaches and sophisticated and highly aesthetic rehabilitations. The zit implant system – "one system – two worlds" – offers excellent technical solutions for every situation using high-tech products made in Germany. ■

**Visit ziterion at IDS Cologne:**
**Hall 04.2, Stand G40.**

## More Information

**ziterion GmbH**
Bahnhofstraße 3 · 97215 Uffenheim · GERMANY
Phone: +49 9842 9369-0
info@ziterion.com · www.ziterion.com

# Mozo Grau New and Improved Products

**Products:**
Surgical kit system for the MG Inhex implant; set of abutments for the Inhex and Osseous implants

**Indication:**
Dental implantology

**Distribution:**
Mozo Grau
San Felipe Neri 2
47002 Valladolid
SPAIN
Phone: +34 983 211-312
sales@mozo-grau.com
www.mozo-grau.com

Mozo Grau has launched a range of new and improved products, including a new surgical kit system for the MG Inhex implant and a set of new abutments for the Inhex and Osseous implants.

With its user-friendly design, the new MG Inhex Basic Surgical kit is ideal for newcomers to oral implantology or to Mozo Grau MG Inhex implants. It fills the gap between the MG Inhex Complete set and the small Mini set, providing an intermediate and cost-effective solution. Clinicians are presented with an easy-to-learn and well-organized collection of tools. The logical color-coded surgical sequence allows them to concentrate on the procedure itself rather than on the tools. The system is suitable for placing MG Inhex implants of all sizes.

The gold-based UCLA abutment for the MG Inhex implant is a welcome addition to the Mozo Grau range of precious-alloy abutments. This abutment ensures a perfect abutment-to-implant connection with a cast-to option for overdenture treatment or for multiple restorations. It ensures a perfect distribution of stress without any loss of precision, as the base is manufactured by Mozo Grau itself.

The new 1-mm ball abutment for MG Osseous extends the indications of this system to include patients with very thin soft tissue, with the choice of heights now ranging from 1 mm to 5.5 mm, depending on the patient's soft-tissue situation. ■

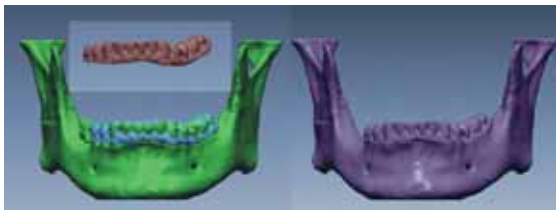
Trinon Titanium

# Reverse Guide Implant Technique

Trinon Titanium's reverse guide implant technique was developed to meet dentists' wishes to use 3D planning methods and placement guides to optimize implant insertion. Most of today's established systems are computer-assisted and require specific experience and expertise in the use of – often complicated – software systems.

Trinon Titanium has developed a solution based on CT scans that does not require users to have any specific knowledge of software or computer technology. For this system, a rapid-prototyping (RPT) model of the patient's jaw is produced based on CT scans.

This model can be customized by the dentist or dental technician using common tools such as a thermoforming unit, stents, a plastic drill and pins to ensure parallel insertion. Most of these tools are re-usable, and the availability of guides for multiple implant diameters makes the system universally applicable for all implant systems.



Using innovative laser-scanning technologies, a plaster cast of the patient's teeth is scanned and digitized, and the data are integrated with the existing CT data. The resulting highly detailed cast of the patient's jaw can be used for guidance during implant placement.

The haptic qualities of the RPT cast give the dentist a good idea of the amount of available bone. The plastic cast with the insertion points marked is overlaid by a thermoforming foil through which the dentist drills holes into the RPT cast. To ensure parallelism, guide pins are placed inside the drill holes. The template is removed from the jaw and the guide sleeves are inserted, which accommodate the final drilling sleeves with the appropriate diameters. The reverse guide implant technique facilitates speedy and cost-efficient implant planning, with the added benefits of shorter operation times and lower risks to the patient. ■

**Product:**
Reverse guide implant technique

**Indication:**
Implant planning

**Distribution:**
Trinon Titanium GmbH
Augartenstr. 1
76137 Karlsruhe
GERMANY
Phone: +49 721 932700
trinon@trinon.com
www.trinon.com

Zimmer

# Angled Zirconia Abutment

Zimmer Dental Inc. has announced the availability of its Zimmer Contour Angled Zirconia Abutment in the United States, Canada, Europe, Latin America and Australia.

The 17° Angled Zirconia Abutments are an addition to the Zimmer Contour Zirconia Straight Abutment line. Engineered for use with its Tapered Screw-Vent implants, the Zimmer Contour Angled Zirconia Abutment provides clinicians with a convenient, off-the-shelf restorative solution for an all ceramic, cement-retained restoration satisfying patients' esthetic demands in the anterior zone. Delivering a combination of strength, esthetics and simplicity the angled abutments have also the innovative titanium ring providing a stable titanium-to-titanium interface with the Tapered Screw-Vent implant. ■

**Product:**
Angled Zirconia Abutment

**Indication:**
Abutment

**Distribution:**
Zimmer Dental Inc.
USA
Phone Germany: +49 761 15647-0
Phone Spain: +34 93 84605-43
Phone France: +33 1 451235-66
Phone Italy: +39 043 85555-73
Phone Israel: +972 3 612-4242
www.zimmerdental.com

# Camlog New Connection Geometry

**Product:**
New connection geometry

**Indication:**
Dental implantology

**Distribution:**
Camlog Biotechnologies AG
Margarethenstrasse 38
CH-4053 Basel
SWITZERLAND
Phone: +41 61 5654100
info@camlog.com
www.camlog.com

The new Camlog connection geometry further optimizes the precision fit of Camlog implants and abutments. In the new Screw-Line implants, the existing round grooves have become square, on the appropriate abutments, the existing round cams have become square. This results in a high accuracy of transfer and positioning – decisive prerequisites for predictable and long-time reliable treatment results. By changing round to square, Camlog provides the basis for dentists to choose the option of platform switching with the new Screw-Line implants. This will be one of the Camlog topics at the International Dental Show in Cologne. Visit us: Hall 11.3, Booth A10-B19. ■

# Omnia Mono Drape “No Panic“

The new liquid-repellent and bacteria-repellent surgical drape “No Panic” by Omnia offers a triangular field access (11 x 10 cm) and comes with an integrated transparent plastic eye shield. It leaves the eyes free, allowing the patient to maintain visual contact with the operator during the procedure – whether in oral surgery, oral implantology or maxillofacial surgery. Thanks to the width of the drape (133 x 200 cm), it is suitable for advanced surgery. Two velcro loops can be used to secure surgical instruments or aspirators in place, preventing accidental contamination. ■

**Product:**
Mono Drape “No Panic”
(Ref. 22.T1783 – Pack of 5)

**Indication:**
Surgical drape

**Distribution:**
Omnia S.p.A
Via F. Delnevo 190
43036 Fidenza (PR)
ITALY
Phone: +39 0524 527453
info@omniasrl.com
www.omniasrl.com

# Mikrona ChiroCart

The tray system is an important factor when it comes to ensuring an economical workflow and impeccable in-office hygiene. Inspired by current discussions on new regulations for oral surgical facilities, the Swiss dental manufacturer Mikrona has been collaborating with Bien Air to present a mobile workspace concept at IDS 2009 that is specifically designed to meet the needs of dental implantologists and oral and maxillofacial surgeons.

The new ChiroCart can be moved on wheels to exactly the desired and ergonomically ideal individual positioning. It saves time by placing everything up right at the surgeon’s fingertips, helps organize the workspace and simplifies the procedure itself. Its elegant and ergonomical design provides a hygienically perfect working environment that complies with the new requirements, optimizing in-office infection control. The new ChiroCart comes equipped with the new Chiropro L technology by BienAir, an innovation that is also first presented at IDS. The cart integrates a large number of powerful and innovative technical features:

- Extremely powerful MX-LED micromotor
- Novel contra-angle featuring internal and vertical irrigation
- Powerful long-life LED
- Seven preinstalled programs to accommodate the most important implant manufacturers plus one freely definable program
- New peristaltic pump with one-way irrigation lines – patent pending

The touch-screen control panel is connected to the movable swivel arm. The ChiroCart can be configured to match the individual preferences of the operator; it is also available in a broad range of shades. Combined with a Mikrona treatment unit designed to accommodate the needs of the oral surgeon, the ChiroCart is a compact and future-proof workspace system. You can take a look at the ChiroCart at IDS by visiting Mikrona in hall 11.3 at stands F-008 and G-009 or BienAir in hall 10.1 at stands H-050 and J-051. ■

**Product:**
ChiroCart

**Indication:**
Mobile tray system

**Distribution:**
Mikrona Technologie AG
Wigartestrasse 8
CH-8957 Spreitenbach
SWITZERLAND
Phone: +41 56 418-4545
www.mikrona.com

# Soredex Scanora 3D Extra Large FoV

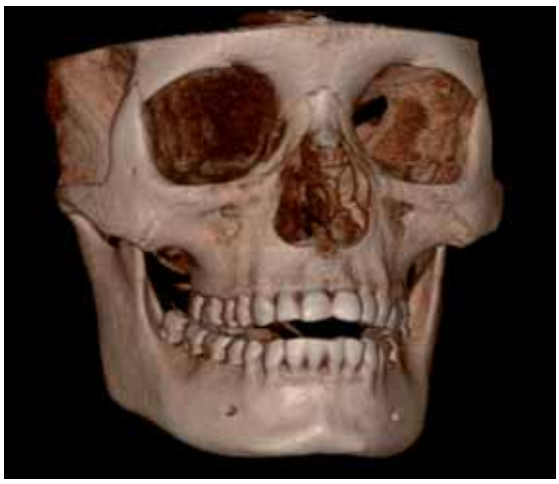
**Products:**
Scanora 3D extra large FoV and Scanora 3 software

**Indication:**
3D x-ray unit and software

**Distribution:**
Soredex
P.O Box 148
04301 Tuusula
FINLAND
Phone: +358 45 7882-2000
info@soredex.com
www.soredex.com

Soredex has introduced a new optional large field-of-view in its Scanora 3D Cone Beam System. The new cylindrical FoV is 145 mm in diameter and 130 mm in height. It considerably extends the diagnostic application area of the system. The new large FoV covers the entire dentomaxillofacial area extending the diagnostic and treatment planning capabilities of Scanora 3D for orthodontic and orthognatic procedures, airway studies, and trauma cases.

In addition, Soredex is also introducing a new version of the Scanora 3 software. It extends the compatibility of Scanora 3D with Soredex's other digital systems making it possible to integrate all Soredex digital intraoral and extraoral systems together.



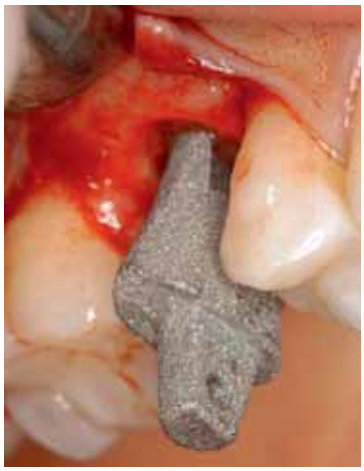
The large FoV and new Scanora 3 software are now available for all Scanora 3D systems. Upgrade kits for existing installations can also be purchased. ■

# Leader Italia Custom Implant

For the first time in oral implantology, a fractured tooth root can now be substituted by a custom implant* manufactured of sintered titanium using the direct laser fabrication process (LST, Laser-Sintered Titanium). This innovative technology has been developed by *Professor Manuel Silvetti* together with a team at the University of Insubria-Varese (directors: *Professors A. Macchi* and *C. Mangano*) over the past few years, culminating in a process whereby a fractured root can be replaced by a perfectly matched copy made of sintered titanium.

This technology has been adopted, further improved and refined by Leader Italia in its laboratories for the production of sintered titanium implants. Starting from a patient's CT scan, a 3D model of the root to be replaced is created. Based on the virtual data of this 3D model, the titanium root is produced by sintering powdered metal nanoparticles with a focused laser beam. Immediately after extraction of the fractured tooth, the sintered titanium root that precisely matches the patient's lost root and its extraction socket can be inserted.

This experimental operation opens up new possibilities in dental surgery by facilitating the use of custom



restorations on custom implants. Leader Italia pioneers a completely new concept in oral implantology: the possibility to fabricate custom implants that can be inserted without the traumatic surgical procedure that is required today.

*The custom AdHoc root is manufactured using the Silvetti-Combe process. ■

**Product:**
Custom implant manufactured of sintered titanium

**Indication:**
Dental implantology

**Distribution:**
Leader Italia S.r.l.
Via Aquileja, 49
20092 Cinisello Balsamo MI
ITALY
Phone: +39 02 618651
export@leaderitalia.it
www.leaderitalia.it

# Aseptico AEU-6000

Launched in 2007, the AEU-7000E-70V from Aseptico quickly became known for its high-end features. In response to a demand for a less expensive motor Aseptico has developed the AEU-6000. While the AEU-7000E-70V has many superior benefits, the AEU-6000 provides equivalent functionality found in other brands of implant motors at a lower price. Features of the AEU-6000 include:

- A smaller footprint than the AEU-7000E-70V, but with a similar design, easy-to-read display and intuitive user interface;
- Autoclavable, brushless 40,000 rpm micromotor;
- Basic calibration system to compensate for many variables in the contra angle at the time of treatment;
- Performs the complete implant procedure using a 20:1 reduction contra angle, such as the AHP-85MB and AHP-85MB-C Mont Blanc handpieces. It is also compatible with 1:1, 1:2, and 1:5 increaser handpieces for a multitude of dental applications;
- After drilling, torque control allows the doctor to decrease the speed and increase the torque level for tapping or placement. Once the torque limit is reached, the motor will stop automatically;
- Basic endo functionality with auto-stop-reverse;
- Five programmable preset buttons for saving preferred ratio, speed, torque, irrigation, and motor direction settings;
- A quiet, fully integrated irrigation pump that has a digital, adjustable flow rate;
- Upgradeable software;
- Automatic sensing power supply.

The AEU-6000 includes the new AE-7PM On/Off Foot Control with 360° activation. The optional AE-70V Multi-function Foot Pedal allows hands-free variable speed control, pump activation, preset number selection, and torque adjustment. ■

**Product:**
AEU-6000

**Indication:**
Surgical motor

**Distribution:**
Aseptico
P.O. Box 1548
Woodinville, WA 98072
USA
Phone: +1 425 487-3157
int@aseptico.com
www.aseptico.com

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For more information, please call +49-2222-92 94-0, "Zirconia" and ask for our free information package, or visit www.keystonedental.de. Your request will be forwarded to the local Keystone distributor.

# Zimmer Colla Wound Dressings

Zimmer Dental Inc. has announced the availability of its absorbable collagen wound dressings in Europe. CollaTape, CollaCote, and CollaPlug Wound Dressing products are soft, pliable, nonfriable sponges suitable for a variety of surgical indications, and have significantly outperformed traditional methodology in clinical tests.

CollaTape Dressings are a good choice for minor oral wounds, closure of grafted sites, and repair of Schneiderian Membranes. CollaCote Dressings are recommended for palatal donor sites and mucosal flaps, and CollaPlug Dressings are suitable for extraction and biopsy sites. Colla absorbable, collagen-based wound dressings offer clinicians a long list of benefits including bleeding control and stabilization of blood clots; wound bed protection; a matrix for tissue growth; absorption in ten to 14 days; and an accelerated wound healing process.

In 1985, Colla Wound Dressings were the first collagen wound dressings to be approved by the FDA for use in dental surgery. Since that time, millions of Colla Wound Dressings have been implanted internationally. These products have now received CE approval with broad indications in dental implantology and oral surgery. ■

**Product:**
Colla Wound Dressings

**Indication:**
Wound dressing

**Distribution:**
Zimmer Dental Inc.
USA
Phone Germany: +49 761 15647-0
Phone Spain: +34 93 84605-43
Phone France: +33 1 451235-66
Phone Italy: +39 043 85555-73
Phone Israel: +972 3 612-4242
www.zimmerdental.com

# Sybron Implant Solutions Cytoplast Membranes

The Cytoplast TI 250 membrane by Sybron Implant Solutions is a non-resorbable and titanium reinforced membrane available in three dimensions. The reinforcement with titanium grade 1 increases the stability of this membrane and allows space preservation for augmentation. Indents within the surface of the membrane provide a structure which enlarges the available area for cell adhesion to 250 percent. A microporosity of less than 0.3 micron prevents an infiltration of bacteria as well as cells so that the membrane can remain exposed.


In addition, the new resorbable membrane Cytoplast RTM has been included in the sales program. This membrane of highly purified (type 1) bovine achilles tendon allows tissue integration into the outer layer thanks to the multiple layer structure, thus preventing a direct migration of bacteria and epithelial cells. The special fiber alignment supports the tensile strength. The membrane is cell-occlusive, of optimal flexibility and enables an easy handling. Each side of the membrane can be placed on the defect. With the relatively long resorption time of 26 to 38 weeks the membrane is suitable for the use in periodontal defects, sinus lift osteotomy and augmentation of soft tissue. ■

**Product:**
Cytoplast Membranes

**Indication:**
Membranes

**Distribution:**
Sybron Implant Solutions GmbH
Julius-Bamberger-Str. 8a
28279 Bremen
GERMANY
Phone: +49 421 43939-0
info@sybronimplants.de
www.sybronimplants.de

***EDI Journal*** is the first and only European professional journal of its kind, written for all clinicians with distinct interest in dental implantology. This publication aims at uniting European dentistry in a common effort, to establish appropriate standards and to help open up new markets.

The specific dental section of this periodical offers a wealth of original work, case reports, scientific research and other articles presented by authors from countries all over Europe, all helping to make this top-quality platform a truly international voice in the dental profession. Product innovations are covered in depth.

And for the first time ever, dental implantologists are offered exhaustive information on important ancillary themes such as European standards, quality guidelines, legal issues, questions of remuneration and professional specialization.

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Phone +49 8243 9692-0
Fax +49 8243 9692-22
service@teamwork-media.de
www.teamwork-media.de

CALENDAR OF EVENTS

| 2009 | Event | Location | Date | Details/Registration |
|---|---|---|---|---|
| **March** | 33rd International Dental Show (IDS) 2009 | Cologne, Germany | March 24–28, 2009 | Koelnmesse GmbH<br>Phone: +49 180 577-3577<br>www.ids-cologne.de |
| **April** | 5th Arab-German Implantology Meeting of DGZI | Damascus, Syria | April 8–10, 2009 | DGZI – International Section<br>Phone: +962 6 553-3160<br>www.dgzi-international.com |
| | 3rd Mediterranean Symposium of BDIZ EDI | Vouliagmeni, Greece | April 11, 2009 | Omnipress<br>Phone: +30 210 2222-637<br>info@omnipress.gr<br>www.omnipress.gr |
| | Symposium: Membranes in GBR – Old Tradition or State of the Art? | Zurich, Switzerland | April 24–25, 2009 | Zahnmedizinische Fortbildung Zürichsee<br>Phone: +41 44 72740-18<br>info@zfz.ch |
| | BioHorizons Global Symposium | Chicago, USA | April 30–May 2, 2009 | BioHorizons<br>Phone: +1 866 872-9785<br>www.biohorizons.com |
| **May** | AAO Annual Session | Boston, USA | May 1–5, 2009 | American Association of Orthodontists<br>www.aaomembers.org/mtgs/annual/2009/index.cfm |
| | ADI Biennial Implant Team Congress | Birmingham, UK | May 7–9, 2009 | ADI<br>Phone: +44 208 487-5555<br>info@adi.org.uk<br>www.adi.org.uk |
| **June** | Europerio 6 | Stockholm, Sweden | June 4–6, 2009 | European Federation of Periodontology<br>www.europerio6.net |
| | SimPlant Academy World Conference | Monterey, CA, USA | June 25–27, 2009 | SimPlant Academy<br>www.simplantacademy.org |

## EDI – Information for Authors

**EDI –** the interdisciplinary journal for prosthetic dental implantology is aimed at dentists (and technicians) interested in prosthetics implantology. All contributions submitted should be focused on this aspect in content and form. Suggested contributions may include:

· Case studies
· Original scientific research
· Overviews

**Manuscript Submission**

Submissions should include the following:

· two hard copies of the manuscript
· a disk copy of the manuscript,
· a complete set of illustrations

Original articles will be considered for publication only on the condition that they have not been published elsewhere in part or in whole and are not simultaneously under consideration elsewhere.

**Manuscripts**

Pages should be numbered consecutively, starting with the cover page. The cover page should include the title of the manuscript and the name and degree for all authors. Also included should be the full postal address, telephone number, fax number, and electronic mail address of the contact author. The second page should contain an abstract that summarizes the article in approximately 100 words.

Manuscripts can be organized in a manner that best fits the specific goals of the article, but should always include an introductory section, the body of the article and a conclusion.

**Figures and Tables**

Each article should contain a minimum of 20 and a maximum of 50 original color slides (35 mm) or digital photos, except in unusual circumstances. The slides will be returned to the author after publication. Slides should be numbered on the mount in the sequential numerical order in which they appear in the text (Fig. 1, Fig. 2, etc.).

Radiographs, charts, graphs, and drawn figures are also accepted.

Figure legends should be brief one or two-line descriptions of each figure, typed on a separate sheet following the references. Legends should be numbered in the same numerical order as the figures.

Tables should be typed on separate sheets and numbered consecutively, according to citation in the text. The title of the table and its caption should be on the same sheet as the table itself.

**References**

Each article should contain a minimum of 10 and a maximum of 30 references, except in unusual circumstances. Citations in the body of the text should be made in numerical order. The reference list should be typed on a separate sheet and should provide complete bibliographical information in the format exemplified below:

[1] Albrektsson, T.: A multicenter report on osseointegrated oral implants. J Prosthet Dent 1988; 60, 75-82.

[2] Hildebrand, H. F., Veron, Chr., Martin, P.: Nickel, chromium, cobalt dental alloys and allergic reactions: an overview. Biomaterials 10, 545-548, (1989)

[3] Johanson, B., Lucas, L., Lemons, J.: Corrosion of copper, nickel and gold dental alloys: an in vitro and in vivo study. J Biomed Mater Res 23, 349, (1989)

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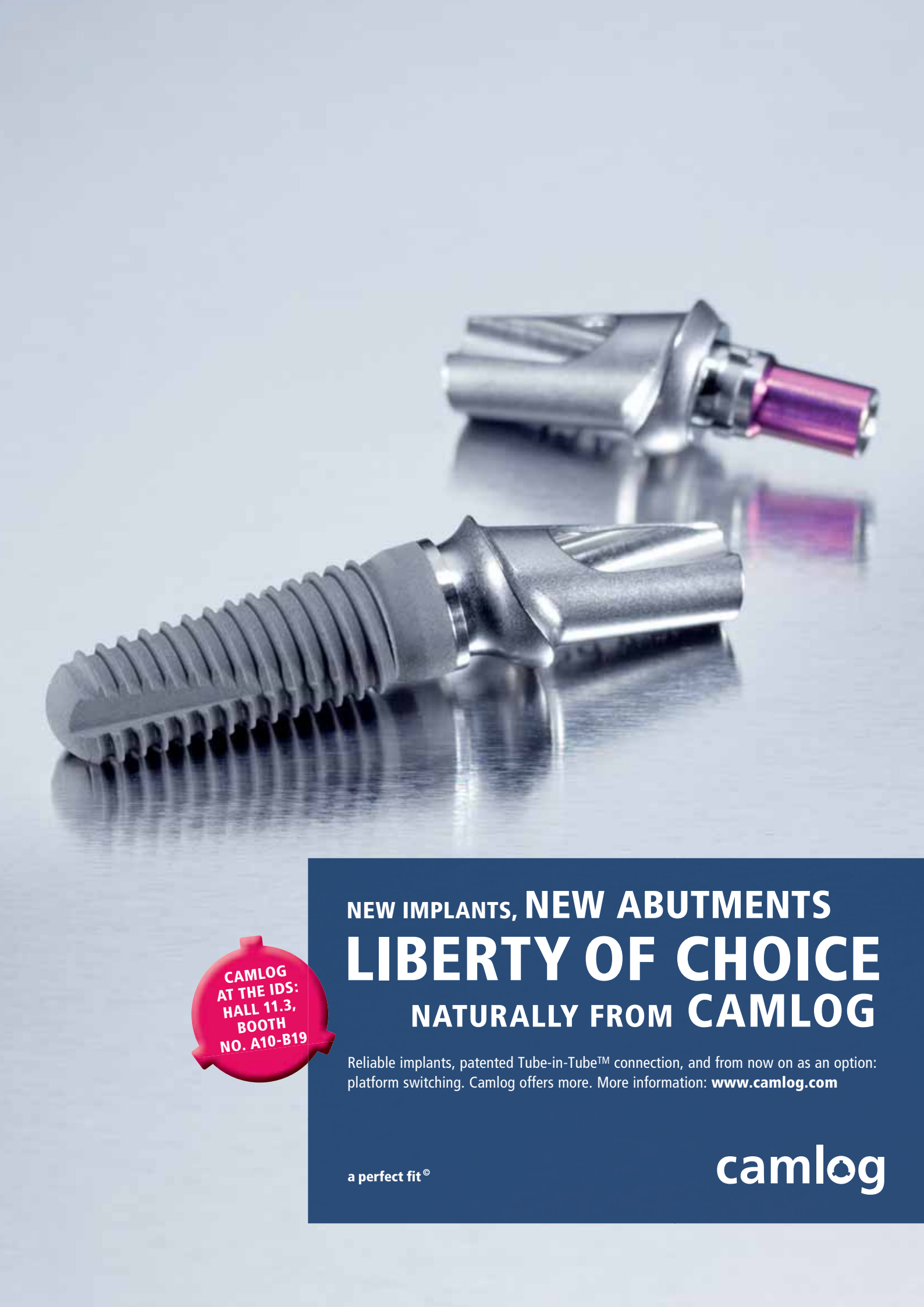

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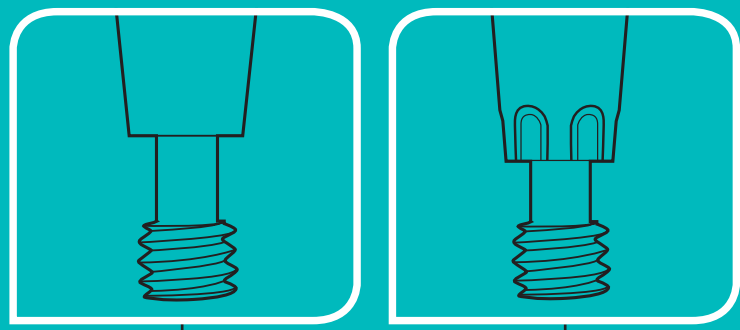

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