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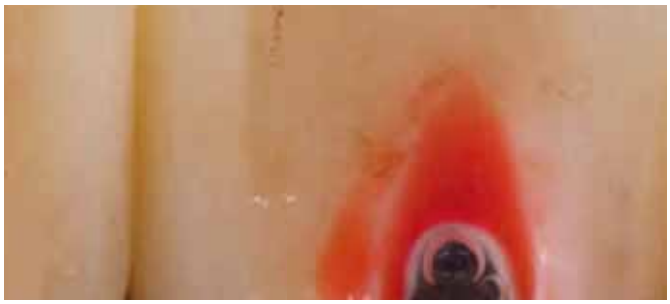
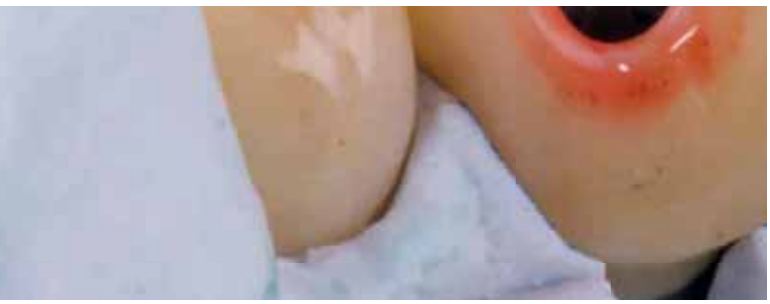
EDI JOURNAL



TOPIC

Delayed versus late

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Pulling together

Many of them had a long journey to make, but they all came nevertheless: the members and guests of the BDIZ EDI's European Committee. Its 24th meeting took place in Cologne in February, with participants from many countries: the UK, Spain, Portugal, France, Italy, the Netherlands, Croatia, Serbia, Macedonia, Turkey – and even India this time. Unfortunately, for the first time, the representatives of our Polish partner, OSIS EDI, could not be present this year.

What the participants of these meetings have reported on the situation of dentists and dental implantologists in their countries over the years has strengthened the determination of the BDIZ EDI Board not only to continue but to promote even more actively its work on the European level. The trend to have dental services performed unsupervised by non-dentists in order to reduce the cost of healthcare, now becoming very evident e.g. in Germany, has pretty much turned into a standard procedure in some countries. The bottom line is that this not only undermines the academic training of dental practitioners but also endangers the quality of dentistry. If this trend continues, we may in a few decades no longer have just dentists, but – in addition to the dental specialists such as endodontists, implantologists and periodontists – many different non-academic occupations covering different subsets of dentistry. Some of them already exist today: dental hygienists, prophylaxis specialists, bleaching shops. This might give the term "interdisciplinary" an entirely new meaning.

Another trend has been reported from the UK. Here, a fear of providing treatment has been rampant on the part of treatment providers, and in particular surgeons. The UK is evidently experiencing a boom of lawyers for whom medical law mainly appears to be a lucrative source of income, suing treatment providers on behalf of patients and actively, not to say aggressively, advertising the fact: "Find out more about making a claim for medical negligence compensation and how the process works" – these or similar advertisements appeal to patients potentially willing to file a lawsuit.

In France, the entire health system is in for a system change, which will of course have its effects on dentistry. In addition, France is reported to be "flooded" by Spanish dentists who no longer see a career prospect in their own country. The situation of dentists and dental implantologists in Spain has been described in our interview with SEI President *Dr Antonio Bowen* in this issue of EDI Journal: "The real problem is the huge number of dentists, as the private colleges do not impose ceilings on admissions. Moreover, the low-cost clinics are changing the way the dental market works in Spain: Dental clinics are becoming businesses rather than being healthcare institutions."

Meetings of international committee members not only foster an understanding of the situation in the various countries but also bring home the fact that many problems are not specific to any particular country or countries. While the realization of this fact naturally falls short of being a solution, it encourages a sense of belonging, a desire to join in and to pull together. Mutual understanding and small beginnings encourage a growing cooperation across national borders.

EDI Journal is the mouthpiece of this effort. It does not restrict itself to offering technical and clinical information but also focuses on aspects of healthcare policy. My hope is that we once again have succeeded in offering a good mixture in this issue.

Sincerely,
Anita Wuttke
Editor-in-Chief

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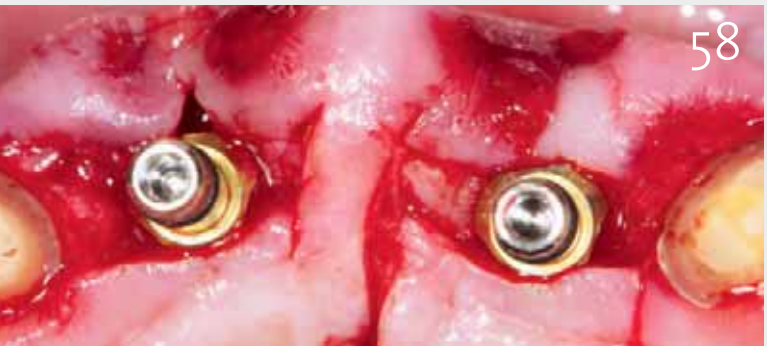
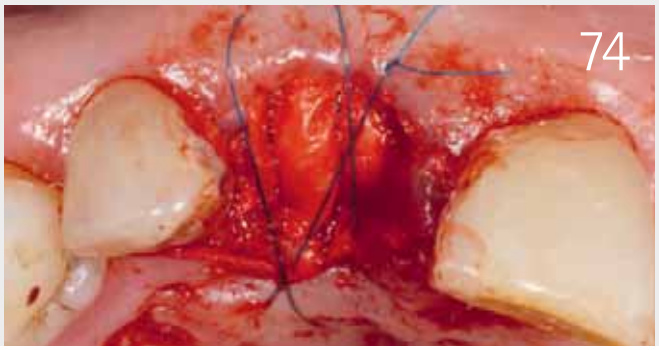
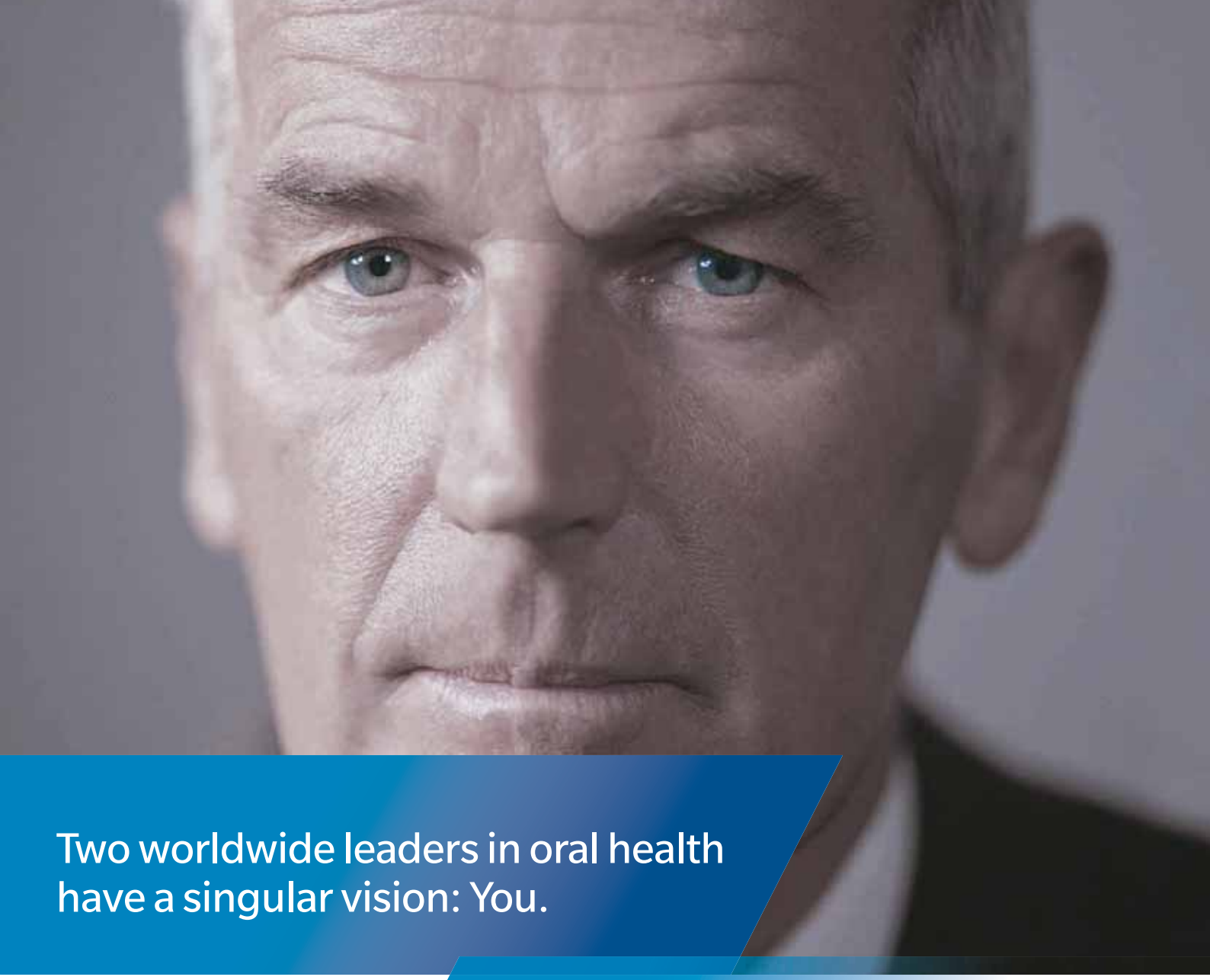


Palatally oriented implants



Fixation of a membrane using the cross-stitching technique



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Partner Organizations of BDIZ EDI

Association of Dental Implantology UK (ADI UK)

ADI UK, founded in 1987, is a registered charity committed to improving the standards of implant dentistry by providing continuing education and ensuring scientific research. It is a membership-focused organization dedicated to providing the dental profession with continuing education, and the public with a greater understanding of the benefits of dental implant treatment. Membership of the ADI is open to the whole dental team and industry, and offers a wealth of benefits, education and support for anyone wishing to start out or develop further in the field of dental implantology.

Ogolnopolskie Stowarzyszenie Implantologii Stomatologicznej (OSIS EDI)

OSIS EDI, founded in 1992, is a university-based organization of Polish scientific implantological associations that joined forces to form OSIS. The mission of OSIS EDI is to increase implant patients' comfort and quality of life by promoting the state of the art and high standards of treatment among dental professionals. OSIS EDI offers a postgraduate education in dental implantology leading to receiving a Certificate of Skills (Certyfikat Umiejętności OSIS), which over 130 dental implantologists have already been awarded.

Sociedad Espanola de Implantes (SEI)

SEI is the oldest society for oral implantology in Europe. The pioneer work started in 1959 with great expectations. The concept of the founding fathers had been a bold one at the time, although a preliminary form of implantology had existed both in Spain and Italy for some time. Today, what was started by those visionaries has become a centrepiece of dentistry in Spain. SEI is the society of reference for all those who practice implantology in Spain and has been throughout the 50 years, during which the practice has been promoted and defended whereas many other societies had jumped on the bandwagon. In 2009 SEI celebrated its 50th anniversary and the board is still emphasizing the importance of cooperating with other recognized and renowned professional societies and associations throughout Europe.

Sociedade Portuguesa de Cirurgia Oral (SPCO)

The SPCO's first international activity was the foundation – together with their counterparts in France, Italy, Spain and Germany – of the European Federation of Oral Surgery (EFOOS) in 1999. The Sociedade Portuguesa de Cirurgia Oral's primary objective is the promotion of medical knowledge in the field of oral surgery and the training of its members.

Udruženje Stomatologa Implantologa Srbije-EDI (USSI EDI)

USSI EDI was founded in 2010 with the desire to enhance dentists' knowledge of dental implants, as well as to provide the highest quality of continuing education in dentistry. The most important aims of the organization are to make postgraduate studies meeting the standards of the European Union available to dentists from Serbia and the region; to raise the level of education in the field of oral implantology; to develop forensic practice in implantology; and to cooperate with countries in the region striving to achieve similar goals.

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11th Expert Symposium of BDIZ EDI in Cologne discusses short, angulated and diameter-reduced implants

The "shorties" have become established

More than 250 participants attended the two events organized by the European Association of Dental Implantologists (BDIZ EDI) in Cologne on the Carnival weekend to get an update on short, angulated and diameter-reduced implants and information on impending anti-corruption legislation. Many vivid discussions developed at the Expert Symposium, in the workshops and especially at the 11th European Consensus Conference (EuCC). The results are incorporated in the new EuCC Guidelines – also the 11th of their kind – reprinted on page 16 f. of this issue.

Once again, the Expert Symposium and the Consensus Conference were prepared with support from the University of Cologne. "Spiritus rector" was *Professor Joachim E. Zöller*, Director of the Interdisciplinary Policlinic for Oral Surgery and Implantology and Department of Oral and Maxillofacial Plastic Surgery of the University of Cologne and Vice President of BDIZ EDI. *Dr Jörg Neugebauer* (Landsberg), who is a BDIZ EDI board member and teaches at the University of Cologne, headed both the Expert Symposium and the Consensus Conference.

The recommendations of the 11th European Consensus Conference offered the following take-home benefit for the participants of the 11th Expert Symposium: "The use of short, angulated or diameter-reduced implants in patients with reduced bone volume has become a reliable therapeutic option if the specific treatment parameters are respected, compared to the risks associated with standard-dimension implants in combination with augmentation procedures." In this respect, the hopeful predictions of the 6th European Consensus Conference in 2011 have been confirmed. Five years ago, BDIZ EDI had looked into possible practical applications of these implants, while this time the focus was put on their advantages and limitations. Furthermore, the definition of short implants has been changed. While the 6th EuCC in 2011 had defined implants as short if their length is < 9 mm, the 11th EuCC in 2016 defined short implants as being ≤ 8 mm in length and ≥ 3.75 mm in diameter. Ultra-short implants have a length of < 6 mm.

The "shorties" on the road to success?

Kicking off the one-day symposium, *Professor Rolf Ewers* (Vienna), who with 45 years of experience is an "old hand" in the field of augmentation surgery, conjured up the temporal dimension: "Iliac crest in the past – short implants today". Yet for *Ewers*,

Professor Rolf Ewers

Professor Mauro Marincola

Dr Thomas Fortin

Professor Matthias Kern

Participants paid high attention to the 11th Expert Symposium in Cologne.

the truth still holds that no material is equivalent to autologous bone. Recognizing that the shape of the bone follows its function even in the context of short implants, he sees this as a confirmation of the good results of the prospective studies he helped supervise. During his lecture, *Ewers* compared the results of five years of experience with short and ultra-short implants to the conventional augmentative approach. "We have found that we get comparable results with substantially less surgical effort, less morbidity and lower cost."

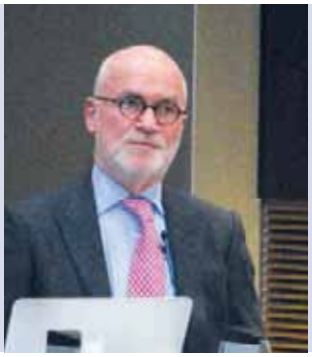
Closely related to *Ewers*' theme was the topic of *Professor Mauro Marincola* (Rome), who spoke about his clinical experience with particular regard to prosthetic rehabilitation. He concluded that short implants not only present a stable peri-implant bone situation at large crown/implant length ratios, but that they can also be restored easily due to the fact that they are single-tooth entities.

Dr Thomas Fortin (Lyon) spoke on short implants as an alternative to risky and expensive vertical augmentation procedures. In his five-year prospective multicentre study on 54 patients who were rehabilitated using two different types of abutments in the mandibular anterior region (platform-switching abutments and platform-matching abutments), no significant differences were found. He concluded: "In this context and for both abutment types, short implants can be considered an effective treatment option, including in terms of hard- and soft-tissue reactions."

Is one better than none?

Professor Matthias Kern (Kiel) highlighted the prosthodontic problems associated with patients with atrophied edentulous mandibles. He pointed out the advantages and disadvantages of restorations on two or four implants and the – affordable – option

Professor Douglas Deporter



Dr Wolfgang Bolz

Professor Norbert Schmedtmann

Dr Jörg Neugebauer

Appropriate training is necessary to deal with short, angulated and diameter-reduced implants.

of inserting a single implant in geriatric patients to stabilize an extended pre-existing denture. *Kern*, a proponent of the central single implant in the edentulous mandible, summarized the available clinical data and presented selected patient cases to illustrate the results after more than six years. His conclusion was that during the first five to six years, all clinical trials yielded improvement of the OHIP (Oral Health Impact Profile) with respect to mandibular single central implants.

Professor Douglas Deporter (Toronto) reported on his over 20 years of experience with short implants (7 mm or less) and sintered implant surfaces, presenting the scientific basics and the fundamental design of an implant system based on short implants. The so-called SPS (sintered porous surface) implants are restored without cementing, by means of mechanical cement-free locking mechanisms, and offer excellent resistance to tensile loads, compressive stress and torsional forces. This treatment approach ("osseoconsolidation") opens up minimally invasive options in the edentulous area in patients with a severely resorbed alveolar ridge.

Taking a look at angulated implants

Dr Wolfgang Bolz (Munich) discussed immediate restoration in edentulous or soon-to-be edentulous patients with angulated or zygomatic implants, with particular attention to patient management. He had at his disposal a wealth of data covering nearly 500 patients, from which he selected some extreme cases to elucidate this restorative approach. The discussion that followed his lecture was especially revealing. Asked what to do if a zygomatic implant was lost, *Bolz* retorted that this had yet to happen. He achieves stability for the zygomatic implants by inserting them exclusively into the zygomatic bone. Continuing this line of argumentation, *Professor Norbert Schmedtmann* (Hamburg) explained the indication-driven prosthetic approach using angulated implants, balancing the advantages and disadvantages of different prosthetic treatment concepts.

Surgical aspects

Finally, *Dr Jörg Neugebauer* (Landsberg) offered practical advice, from a surgical perspective, on the preparation of the implant site, on implant placement and regional bone augmentation measures for short or angulated implants, stating that bone quality and the time of tooth loss must be taken into account. *Neugebauer* further elaborated on when a 3D template was necessary and when he considered free-hand implantation possible.

Conclusion

According to the recommendations of the 11th European Consensus Conference, short, angulated and diameter-reduced implants are a viable treatment option. However, there are limits: When using short implants that also have reduced diameters, an increased failure rate of up to ten per cent after three to five years can be expected, as a review of the pertinent literature has shown.

In addition, the EuCC suggests that "implant surgeons and restorative dentists must undergo appropriate training to be able to determine the best possible treatment for each patient".

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Impressions of the 11th Expert Symposium

"Work and pleasure" is the motto of the Expert Symposium in Cologne. After a hard working day, the evening was dedicated to carnival.



1 I "Who's the devil?", Professor Antonio Felino from Portugal (right) would like to know. 2 I Marianne Steinbeck as a cute little mouse. 3 I "Senator" Christian Berger amidst spooky characters. 4 I Dancing butterfly. 5 I The President of „Die Grosse von 1823", Professor Joachim Zöller (left), on duty in Gürzenich. 6 I The trifolium of Cologne carnival: Maiden, Peasant and Prince. 7 I From the middle of India right into Cologne carnival: Dr Vikas Gowd loved it. 8 I Having fun: Professor Ewers and his wife. 9 I Croatians celebrating carnival in Cologne with Professor Pavel Kobler (right) and Dr Deni Milevcic (second from left). 10 I "Son of the desert" from way up north: Dr Stefan Liepe. 11 I A colourful bouquet: Dr Peter Fairbain with Anita Wuttke, Dr Freimut Vizethum and Dr Ulrich Fürst.

Guidelines of the 11th European Consensus Conference 2016

Short, angulated and diameter-reduced implants

Based on a working paper of the University of Cologne, the 11th European Consensus Conference (EuCC) under the auspices of BDIZ EDI discussed advantages and limits of short, angulated and diameter-reduced implants in Cologne in February 2016. The resulting guidelines will be published shortly.

1. Methods

1.1 Objective

The purpose of these guidelines is to offer recommendations for clinicians engaging in implant dentistry, enabling them to correctly assess potential indications (and any limitations thereof) for short, angulated or diameter-reduced implants.

1.2 Introduction

This consensus paper covers only titanium implants typically placed in accordance with the indications recommended by the European Consensus Conference (EuCC, Germany, 6 February 2016).

All consensus recommendations in this paper should be considered as guidelines only. The patient's specific situation is always an important consideration and may justify a deviation from the recommendations of this consensus paper.

1.3 Background

Avoiding bone augmentation through reduced-dimension implants and optimum utilization of available bone volume is often recommended being a minimally invasive treatment option [45]. To ensure an acceptable treatment outcome, dimension and insertion type must be considered in addition to the number of implants.

1.4 Literature search

The Cochrane Library, EMBASE, DIMDI and Medline literature databases were used to conduct a systematic search of recently published data on the use of short, angled or diameter-reduced implants. Selective search criteria were used, including terms such as "short implants", "angulated implants", "angled implants", "tilted implants", "outcome grafting procedure", and "implant failure". The publications identified by the search were screened by reading their abstracts, and those irrelevant to the subject were identified and excluded. Publications found to be potentially relevant were obtained in full-text form. Multiple review papers with meta-analyses and randomized controlled trials (RCTs), and other prospective and retrospective systematic clinical studies were available on the subject.

1.5 Procedure for developing the Consensus Conference guidelines

A preliminary version of this document on which the EuCC based its deliberations was prepared by *Dr J. Neugebauer* of the Interdisciplinary Policlinic for Oral Surgery and Implantology and Department of Oral and Maxillofacial Plastic Surgery at the University of Cologne/Germany. The preliminary report was then reviewed and discussed by the sitting committee members in five steps as follows:

- Reviewing the preliminary draft
- Collecting alternative proposals
- Voting on recommendations and levels of recommendation
- Discussing non-consensual issues
- Final voting

2. Problem

The application of standard implants in patients with atrophy of their alveolar ridges or large pneumatization of the maxillary sinus cavity often requires the use of hard tissue augmentation procedures [18,17]. These procedures are established, and widely used with success. But depending on level of training of the user and the patient-specific risk factors, complications may occur and affect the postoperative quality of life [1,9,19,18,17,33].

3. Use of short implants

3.1 Introduction

Short implants are increasingly being discussed as a treatment alternative in situations characterized by limited vertical bone height [3].

Compared to the use of standard implants due to biomechanical considerations (e.g. crown-to-implant ratio, C/R) with short implants may lead to unfavourable loading conditions and complications, including excessive crestal bone loss and implant failure [23]. Improvements in implant design and surface along with the use of modified implant insertion methods all are intended to minimize these risks [14].

3.2 Definition of short implants

Implants are usually referred to as short if their designed intrabony length measures ≤ 8 mm with diameters ≥ 3.75 mm. Standard implants are considered to be those with lengths > 8 mm and diameters ≥ 3.75 mm [43,47]. "Ultra-short" implants are considered to be those with lengths less than 6 mm [13].

3.3 Indications for short implants

Short implants are primarily used to avoid bone augmentation procedures in the maxillary and mandibular posterior segments of partially edentulous patients. They are applicable if vertical bone volume is limited by anatomical structures (maxillary sinus, mandibular canal), but there is sufficient alveolar ridge width to permit successful use of implant diameters ≥ 3.75 mm. They are also used to support removable overdentures as single or multiple tooth replacements in the anterior jaws [47,48].

Participants of the 11th European Consensus Conference

Chairman:
Dr Jörg Neugebauer (Germany)

Protocol:
Dr Freimut Vizethum (Germany)

Participants:
Christian Berger (Germany)
Dr Antonio Bowen (Spain)
Professor Douglas Deporter (Canada)
Professor Rolf Ewers (Austria)
Dr Peter Fairbairn (United Kingdom)
Professor Antonio Felino (Portugal)
Dr Thomas Fortin (France)
Dr Vikas Gowd (India)
Professor Pavel Kobler (Croatia)
Professor Vitomir Konstantinovic (Serbia)
Professor Matthias Kern (Germany)
Professor Mauro Marincola (Italy)
Dr Hans-Joachim Nickenig (Germany)
Professor Hakan Özyuvaci (Turkey)
Professor Norbert Schmedtmann (Germany)
Professor Joachim Zöller (Germany)
Vijay Kammula (Germany, accompanying Dr Gowd)

3.4 Current observations

For ultra-short implants, there is insufficient evidence to make recommendations at this time. A review paper from 2015 summarized findings with RCTs on sinus floor elevation with standard length implants or short implants on their own. Five studies reported 16–18 months survival rates for long implants in combination with sinus elevation of 99.5 % (95 % CI: 97.6–99.98 %) and for short implants alone of 99.0 % (95 % CI: 96.4–99.8 %). For shorter observation periods of 8–9 months in three studies, survival rates for long implants were 100 % (95% CI: 97.1–100 %) and for short implants alone 98.2 % (95 % CI: 93.9–99.7 %) [53]. These results are supported by other RCTs [49,52].

The number of RCTs on the use in the mandible is limited [42]. In these RCTs, no relevant differences in biological parameters between the use of short and long implants in the posterior mandible were found [20,27]. One group has presented five-year results showing no significant difference for the application of short implants alone as compared to standard implants and vertical augmentation in the mandible [21].

A retrospective comparative analysis also showed no differences between short and long implants for an observation period of five years [24]. Meta-analysis showed high survival rates for short implants with moderately rough surfaces [37]. Long-term data for observation periods of 10 years for the posterior mandible of partially edentulous patients and 20 years for mandibular overdentures showed favourable results for short, sintered porous-surfaced implants [15,16].

The literature does show, however, that short implants with a reduced diameter have failure rates of up to 10 % after three to five years [11].

3.5 Prevention of complications

Some authors have offered recommendations on how to avoid complications that are mainly biomechanical in nature. These recommendations include:

- Machine-surfaced, short implants should not be used [37]
- Short implants should only be used if bone quality is favourable [48]
- Restoration with single crowns [2,28,38,53]
- Primary splinting of threaded short implants [39]
- Guiding surfaces for lateral movements should be avoided [10]
- Insertion at or below bone level with tapered abutment design [30, 34]
- The implant surgeon and restorative dentist should have adequate training [53]
- For short implants no data available for immediate loading procedures

4. Use of angulated implants

4.1 Introduction

Angulated standard implant designs or non-angulated ones placed in off-axis (tilted) positions are increasingly being used for the splinted reconstructions of edentulous jaws, again as an alternative treatment option to avoid hard tissue augmentation procedures, but also to increase primary stability for immediate loading procedures with longer implants [10]. The objective of having implants in a tilted position is to utilize as much bone as possible, while still avoiding vital adjacent structures (e.g. the mental foramen in the mandible or the maxillary sinus in the maxilla). They also increase the surface area for restorative support (through diverging implant axes) [4]. Restorations can be inserted on these implants via angulated abutments.

4.2 Current observations

Studies of immediate loading concepts with angulated implants used to support full-arch reconstructions on four or six implants in the maxilla and mandible have provided five-to-ten-year data [6,7,22,26,32,35]. Favourable survival rates were found following the use of primary splinting of angulated/tilted implants with fixed dental prostheses (FDP) for follow-up intervals of up to 6.5 years [36]. Various meta-analyses show no differences compared to conventional implant placement/loading in either survival rates or crestal bone loss in the restoration of atrophied edentulous jaws with FDP and angulated implants after a short and medium observation time [5,10,12,40].

4.3 Restoration-related experiences

Using a cantilevered, shortened dental arch with a lack of posterior support resulted in no increased prevalence of oro-mandibular malfunctions [46].

4.4 Prevention of complications

- Placement of angulated and immediately restored implants should be effected with sufficient primary stability (and splinted with immediate restoration)
- For anatomically and prosthetically correct angulated implant placement, a pre-operative 3D computer-based diagnosis is recommended
- The implant surgeon and restorative dentist must have adequate training

5. Use of diameter-reduced implants

5.1 Definition

Diameter-reduced implants (DRIs) can be defined as those with intraosseous diameters below 3.5 mm for placement in sites with reduced alveolar ridge bone width [47]. Implants with diameters less than 2.7 mm are referred to as mini-implants [25,50].

5.2 Current observations

Diameter-reduced implants generally have high survival rates (> 90 %), assuming careful patient selection, assessment of bone density, the clinical approach and the experience of the user [29,31,47,51]. DRIs are also applicable in the posterior region with high success rates [31].

Many retrospective studies are available for mini-implants. However, meta-analyses with prospective and/or randomized trials show only short-term results and/or increased failure rates [8,31,44]. Furthermore, in a recent literature review, it was determined that short mini-implants (≤ 13 mm) will be lost more frequently under load than longer ones (> 13 mm) [51].

5.3 Prevention of complications

- Mini-implants have an increased risk of implant loss
- Short mini-implants should be avoided [54]

6. Recommendations for short, angulated or diameter-reduced implants

Provided the specific treatment parameters are observed, the use of short, angulated or diameter-reduced implants in sites with reduced bone volume can be a reliable treatment option, given the risks associated with the use of standard-dimension implants in combination with augmentation procedures. The implant surgeon and the restorative dentist must have appropriate training to choose the best possible therapy for each patient [41].

11th European Consensus Conference

Literature may be obtained by scanning the QR-Code. The final brochure "Short, angulated and diameter-reduced implants" will be available in early April 2016.

Interview with Dr Jörg Neugebauer and Christian Berger

"Short implants are not for beginners"

What is short, and how short can short be when it comes to implants? In an interview with Dental Magazin, Dr Jörg Neugebauer, Scientific Director of the 11th Expert Symposium, and Christian Berger, President of BDIZ EDI and the Bavarian Dental Chamber, provided answers to these questions.

Christian Berger

Dr Jörg Neugebauer

Can we produce shorter implants than 6 to 8 mm at all and still get stable implant-abutment connections? Where are the limits, from a mechanical and biological point of view?

Neugebauer: Attempts to develop very flat implants were abandoned in the past because they produced extensive alveolar ridge defects in the event of biological complications. In today's standard cylindrical implants, the depth of placement of the implant-abutment connection is the key factor for long-term stability. This is exactly where conical implant-abutment connections show their main advantages, and consequently, ultrashort implants with endosteal anchoring lengths of 4 to 5 mm are conceivable. But: Anyone who wishes to use short and ultrashort implants must realize that their anchoring mechanisms are different from those of the previously used "pure" screw-type implants – both in terms of prosthetics and in terms of the bone. Deep grooves or flanges on the implant and a tapered implant neck assist in achieving excellent osseointegration and thereby ensure a biomechanically favourable, physiological transmission of forces, something that even may result in the structural compression of low-quality bone.

The stability of the connection is the limiting factor, especially in the case of large vertical defects. Looking at the internal connection, for what cases do you still advocate short implants?

Neugebauer: When it comes to implant prosthetics, much attention has been paid to implant-abutment connections in recent years. Unfortunately, the designs chosen often tended to be rather complicated; even if the ensuing challenges in terms of manufacturing technology were mastered, they often resulted in intraoral complications in the actual clinical practice, such as abutment or screw loosening. The desire to combine conical abutment connectors with screw fixation unfortunately often triggers the "belt and suspenders" phenomenon, where ultimately none of the two anchoring mechanisms is fully functional, which in turn gives rise to prosthetic complications once again. This means that a sufficiently large cone should be used, which must be able to completely absorb all masticatory forces. Especially with ultrashort implants, we would have to return to implant diameters of 4.5 mm, which in longer cylindrical implants would result in very voluminous implant bodies. But especially in the case of ultrashort implants, small

implant bodies that maximize utilization of the existing bone supply yield good long-term results. Several authors have shown that short implants with a microstructured surface result in fewer complications even if the crown-to-implant ratio is high.

Short implants often make extensive augmentation unnecessary. But are there cases in which augmentation remains indispensable even with short implants?

Neugebauer: Our team has increasingly placed short implants in recent years. Nevertheless, there is a significant number of augmentation procedures when the bone supply is insufficient to place short implants – for example in the posterior mandible less than 4 mm above the mandibular canal. A similar situation exists in the posterior maxilla in patients with extremely extended maxillary sinuses, or very often when previous implants have been lost and the ridge contour must be restored before replacing those implants. And especially in young patients, implants in the anterior maxilla still require bone augmentation for optimal support of not only the hard but also the soft tissue.

Diameter-reduced implants also help avoid (lateral) augmentation. How short can or should those implants be today? From what length upward would we have to accept the risk of fracture?

Neugebauer: The evidence for diameter-reduced implants is quite controversial. Implants with a length of 8 mm and a diameter of 3.5 mm should be used only in exceptional cases, since the mechanisms of ultrashort implants are not applicable here and the contact surface would be relatively small. In the case of thin implants, the restorative approach used also plays a decisive role. It is possible that additional implants must be placed in order to obtain sufficient stability for the overall system. It is not acceptable to simply see what you want to see in a given reduced design you attempt to use when conditions are unfavourable, without considering the chosen design's specific concept.

When is free-hand placement of short implants advisable, and when is it better to use a 3D template?

Berger: Good planning is always the key to success – even with long implants. Whether or not a template is necessary or free-hand insertion is pos-

sible will depend mainly on the experience and skill of the dentist. It is not the "short vs long" that makes the difference. All implants have to be placed in the correct position and with the correct inclination in order to fully utilize the existing bone supply while facilitating restoration later. The placement of the implants is also important for subsequent implant maintenance.

Obviously, zygomatic implants are anything but short. The learning curve is steep. In the final analysis, does this mean that they should only be used by oral surgeons?

Berger: It certainly requires intensive training to anchor 50-mm implants in the zygomatic bone in the right place and with the right inclination starting from the oral cavity. Today this is usually done in conjunction with an external sinus lift, to avoid implants perforating the maxillary sinus and its mucosa. This necessary training and the requisite skills are not dependent on a specific surgical training, but such training is of course a solid foundation for acquiring the necessary knowledge and skills for zygomatic implants.

Implant surgeons and restorative dentists "must undergo appropriate training to be able to determine the best possible treatment for each patient", as the 11th European Consensus Conference expressed it. Do we currently see problems in this regard?

Berger: The market for oral implantology is just that, a market. Unfortunately, many innovations are brought to market with the subliminal promise that this implant or that method would achieve results "easily" or "without any problems". But each therapy has its own indications and therefore its own possibilities, complications and limitations. So it would be wrong to assume that short, angulated or diameter-reduced implants can be used to cover up one's own shortcomings in surgical technique. Those implants were not developed for operators who have not (yet) mastered the external sinus lift and bone augmentation. What characterizes experienced and consistently successful implantologists is that they are able to choose and implement, from today's wide range of available implants, the best solution for the patient's specific case. In many cases, this will simply mean "normal" implants; sometimes we have to take the long road of grafting and sinus floor elevation, but more and more often we can also use short, angulated or diameter-reduced implants. In any case, the dentist needs advanced continuing professional development and a well-trained team.

What needs to be improved specifically?

Berger: I would not speak of improvement; I tend to consider this a professional and scientific inevitability. Good continued surgical and prosthetic training and development is a prerequisite for long-term implantological success. It is self-evident that innovations are presented by manufacturers, who also conduct the requisite training. It is the duty of the scientific societies and the profession at large to scrutinize these developments critically at conventions and other events and to compare innovations with other available methods. So please don't simply buy implant system X, attend only the training courses of manufacturer X and read only the publications offered by manufacturer X. Dentistry is always in part an empirical science. Science always means critical dialogue and implantologists must always remain self-critical.

Do we need a formally recognized specialization within dentistry for oral implantology and implant prosthetics?

Berger: We need more and more highly qualified and continually trained implantologists. "Specialist in Oral Implantology" – no, that is not what we need. Specialists run a risk of limiting themselves to their own subject. Unfortunately, the situation in orthodontics had long been such that dentists and orthodontists did not engage in much dialogue. Ever since this changed, everybody has benefitted. From an implantological point of view, I only think of the orthodontic extrusion of hopeless teeth and roots in order to optimize the bone supply for subsequent implant placement. Today there is an increasing need for cooperation between dentists who specialize in various fields. Through prophylaxis, we try to keep as many teeth as possible naturally healthy for as long as possible. If a tooth is damaged, we use minimally invasive therapies, and even in the case of progressive periodontal breakdown we try to preserve teeth for as long as humanly possible. Only when teeth really need to be removed and replaced do prosthetics and oral implantology come into play. And then we need, as I said before, an overall networking approach, not cutting up dentistry into different specialties. In this networking approach, it's the dental team consisting of the dentist, the assistant and the dental technician that plays an increasingly important role in diagnosis, therapy and post-treatment.

The interview was conducted by Anne Barfuß, editor of Dental Magazin. Reprinted by kind permission of Dental Magazin (issue 3/2016).

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24th BDIZ EDI European Committee meeting

A growing committee

On the occasion of the 11th Expert Symposium of BDIZ EDI in Cologne in February this year, the European Committee of BDIZ EDI met at the Dorint Hotel. The partner organizations were well represented, and there were some invited guests from Macedonia.

The European Committee of BDIZ EDI met for the 24th time – this time in Cologne. Here: members of the committee.

At the 24th meeting of the European Committee, *Christian Berger* (Kempten), President of BDIZ EDI, engaged in discussions with *Dr Antonio Bowen* (Madrid), the new President of the SEI, *Dr Peter Fairbairn* (London) of the ADI UK, *Professor Antonio Felino* (Porto) of the SPCO, *Professor Vitomir Konstantinovic* (Belgrade), *Dr Dusan Vasiljevic* (Friedeburg), President of the Serbian partner organization USSI EDI, *Dr Jeroen Pepplinkhuizen* and *Dr Jan Willem Vaartjes* (Netherlands), *Dr Vikas Gowd* (Hyderabad) and *Vijay Kammula*, *Dr Thomas Fortin* (Lyon), *Dr Guido Schiroli* (Genoa), *Professor Hakan Özyuvaci* (Istanbul), *Dr Fisnik Kasapi* (Skopje), *Marianne Steinbeck*, project manager of EDI Journal, *Anita Wuttke*, chief editor, as well as *Dr Detlef Hildebrand* and *Dr Peter Ehrl*, members of the BDIZ EDI Board.

Christian Berger informed about the upcoming 10th European Symposium to be held jointly with Quintessence Publishing in Verona, 26 to 28 May 2016, and invited the committee members to participate. Next, *Anita Wuttke* presented the work of BDIZ EDI and discussed the political connections the association has in Brussels. Given the diverse range of training events and topics offered by partner organizations, the editors of EDI Journal repeated their suggestion to publish event dates and topics from different countries.

An important issue that BDIZ EDI is currently engaged in in Germany is the anti-corruption law. In his presentation, *Christian Berger* pointed out the parallels with the Physicians Payments Sunshine Act and the complications that academic medical professions – physicians, dentists, psychotherapists – are facing as the new law on combating corruption in health care enters into force. *Berger* also informed the European Committee members on the alternative bill that BDIZ EDI presented in Berlin.

Looking across the borders

In the discussion that followed the introductions it became clear that dentistry in Europe – and beyond – is often struggling with similar problems. In the Netherlands, the profession of dental hygienists is supposed to assume part of the tasks traditionally reserved to the dental profession – more massively so than in other European countries. In Britain, physicians and dentists performing surgical procedures are greatly restricting their willingness to perform complicated treatments in the light of a threatening avalanche of lawsuits. In France, the government wants to completely restructure the health system based on the Anglo-Saxon or Spanish model. In Spain, more and more "low-cost clinics" are springing up that are operated by insurance companies. In Turkey, the number of state-owned dental faculties at universities exhibits inflationary growth. In India, there is a great need for a solid dental education and postgraduate training in view of the increasing expectations of a growing middle class.

At the end of this insightful international exchange, BDIZ EDI President *Christian Berger* thanked the participants for their frankness in the discussion and for their willingness to attend the European Committee meeting every year. The editors of EDI Journal will address some of the topics mentioned in the upcoming issues.

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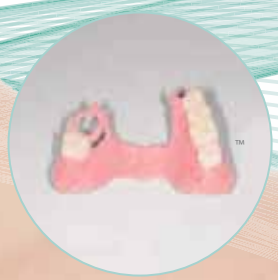
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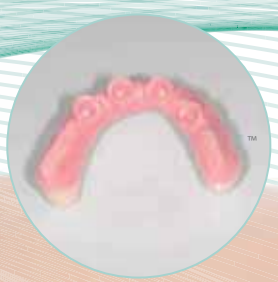
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10th European Symposium of BDIZ EDI/2nd Quintessence International Congress in Verona

Photo: fotolia.com/Ekaterina Belova

“State of the art” in a historical setting

BDIZ EDI will again be a partner at the 2nd Quintessence International Congress. From 26 to 28 May 2016, the 10th European Symposium of BDIZ EDI will be held under the auspices of Quintessenza Edizioni in Verona. The motto of the symposium will be “State of the art”. Members of BDIZ EDI are eligible for a special discount.

This 2nd International Congress will be held in Verona and organized by the Italian branch of Quintessence Publishing. Verona was named a UNESCO World Heritage Site in 2000. A number of historical buildings ranging from the Arena, the Roman theatre and the Gavi Arch to the Porta Borsari city gate and from the excavation area of Porta Leoni to the Scavi Scaligeri (now the International Centre for Photography) still bear witness to the erstwhile historical importance of Verona as a political and economic centre.

Photo: fotolia.com/sasimoto

Gavi Arch in Verona.

The well-preserved amphitheatre, well integrated into today’s cityscape, was probably completed under the Roman emperor *Tiberius* around 30 CE, half a century before the Colosseum in Rome (80 CE), making it one of the earliest examples of an amphitheatre following the advanced Roman blueprint, in the form of a closed oval. The building is 138 m long, 109 m wide and is the second largest preserved amphitheatre, next to the Colosseum in Rome. The arena inside consists of 45 rows of seats and today accommodates about 22,000 spectators. Each summer, it is the venue of the famous open-air Opera Festival.

The arena is surrounded by the Piazza Bra with the paved Listone, built in 1730. The wide sidewalk with many restaurants runs in front of the facades of the palaces on the west side of the square. ››

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About the congress

The 10th European Symposium of BDIZ EDI/2nd International Congress of Quintessenza Edizioni will be held in the Palazzo della Gran Guardia. Simultaneous interpretation (Italian – English) will be available for the entire programme. The Congress President will be *Professor Pier Francesco Nocini*, Director of the Surgery Department, Clinic of Maxillofacial Surgery and Dentistry at the University of Verona.

The scientific programme is innovative, attractive and transparent and aims to give all participants clear take-home messages, something new and useful for their daily practice.

The conference opens on 26 May under the theme of "The Future of Dentistry", where the podium will be dominated by young speakers (under 40). The day will end with a speaker contest. The winner of the participant vote will be invited to lecture at the 3rd Congress of Quintessenza Edizioni in 2018.

On Friday and Saturday, the congress will continue featuring speakers with an international reputation. The conference is divided into several sessions:

- Rehabilitation of the completely edentulous patient
- Implant-supported prostheses and aesthetics
- Orthodontics
- Periodontology/aesthetics
- State-of-the-art restorative dentistry and digital dentistry

On Saturday, 28 May, three free courses open to dentists, hygienists and dental technicians will be held in parallel to the conference.

Speakers on Friday and Saturday

Enrico Agliardi, Alessandro Agnini, Andrea Agnini, Christian Berger, Tommaso Cantoni, Andrea Chierico, Enrico Cogo, Fabio Cozzolino, Davide Faganello, Ueli Grunder, Mario Imburgia, Pasquale Loiacono, Giuseppe Luongo, Anna Mariniello, Mauro Merli, Vincenzo Musella, Jörg Neugebauer, Giovanna Perrotti, Massimiliano Politi, Giovanni Polizzi, Loris Prosper, Giano Ricci, Marisa Roncati, Roberto Spreafico, Tiziano Testori, Francesca Vailati, Tomaso Vercellotti, Giovanni Zucchelli.

Registration

The congress programme is available online at www.quintessenzaedizioni.com. BDIZ EDI members are eligible for a reduced registration fee of 250 euros (regular price: 300 euros). To get this discount, please forward the registration on page 32 to BDIZ EDI. The programme, the registration form for members and a list of hotels are also available on the BDIZ EDI website at www.bdizedi.org > English. Use the following link for hotel bookings: www.veronabooking.com/index.cfm/de

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More information

Congress location:
Palazzo della Gran Guardia
Bra Square, in front of Arena
Verona
Italy

Organizing office:
Quintessenza Edizioni
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Friday, 27 May 2016 I Dental Congress

08.30–09.00 Welcome of the Director *Lauro Dusetti* and presentation of the congress
Tiziano Testori, Pier Francesco Nocini

The rehabilitation of the edentulous patient

Moderators: Giovanni Zucchelli, Giuseppe Luongo

09.00–09.30 Therapeutic alternatives in implant treatment in complex clinical cases
Mauro Merli

09.30–10.00 Immediate loading rehabilitation of the athrophic maxilla with angled implants
Enrico Agliardi

10.00–10.30 Cawood and Howell Class V and Class VI mandibular atrophies: treatment protocols
Tiziano Testori

10.30–11.00 Early and late complications in implant dentistry
Jörg Neugebauer

11.00–11.30 Break

11.30–12.00 The clinical results of the first 15 years of use: the piezoelectric bone surgery in Italy and in the world
Tomaso Vercellotti

Prosthesis on implants and aesthetics

Chairmen: Giano Ricci, Dino Re

12.00–12.30 The Digital Revolution: the learning curve
Alessandro and Andrea Agnini

12.30–13.30 Implants in the aesthetic zone
Ueli Grunder

13.30–14.30 Lunch

14.30–15.00 Full Digital Dentistry: the total digitalization of the procedures of the modern dental practice
Giuseppe Luongo

15.00–15.30 Advantages of guided surgery in extraction sockets and in the tuber-pterygoid area
Giovanni Polizzi

15.30 – 16.00 Prosthetic planning in guided surgery
Tommaso Cantoni

16.00–16.30 The tissue and color integration of restorations in the aesthetic area: advice for the management of clinical problems
Andrea Chierico, Davide Faganello

16.30–17.00 Break

17.00–17.30 The influence of implant positioning for long-term success – avoiding implant malpositioning
Christian Berger

17.30–18.00 How does gingival morphology influence tooth preparation? How much importance has marginal fit in order to obtain long-term follow-up?
Loris Prosper

18.00–18.30 Discussion

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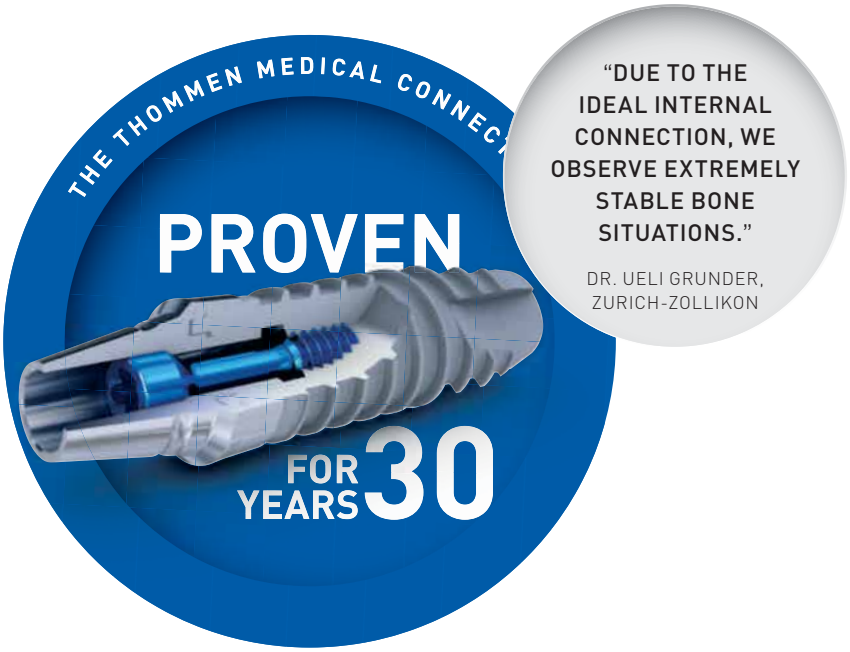

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Saturday, 28 May 2016 I Dental Congress

Orthodontics

Chairmen: Roberto Spreafico, Tomaso Vercellotti

09.00–09.30 Bracketless fixed lingual orthodontics, a new approach in orthodontic treatment
Anna Mariniello, Fabio Cozzolino

09.30–10.00 Effectiveness of 3D cephalometric in programming of orthognatic cases
Giovanna Perrotti, Massimiliano Politi

10.00–10.30 Break

Periodontics and aesthetics

10.30–11.15 Periodontics today: What does it mean? Considerations based on 44 years of clinical practice
Giano Ricci

11.15–12.00 Peri-implant aesthetic defects treatment
Giovanni Zucchelli

12.00–13.00 Additive dentistry vs subtractive, which follow?
Francesca Vailati

13.00–14.00 Lunch

The modern "restorative dentistry" and digital dentistry

Chairmen: Franco Brenna, Andrea Chierico

14.00–14.30 Planning the aesthetics of the prosthetic restoration through digital tools: current concepts and new trends
Mario Imburgia

14.30–15.00 Prosthetic design: clinical and technical aspects in the system "Aesthetic Preview"
Vincenzo Musella

15.00–15.30 Break

15.30–16.15 Partial and full restorations in the digital era: Indications, materials and clinical applications
Roberto Spreafico

16.15–17.00 Closing of the conference and presentation of the 3rd Congress 2018
Pier Francesco Nocini, Tiziano Testori

Saturday, 28 May 2016
Open courses to dentists, dental technicians and hygienists

09.00–13.00 The role of digital photography today in the analysis of dental optical anatomy
Pasquale Loiacono

09.00–13.00 Dental bleaching: materials and techniques for success
Enrico Cogo

09.00–13.00 Nonsurgical periodontal therapy – indications, limits and clinical protocols with the additional use of diode laser. Nonsurgical treatment of peri-implantitis
Marisa Roncati

Photo: fotolia.com/Sergii Figurnyi

Registration: Fax to +49 228 93592-46 or mail to BDIZ EDI: office-bonn@bdizedi.org

10th European Symposium of BDIZ EDI, 26 to 28 May 2016, Palazzo della Gran Guardia, Verona

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18th Curriculum Implantology

The 18th Curriculum Implantology of BDIZ EDI in collaboration with the University of Cologne will be launched in Cologne in October 2016. The curriculum consists of different modules that run over a period of one year.

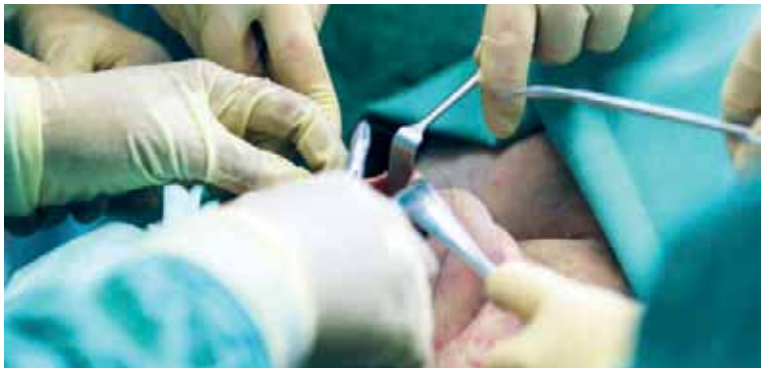
In eight modules, the BDIZ EDI Curriculum Implantology, led by *Professor Joachim E. Zöller*, addresses indications, surgical and restorative procedures as well as complications within oral implantology. The programme includes the latest aspects of minimally invasive surgery (sinus floor elevation, bone splitting, flapless surgery) as well as intensive training in 3D diagnostics and their surgical application using 3D surgical templates, which are becoming increasingly popular in clinical oral implantology.

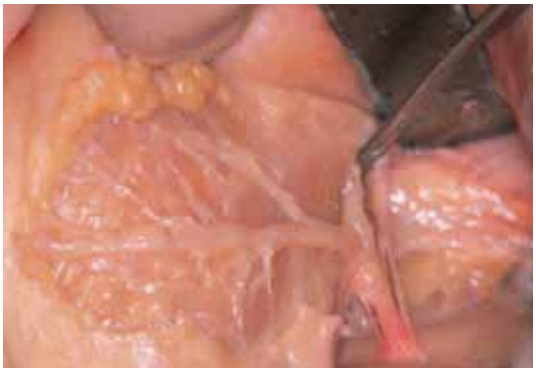
A solid foundation

The BDIZ EDI Curriculum Implantology appeals not only to young dentists and to newcomers to oral implantology. Its modular design makes it particularly interesting to dentists who perform implant surgery only occasionally but want to make sure their treatment rests on solid ground. The curriculum allows its successful graduates to master even difficult indications and to address potential complications successfully. Other special features include the high proportion of practical exercises as well as the fact that training modules not offered by BDIZ EDI can be integrated into the curriculum if they are documented to be scientifically sound.

Current and former attendees particularly appreciate the surgical exercises on human specimens that make for realistic hands-on workshops. These practical units are an integral part of each curriculum module. Human specimens at the Anatomical Institute of the University of Cologne have been prepared to different stages and tissue depths so that not only the tissues' spatial orientation can be studied, but it can also be appreciated which structures should be preserved wherever possible. ››

The Curriculum Implantology of BDIZ EDI includes many practical exercises on animal and human specimens.





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Teaching methods

One innovation team leader *Dr Hans-Joachim Nickenig* implemented is certainly the "presentation" block. Here, participants will present their own cases to their peer group. This, in addition to intensive discussions and the development of strategies for implant surgery and implant restoration, prepares attendees for their final exam, which has been integrated into the final module. Thus, once the last module has been successfully completed, the candidate can be granted his or her certificate.

Comparative analysis of different implant systems and protocols make it easier for participants to make sound choices in clinical practice. Great emphasis is also placed on the development of a surgical and restorative standard protocol (even for beginners). Members of BDIZ EDI pay a reduced registration fee. If you are interested in this course or would like to come to Cologne for a special basic or advanced course for two to three days, please contact our Bonn office at office-bonn@bdizedi.org.

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Modules of the 18th Curriculum Implantology of BDIZ EDI and the University of Cologne

Module 1, 6–7 October 2016
Fundamentals of oral implantology
- Anatomy and histology of the stomatognathic system
- Biology of the bone and osseointegration
- General diagnostics in oral implantology
- Patient education in oral implantology

Anatomy (Friday): Studies on human specimens

Module 2, 24–25 November 2016
Treatment planning and diagnosis
- High-risk patients, local anaesthesia, monitoring
- Implant therapy in patients with compromised blood coagulation
- Aesthetic diagnosis
- Case presentations I (*)
- Suturing techniques and incisions
- Surgical protocol

Practical exercises: implant insertion into a plastic jaw, suturing techniques and incisions

(*) For the presentations, participants are encouraged to put their own cases up for discussion.

Module 3, 19–20 January 2017
Surgical techniques and advanced diagnostics
- State-of-the-art tooth extraction
- Limits and options of socket preservation
- 3D diagnostics and guided implant surgery
- Comparison of 3D guiding stent systems

Practical exercises: 3D workshop

Module 4, 9–10 February 2017
Implant-supported restorations
- Antibiotic therapy
- Emergencies in the dental practice
- Implant prosthodontics I (single and multiple missing teeth, cantilever situations)
- Comparison of implant systems

Practical exercises: Biological ridge widening; exercises on calf's ribs

Module 5, 9–10 March 2017
Augmentation, part 1 – Regional bone augmentation
- Unfavourable biomechanics vs. augmentation
- Autologous bone and bone substitutes
- Membrane technique
- Immediate implant placement
- Sinus floor elevation

Practical exercises: sinus lift exercises on lamb skulls/pig jaws/ apples/eggs – splitting calf's ribs

Module 6, 4–5 May 2017
Soft-tissue management
- CBCT in implant therapy
- Augmentation with connective tissue and bone substitutes
- Hands-on soft tissue
- Implant prosthodontics II (partially and completely edentulous jaws)
- Case presentations II (*)

Practical exercises: soft tissue (on pig jaws)

(*) For the presentations, participants are encouraged to put their own cases up for discussion. Preparation for the final exam.

Module 7, 18–19 May 2017
Augmentation, part 2 – Remote autologous bone grafts
- Iliac-crest transplants
- Distraction osteogenesis
- An alternative to augmentation: nerve lateralization, angulated implants
- Expert opinions in implantology

Practical exercises: anatomy, block augmentation, sinus floor elevation

Module 8, 29–30 June 2017
Recall and complications
- Implant re-entry, recall and maintenance
- Growth factors in oral implantology
- Peri-implantitis
- Assistance in oral implantology

Friday afternoon: Final examination and certificate award ceremony

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Certification as an EDA Expert in Implantology

Qualification for experienced implantologists

For many years, BDIZ EDI has been catering to experienced and well-versed oral implantologists by offering the certification exam for EDA Expert in Implantology. Jointly with the European Dental Association (EDA), BDIZ EDI regularly invites interested dentists to take the certification exam, which we would like to present in this article.

That quality is of paramount importance to BDIZ EDI is no secret. BDIZ EDI has demonstrated this in many different areas – legal and accounting, materials testing, postgraduate education, the annual Guidelines of the European Consensus Conference (EuCC) on current implantological issues and finally the qualification of court experts. BDIZ EDI also supports dental education with its Curriculum Implantology that introduces aspiring dentists and young implantologists to this dental specialty in eight well-organized modules.

Admission requirements for the certification exam

Certification as Expert in Implantology requires very good to excellent skills and knowledge. Candidates must meet the following admission requirements:

- 250 EDA-recognized continuing education/training hours in various sub-disciplines of implantology
- Submission of ten documented, independently performed implantological treatment cases
- At least five years of professional activity, primarily in the field of implantology

Specific experience and primary activity in the field of implantology must be documented by at least 400 implants inserted and 150 implants restored within the past five years. Candidates who already obtained qualifications in oral implantology (e.g. from other professional societies) may submit the appropriate credentials with their application for certification as EDA Expert in Implantology.

The exam

Candidates meeting all the requirements will be admitted to the examination. The examination board of BDIZ EDI and EDA consists of recognized specialists. The exam has a theoretical and a practical part, both of which must be completed successfully.

The procedure is as follows: The theoretical part of the exam will start with a discussion of the documented cases. In addition, candidates are expected to answer questions related to oral implantology and closely associated fields. The theoretical examination usually takes no longer than 60 minutes; it may be administered to candidates in groups. The practical part of the examination covers one or more recognized, state-of-the-art treatment method or methods and/or treatment plans covering some aspect of oral implantology. Candidates will be informed of the respective topic two weeks before the exam date. Candidates are responsible for providing the required materials and instruments on the day of the exam. The examination as a whole is subject to a fee to cover the cost incurred by the examination board.

New EDA Experts in Implantology are nominated by the president or vice president of the EDA certification committee.

AWU

More information

To register for the next certification exam, please go to www.bdizedi.org and select English > Professionals > Expert or write to the BDIZ EDI office in Bonn at office-bonn@bdizedi.org.

European Association of Dental Implantologists

Applicant's address:

Full name _____

Full address _____

_____

_____

E-mail _____ Date _____

Forward by mail or fax to:

European Association of Dental Implantologists (BDIZ EDI)
An der Esche 2
53111 Bonn
Germany

office-bonn@bdizedi.org
Fax +49 228 93592-46

Certification exam: EDA Expert in Implantology
Application for accreditation

I hereby apply for the EDA Expert in Implantology certification exam (EDA = European Dental Association).

I am qualified for this exam as defined below:

Member of BDIZ EDI ☐ yes ☐ no

Member of the following Societies/Associations: _____

I am: ☐ a dental clinician ☐ an oral surgeon ☐ a maxillofacial surgeon

I meet the training requirement of 250 hours of postgraduate education. ☐ yes ☐ no

Education and experience:

Surgery:

Inserted implants: ☐ less than 400 ☐ more than 400

Sinus lift: ☐ yes ☐ no

Close to nerve: ☐ yes ☐ no

Advanced atrophy of the jaw: ☐ yes ☐ no

Soft-tissue augmentation: ☐ yes ☐ no

Bone augmentation: ☐ yes ☐ no

Prosthodontics:

Implant-supported restorations: ☐ less than 150 ☐ 150 or more

During the exam, I will be able to present documentation for 10 treatment cases. ☐ yes ☐ no

I understand that the examination board will review my qualifications and vote to accept or reject my application. Furthermore, I declare that all images I present are my own and that the implants have been inserted and prosthetically restored by me.

_____ _____

Applicant's signature Date

Having successfully passed the exam and paid the requisite fee, I will be certified as EDA Expert in Implantology.

BDIZ EDI on Facebook and Twitter

Keep up!

BDIZ EDI has been represented on Facebook with its own page since 2010. Here, we publish up-to-date information and report on the major events, but also about the small everyday things. There is a special focus on the announcements and coverage of BDIZ EDI events. But you can also find information on other topics, available to members and non-members alike. Of course visitors have the opportunity to comment and exchange opinions, too.

The f-logo and the Like-button have become very popular.

BDIZ EDI is also represented on Twitter. Follow us and stay informed – @bdizedi.

Not only can members keep connected with their association via Facebook – but also non-members and interested dental personnel can learn more about the activities and new services of BDIZ EDI, such as billing recommendations.

Facebook was founded in 2004 and is operated by Facebook Inc. Meanwhile, co-founder and CEO *Mark Zuckerberg* counts among the richest IT and internet players in the United States. With a market value of more than 300 billion dollars by the end of 2015, Facebook is one of the most valuable internet companies worldwide. The social-networking website now has more than 1,5 billion registered members. Over one billion is said to visit the service every day, a large part of which are mobile users.

According to various statistics, Facebook is one of the five most visited websites in the world. In Germany it ranks second, right behind Google. The web interface of Facebook is available in at least 45 languages. Ever since its beginnings, Facebook has been the target of criticism due to poor data privacy practices, especially by European privacy advocates and security experts. It is therefore recommended to enjoy the benefits of the network – such as the rapid and simple exchange of information – while exercising the greatest caution when passing on personal or even confidential data. For that end, BDIZ EDI will continue to rely on other proven means of communication.

Dr Stefan Liepe, BDIZ EDI Board

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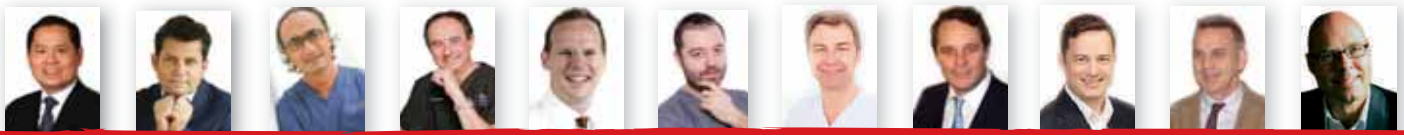

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Council of European Dentists (CED) General Meeting

Marco Landi is the new President

The Council of European Dentists (CED) has a new President. Dr Marco Landi from northern Italy, who had been elected at the CED General Meeting in Brussels in 2015, will be the successor of Dr Wolfgang Doneus from Austria. Doneus had not sought re-election after two terms in office.

Dr Marco Landi

Dr Landi will be guiding the umbrella organization of 32 European dental associations in Brussels over the next three years, representing about 340,000 European dentists. *Landi* had already served on the Board since 2009, most recently as Vice President. New Board members are *Dr Hans Schrangl* from Austria and *Dr Piret Väli* from Estonia. *Dr Alexander Tolmeijer* was confirmed in office. Continuing Board members are *Dr Pirkko Grönroos* from Finland, *Dr Peter Engel* from Germany and *Dr Susie Sanderson* from the UK.

The CED represents the interests of dentists towards the EU institutions and responds rapidly to new developments at European level that affect dental interests in the health and service sectors (Services Directive, Professional Qualifications Directive, dental amalgam debate, deregulation trends with respect to the liberal professions, and more). *Doneus* has successfully led the CED over the past six years and made sure it carried political weight in Brussels.

BDIZ EDI has maintained good relations with the CED for many years and sent *Landi* a note wishing him success in his new role. The CED President sent thanks and expressed the hope for the fruitful cooperation with BDIZ EDI to continue.

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Reelected President of the Portuguese Dental Association

Orlando Monteiro da Silva again on top

On 9 January 2016 the swearing-in ceremony of the new governing bodies of the Portuguese Dental Association took place in Lisbon.

Dr Orlando Monteiro da Silva

The ceremony was held at Palace Foz in Lisbon and was attended by numerous representatives of the Portuguese professional association as well as politicians like *Teresa Caeiro*, Vice President of the Portuguese Parliament, *Carlos César*, leader of the ruling Socialist Party at the Parliament, and *António Correia de Campos*, former Minister of Health, among other academic, professional and scientific personalities. *Dr Orlando Monteiro da Silva* was reelected President of the Portuguese Dental Association. *Paulo Ribeiro de Melo*, former Secretary-General, was elected member of the new General Council. *João Carames* is now President of the General Assembly and *Ana Cristian Mano Azul* is the designated President of the Fiscal Council. In his speech, the reelected President *Dr Orlando Monteiro da Silva*, immediate Past President of the FDI said: "I am happy to inform you that the single candidate list that I submitted was elected for a further four year mandate by the General Assembly on 15 December 2015. Under PDA's new statutes the governing bodies now have a General Council, composed of 50 members representing all regions throughout Portugal. We have new challenges ahead, and new commitments to pursue, so we will be very busy in contributing to the improvement of oral health care in Portugal."

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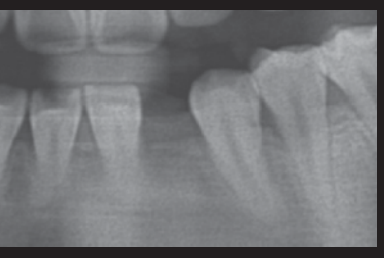
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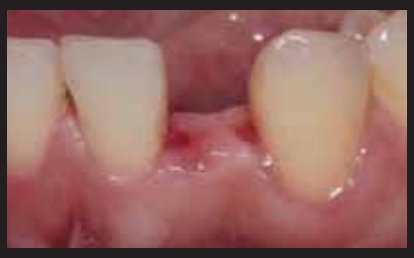

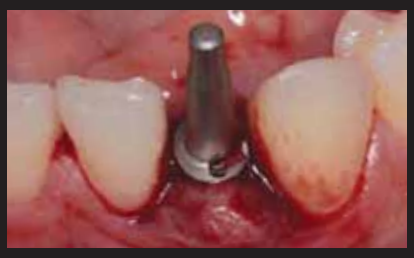
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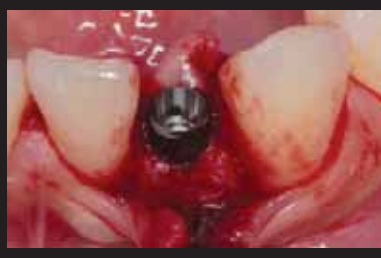
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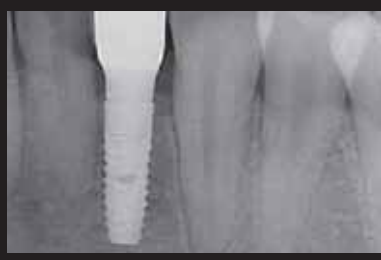
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Interview with Dr Antonio Bowen, Madrid, President of the Sociedad Española de Implantes (SEI)

Dental implantology in Spain

Since 2014, the Sociedad Española de Implantes (SEI) has had a new President: Dr Antonio Bowen is an oral surgeon and implant clinician from Madrid. EDI Journal has asked him about the situation of dentistry and dental implantology in Spain and the problems dentists are facing.

Dr Bowen, how interested in dental implants are patients in Spain?

Patients in Spain are highly interested in dental implants because they are looking for the best solutions for their oral health, and implants are considered as the superior treatment option.

Are patients well informed about innovative techniques and treatment options?

Patients know that dental implantology exists. But the overall publicity and the information bias that is a result of the ubiquitous access to the Internet interfere with a sound knowledge of the treatment options with implants.

How interested in dental implants are dentists in your country?

Dental implants account for more than 40 per cent of the dental market in Spain. They are essential for any dental clinic. Dental implantology is one of the most interesting fields for dentists, as demonstrated by the fact that 50 per cent of all courses in dentistry deal with implants or related issues.

How do dentists view dental implantology – as a welcome challenge or as undesirable?

The roots of modern implantology in Spain lie in the late 1980s. However, only a small number of dentists embraced it in the 1990s because the older generation did not believe in it. Then, in the 2000s, implantology took off on a broader scale, marking the transition to modern dentistry; practically all dentists and dental clinics incorporated dental implantology in their daily practice.

What type of education or postgraduate training does a dentist (or physician) need in your country to be able to work in dental implantology?

All dentists can work in dental implantology because there are no official dental specializations in Spain. However, it is widely believed that postgraduate training for dental implantology is necessary. Therefore, we have many academic master programmes (which take two years) especially for implantology, as well as master programmes in oral surgery or periodontics, where students get specific implantology-related training.

Furthermore, the official Spanish association for implantology SEI offers programmes of a shorter duration for implant training, and the dental industry provides trainings for their specific systems or products.

What is the total number of dentists in your region and throughout Spain?

In Spain, there are more than 30,000 registered dentists, and in my region – Madrid –, there are more than 10,000, which means approximately 30 per cent of all dentists in Spain.

How many of them are active in implantology?

We think that some 40 per cent of the dentists are working in implantology, in surgery, in prosthodontics or a combination of them. But only two per cent of all dentists have earned a postgraduate degree in implantology.

Is it an attractive proposition in your country to be an active dental implantologist? If so, why?

Many young dentists want to work in implant dentistry because of the complexity of the treatments, but also for economic reasons. Problems arise with low-cost clinics which employ young dentists who cannot perform treatments adequately because they lack appropriate working conditions. The conditions have even worsened for dental implantologists in recent years, so that many of them are moving to other fields of dentistry. ››

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Are there any specific regulations for dentists offering implantological treatment in their practice?

There are no specific regulations. You only need the official dentist degree and a dental clinic which meets the official requirements and is certified by the Spanish health authorities.

Who pays for an implantological treatment, and how?

In Spain, patients always pay for their treatments. In clinics owned by a dentist, the patient pays when the medical treatment is completed, but in low-cost clinics patients pay when the treatment starts – in many cases with financial assistance from a bank.

This situation has produced considerable problems as so many low-cost clinics in Spain went under in the crisis. Many patients who paid treatments in advance are left without doctors and without money, but they still have to pay their monthly rates to the bank.

What percentage of the cost is borne by patients, their (statutory or private) health insurer and/or other institutions or organizations?

Patients pay 100 per cent of the cost. Public institutions pay nothing at all.

What are the problems implantologists are facing in your country?

The real problem is the huge number of dentists. The private colleges do not impose ceilings on admissions. Moreover, the low-cost clinics are changing the way the dental market works in Spain: Dental clinics are becoming businesses rather than being healthcare institutions.

The main problem may be the absence of a law stipulating that the owner of a dental clinic must be a dentist. Moreover, the legal regulation is unsatisfactory when it comes to misleading advertisements and a strict ban on advertising in health care.

How do you believe dental implantology in your country will develop – as the ideal solution in prosthodontics or as one concept of many?

For many years, implants have been the best solution for replacing missing teeth and for other dental treatments. These days, most of the dentists consider implants as one of various prosthodontic solutions, but not necessarily the best one.

I think that over the next years, the use of dental implants will be governed by strict protocols. They will have significance, but not quite as much as today.

Please name three topics you would like BDIZ EDI to assign priority to.

Treatments protocols for periodontitis; GBR for vertical bone augmentation; treatment options for the atrophic posterior mandible.

What are your wishes for dental implantologists in your country?

My wishes are the same for the whole field of dentristy in Spain: limits to the number of dentists, limits to the number of new students of dentistry, the creation of a new official specialization in dental implantology, regulation of (or an outright ban on) health advertising; and a law which stipulates that the owner of a dental clinic must be a dentist or a company owned by dentists.

I would like to see dentistry and dental implantology to be a health service for people and not a business. I am aware that this is already the case in the majority of countries and I think that it would be easy to achieve in Spain, too. In these days, we go through the consequences of the current situation: low-cost clinics closing, patients abandoned, legal fraud ... a puzzle that is very difficult to solve.

What would be the significance and the objective of an international professional journal in the field of dental implantology?

I think the significance is evident: It is the best means of communication for all implantologists and a very good panel to present current scientific knowledge, new products and the consensus in the field.

What would be your favourite topics for a panel discussion or an international symposium?

New techniques for bone regeneration, stem cells therapy applied to bone regeneration and new technologies in dental implantology.

Dr Bowen, thank you very much for this interview!

AWU

Portrait of Dr Antonio Bowen

- Medical degree (MD): Universidad Complutense de Madrid (UCM)
- Dental degree (BDS): UCM and Universidad Iberoamericana (UNIBE)
- Doctor in Medicine and Surgery (PhD): UCM
- Oral surgeon: Training and residence in Hospital Gregorio Marañón, Madrid
- Postgraduate in Implantology (Udico programme): University of California Los Angeles (UCLA)
- Fellow of the European Board of Oral Surgery: EFOSS
- Head of the course of Dental Implantology: Universidad San Pablo CEU (1999–2004)
- Professor at the Facultad de Medicina, UCM (1993–2008)
- President of the Sociedad Española de Implantes (SEI): since 2014

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Dr Wolfgang Doneus, Past President of the CED, on the relationship between the dentist and the dental team

The dentist is fully responsible

In 2015, the General Meeting of the Council of European Dentists (CED) adopted a resolution in Riga to promote high standards of oral health care and dentistry and to establish principles relating to the structure of the dental team and its attitude towards patients and patient safety. This includes the issue of responsibility and delegation in the dental office.

The recommendations are intended to demonstrate

- the importance of the leading function of the dentist within the dental team to effectively ensure patient safety;
- the composition of the dental team and the relationship between dentists and dental technicians; and
- the competencies and responsibilities that dentists expect of the team members, and their relationship to patients.

The dental team is composed of different members in different countries of the EU. This article will limit itself to the professions represented in the majority of EU member states.

The recommendations support the CED resolution entitled "Delegation yes – substitution no" adopted by the General Meeting of the CED in November 2009, and the common position of CED ADEE on competencies adopted by the General Meeting of the CED in May 2013.

Dr Wolfgang Doneus

The dentist's leading position within the dental team

Dental care requires comprehensive and detailed medical and scientific knowledge in order to perform a correct diagnosis and treatment planning. This is all the more true in view of demographic changes such as an aging population with complex health problems.

The dentist must retain a leading position within the team in order to have full insight into the treatment and ongoing care, especially given the risks associated with the complexity of the problems that individual patients bring along, including drug interactions in the treatment of multi-morbid patients.

The revised EU Directive on the Recognition of Professional Qualifications has introduced a new criterion for how to determine the minimum period of dental training required for dentists. Basic dental training now includes a total of at least five years and 5000 hours of university-level studies prior to attaining the professional title of dentist and being able to practice the profession autonomously.

A dental degree programme at a university provides the thorough knowledge, skills and competence needed for the prevention, diagnosis and treatment of diseases of the hard and soft tissues of mouth and jaw, of malformations and lesions of teeth, mouth, jaw and surrounding tissues, as well as for the rehabilitation of the dentition by replacing missing teeth and for the restoration of aesthetic and functional oral health. The degree programme also includes general medical subjects and fosters an overall understanding of the clinical and non-clinical needs of the patient.

Dental teams must be led by dentists to prevent oral diseases by promoting and improving the oral health of individuals, families and society at large, based on a patient-centred, holistic approach to patient care, and by ensuring that the practice of dentistry is evidence-based.

Given these various aspects, the dentist is the only expert who possesses the skills to perform the full range of dental services, from oral prevention and diagnosis to the planning and implementation of treatment, and thus bears the full responsibility for the dental care of all of his or her patients. ››

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The composition of the dental team and the relationship between the dentist and the dental technician

The care of patients can be optimized if dental teams work together in one place and are led by a dentist. In the European Union, the composition of the dental team varies from country to country. As stated, this article will limit itself to the professions represented in the majority of EU member states.

In some countries, dentists work with dental assistants only, while in other countries the team also includes dental hygienists, with the responsibilities of the different team members varying according to national legislation.

The members of the dental team can carry out tasks and procedures in accordance with their specified level of competence. For reasons of patient safety, however, they should do so only after the dentist made a diagnosis, devised a treatment plan and delegated individual tasks to the team members.

Moreover, team members should only work in a dental office under the supervision of a dentist, as they lack the necessary skills to provide a general diagnosis.

Dental technicians produce individual medical devices according to the prescriptions and specifications of the dentist with whom they collaborate. They usually work in independent laboratories, but some also work in dental offices or hospitals.

These professionals form the core of the dental team, which covers all of the patient's dental needs and ensures the quality and safety of oral health care procedures.

Responsibilities and competencies

To ensure adequate dental care and the proper relationship to the patient, the members of the dental team must have the appropriate education, training and legal authority for specific oral health care measures as delegated by the dentist. They must adhere to a code of conduct or pre-defined standards to ensure patient safety and good teamwork.

The core competencies of the team members of are listed below. They may differ from country to country. The scope of regulation and registration varies greatly in the European Union. This fact emphasizes the leading function of dentist, whose profession is highly regulated in each one of those countries.

Dental assistants

(Certified) dental assistants or dental nurses – the designation varies by country – assist the dentist in providing dental treatment. They work under the dentist's supervision and are responsible for processing and preparing the instruments and materials prior to and during procedures as well as for the follow-up of patients and some other laboratory and administrative chores assigned to them by the dentist.

Dental hygienists

Dental hygienists exist only in some EU member states. Their education and training and the range of permitted clinical activities differ considerably from country to country.

Dental hygienists work under the dentist's supervision and stick to prescribed procedures and processes related to the promotion and preservation of good dental hygiene. They perform dental prophylaxis and complement removal, apply prophylactic materials to the teeth, collect data and train patients in oral hygiene.

Dental technicians

Dental technicians are classified as manufacturers in the sense of the medical device directive. They cooperate with the dental team and produce individual restorations such as bridges, crowns and dentures according to the prescriptions and specifications of the dentist. The dentist is considered the immediate consumer of the individual restorations and he is responsible for the overall treatment.

Recommendations

1. The dentist leads the dental team to ensure patient safety and a holistic, high-quality oral treatment.
2. The dentist is responsible for the oral health and for the outcome of the clinical treatment and therefore the only expert who can decide which activities should be delegated to members of the dental team.
3. These members of the dental team must always comply with the professional and treatment guidelines (protocols) described by and agreed on with the dentist.
4. The members of the dental team must adhere to a code of conduct or pre-defined standards to ensure patient safety and good teamwork.
5. Dental professional associations and/or national regulatory authorities must play an important role in defining the profiles of the members of the dental team and in preventing illegal practices.

Dr Wolfgang Doneus
Vice President and board member responsible for international affairs of the Austrian Dental Association and Past President of the European umbrella organization of dentists, the Council of European Dentists (CED)

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Europe Ticker +++

The European Union in the first half of 2016

The Netherlands takes over Presidency

The Netherlands holds the Presidency of the Council of the European Union during the first half of 2016. The country's declared goal is to promote growth and employment. Together with Slovakia and Malta, the two successors of the Netherlands, some priorities have been defined. They include the expansion of the internal market to provide new impulses for growth, notably by improving the legal framework for the cross-border provision of services. The Netherlands, Slovakia and Malta are also concerned about the health of the EU population, focussing on the fight against non-communicable chronic diseases and on the access to innovative and affordable medicines. The cooperation between the different health systems of the member states is also part of the trio's agenda.

Source: European Union

Photo: Shutterstock/Alhovik

Zika virus and malformations in newborns

WHO: Danger for Europe

Brazilian researchers have found another link between the Zika virus and malformations in newborns, demonstrating the presence of the virus in the brain tissue of affected babies. The Zika virus causes damage to the brain – a point that Brazilian researchers are now certain of. In pathological examinations, they discovered the pathogen in the brain tissue of several newborns. As reported by the German newsmagazine "Der Spiegel", *Dr Lucia Noronha* of the Brazilian Society of Pathology confirmed that there was a correlation between the virus and dangerous malformations of the head in newborns. However, the pathogen's mechanism of action was still unclear.

According to the Brazilian authorities, more than 4000 babies throughout the world have been born with suspected microcephaly since October, 462 cases of which have been confirmed. The heads of these children are much smaller than normal, and there is a considerable risk that they will be mentally retarded or suffer neurological damage. At the same time, Brazil is the country that has been hit hardest by the Zika epidemic, with an estimated 1.5 million cases.

The WHO Regional Office for Europe now warns that the dangerous Zika virus could spread globally. Every European country where Aedes mosquitoes exist can be at risk for the spread of the Zika virus, said the WHO. With the onset of spring and summer, the risk that the virus will spread increases. It is time for the countries to prepare the protection of their population. Measures suggested by the WHO include the control of mosquito populations, eradication of mosquito breeding grounds and the deployment of plans for the use of insecticides.

Sources: Der Spiegel, Germany; WHO Regional Office for Europe

Increasing number of immigrant physicians in German hospitals

Opportunities and challenges

New physicians at German hospitals increasingly hail from abroad. In some German regions, 90 per cent of all junior physicians working in hospitals immigrated during the past three years. By the end of 2014, on a federal level, 9.7 per cent of practicing physicians had come from abroad, according to data published by the German Medical Association. Since then, many more physicians have entered the country. In North Rhine-Westphalian clinics alone, more than 7500 of the 39,000 doctors are immigrants. In the region of Westphalia-Lippe, 48 per cent of junior physicians entered the country in or after 2012. The influx of doctors from non-EU countries is both an opportunity and a challenge for German hospitals. While these physicians help to replenish the staff, this will only succeed in the long run if the hospitals actively contribute to the integration of newcomers, as experience has shown.

Sources: German Medical Association; Deutsche Ärzte-Zeitung (Germany)

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Europe Ticker +++

Gathering data for health

Europeans and Big Data

When it comes to the massive collection of personal data, Europeans – especially Germans – tend to be very reluctant. However, if the data are collected by health institutions in order to combat diseases more effectively, there is a trend towards greater acceptance. This is the result of a representative study by the TNS Infratest market research institute, commissioned by the Vodafone Institute for Society and Communications. The researchers wanted to find out under which conditions people are willing to share their data. To that end, more than 8000 people were interviewed by telephone in eight European countries in the summer of 2015. The majority of participants were between 30 and 49 years old (36 per cent); the second biggest group were the 50- to 59-year-olds. For 51 per cent of respondents from eight EU countries, the disadvantages of "Big Data" – very large collections of data – outweighed the advantages. With 62 per cent, the Germans were the most sceptical, while the Irish showed themselves to be most open (38 per cent). When questioned on the individual areas of the application of data collection, such as shopping or transport, the Germans stood out as being most sceptical. Health was the only area where a little more openness prevailed. Slightly less than half of the respondents in Germany (42 per cent) declared themselves willing to make health data available for research purposes, under the condition that they are evaluated anonymously and in accumulated form. Respondents from other countries were more generous: On average, 61 per cent felt comfortable with the use of their data for this purpose. Only 6 per cent were strongly opposed. But there was strong repudiation of the highly publicized idea to exchange favourable digital self-tracking fitness data for lower health insurance rates. 72 per cent of respondents from all eight countries did not want to pass on their health and fitness data to health insurers to recalculate their rates based on their fitness level. The results of the survey can be found here: http://www.vodafone-institut.de/wp-content/uploads/2016/01/VodafoneInstitute-Survey-BigData-en.pdf.

Source: Ärzte-Zeitung, Germany

Photo: Fotolia.com/Tomasz Zajda

Survey on asylum policy

EU citizens want equitable distribution

A large majority of EU citizens has called for European solutions in the refugee crisis. According to the German newsmagazine "Der Spiegel", 79 per cent of respondents in the countries of the European Union want a fair distribution of asylum-seekers to all member states. This was the result of a recently published study by the Bertelsmann Foundation. There were significant differences between the new and the old member states: 87 per cent of respondents in all 28 member states favoured joint protection of the EU's external borders. 79 per cent of EU citizens believe that asylum-seekers should be distributed fairly among EU member states. 69 per cent supported the demand that countries which do not live up to their responsibility in the refugee issue should receive less money from EU coffers. In the new member states admitted since 2004 and 2007, such as Poland, the Czech Republic, Bulgaria and Romania, a majority of 54 per cent supports a fair distribution of asylum-seekers; this percentage is significantly higher in the old member states, at 85 per cent. Yet the high level of agreement on this question does not say anything about a "culture of welcome": According to the survey, half of the respondents sometimes felt like strangers in their own country, while 58 per cent fear a negative impact on the welfare system. The Bertelsmann Foundation had interviewed 11,410 representative

EU citizens in all 28 EU member states in December 2015. Among other things, participants had to indicate whether they agreed or disagreed with the thesis that "the EU needs joint border protection" or that "the number of asylum seekers should be distributed fairly".

Sources: Der Spiegel, Germany; Bertelsmann Foundation, Germany

Legislative proposals of the EU Commission

No complete ban on dental amalgam

On 2 February, the European Commission adopted a ratification package for the 2013 Minimata Convention concluded under the auspices of the United Nations and aiming at a reduction of the global use of mercury. The draft regulation addresses, in addition to other modalities of mercury consumption, the special case of dental amalgam. The European Commission proposes, among other things, that after 2019, the use of dental amalgam in the EU should only be legal in encapsulated form. In addition, from the same year on, all dental facilities must be equipped with amalgam separators for retention and collection of amalgam particles. However, the European Commission does not propose a complete ban on amalgam. Its proposal states: "In the light of the available scientific information, the impact assessment concludes that a ban of the use of dental amalgam would not be proportionate as the health risks of dental amalgam are not clearly demonstrated and the cost of a ban would be high." A working group of the Council of European Dentists (CED) is engaged in discussions on the amalgam issue. The CED is in favour of using amalgam separators. In a number of European countries, the use of amalgam separators is still not mandatory.

Sources: European Commission; CED

What to do with health data?

Whether outsourcing or servicing dental surgery IT systems, factoring invoices or working with picture archiving and communication systems (PACS) or shared document management systems (DMS), data protection is always an issue. Patient data enjoy special protection – both under EU law and under the laws of the EU member states. Depending on the circumstances of the case, deficiencies in data protection may lead to sanctions, or at least result in a bad reputation. Data protection is therefore an important item on the agenda of the dental practice. Changes in EU data protection law are planned for adoption this year.

The proposed reform

EU data protection law has been earmarked for reforms. As early as 2012, the EU Commission had submitted a proposal for a legal framework intended to increase the amount of control that individuals (i.e., patients) can exert over their personal data. At the same time, the powers of the national data protection authorities are to be harmonized, strengthening data protection and control. One of the essential concepts is data protection by design. The legal framework will be laid down in a new General Data Protection Regulation (GDPR) and applied from 2018 onward. This legal framework has not yet been adopted in its entirety; this is planned for early 2016.

Current data protection legislation

At the EU level, the protection of patient data is currently regulated by Directive 95/46/EC. Directives must be implemented into national law by the EU member states; in Germany, this has been done, for example, by the Federal Data Protection Act (BDSG). The Directive already provides for special protection of health-related patient data. Here the concept of "health" is interpreted broadly: According to a European Court of Justice ruling, it includes "information concerning all aspects, both physical and mental, of the health of an individual" (ECJ judgement of 6 November 2003, C-101/01). However, the Directive provides for certain exceptions. The processing of patient data for treatment purposes by health professionals, for example, must be exempt from national prohibitions. In addition to the consent of the patient (which makes data processing lawful), Article 8 (4) of Directive 95/46/EC provides that member states can add further exceptions "for reasons of substantial public interest". These terms, however, left room for considerable interpretation, but are now to be uniformly defined on a European level.

How will patient data be protected in future?

The proposed regulation contains three important elements.

An enlarged concept

New in this regulation is the concept of "data concerning health". This concept is defined in Article 4 (12) of the proposal: "'Data concerning health' means any information which relates to the physical or mental health of an individual, or to the provision of health services to the individual." Following Recital 26 of the proposed regulation, this definition has been made very broad. According to the current state of the negotiations, it comprises three categories of data:

a) Data pertaining to the health status of a patient;
b) Data collected in the course of the provision of dental/medical treatment, as well as billing data;
c) Data related to the patient with regard to the identity of the practitioner (name of the physician/dentist).

Therefore, the term "data concerning health" is more inclusive than, for example, the term "patient data".

Harmonization of processing conditions

In addition, the proposed regulation wants to harmonize the conditions for the processing of personal data concerning health in the EU (Recital 122). This includes the right of information about and access to one's own data concerning health (e.g. the right to inspect one's own medical records). To this end, the proposed regulation stipulates two different procedures:

a) To begin with, Article 9 defines the prerequisites for permission to process specific data concerning health. This is essentially linked to the circumstances already mentioned in the current Directive 95/46/EC.
b) Secondly, the proposed regulation contains a special provision for the slightly wider notion of "(personal) data concerning health" in Article 9 (2) (h). It stipulates the requirement that the "processing of data concerning health is necessary for health purposes". However, the proposal does not elaborate on what is meant by "health purposes". One would readily anticipate an intense future debate about this issue. Another requirement for the processing of data concerning health is that certain conditions are met and guarantees given as per Article 81 of the proposed regulation. It stipulates, for example, that data concerning health may be processed if needed for "reasons of public interest in the area of public health, such as protecting against serious cross-border threats to health or ensuring high standards of quality and safety,

inter alia for medicinal products or medical devices". The European Commission is called upon to specify the relevant "reasons of public interest". Against this background, the question arises whether this might, as far as data protection is concerned, provide more scope for cooperation between dentists and drug or medical device manufacturers in future. But since the requirement calls for "reasons of public interest", one should not be overly optimistic in this regard.

Privacy by design

Finally, Article 23 of the proposed regulation stipulates the principle of data protection by design (a.k.a. privacy by design), which may become important for dental practices in future. This principle requires implementing mechanisms and data protection settings to ensure that "by default, only those personal data are processed which are necessary for each specific purpose of the processing" (such as a given treatment). That would mean that the existing detailed recommendations by Data Protection Supervisors defining prerequisites for permission to access document management systems (DMS) and other systems could be made mandatory. But what does this mean for factoring services, for outsourcing, for cooperation with other local practices, medical/dental collaborations and much more? The EU Commission will be able to define specific requirements for individual sectors (such as the health care sector). What the effects of data protection by design will turn out to be remains to be seen.

Conclusion

The proposed General Data Protection Regulation initially harmonizes the protection of data at the European level only. Because the GDPR contains specific provisions for dealing with data concerning health, the protection of patient data is moving in the direction of an EU-wide health-data protection law, which may be associated with additional organizational requirements related to data protection in dental surgeries. Against this background, it may be anticipated that data protection will become an even more of a focal task in dental surgeries.

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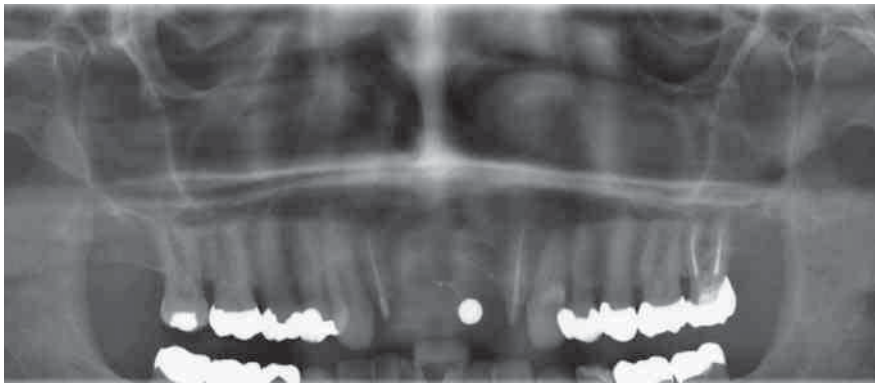
Implant placement at sites 11 and 21 at different times after extraction

Delayed versus late

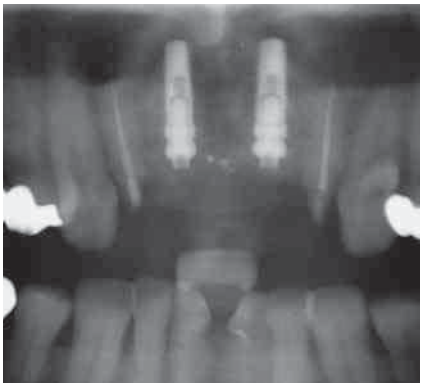
DR PETER RANDELZHOFER, MSC, MUNICH, GERMANY

Patients' expectations of dental restorations in the anterior region are extremely high. Aesthetic compromises are undesirable and will not be tolerated by most patients. To avoid unpleasant surprises, the treatment team – consisting of the dentist, the oral surgeon and the dental technician – will have to carefully analyze the situation, comprehensively inform the patient and then determine the treatment goal in a common effort. Many dentists are convinced that immediate implant placement is the only way to achieve excellent aesthetic results. Although our team does not at all mind performing immediate implantations, in many cases we still need to follow the rules of delayed or late implantation. We therefore constantly strive to further optimize these concepts – after all, it is not up to us to choose the cases we encounter. The present case report intends to show how we were able to reach an, in our eyes, acceptable result in a case involving delayed and late implant placement.

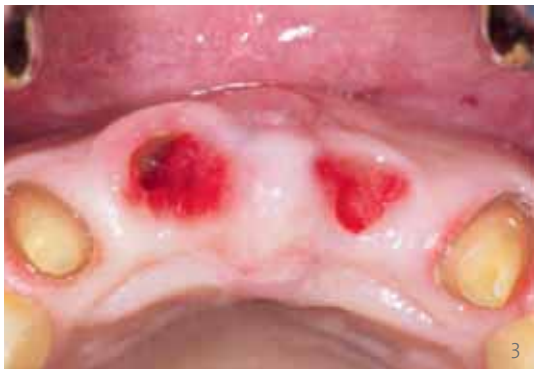
The situation after the extraction of teeth 11 and 21 presented as follows: The referring dentist sent us his patient for implantation (Figs. 1 and 2). The patient's high aesthetic demands coupled with a not-so-high motivation regarding oral hygiene constituted major challenges in terms of (long-term) treatment success. Tooth 11 had been removed eight weeks before, while tooth 21 had been extracted six months previously. This makes the case particularly interesting, because the corresponding ridge areas can be compared very nicely. Figure 3 clearly shows that the anatomy is preserved much better at site 11, where the extraction had been performed recently, than at site 21. The referring dentist had inserted a long-term provisional bridge that was aesthetic in appearance and designed to shape the papillae and the pontic region; however, it interfered significantly with healthy and stable gingival healing in the surgical area. Dense and safe primary wound closure would always be preferable. For this reason, we never shape the soft tissue until after the implant has been inserted. In this case, there was no more time to lose, and a speedy intervention was required, using minimally invasive incisions to protect the tissue to the fullest extent possible – rebuilding is more difficult than retaining (Figs. 3 and 4).

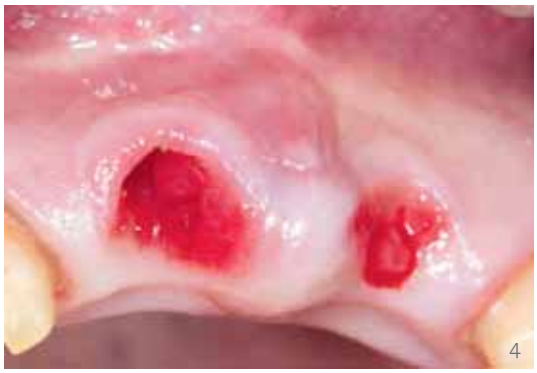


1 I Initial situation with measuring sphere for implant planning at sites 11 and 21.

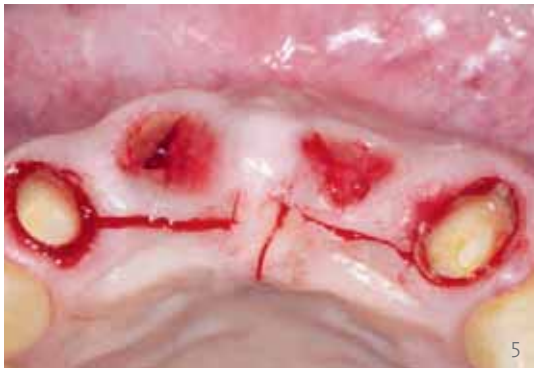


2 I Radiograph after implant placement.

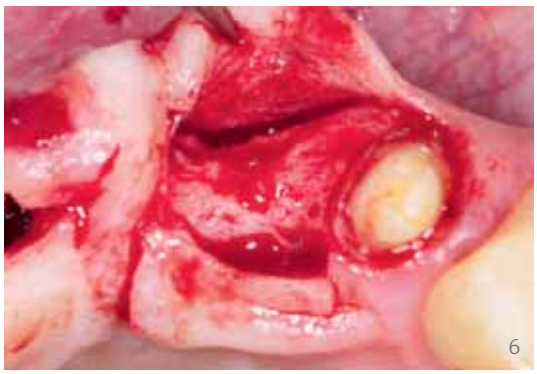




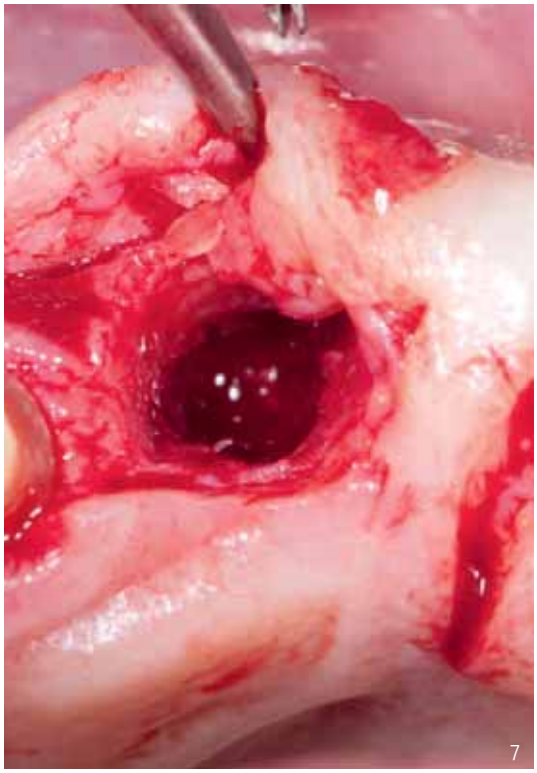
3 and 4 I
Baseline situation: The gingiva had already been pre-formed by the provisional restoration, and "pontic areas" had been created – which was unfortunate, as that meant that the soft tissue had received "previous damage".



5 I
The incision prior to implant placement left the area of the central papilla untouched.



6 I
It is easy to see that the bone bed at site 21 ...

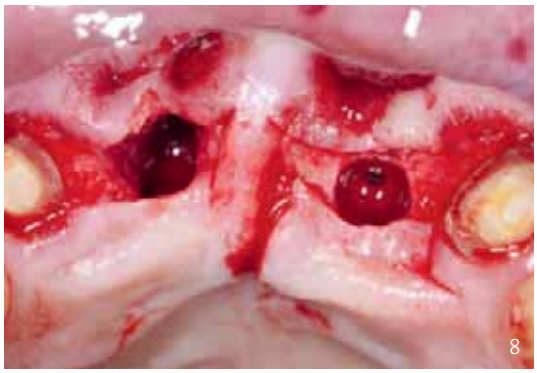


7 I
... and at site 11 had healed differently.

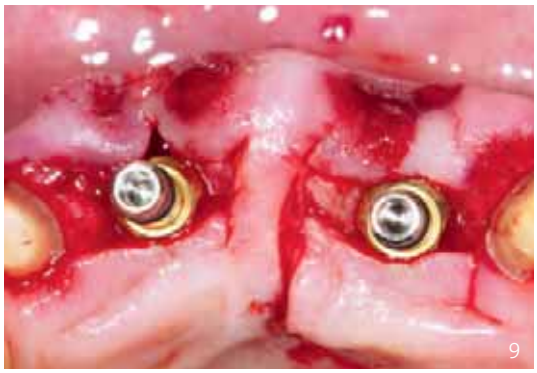
Surgical procedure

Two hours before the procedure, the patient received 3 g amoxicillin for antibiotic prophylaxis. The crestal incision was made in the palatal area behind the extraction sockets. The adjacent teeth were circumferentially incised along the sulcus with no vertical relief. By contrast, we did perform two mesiopalatal vertical relief incisions at site 21, for two reasons – we needed a flexible flap on this side, and we wanted to determine the exact dimensions of the anterior palatine nerve in the event we had to relocate it. In the upper section, a classic full-thickness flap that transitioned to a buccal split-thickness flap was used to ensure wound closure without tension. Whereas the extraction socket was virtually intact on the side with delayed implant placement, the late-placement side exhibited a considerably reduced alveolar ridge in both the horizontal and buccovertical dimensions. These two sides demanded different tactical approaches to achieve results of the same high quality. The decisive factor was that we preserved the area around the former central papilla and did not access this region surgically (Figs. 5 to 7).

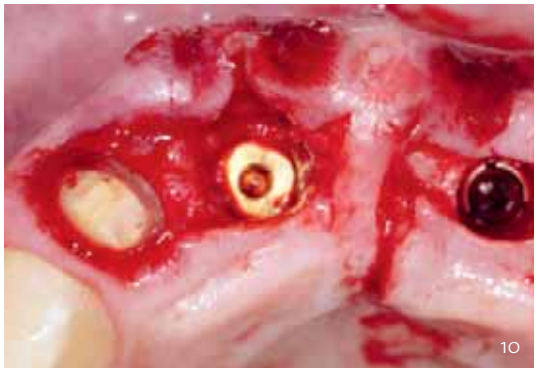
Surgical approach at site 11: The implant was placed in the more palatal aspect of the socket after punch-marking the palatal alveolar wall and preparing an undersized final implant bed. The implant was positioned 3 mm below the height of the subsequent idealized sulcus. An implant diameter of 3.8 mm was chosen in order to maintain the greatest possible distance from all adjacent structures that needed to be preserved, and also to safeguard the desirable distance of 5 mm between the two implants.



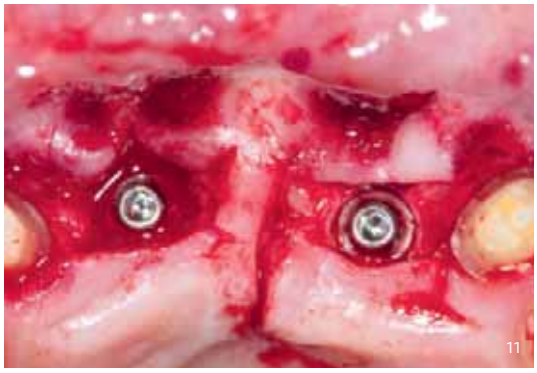
8 I The prepared implant sites ...



9 I ... and the palatally oriented implants.

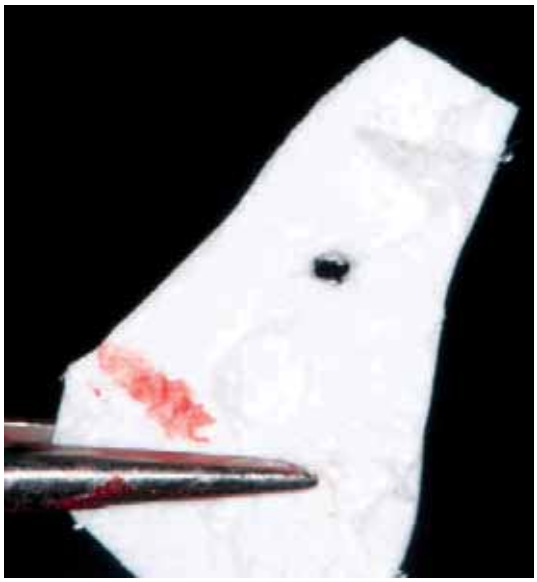


10 I Augmentation of the buccal aspect of the socket at site 11 ...



11 I ... and healing abutment in place.

Surgical approach at site 21: The implant was placed in the palatal aspect of the alveolar ridge. By using an osteotome at an early stage, the bone was driven in a buccal direction, against the defect. The same guidelines for 3D positioning were used as for the first implant. Both implants ultimately showed primary stability and were inserted at a matching height (Figs. 8 and 9).



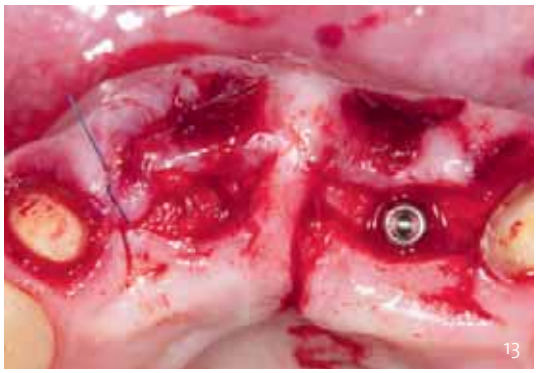
12 I Bio-Gide collagen membrane with perforation for stabilization by the healing abutment.

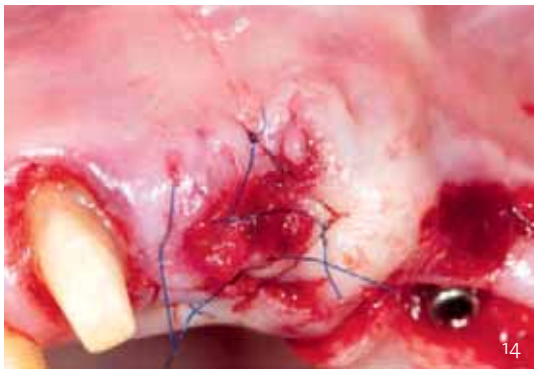
Augmentation of the hard tissue at site 11: The inside of the socket was lined with BioOss particles soaked in blood for stabilizing a blood level.

Augmentation of the hard tissue at site 21: The jawbone was perforated and bone substitute material of bovine origin was applied buccally to reinforce the alveolar ridge. This activated the healing process and provided mechanical support. The implant itself was completely surrounded by autologous bone.

During the augmentation phase, cover screws were connected to the implants, later to be replaced by bottleneck healing abutments 4 mm in height. The tips of the healing abutments were intended to stabilize the upper aspect of the soft tissue (Figs. 10 and 11).

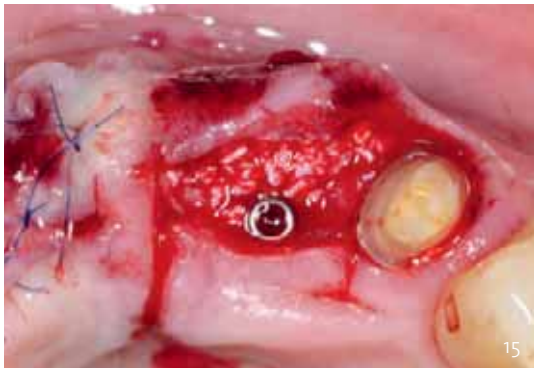
The augmented volume was protected by a Bio-Gide membrane, whose small perforation was pulled over the implants (Fig. 12). The membrane was placed subperiosteally. The wound was closed without tension using monofilament sutures (6-0). Even with the minimally invasive procedure, a respectable amount of ridge volume was achieved. In the horizontal plane, this could already be seen with the bridge inserted. The pontic was completely relieved in the region of the gingiva perforations (Figs. 13 to 18). One and four weeks after implantation, healthy and irritation-free conditions prevailed (Figs. 19 to 21).

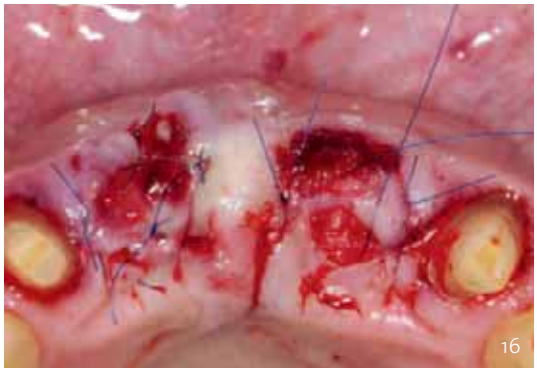


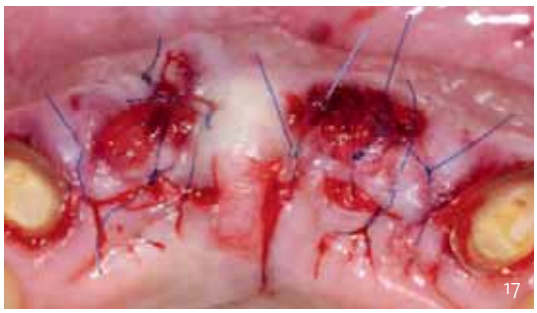


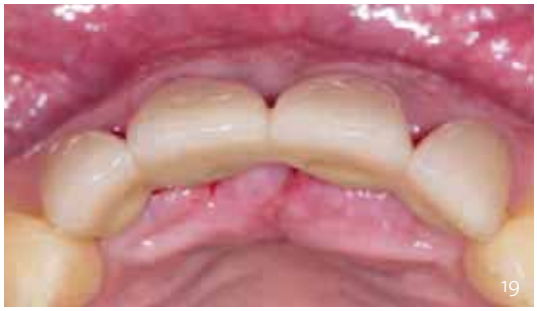
13 I
Augmentation of the buccal aspect of the ridge at site 21.

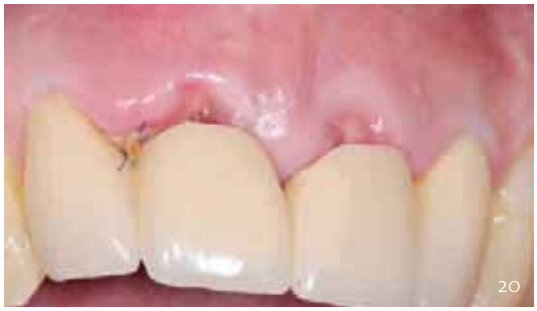
14 to 18 I
Site coverage with the Bio-Gide membrane and the corresponding closure, shown step by step.



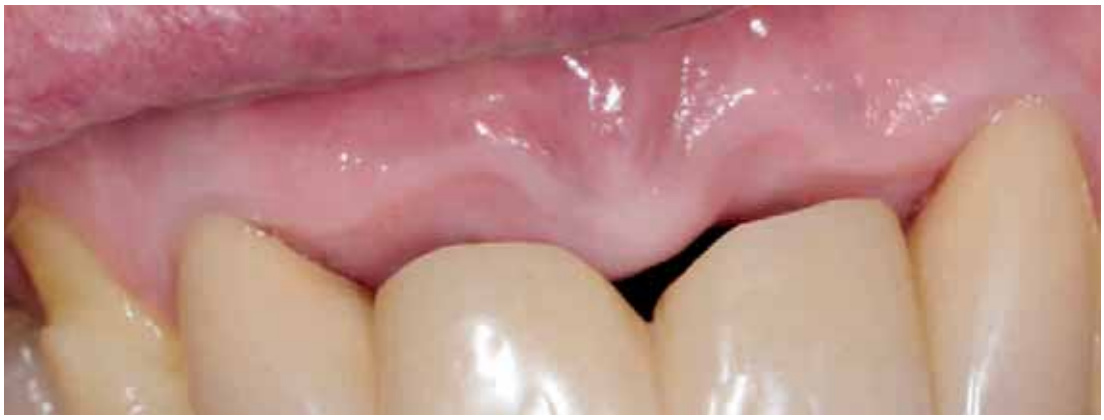






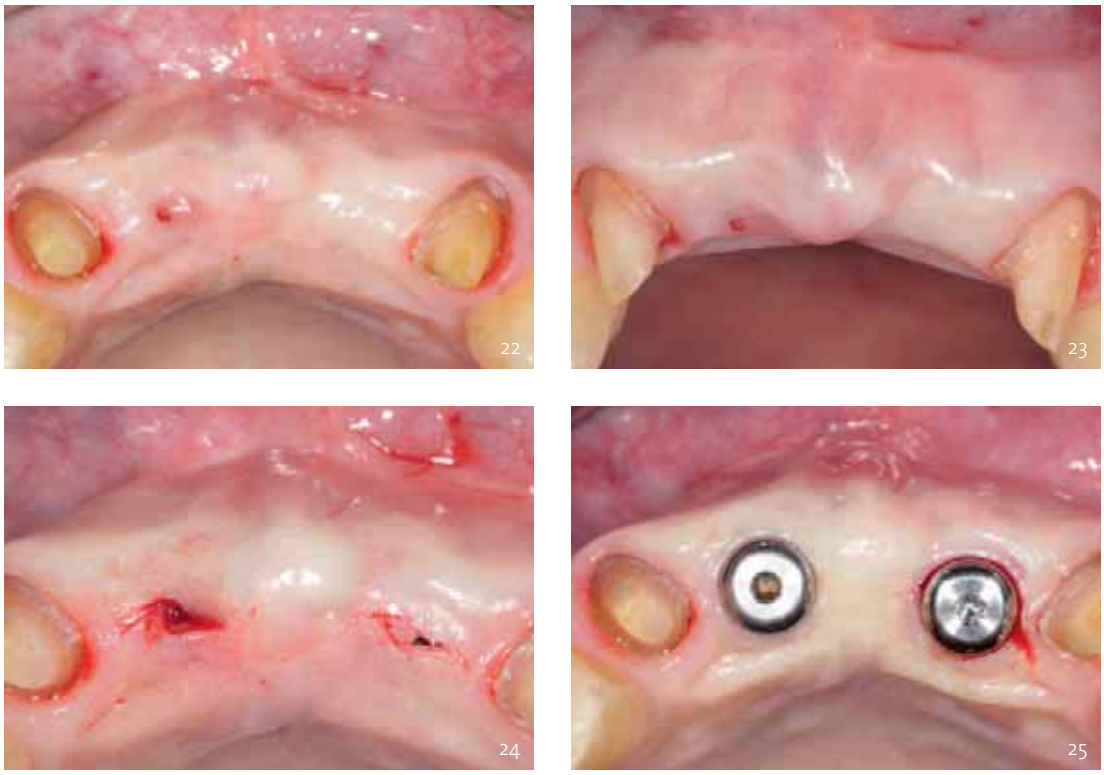


19 and 20 I
The temporary bridge features relieved pontic areas to provide space for tissue swelling.

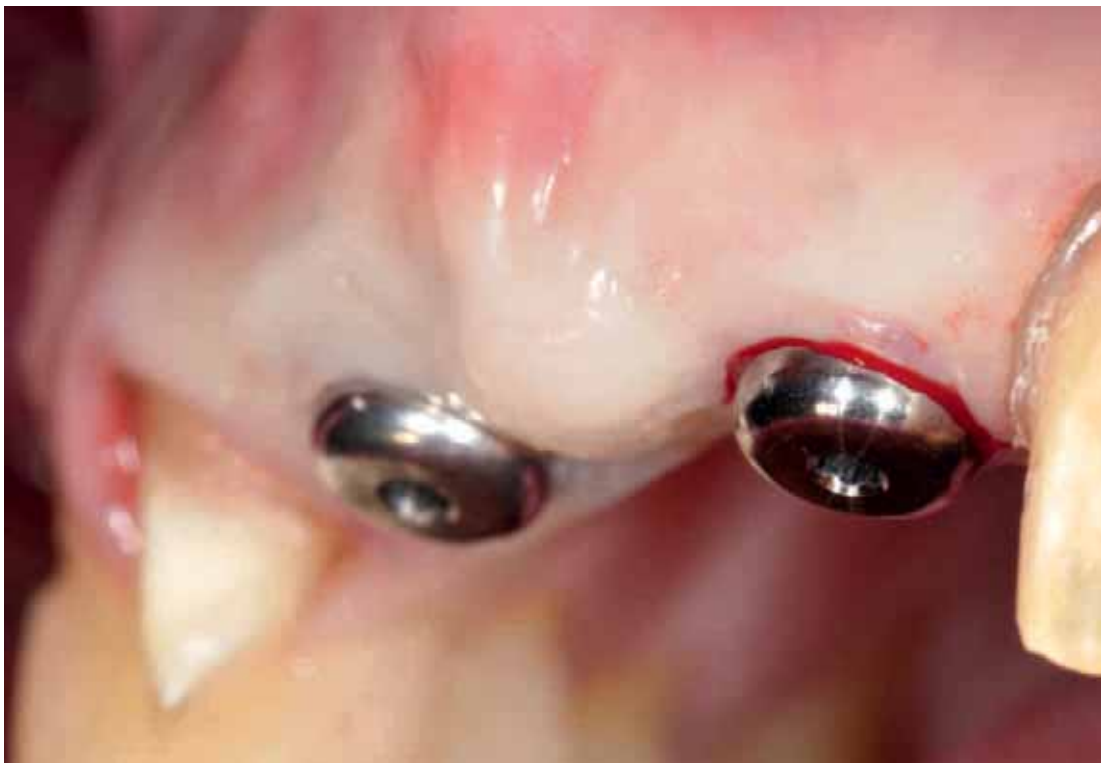


21 I
The buccal aspect of the jaw is well preserved on both sides.

22 to 25 I Re-entry was easy, as the structure of the alveolar ridge was well preserved.



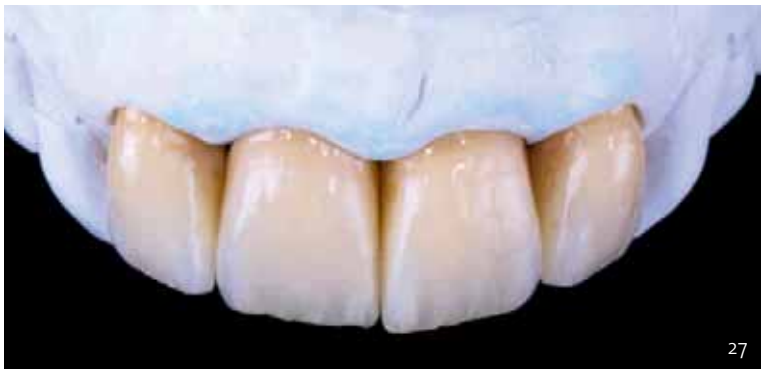
26 I Lateral view with an apparently well-preserved soft-tissue architecture.



Outcome after four months of healing

The tissue was found to be in good condition and healthy. Re-entry required only a small palatal incision. The inserted platform-switched healing abutments thus displaced additional soft tissue labially (Figs. 22 to 26).

At the dentist's office: Two weeks after re-entry, the referring dentist took the first impression for the prototype crown restoration (provisional). In a second step, the implant crowns were inserted in reduced-platform mode and adapted to the gingival structures.

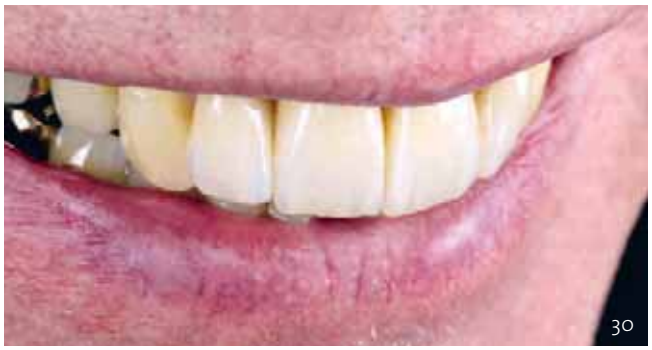


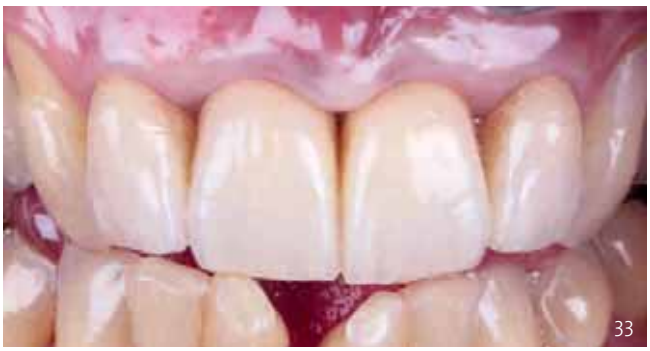
27 to 29 I
The definitive zirconia crowns on the cast: Two crowns at sites 12 and 22 on natural abutments and two screw-retained crowns at sites 11 and 21 on a one-piece implant.

The patient was recalled three times during the following four months. At these sessions, pressure was built by adding composite resin to the composite implant crown and manipulating the soft tissue accordingly. After this time, it could be assumed that the anatomical situation was stable. The referring dentist then took another set of impressions of the implants with custom impression posts.

At the laboratory: The emergence profile was expanded somewhat at the dental laboratory of *Uwe Gehringer*, Munich. The final crowns (12, 22 on natural teeth and 11, 21 on implants) were made of ceramically veneered zirconia. Like the prototypes before them, the crowns on the implants were screw-retained. The palatal canal was delivered etched in the upper region to establish an optimal connection between the ceramics and the composite to be sealed (Figs. 27 to 29).

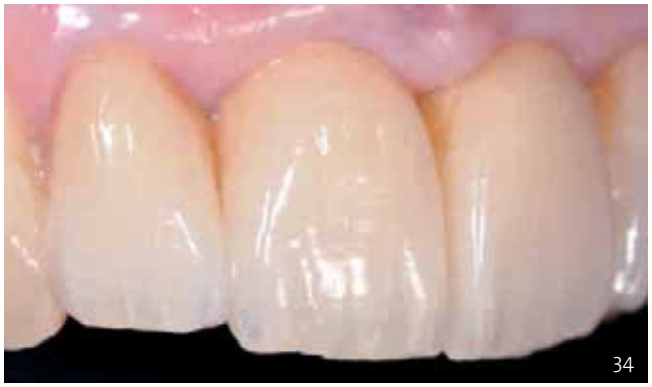
This result was achieved after a preliminary and an aesthetic try-in and approved by the patient. A result like this can only be achieved through direct contact between the dental technician and the patient. Unless these two work closely together on-site at the laboratory, similar results will be difficult or impossible to achieve. The crowns on the natural abutments were cemented with Ketac Cem. The implant crowns were screwed in place after careful rinsing of the implants and introduction of chlorhexidine gel. The screw was re-tightened after five minutes to 30 Ncm. The screw channel was then definitely closed with Tempit and flow composite.

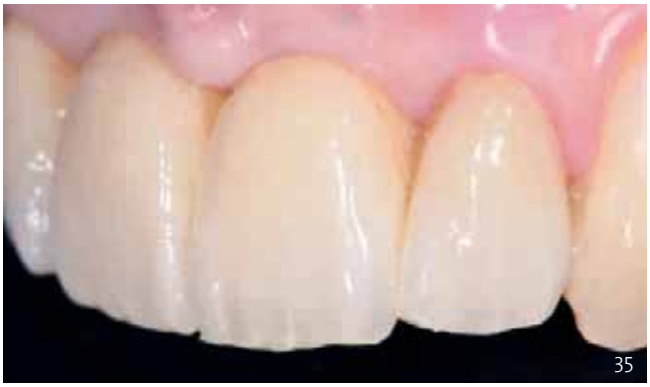




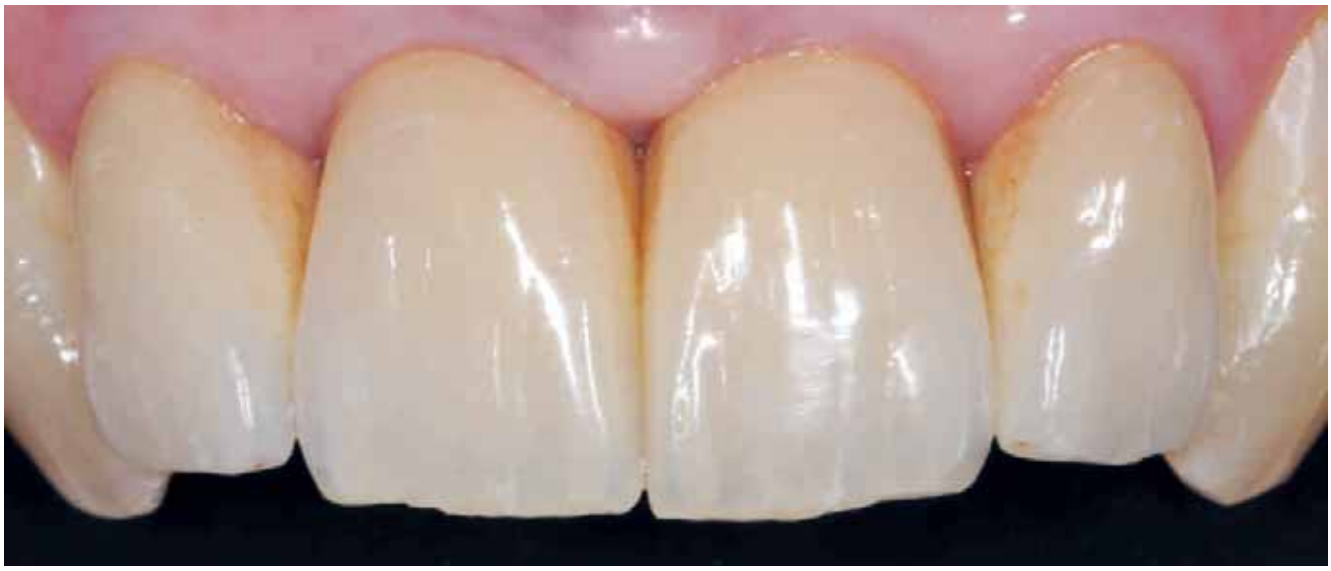
30 to 32 I Situation directly after insertion of the crowns on teeth 12 and 22 and implants 11 and 21.

33 I The front teeth blend in harmoniously ...

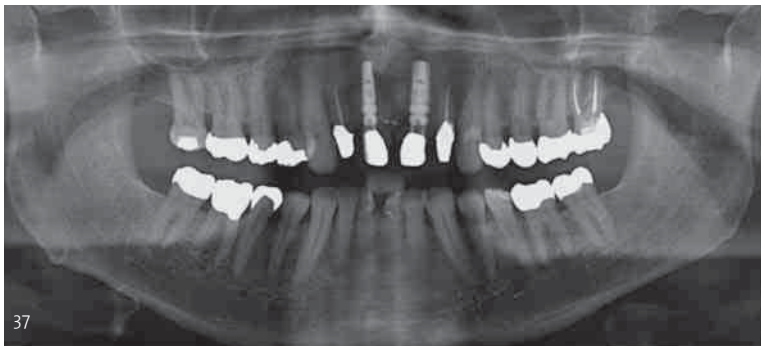


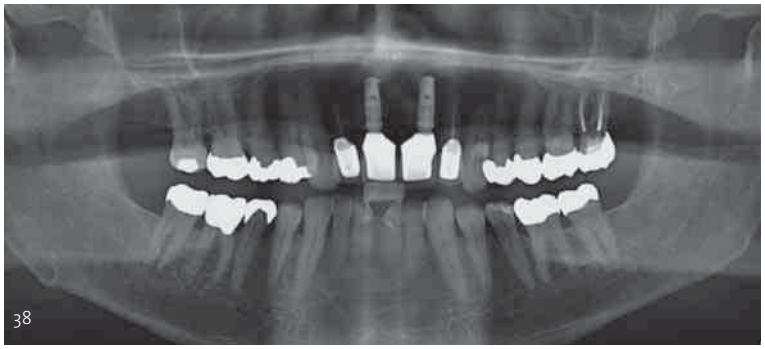


34 and 35 I ... into the oral environment. Laboratory procedures by Uwe Gehringer, Munich.



36 I The definitive restorations after about ten months in situ.





37 I Control radiograph showing the long-term provisional.
38 I Control radiograph showing the final and definitive restorations.

Conclusion

White and red aesthetics present a natural appearance. The patient was very satisfied with the restoration (Figs. 30 to 36). It is not apparent which placement technique was applied on which side of the jaw, although the placement times – and, hence, the procedures – were different in both regions. This case nicely demonstrates that the supposedly simpler and more aesthetically predictable delayed implant could not outperform the late implant. Fortunately, it is not always important *when* you do something, but rather *how* you do it. Without the excellent teamwork between the implantologist, prosthodontist, dental technician and patient, this result could not have been achieved. I personally believe that the key to success in this case was the minimally invasive incision aimed at preserving the tissue. The final radiographs underline the stable results; osseointegration seems to work well in the two dimensions assessed (Figs. 37 and 38).

To find the list of references visit the web at www.teamwork-media.de/literatur.

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Reduced treatment time, predictable results and lower costs

Immediate restoration in the digital workflow

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Endosseous implants have consistently achieved high success rates in partially and completely edentulous patients. Clinicians have therefore begun to offer selected patients immediate and early implant placement options. The long-term success of immediately loaded implants has been investigated in animals [1,2] and humans [3], with encouraging results. However, most of the studies were performed with implants placed in the anterior mandible, where primary implant stability is easily achieved.

In the anterior maxilla, clinicians seeking to load implants immediately must be concerned not only about achieving adequate implant stability, but also about fulfilling patients' desires for aesthetic results that resemble the natural dentition. To achieve this, it is essential to maintain as much of the bone height around the implant neck as possible, controlling the biologic width [4].

Bone loss around the implant always occurs when an abutment is connected to a dental implant at the crestal level. It has been demonstrated that the gap between the implant and the abutment has a direct effect on bone loss, regardless of whether the two parts are connected at the time of integration of the implant or later [5]. This phenomenon occurs whether the implant is loaded or not and appears to be unrelated to the type of implant surface [5,6]. *Hermann* et al. demonstrated that crestal bone remodels to a level about 2.0 mm apical to the implant-abutment junction (IAJ) [5,7,8], while *Lazzara* and *Porter* reported crestal bone levels about 1.5 to 2 mm below the IAJ at one year after restoration [9]. *Tarnow et al.* documented a horizontal component that results in 1.3 to 1.4 mm of resorption from the IAJ to the bone in a horizontal direction [10,11]. When the biologic width is in the wake of such osseous changes, the soft-tissue architecture, including the appearance of the papillae, is affected. The interproximal bone influences the interdental papillae by acting as a guidepost for the soft-tissue contours.

In addition to several ideas aimed at limiting crestal bone resorption, the concept of platform switching appears to be promising. Platform switching refers to the use of a smaller-diameter abutment on a larger-diameter implant collar. This type of connection shifts the perimeter of the IAJ inward toward the central axis of the implant [12,13].

The time limitation in implant treatments is an important bias when it comes to planning and developing rehabilitation therapies. In this sense, the inclusion of new materials that allow for immediate loading in a single session without having to replace prosthetic components facilitate optimal results in terms of gingival attachment and minimize peri-implant bone loss after prosthetic abutments have been manipulated. Ceramically reinforced PEEK is of great interest as it allows a single attachment to be retained in place throughout the entire treatment and avoids handling-related overload. Its mechanical and physical properties have been tested in animal experiments and in humans, showing the material to be ideal for one-step protocols.

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The physical and mechanical properties of the prosthetic components govern the success of the long-term restoration. Resistance to occlusal loads such as masticatory movements and parafunction should be adequate to allow denture survival. The modulus of elasticity and bending resistance of the material should be adequate to prevent undesirable fractures or micromovements [13].

Furthermore, components used require a high degree of biocompatibility to prevent the occurrence of abnormal tissue reactions such as initial peri-implant inflammation and mucositis, which may result in more severe complications such as peri-implantitis [14]. Polyetheretherketone (PEEK) is a polymer from the polyaryletherketone family, a relatively newly developed family of high-temperature thermoplastic polymers having of an aromatic backbone interconnected by ketone and functional ether groups [1]. In medicine, PEEK has been found to be an excellent substitute for titanium in orthopaedic applications [15,16] and has been used in dental implants, provisional abutments, implant-supported bars, or clamp material in removable dentures [17,18]. PEEK is biocompatible and has a natural tooth-coloured appearance, unlike metal reconstructions.

Ceramically reinforced PEEK materials were developed to improve the mechanical properties and the colour of dental restorations. One of these materials is BioHPP (bredent medical, Senden, Germany). In abutments, the BioHPP is directly injection-moulded to a titanium base and forms a monolithic hybrid abutment called “elegance” abutment, with a screw seat in titanium for long-term stability plus a resilient body made of ceramically reinforced PEEK.

To shorten procedures and eliminate intermediate prosthetic steps, digital technologies were developed that allow the intraoral scanning of models and attachments with a high degree of precision and reproducibility. Chairside CAD/CAM systems such as Cerec (Sirona) allow direct scanning of the abutments and the realization of immediate crowns. The ceramically reinforced hybrid abutments with a PEEK body and titanium base are easily scannable, yielding restorations of high quality with a good prognosis. Problems caused by removing and reinserting different prosthetic components – such as loss of soft tissue or early marginal bone loss – are reduced or eliminated.

This article demonstrates the reliability of the single-session protocol using digital methods for scanning and producing crowns complemented with platform switching and evaluates the peri-implant soft-tissue seal.

1 | Implants and abutments used (left to right). blueSKY implant, SKY aesthetic abutment titanium, SKY elegance abutment.

Material and methods

Animal protocol

An animal experiment was conducted to evaluate an implant placement protocol with immediate loading using PEEK and Cerec and to assess the peri-implant soft tissue. Forty-eight blueSKY implants (bredent medical) were placed in healing bone. Thirty-two SKY elegance abutments (bredent medical) were used in the test group and sixteen titanium abutments in the control group (Fig. 1).

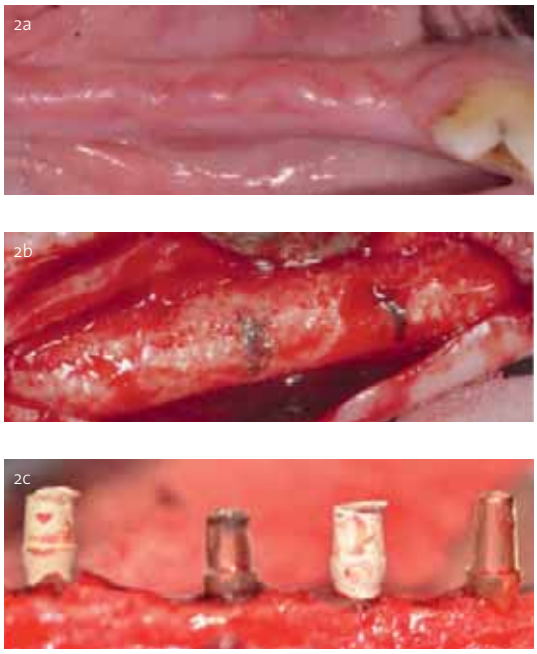
A randomization scheme was generated using the website www.randomization.com. The Ethics Committee for Animal Research of the University of Murcia, Spain, approved the study protocol, which followed the guidelines established by Directive 2010/63/EU on the protection of animals used for scientific purposes. Six American Foxhound dogs approximately one year of age, each weighing approximately 13–15 kg, were used in the study.

Day 0 (first stage)

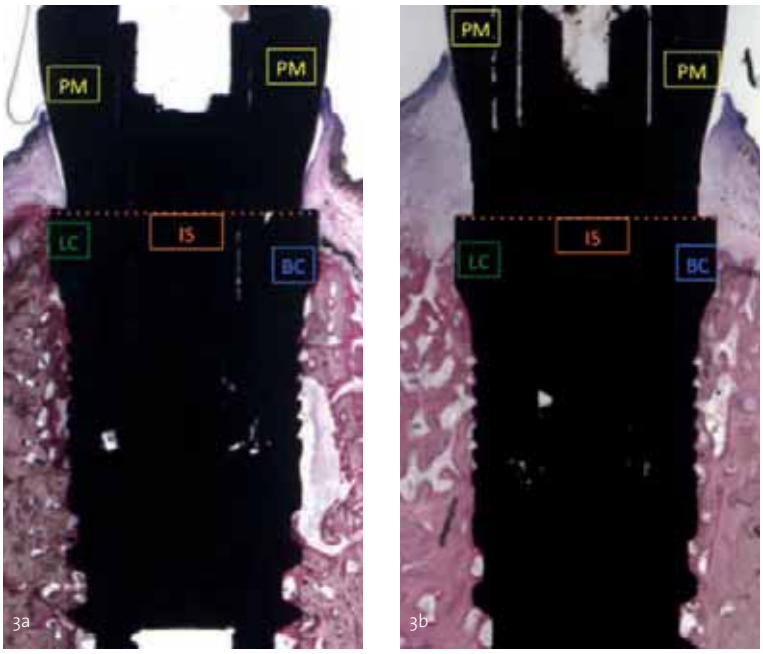
The animals were pre-anaesthetized and taken to the operating theatre where, at the earliest opportunity, an intravenous catheter was inserted into the cephalic vein and propofol was infused at the rate of 0.4 mg/kg/min as a slow constant-rate infusion. Conventional dental infiltration anaesthesia was administered at the surgical sites. Premolar and molar extractions (P2, P3, P4, M1) were performed in both mandibular quadrants of each dog.

Day 60 (second stage)

After drilling, the sequence of placement of four implants by hemi-mandible was randomly planned (using randomization as mentioned). The implants



2a to c I Animal study protocol with immediate loading.



3a and b I Linear measurements (in mm): peri-implant mucosa (PM), buccal bone crest (BC), lingual bone crest (LC), top of the implant shoulder (IS), bone crest (BC), distance from the implant shoulder at buccal bone crest (IS-BC), distance from the implant shoulder at lingual bone crest (IS-LC).

were inserted in healed bone at the sites of the mandibular premolars and molars (P2, P3, P4, M1), with an insertion torque of 30 Ncm or more (Figs. 2a to c).

Analysis (eight weeks after implantation)

- Histological and histomorphometric analysis of the bone-to-implant contact area (BIC) with linear measurements in millimetres: peri-implant mucosa (PM), buccal bone crest (BC), lingual bone crest (LC), top of the implant shoulder (IS), bone crest (BC), distance from the implant shoulder at buccal bone crest (IS-BC), distance from the implant shoulder at lingual bone crest (IS-LC) (Figs. 3a and b).
- Primary stability was evaluated by measuring the ISQ by Osstell Mentor at the time of placement.
- The radiological analysis was performed using a standardized protocol.

Human protocol

The research protocol called for recruitment of subjects among patients referred to the Department of General Dentistry, University of Murcia, Spain, during an 18-month period. All those in need of anterior oral rehabilitation that would include single-implant placement were invited to take part in the study, which was overseen by the institutional review board.

Additional criteria for inclusion in the study included sufficient bone height and width to allow the placement of implants with a minimum diameter of 4.1 mm and a minimum length of 10 mm and an occlusal pattern that allowed for bilateral stability. All subjects needed to have at least 3 mm of soft tissue (vertically) to allow for the establishment of an adequate biologic width and to reduce bone resorption. Exclusion criteria included severe maxillomandibular skeletal discrepancies, non-controlled diabetes, haemophilia, metabolic bone disorders, a history of renal failure or radiation treatment of the head or neck region, ongoing chemotherapy, pregnancy, drug or alcohol abuse, poor oral hygiene, insufficient bone volume at the recipient site, and the need for bone augmentation prior to implant placement.

Day 0 (surgical planning and protocol)

A full-thickness incision was made with a No. 15c blade, combining an intrasulcular with a crestal incision in the palatal area. A full flap was reflected using a periosteotome. The manufacturer's implant placement protocol for blueSKY implants (bredent medical) was followed. After placement, the site was closed using 4-0 polypropylene single sutures.

- Postsurgical care: All patients received anti-inflammatory treatment (NSAID), ibuprofen 3 x 400 mg/day for three days and two chlorhexidine 0,12 % rinses per day for two days.

- Implants: Ten blueSKY implants (bredent medical) 3.5–4 mm in diameter and 10–12 mm in length were randomly assigned and placed crestally in the premolar zone (P1 or P2) of the maxilla.
- Abutments: Ten BioHPP SKY elegance abutments were connected at the time of implant placement (immediate loading). The SKY elegance is a hybrid abutment with a body made of BioHPP moulded directly onto the titanium base without a gap. These abutments are used for single-session immediate-restoration treatments, since they combine the properties of a temporary and a definitive abutment, i.e. it is not necessary to change the abutment. All crowns were realized using the Cerec system (Sirona, Bensheim, Germany) with IPS Empress CAD Cerec/InLab (Ivoclar Vivadent, Schaan, Liechtenstein) feldspar ceramics. The crowns were cemented with RelyX self-adhesive cement (3M Espe, Neuss, Germany) (Fig. 4). All implants were loaded using a platform-switching protocol.

Analysis

- Radiological analysis: Standardized radiographs were taken on the day of placement and at one, three and five months using a one-position paralleling system. The analysis was performed with the ImageJ software (Wayne Rasband, NIH, Bethesda, MD, USA). The distances between the platforms and the points of first bone contact were recorded.
- ISQ stability analysis: Stability measurements were made on day 0 to assess the primary stability of the implant required for the immediate-loading protocol. An ISQ of 65 was defined as the minimum value needed (Osstell Mentor; Osstell, Göteborg, Sweden).
- Mucogingival analysis and clinical findings: The bleeding index was recorded one, three and five months after implant placement by means of a special peri-implant probe. Moreover, any post-insertion loss of peri-implant mucosa or height were recorded. Bleeding on probing (0 = absent, 1 = present) was measured at one, three and five months. The insertion length was measured with a conventional plastic probe by one examiner per examination period and six measurements for each implant. The results were presented as means of six measurements.
- Statistical analysis: Values were recorded as mean ± standard deviation (SD) and median. The non-parametric Friedman test was applied to compare sample values. The level of significance was set at $p < 0.05$.

Results and discussion

Rationale for immediate restoration

Research has shown that, for two-stage implants, marginal bone loss occurs primarily during the first year following placement and that this has mainly been attributed to the establishment of biologic width adjacent to the implant [19]. Some studies have shown that bone remodelling can be biologically ascribed to bacterial colonization of the microleakage present in a two-stage implant system and subsequent inflammation [20]. The crestal bone loss around implants has both horizontal and vertical components. Following abutment connection, crestal bone has been shown to recede from the implant/abutment junction microgap by 1.3 to 1.4 mm, measured horizontally [21].

Animal study

Immediate implant placement and restoration minimize the harmful contamination of the peri-implant biological space and the resultant bone resorption. Immediate loading requires that certain prerequisites are met. The best way to objectively quantify the feasibility of immediate loading clinically is to analyze implant stability either by measuring the insertion torque, recommended at above 30 Ncm, or using the Osstell Mentor ultrasonic stability measuring device that returns ISQ values, which if above 65–70 allow us to load immediately with some confidence (Table 1).

4 I
SKY elegance abutment.

ISQ value	Insertion		p value
	Mean ± Sd	Median	
Bio HPP abutment	74.46 ± 4.55	74.46	0.16
Titanium abutment	74.19 ± 4.29	74.19	0.23

Table 1 I
Friedman test of ISQ analysis and measurements at initial day. Results as mean and medians. No significant differences with $p < 0.05$ were found.

Changes in the peri-implant tissue can be quantified by histomorphometry and histological evaluation in experimental studies (Tables 2 and 3).

The radiological results of the animal experiments are documented in Figures 5a and b and Table 4.

The histological connection between the soft tissue and the SKY elegance abutment is tight. In combination with platform switching, this produces a high level of bone stability at the implant collar (Figs. 6a and b).

Rationale for platform switching

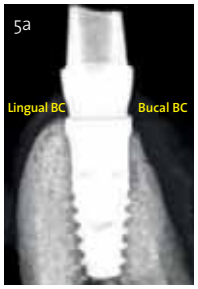
The switch in implant platform diameter prevents apical migration of the epithelial attachment and

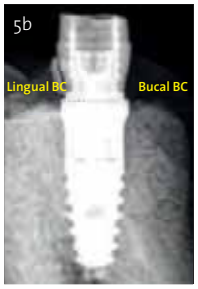
BIC (%)	Titanium	PEEK	p value
Mean ± Sd	61.29 ± 1.45	62.52 ± 4.63	0.32
Median	61.29	62.52	

Table 2 I Friedman test of BIC values. Comparison between titanium and hybrid PEEK-Ti abutments. Follow-up eight weeks after implant placement. Data shows mean, SD and medians. No significant differences with $p < 0.05$ were found.

		Titanium	PEEK	p value
PM-BC	Mean ± Sd	2.74 ± 0.41	3.11 ± 0.26 *	0.032
	Median	2.74	3.11	
PM-LC	Mean ± Sd	2.91 ± 0.03	3.71 ± 0.18 *	0.008
	Median	2.91	3.71	
PM bucal-IS	Mean ± Sd	2.35 ± 0.87	2.95 ± 0.53 *	0.015
	Median	2.35	2.95	
PM lingual-IS	Mean ± Sd	2.65 ± 0.43	3.57 ± 0.38 *	0.003
	Median	2.65	3.57	
IS-BC	Mean ± Sd	2.04 ± 0.11 *	1.53 ± 0.21	0.011
	Median	2.04	1.53	
IS-LC	Mean ± Sd	1.93 ± 0.14 *	1.41 ± 0.19	0.029
	Median	1.93	1.41	

Table 3 I Linear measurements in millimeter: PM-BC: distance from the peri-implant mucosa to the buccal bone crest; PM-LC: distance from the peri-implant mucosa to the lingual bone crest; PM bucal-IS: distance from peri-implant mucosa to the implant shoulder in the buccal aspect; PM lingual-IS: distance from peri-implant mucosa to the implant shoulder in the lingual aspect; IS-BC: distance from the top of the implant shoulder to the first bone-to-implant contact in the buccal aspect; IS-LC: distance from the top of the implant shoulder to the lingual bone crest. Values as mean ± Sd and median. Friedman non parametric test to related samples. (*) Significant differences with $p < 0.05$.



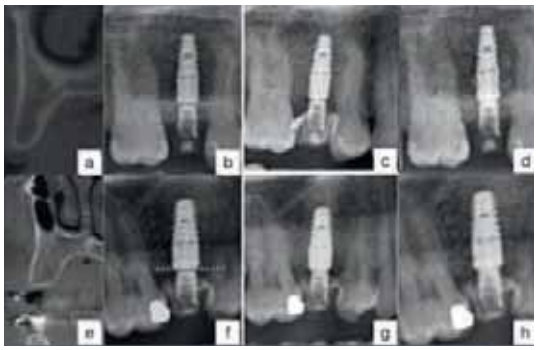


5a and b I Radiological analysis. Comparison between a titanium abutment (a) and a SKY elegance abutment (b).

		Titanium	PEEK	p value
Bucal bone	Mean ± Sd	1.96 ± 0.21 *	1.43 ± 0.11	0.013
	Median	1.96	1.43	
Lingual bone	Mean ± Sd	1.78 ± 0.33 *	1.28 ± 0.43	0.031
	Median	1.78	1.28	

Table 4 I Radiological analysis of bone first contact distance to the implant shoulder. Values as mean ± Sd and median. Non parametric Friedman test analysis. (*) Significant differences with $p < 0.05$.

6a and b I Histological analysis of the SKY elegance abutment. Detail of platform switching and connective-tissue insertion over platform. Connective tissue at four weeks (a). Connective tissue at eight weeks (b).



7a to h I Radiological analysis. Preoperative (a, e), at one month (b, f), at three months (c, g), and at five months (d, h).

		1 month	3 months	5 months	p value
First bone contact to platform (mm)	Mean ± Sd	0.50 ± 0.41	1.07 ± 1.12	1.17 ± 0.87	0.044
ISQ value (%)		68.10 ± 4.93	69.34 ± 1.22	71.43 ± 3.01	0.12
Bleeding on probing (0-1)		0.21 ± 0.01	0.16 ± 0.05	0.06 ± 0.02	0.014
Insertion lenght (mm)		3.64 ± 1.02	4.19 ± 1.05	4.11 ± 1.02	0.029

Table 5 I Human study, values as mean ± Sd. Non parametric Friedman test. Values of bleeding on probing (0 = no bleeding on probing and 1 = bleeding on probing).

soft-tissue ingrowth at the top of the platform by reducing bacterial migration and, consequently, of soft-tissue ingrowth and peri-implant bone loss. Marginal bone loss is drastically reduced and the objective criteria for peri-implant inflammation are greatly improved [22].

Human study

Table 5 lists clinical parameters from human studies at one, three and five months. Figures 7a to h show radiological findings at one, thee and five months. Figures 8a and b show the customization of a SKY elegance abutment.

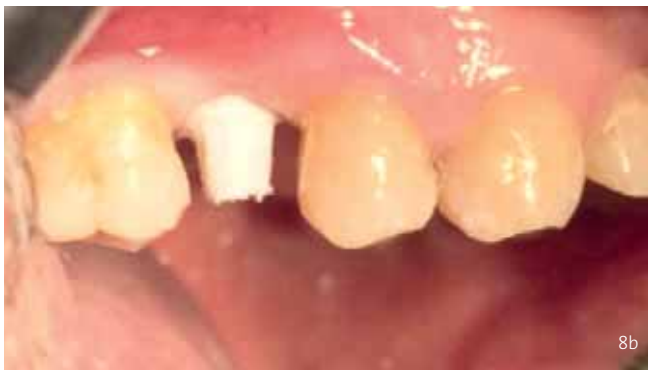
Rationale for single-stage treatments

Successive insertions and reconnections when restoring an implant according to conventional protocols provoke bacterial invasion and colonization of the biological space and mark the onset of marginal bone loss.

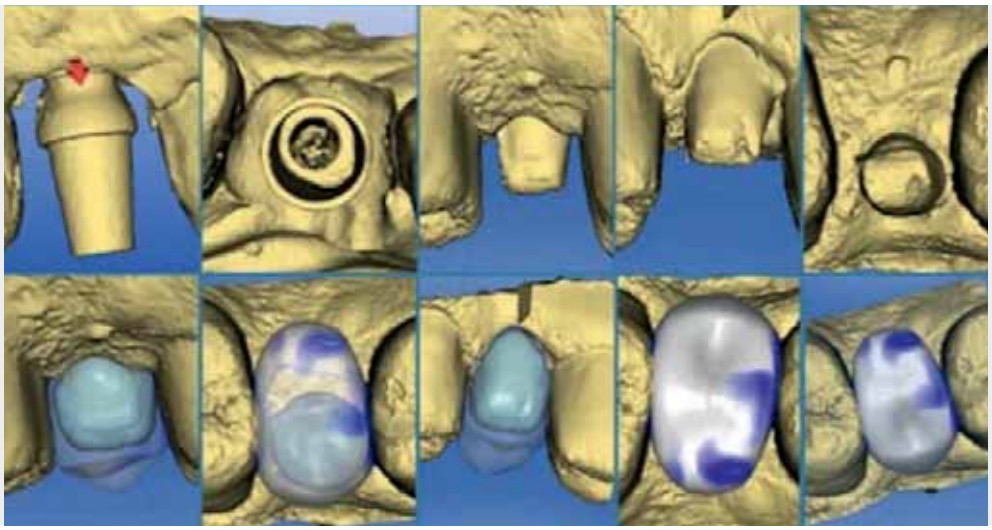
Offering treatment in a single session provides the biological benefits described and saves time and money, increasing patient satisfaction [23].

Intraoral scanning

Fabricating a Cerec crown requires a step prior to intraoral scanning, namely the adaptation of the prosthetic support. The SKY elegance abutment can be cut and customized in the mouth, more or less like dentin, which means a reduction in time and cost. Also required are a delicate surface polish and preparation of the profiles to be recognized by the intraoral scanner. The restoration margins should be well-defined and prepared to the gingival or sub-



8a and b I Customization of a SKY elegance abutment.



9 I Customizing the SKY elegance abutment and crown design with Cerec.

gingival level [24,25]. The SKY elegance abutment anatomy allows to create a proper emergency profile that can be customized for each patient (Fig. 9).

The next step is to obtain relative isolation, with any hint of moisture removed, to ensure a good intraoral impression. The savings in terms of time and money are evident, as is the increase in patient comfort.

Fabricating a Cerec crown

The choice of restorative material to use on an implant requires familiarity with the way masticatory forces are transmitted via the crown and abutment to the implant-to-bone contact area. Biomimetics is the study of the materials that allow us to adapt prosthetic elements to their intended proper function, based on similarity to the receiving environment [26].

Knowing how forces are transmitted is essential to avoid loads that can lead to bone loss or implant failure.

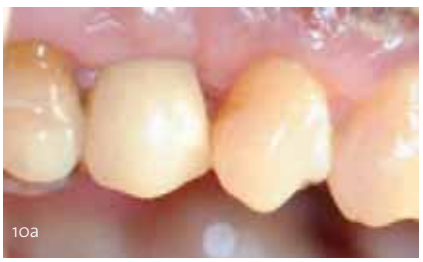
The SKY elegance is a hybrid abutment with a titanium base and a ceramically reinforced PEEK body, so the transmission of forces from the crown to the implant proceeds gradually and progressively. This helps avoid crown fractures due to internal or external tension between a ceramic crown and an all-ceramic abutment.

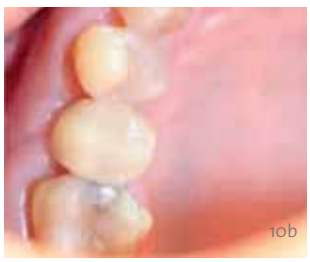
Using a hybrid abutment approach, there is a choice of resin or ceramic base materials, from feldspar ceramics to ceramics with a silicate base. This still leaves the interface to consider; here, the crown is best connected to the abutment using a resin-based composite cement that facilitates the gradual transmission of forces; also, these cements are more stable biomechanically than ionomer cements or derivatives (Figs. 10a and b).

Conclusions

The establishment of a stable peri-implant seal to maintain gingival health around implant-supported restorations must be a primary objective of any implant treatment. The single-stage approach allows the establishment of an initial peri-implant soft-tissue attachment that will be preserved as the abutment is not removed; hence, no violation of the biologic space will occur, allowing for greater tissue stability and yielding better aesthetics and an improved bone and soft-tissue stability.

The integration of digital technology (Cerec) in the implant/restorative process shortens the treatment time and reduces the cost for the patient. The SKY elegance abutment helps treat patients with predictable results.





10 I Final restoration at the day of surgery day (a). Detail of soft-tissue attachment (b).

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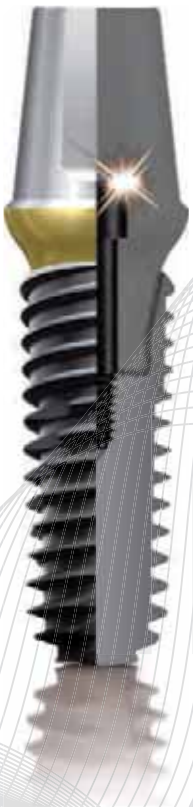

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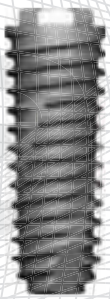

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Minimally invasive socket management with a synthetic bone cement and a ribose cross-linked collagen membrane

Simplified socket management and delayed implant placement

DR BEAT WALLKAMM, LANGENTHAL, SWITZERLAND

The combination of a fast-resorbable synthetic bone substitute with a ribose cross-linked membrane facilitates minimally invasive regenerative socket management and rapid implant placement while optimally preserving the hard and soft tissues.

Following the extraction of a tooth, three-dimensional preservation of the hard and soft tissues is crucial for the aesthetic and functional outcome of the implant treatment. This article presents a simplified technique for socket preservation using a ribose cross-linked collagen membrane and a full-synthetic bone substitute to achieve the desired result. Thanks to the special combination of materials used, no complete wound closure is required. The keratinized soft tissue is optimally preserved, and the extraction defect consolidates well and rapidly.

Statement of problem

The preservation of red and white aesthetics is the aesthetic-functional goal following the extraction of a tooth. It must be based on a sufficient bone supply in the vertical and horizontal dimensions, offering maximum soft-tissue support. It is known that resorptive remodelling is initiated after an extraction (*Schropp*, 2003; *Araújo*, 2005) that results in a significant volume loss in the horizontal (up to 6 mm) and vertical (up to 4 mm) dimensions (*Amler*, 1969; *Nevins*, 2006). In particular, the preservation of the vestibular bone lamella is difficult, because it is particularly prone to resorption (*Smukler*, 1999; *Araújo*, 2005). On the other hand, it is just the vestibular bone wall that plays a decisive role for preserving the soft tissue and, hence, for the long-term success of implant therapy. Therefore, preventing or at least inhibiting the resorptive remodelling processes is eminently important.

Management of the extraction socket

The standard implantological treatment after tooth extraction is delayed implant placement approximately four to eight weeks after the soft tissue has healed (*Chen,* 2004). To mitigate the resorptive processes within the socket and to achieve an adequate hard- and soft-tissue situation, augmenting the bone tissue to replace its lost volume is necessary in most cases. This procedure usually requires an appropriate flap technique for tension-free closure of the surgical site.

A common approach to the preservation of hard and soft tissues immediately after tooth extraction is to fill the extraction socket with a bone substitute (socket preservation). This is intended to minimize resorption. The aim is to simplify the placement procedure compared to the standard delayed approach. The placement of the implant should be possible without additional invasive augmentative and surgical procedures. Animal studies (e.g. *Araújo*, 2008) and various clinical trials have demonstrated that the buccal bone wall cannot be preserved in all cases by socket-preservation efforts, but it is possible to save the volume of the socket, which would be largely absorbed without this technique.

A disadvantage of socket preservation compared to delayed placement without additional augmentative procedures is the increased time period until the potential implant placement. The bony reconsolidation of the extraction socket without the addition of bone substitute provides substantial structure after five to ten weeks and is completed after about sixteen weeks (*Chen*, 2004). By compari-

son, the consolidation processes are significantly slowed within a socket filled with bone substitute, not least because of the need to integrate or resorb the augmentation tissue. The implant usually cannot be placed until approximately six months after extraction (*Jung*, 2012). In addition, it is known that the use of slow-resorbing bone substitutes will often result in insufficient osseous reconsolidation of the socket, due to connective-tissue sheathing of the particles (*Carmagnola*, 2003). It would therefore be desirable to have an augmentation concept for socket management that ensures preservation of a sufficient volume while facilitating implant placement without significant time loss.

Calcium sulphate-based bone substitutes

Calcium sulphate (CS)-based graft materials exhibit a fast resorption profile. The rate of new bone formation after augmentation with CS is higher than that for most other bone substitute materials described in the literature, regardless of their origin (*Thomas* and *Puleo*, 2008; *Turri* and *Dahlin*, 2014; *Toloue*, 2012; *Collins*, 2014). CS-based materials have proven particularly effective in the management of extraction sockets. Re-entry was possible as early as about three months post-surgery (*Toloue*, 2012; *Guarnieri*, 2004). A further advantage is the simplified application mode. Mixing the material with water produces a bone paste that can be injected directly into the socket.

Augmentation concept

This article reports on the use of a resorbable bone substitute material based on a biphasic calcium sulphate in combination with slow-resorbing hydroxyapatite (HA) granules (Bond Apatite; Regedent, Dettelbach, Germany). This material is provided in a syringe, in which it is mixed with liquid. After introducing the bone paste, the material hardens on-site – regardless of the presence of blood or saliva, according to the manufacturer's claims. High primary stability of the augmentation can be achieved. A case report demonstrates a minimally invasive augmentation concept that optimizes soft-tissue preservation without displacing the mucogingival junction. For this reason, a flapless approach was chosen.

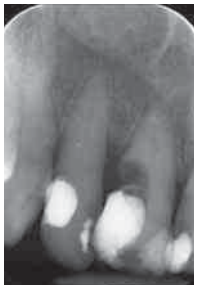
The following aspects must be considered:

- The use of a bone substitute without a membrane often leads to a deeper soft-tissue ingrowth into the graft. Therefore, covering the bone substitute is recommended (*Brkovic*, 2012).
- Using a non-resorbable membrane may lead to serious infectious complications in case of exposure (*Darby*, 2009).
- In conventional resorbable membranes (such as native collagen membranes), bacterial contamination – unavoidable on exposure – results in more rapid membrane resorption. On one hand this prevents infection, but the original purpose of the membrane – preventing the soft tissue from growing into the graft – is compromised (*Klinger*, 2010; *Friedmann*, 2011).
- The resorption time of native collagen can be increased by appropriate cross-linking techniques (*Rothamel*, 2005), resulting in a significantly improved bone regeneration potential (*Goissis*, 1999). However, increased cross-linking is often associated with compromised biocompatibility compared to native collagen membranes (*Rothamel*, 2004 and 2005).
- Modern cross-linking techniques based on the use of the natural sugar ribose (glycation) make it possible to manufacture resorbable membranes which show an elongated barrier profile (up to six months) and high biocompatibility (*Zubery*, 2007 and 2008).
- Ribose cross-linked membranes also show significantly prolonged stability on native or chemically cross-linked membranes even in the event of exposure (*Klinger*, 2010).

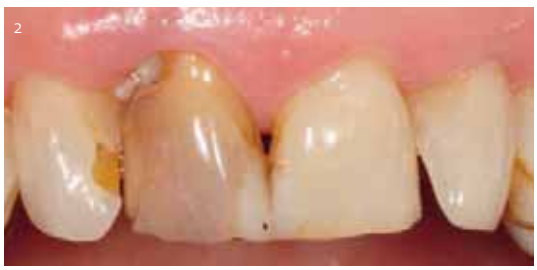
In the case described here, a minimally invasive flapless approach was chosen. The synthetic cementitious bone substitute was covered with a ribose cross-linked Ossix Plus membrane (Regedent).

Case report

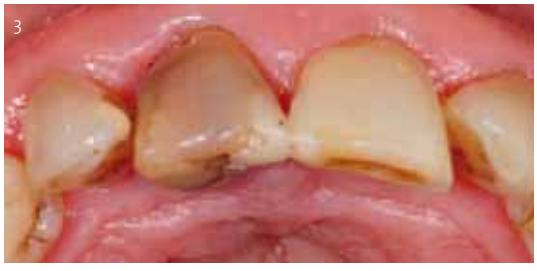
A 61-year-old man presented with a hopeless tooth 11. The tooth had experienced trauma in an accident about 30 years previously and exhibited resorption and caries (Figs. 1 to 3). The treatment plan

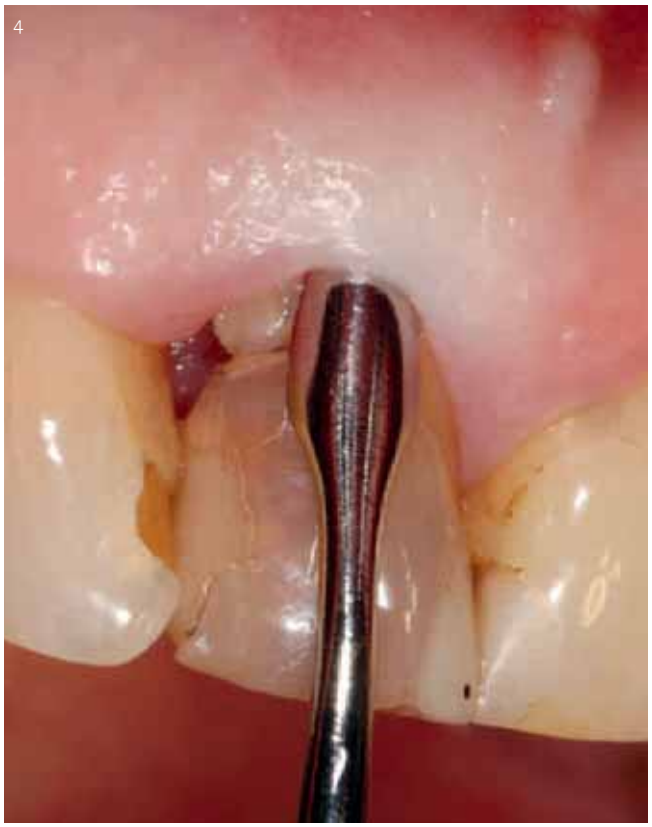


1 I Radiographic finding: Tooth 11 cannot be preserved.

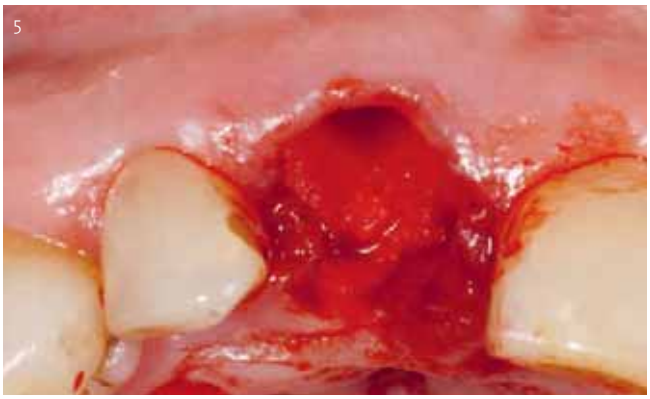


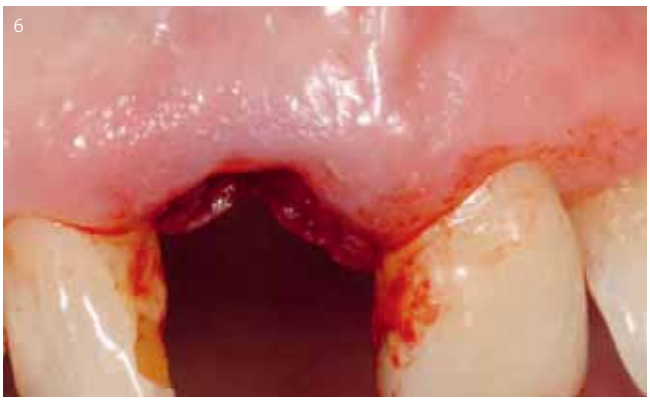
2 and 3 I Clinical finding: Gingivitis and thicker gingival biotype.





4 I Atraumatic extraction of tooth 11.

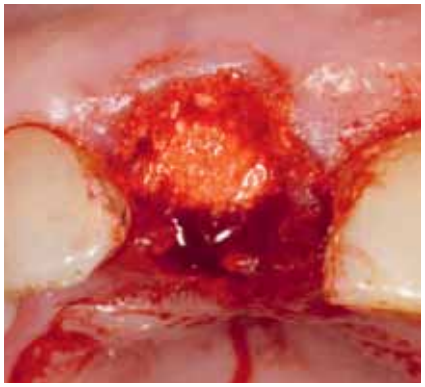




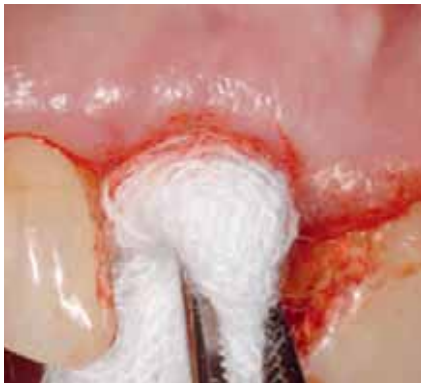
5 and 6 I Situation after extraction: Bony dehiscences in the buccal lamella.

envisaged an extraction with simultaneous augmentation of the bone defect and implant placement at a later point. An atraumatic extraction was carried out first (Fig. 4). Since the buccal lamella showed multiple bone dehiscences, simultaneous implant placement was not possible (Figs. 5 and 6). In order to avoid a complete collapse of the socket and to support the existing soft tissue as far as possible, bone augmentation was performed in the same session. Following thorough curettage of the alveolar bone defect, it was filled in a flapless procedure with a mixture of resorbable biphasic calcium sulphate cement and slow-resorbing hydroxyapatite (Bond Apatite) (Figs. 7 to 9). Subsequently, the socket was covered with an Ossix Plus membrane (Fig. 10) swept below the minimally elevated mucoperiosteal flap both palatally and vestibularly (Fig. 11). Given the long-lasting barrier effect, attempts to achieve

7 I Paste-like bone cement, calcium sulphate-based, prior to application.

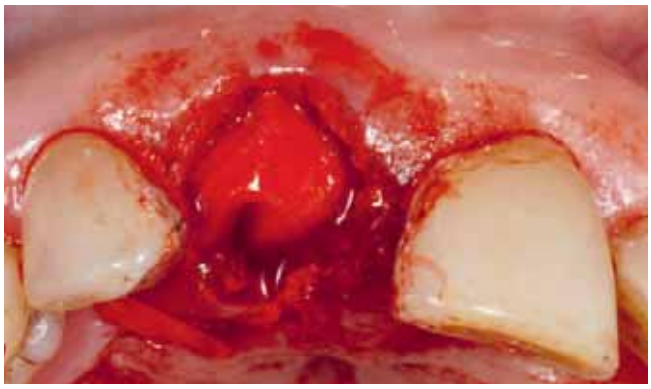


8 I Extraction socket after filling with Bond Apatite (Regedent).

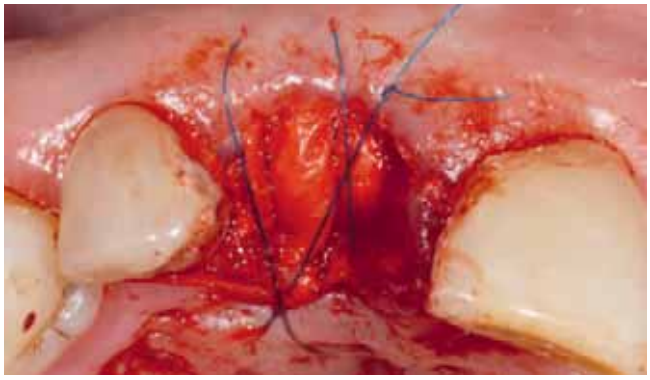


9 I Gentle compression of the bone substitute with sterile wound gauze promotes curing of the bone substitute material.

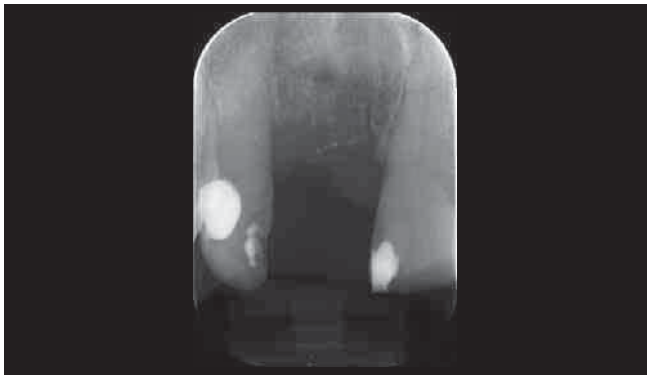
10 I Contoured Ossix Plus membrane (Regedent) for minimally invasive closure of the augmented socket.



11 I Extraction socket after membrane coverage.



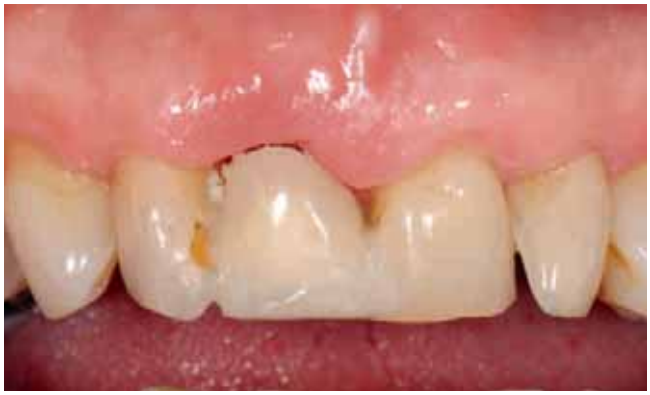
12 I Fixation of the membrane using the cross-stitching technique (triple-sling suture, TSS).

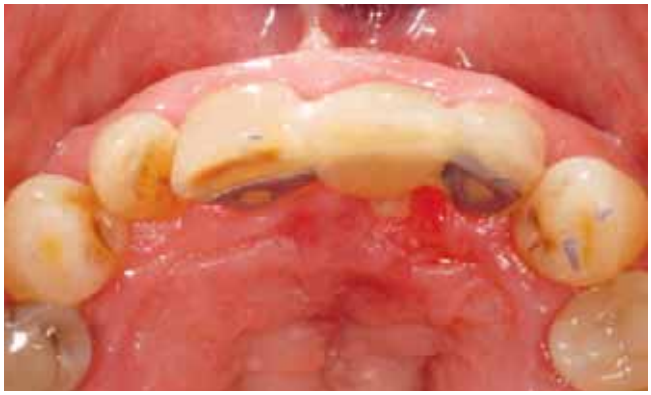


13 I Radiographic situation after the augmentation of the bony defect.

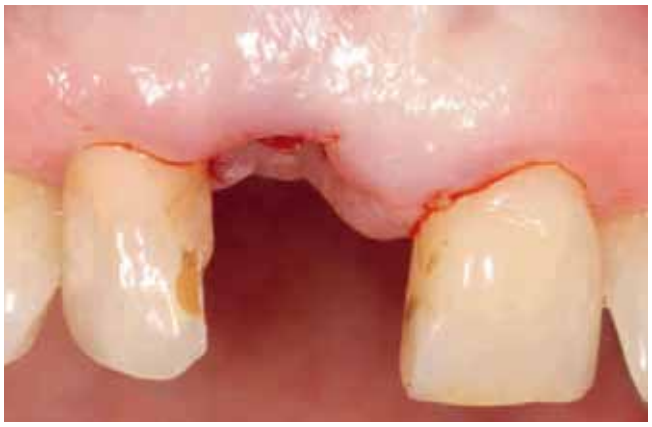
complete wound closure were deliberately not made. This minimally invasive treatment protocol was meant to avoid the preparation of a coronally advanced flap using mobilization techniques – such as a periosteal separation – or a vertical releasing incision, and to preserve the keratinized tissue. The membrane was stabilized with several cross-sutures. This meant that part of the membrane was left exposed in the coronal region (Figs. 12 and 13).

The patient was instructed to rinse with a 0.2 per cent chlorhexidine solution three times a day until complete wound closure and to avoid mechanical trauma in the wound area. For the temporary restoration of tooth 11, an adhesive bridge was delivered, which at the same time served to protect the exposed membrane. Figures 14 and 15 show the situation one week after extraction and augmentation. The surrounding soft tissue was free of inflammation.

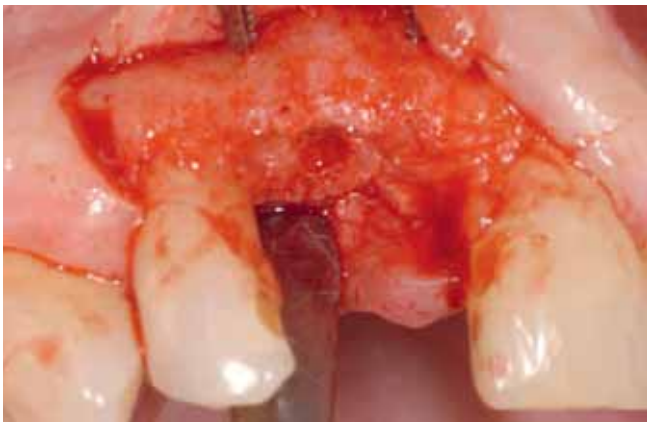




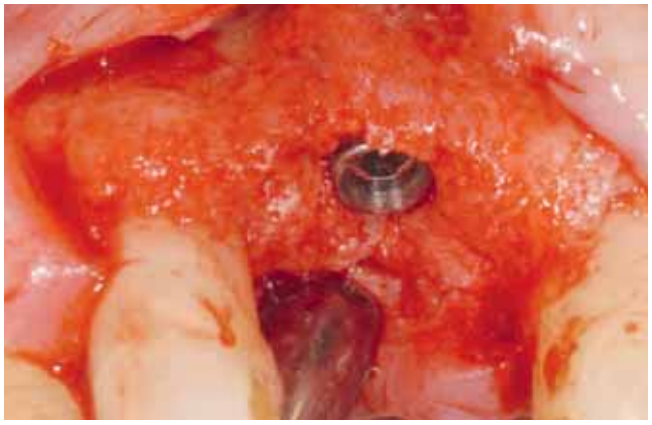
14 and 15 I Situation seven days after extraction and augmentation: Primary healing with no clinical problems. The long-term temporary (a provisional adhesive bridge) protects the extraction socket.



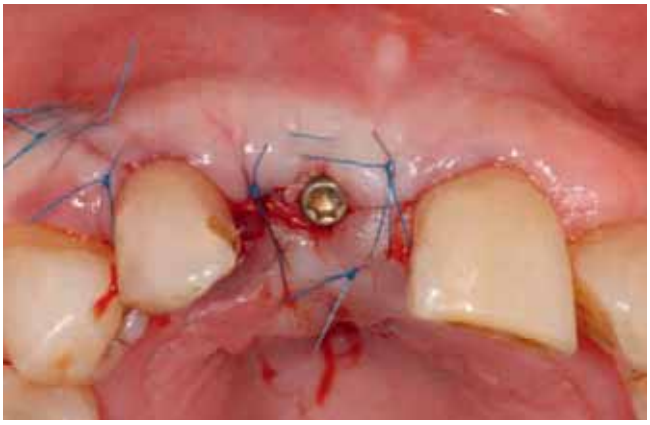
16 I Situation 2.5 months after extraction and augmentation: Healthy and sufficiently keratinized soft tissue. No signs of resorption.



17 I Situation after re-entry: Sufficient vital bone volume, good preservation of the alveolar ridge. Small vertical relief.

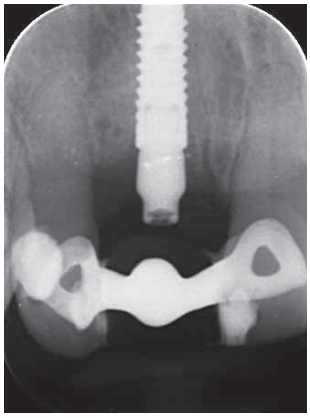


18 I The implant (Straumann Bone Level, 3.3 mm NC, 10 mm) can be inserted with sufficient primary stability. There was some additional augmentation distobuccally carried out with autologous bone chips and collagen membrane.



19 I Wound closure after implant placement.

The sutures were removed one week after the extraction. The post-surgical healing phase and the epithelialization of the exposed membrane were normal and free of irritation. The implant could be inserted after 2.5 months. There was healthy soft tissue with sufficient keratinized gingiva (Fig. 16). The former extraction defect/implant bed showed almost complete bony consolidation, despite the short time elapsed. There were no signs of crestal volume loss (Fig. 17). The implant could be inserted with primary stability (Figs. 18 to 20).



20 I Radiographic situation after implant placement.

Summary

The long-term barrier function of the Ossix Plus membrane provides resistance to premature membrane degradation. Secondary wound closure by epithelialization still takes place at the exposed membrane. The combination with a fast-resorbing biphasic calcium sulphate (Bond Apatite) may simplify socket management, allowing late implant placement after less than three months without additional augmentation procedures. Both the alveolar bone volume and the keratinized tissue are optimally preserved during the bone-formation period.

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Oral surgery specialists welcomed by W&H

bone & tissue days in Salzburg

During the first specialist congress hosted jointly by W&H and botiss biomaterials on 4 and 5 December 2015, the focus was set on expert training. With a successful combination of state-of-the-art technologies and techniques, complemented by a range of guest speakers, the bone & tissue days offered insights into the latest treatment concepts in oral surgery. The comprehensive possibilities for bone augmentation were one of the focuses of the event hosted at W&H's headquarters. More than 100 participants seized the opportunity to expand their knowledge in workshops and presentations held by internationally renowned surgeons.

W&H and botiss biomaterials brought together expert surgeons from Germany, Austria and Switzerland under the motto of "Augmentation 2015 – Innovative Concepts, Solutions and Products". The bone & tissue days have been organized by botiss biomaterials for a number of years now. In addition to jawbone augmentation, the focus of the first specialist congress hosted jointly with W&H in Bürmoos, Austria was on the regeneration of hard and soft tissue and, above all, the latest implant techniques. Special attention was also paid to minimally invasive patient treatments that preserve the maximum amount of tissue and involve as little pain as possible for the patient.

Learning from renowned users

The first day of the event was dedicated to theoretical and practical workshops. These not only provided participants with insights into the tried-and-tested techniques employed by renowned surgeons, but also gave them a chance to find out more about the advantages and benefits of the latest biomaterials available for bone augmentation from botiss biomaterials and W&H's innovative range of products. Live demonstrations gave visitors plenty of opportunity to test out the surgical instruments and devices for themselves.

Selected workshops offered an opportunity to test the W&H Piezomed surgical device live and to learn more about its most innovative features in more detail.

First-rate presentations on stage were the focus of the second day of the event. In addition to the latest findings in the fields of periodontology and implantology, the speakers also put up for disussion current surgical treatment concepts.

Improved patient comfort thanks to new concepts and technologies

The current trend is towards minimally invasive operations and reduced pain for patients. W&H has managed to create awareness on the global market in the field of piezosurgery in particular. The company attracted attention on the international dental market with its latest innovation "Piezomed". Under the specialist supervision of high-calibre surgeons and with the help of experts from botiss biomaterials and W&H, participants were able to try out new concepts and techniques and the new Piezomed for themselves in practical applications and by doing so understand them in all of their facets.

The highly interactive bone & tissue days offered expert knowledge in the field of dental surgery and valuable input for day-to-day clinical practice at the same time. An evening event in the stylish surroundings of the Stiftskeller St. Peter restaurant allowed guests to continue their discussions in more detail and share their experience.

More information

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2nd Zirconia Day 2016 and 5th International Zeramex Congress

Strong, bright, right!

Considering the success of the first Zirconia Day ("Zirkontagung") in 2011, the time had come to return to zirconium oxide as a dental material and its clinical application in the field of implant dentistry. In mid-January, Professors Urs Brägger and Daniel Buser had invited to the 2nd Zirconia Day at the Auditorium Ettore Rossi of the University of Bern for a re-examination of the status quo. Dentalpoint AG had hooked onto this key event to hold a follow-symposium on "Legends and facts – Zeramex in everyday practice" the following day.

Professor Siegfried Jank

Dr Kai Höckl

The attractive programme featuring speakers from the universities of Bern, Geneva and Freiburg set off by addressing preclinical and clinical experience with implants made of zirconia. The first lecture was held by *Dr Vivianne Chappuis* and *Dr Simone Janner* of the University of Bern on "Tissue integration of zirconia implants" and surgical experience with today's two-part ceramic implant systems. *Professor Urs Belser* (Geneva) followed with the prosthetic experience with two-piece zirconia implants. Compared to the 2011 Zirconia Day, *Belser* noted tremendous progress in the field of ceramic implants. *Professor Andrea Mombelli* (Geneva) began his lecture on "Clinical results with two-piece zirconium implants" with an excursion into the epidemiology of peri-implantitis, which in his opinion is a problem related to titanium implants. In this he was supported by the Derks study of the University of Gothenburg published in January 2016, which reported a prevalence of peri-implantitis around titanium implants of 14.5 per cent. In his clinical studies of Zeramex implants with a previous version of today's Zerafil surface, *Mombelli* reported some early failures, but 85 per cent of restorations remained stable in the long term and exhibited no biological complications. *Professor Susanne Scherrer* (Geneva) spoke on "Material science aspects of zirconia abutments and crowns". *Joannis Katsoulis* (Bern) then presented restorative concepts with CAD/CAM-fabricated zirconia bars, where tension-free seat was the most important criterion. *Professor Petra Gierthmühlen-Güss* (Freiburg) reported on minimally invasive and aesthetic solutions. This was followed by *Professor Urs Brägger* and his presentation on new data from the University of Bern on clinical experience with veneered zirconia bridges and Cares implant crowns.

For the following day, Dentalpoint had organized the 5th International Zeramex Congress in Bern's historical centre under the motto "Legends and facts – Zeramex in everyday practice". "The old is more quickly replaced by the new if what is proven appreciated remains", said *Sandro Matter*, CEO of Dentalpoint, in his welcoming address. The two-piece, screw-retained Zeramex P6 implant allows the practitioner to work with known and proven surgical and prosthetic protocols. *Professor Dieter Bosshardt*, head of Oral Histology at the University of Bern, introduced the topic with his presentation on "Tissue integration of ceramic implants compared to titanium". *Dr Kai Höckl* (Freiburg) shared his experience and learning curve with Zeramex implants during the past five years. *Dr Urs Brodbeck* (Zürich) reported on his 20 years of experience with zirconia. *Professor Siegfried Jank* (Lienz and Hall) had performed a statistical analysis on the basis of guarantee forms of 15,000 Zeramex implants placed between 2010 and 2014, arriving at a success rate of 96 to 98 per cent. *Vanik Kaufmann*, dental technician at Cera Tech AG (Liestal), believes that the future belongs to a closed digital workflow. He uses zirconia only in the posterior region, as it appears black under the type of UV light found for example in nightclubs. *Dr Michael Tegtmeier,* oral surgeon (Neuss), concluded the day of sessions for clinical users with the exciting topic of "Conflict prevention in the border area". Finally, *Thomas Bosshart*, Director of Product Marketing at Dentalpoint AG, presented the latest products, and specifically the CAD/CAM workflow for the P6 implant and the expansion of the CAD/CAM portfolio. ■

More information

www.zeramex.com

First Polish User Conference by Dentaurum Implants

Implantology days with Cito mini

The first User Conference organized by Dentaurum Implants from 22 to 23 October 2015 in Olsztyn (Poland) received very positive feedback. Forty-five participants had registered to learn more about the new Cito mini implant line. A combination of informative lectures, interesting hands-on workshops and diverting evening events contributed to the success of the programme.

Different lectures were held on Thursday at the Olsztyn Planetarium, giving participants a first insight into the topic. After the official welcome and presentation of the venue, *Dr Joachim Hoffman* delivered a lecture inspired by the motto "Implantarium meets Planetarium". His presentation included impressive videos projected onto the wall of the cupola room. Later in the day, several challenging cases in the maxillary and mandible were discussed, as were techniques aimed at addressing them. The Cito mini product video helped viewers gain a first impression of what was to come the following day. At the end of the day, guests could enjoy a gala dinner at the beautiful Omega Hotel in Olsztyn. A musical band provided the evening entertainment by playing old Polish seafaring songs.

Cito mini – The star of the second training day

Friday was dedicated to lectures on Exomed, Planmeca and tioLogic meets Cerec. A live demonstration of a ceramic milling work was also performed. The cooperation laboratory Willigala from Chojnice demonstrated CAD/CAM restorations achieved with the tioLogic system. The product presentation concluded with the Cito mini implant system and a hands-on workshop. Apart from testing the tioLogic ST and ST Advanced, participants also had the opportunity to test the Cito mini implant system for the first time.

Many participants highly appreciated this two-day User Conference and expressed the wish to see more such sessions organized.

More information

Dentaurum Implants GmbH
www.dentaurum-implants.com

4th International Implantology Days, 8–10 April 2016, Baden-Baden, Germany

The future starts now

The 4th International Implantology Days, initiated by HL-Academy Baden-Baden (a Seattle Study Club organization) will be held under the motto "The future starts now" in Baden-Baden, Germany, from 8 to 10 April.

Baden-Baden will be the venue of the 4th International Implantology Days.

Photo: Thinkstock

This congress presents yearly updates on the latest trends, technologies and techniques in dental implantology. Its vision of dentistry is one of comprehensiveness and internationality. The 4th International Implantology Days aim at spreading knowledge and promote the highest standards of treatment, regardless of geographical and linguistic division. Interpretation will be provided into German, Russian and Chinese.

Innovative minds and talents from the clinical and technical dental world will speak on the following subjects:

- Smile design
- Implant world
- Digital dental world
- Latest research on biology and biomaterials

More information and registration

HL-Dentclinic & Academy
Ludwig-Wilhelm-Straße 17 · 76530 Baden-Baden
Germany
info@hl-dentclinic.de · www.hl-dentclinic.de

Presenters

Professor Ashraf Ayoub
Professor Ralf Smeets
Professor Shahram Ghanaati
Dr Peter Fairbain
Professor Daniel Rothamel
Professor Lixin Qiu
Dr Mirela Feraru
Dr Horia Barbu
Dr Tommie van der Velde
Professor Kostas Valavanis
Professor Sherine Ellatar
Dr Jan Klenke
Dr Gil Asafrana
Dr Ulrich Volz
Dr Joseph Oliva
Dr Fabio Giorni
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Greg Kinzer
Vince Kokich jun.

ADDITIONAL SPEAKERS
Daniel Edelhoff
Stefan Fickl
German Gallucci
Bärbel Kahl-Nieke
Gerd Körner
Carlo Poggio
Andrea Ricci
Frank Schwarz
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Hannes Wachtel
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Photo: Fotolia.com / Sergii Figurnyi

Countdown to Osteology Monaco

The place to be for implant specialists

The International Osteology Symposium in Monaco this April will focus on open issues in regenerative therapy, and includes workshops and lectures as well as poster sessions and discussions. According to Mariano Sanz, President of the Osteology Foundation, modern digital media will also play a special role at the event.

Not long to go: The International Osteology Symposium 2016 will be held from 21 to 23 April. For three days, Monaco will be the place to be for implant specialists, maxillofacial surgeons and periodontists as well as for researchers and practitioners in general from around the world – professionals, who share an interest in the issues surrounding regenerative therapies in dental medicine. More than 2500 participants from 60 countries are expected at the symposium, which is held every three years and for many is a notable event in the congress calendar.

The open issues

The Scientific Chairs of the congress, *Professor Friedrich W. Neukam* from Germany (see interview on p. 105 f.) and *Professor Myron Nevins* from the USA, have put together an outstanding scientific programme under the motto "Learning the WHY and the HOW in regenerative therapy", which addresses the many open questions that dentists still face in their daily practice routine. No fewer than 85 internationally renowned speakers will try to answer as many questions as possible, with the aim to give practitioners the relevant knowledge for their daily practice routine as well as the confidence to provide their patients with the best possible treatment. In presentations and discussions, experts will examine the topics and questions related to regenerative therapies based on evidence from research as well as study data and experience from master clinicians. Symposium participants will also have the opportunity to contribute their own experience as part of interactive sessions, thus encouraging discussions.

Hands-on training

A highlight of the International Symposium is always provided by the numerous workshops held by the Osteology Foundation and various partners. They take place as part of the pre-conference sessions, and look at a variety of topics, from soft-tissue augmentation to digital implant planning.

Looking ahead

The President of the Osteology Foundation, *Professor Mariano Sanz*, has announced that the foundation will promote its geographical expansion as well as the use of modern digital media in order to foster scientific research and clinical practice. According to *Professor Sanz*, a lot of exciting items have been prepared, and online media will already be used intensively during the conference to enhance the integration of research and practice.

More information and registration

Osteology Foundation
www.osteology-monaco.com

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Our Lecturers

Friday
Milos Miladinov
Livio Yoshinaga

Saturday
Prof. Ashraf Ayoub
Prof. Shahram Ghanaati
Dr. Peter Fairbain
Prof. Daniel Rothamel
Prof. Lixin Qiu
Dr. Mirela Feraru
Dr. Horia Barbu
Dr. Tommie van de Velde
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Dr. Kenneth van Straalen
Dr. Stavros Pelekanos
Prof. Dr. Daniel Grubeanu
Dr. Bogdan Baldea

Sunday
Prof. Dr. mult. Robert Sader
Eddie Salama
Dr. Guido Sarnachiaro
Dr. Howard Gluckman
Dr. Thomas Linkevicius
Dr. Markus Troelzsch
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www.hl-dentclinic.de




bredent group days series 2016

Combining dentistry and dental techniques

"Leading in immediate restoration powered by physiological prosthetics" – under this motto the bredent group has started a new series of exclusive bredent group days. Dentists and dental technicians are invited to participate in the global events scheduled from March to November 2016. A series of local events will be organized by the respective bredent group subsidiaries. An interesting and wide-ranging programme of lectures from renowned and experienced specialists will provide coverage of numerous aspects in the field of dental techniques and dentistry.

Sagrada Familia in Barcelona. The capitol of Catalonia will be one of the venues for the bredent group days 2016.

The bredent group days, the in-house congress of the bredent group, addresses dentists and dental technicians. The event has already become a tradition and the bredent group has demonstrated excellent achievements during seven successful events held in recent years. It all started with a small event at the headquarters in Senden in 2005 and found its peak in the mega-event in Berlin in 2014 with a total of 950 participants. A series of local events is planned for 2016 by bredent subsidiaries all over the world. This series was preceded by the bredent group days in Bucharest in November 2015 with more than 380 participants from 14 countries.

The focus of all events is on immediate restoration of single teeth and full arch, physiological prosthetics, regeneration and digital workflow. The extensive programme includes the presentation of clinical studies' results, the introduction of new products and therapeutic solutions, interesting discussions in an exclusive setting as well as time and space for networking and exchange among colleagues. Moreover, each event has its own local highlight. The series began in Croatia at the stunning location of Split with the participation of more than 200 professionals. The bredent group days of the headquarters in Germany will be held in cooperation with the Spanish subsidiary in Barcelona, Spain, from 23 to 24 September 2016.

Save the date for the planned locations:
Budapest (Hungary): 20 – 21 May 2016
Odessa (Ukraine): 22 August 2016
Barcelona (Spain): 23 – 24 September 2016
Warwickshire (UK): 7 – 8 October 2016
Athens (Greece): 14 – 15 October 2016

More information and registration

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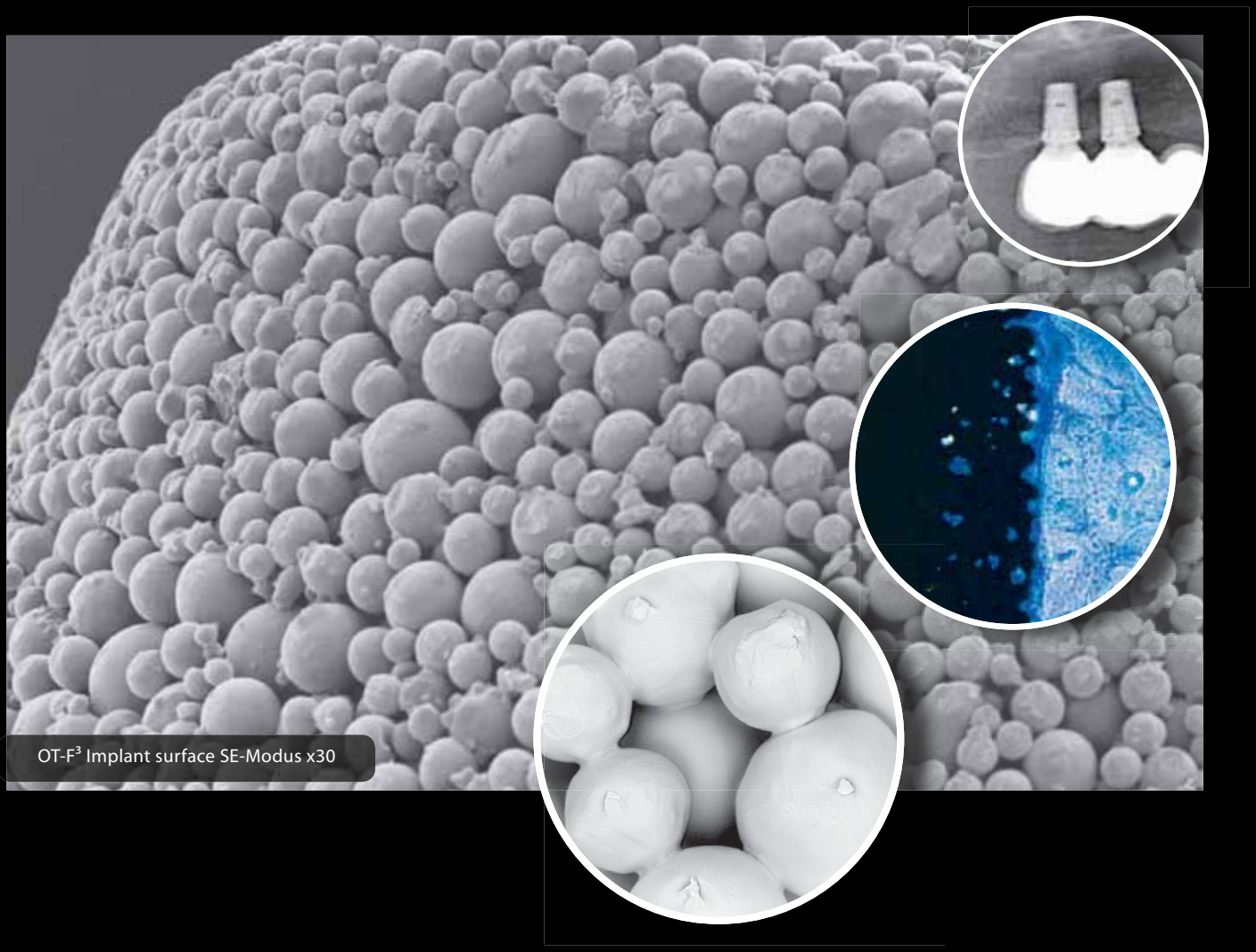

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6th International Camlog Congress

Tackling everyday challenges

This is now the sixth time that the Camlog Foundation is holding an international congress, this time in Cracow, Poland, from 9 to 11 June 2016. The motto "Tackling everyday challenges" promises sessions that will have an impact on daily dental practice, paired with sound science at the highest level.

A top-level scientific committee chaired by *Professors Frank Schwarz* and *Piotr Majewski* is looking forward to welcoming a large number of delegates in the historical and beautiful cultural capital of Poland. The ICE – the brand-new, modern International Conferences and Entertainment Centre – is an ideal venue.

The pre-congress workshops on Thursday have proven very popular in the past and might be fully booked early. Four full-day and two half-day workshops will cover current topics such as 3D planning, bone augmentation, sinus lift and suture techniques in small groups, all presented by competent speakers and with a focus on practical training. For the first time, a Digital Dentistry Pre-congress will be held in parallel to the workshops. During this full-day event, top experts in dentistry and dental technology will discuss the interdisciplinary workflow and provide exciting highlights across the entire range of digital options.

The ICE in Cracow will be the venue of the 6th International Camlog Congress.

Photo: Camlog Foundation

Friday will focus on challenges encountered in the daily practice, followed by a block on the topic of "The challenge and handling of the posterior region". Successful teams will be presenting their concepts during the afternoon and invite the audience to participate in the discussion. At the end of the day, the delegates will encounter a rather special guest speaker. *Markus Gross* is Professor of Computer Sciences at ETH Zürich and Director of Disney Research. He is the winner of numerous prestigious international awards. His concept of the "Virtual man" will no doubt enthrall the audience with its futuristic images and technologies.

Saturday will focus entirely on science. The proceedings will begin with seven short presentations on current research projects, followed by a session on the transmucosal region. After lunch, the winners of the Camlog Foundation Research Awards will be chosen. The highlight will certainly be the debate in the afternoon, when controversial topics will be presented and discussed. The audience will be asked to participate actively by asking questions or giving statements.

With the new interactive congress app, the Camlog Foundation offers all delegates the opportunity of interaction and communication. These will receive considerable useful information in advance of the congress to set up their very personal congress environment. And the app will also play an important role during the congress itself.

In addition to the congress proceedings, the delegates can also expect a lively cultural social programme, the legendary Camlog Party and the enjoyments of a fascinating city.

Special rate for OSIS EDI members

Members of the associated partner organisation of BDIZ EDI, OSIS EDI in Poland, will receive a special congress fee of only € 250 (official rate € 550). Members should contact their OSIS EDI office in Warsaw.

More information and registration

Camlog Foundation
www.camlogcongress.com

9th Osstem World Meeting

See you in Rome!

The Osstem World Meeting is coming to Europe. The international event will take place in the capital of Italy from 17 to 18 June 2016.

The meeting represents an excellent platform to keep up with the latest clinical and technological innovations in implant dentistry with the help of well-acknowledged speakers from around the globe. Participants will also be able to learn new techniques and procedures in hands-on courses.

The first day will start with lectures held by University of Rome Tor Vergata professors and the possibility to attend an intriguing campus tour. The programme of the second day will mainly focus on the topics related to the clinical and scientific fields of implantology with a live surgery carried out by *Dr Marco Tallarico*, Italy, and *Dr Yong-Seok Cho*, South Korea.

The 9th Osstem World Meeting in Rome will not only provide all attendees with the latest news and trends, but also offers a superb occasion to share knowledge and to form networks on an international level.

More information and registration

Deutsche Osstem GmbH
www.osstem.de

Straumann and Anthogyr announce partnership

A promising cooperation

In February, Straumann, a global leader in tooth replacement solutions, and the French dental implant manufacturer Anthogyr have announced a partnership agreement that enables the Swiss company to invest in Anthogyr and to address a broader section of the fast-growing tooth replacement market in China.

Anthogyr's dental implant system is registered and established in China where it is positioned as an attractively priced high-quality option. The agreement foresees the transfer of Anthogyr's implantology business activities in China to Straumann by mid-year, giving the latter access to the fast-growing value segment there. The combination of the two companies' sales capabilities is expected to provide the critical mass to compete and grow successfully in this segment. Straumann already leads the premium segment in China and has recently established a new country organization and distributor network covering all provinces. In addition, Straumann is to acquire a 30 per cent stake in Anthogyr and offers potential leverage to the business in other markets through Instradent, the business platform that Straumann is building to address the global value segment with multiple brands.

More information

Straumann Holding AG
www.straumann.com

Nobel Biocare Global Symposium 2016

Where innovation comes to life

World-class speakers, hands-on instruction, master classes, forums and social networking opportunities, all in the heart of one of the greatest cities in the world. Between 23 and 26 June 2016, the fabled Waldorf Astoria in Manhattan will be hosting the Nobel Biocare Global Symposium under the banner "Where innovation comes to life".

Dr Bertil Friberg

Dr Peter Wöhrle

Four days of learning

The symposium's four-day calendar will feature three main themes: refining and enhancing treatment, digital dentistry, and achieving clinical excellence in challenging situations. In addition to the theme-related agenda intertwined with independent study opportunities, Nobel Biocare is arranging a compelling array of forums, including an innovation assembly and a full-day compromised patient forum. Other forums will cover Partnering for Life – how Nobel Biocare helps dental professionals achieve their goals –, the All-on-4 treatment concept, and the dental laboratory workflow. A new generation of dental professionals will also have their own platform at the event's NextGen forum.

Getting to know each other

After a busy first day of lectures, master classes and hands-on sessions, a Thursday welcome gathering will provide a perfect opportunity to unwind and to network with peers from around the world. Here attendees will be able to raise a glass, enjoy some food and see a display of innovative Nobel Biocare products in the beautiful, historical setting of the Waldorf Astoria. On Friday evening, Nobel Biocare will host the symposium reception off-site at an exciting venue yet to be revealed. It is set to be an evening to remember with an inspiring blend of diversion and education.

By popular demand

The Scientific Chairmen for the Nobel Biocare Global Symposium are *Dr Peter Wöhrle* from the United States and *Dr Bertil Friberg* from Sweden. They recently announced that, for the first time at a Nobel Biocare dental event, registered attendees will be able to have a direct impact on the programme by voting on various topics and speakers via the event website. The results will be revealed a few weeks before the symposium.

With world-class lecturers and thousands of dental professionals from around the world exploring the future of dental implants together, the Nobel Biocare Global Symposium 2016 is sure to be an incomparable experience for everyone involved.

More information and registration

www.nobelbiocare.com/global-symposium-2016

President of the Congress
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Director of Surgery Department
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11th International Conference of the DGÄZ in Tegernsee, Germany

America meets Europe 2016

Continuing an esteemed tradition: The German Academy of Esthetic Dentristy (DGÄZ) invites to its 11th International Conference which will take place from 6 to 8 October at Lake Tegernsee, Germany. The DGÄZ is looking forward to welcoming members of the dental community from all over the world.

For the second time after 2008, the conference will be held under the motto "America meets Europe", putting the focus on its international scope. The DGÄZ and its cooperation partners – the German Association of Oral Implantology (DGI), the Italian Academy of Prosthetic Dentistry (AIOP) and the Seattle Study Club (SSC) – are looking forward to host the international family of dentists and dental technicians at lake Tegernsee. A renowned committee has elaborated an ample scientific programme that aims at deepening the knowledge of current issues and finding practice-oriented answers for the daily routine in the dental practice. An emphasis will be put on the latest trends and developments in digital dentistry, perioprothetics, maxillary surgery and implantology.

The scientific programme proposes a range of interesting lectures, discussions and selected case studies while industry workshops and a dental exhibition provide an appropriate framework to the event. The new venue at Hotel Bachmair-Weissach in Rottach-Egern offers a generous setting and excellent opportunities to exchange professional expertise and to establish new friendships.

More information and registration
www.america-meets-europe.com

Controversal discussion between two teams – standing ovations at the conference in 2008 for Mauro Fradeani, Stefano Gracis and Urs Belser (from left).

One of the highlights of the social event in 2013 – Gala Party at the BMW Welt with Jenny Bae.

Osteology Foundation

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Scientific Chairmen
Friedrich W. Neukam, Germany
Myron Nevins, USA

Register online at www.osteology-monaco.org

Dentsply Implants World Summit Tour 2017

“Because inspiration and confidence matters”

The dynamic, interactive and state-of-the-art Dentsply Implants World Summit Tour, a scientific congress on implant dentistry, is coming to Tokyo, San Diego, Nice and Shanghai during 2017.

Dedicated to enhanced quality of life for patients and a vision of a world where everyone eats, speaks and smiles with confidence, Dentsply Implants will tour the globe under the motto “Because inspiration and confidence matters”. The series of events aims at inspiring clinicians and researchers from Asia, Europe and America to come together to share scientific knowledge and clinical experience and to discover the latest innovations in implant dentistry.

“Attending international scientific congresses is a must for today’s dental professionals in order to keep up with the latest scientific, clinical and digital development, especially in implant dentistry. And with a tour like this, you are able to attend a congress that is not just geographically close to where you live, but also tailor-made to your needs and the market that you work in”, says *Professor Clark Stanford* from the University of Illinois at Chicago, and also a member of the International Scientific Committee for the Dentsply Implants World Summit Tour.

The World Summit Tour will welcome 1200 dental professionals in each of the four cities of the tour. At each tour stop, dental professionals will experience an international yet intimate and familiar setting, with a congress programme made up of scientific lectures from international and regional speakers, hands-on workshops on various solutions, a display of the comprehensive portfolio, and a hospitable atmosphere.

More information

Dentsply Implants · www.dentsplyimplants.com

International Scientific Committee

An international group of well-renowned experts will contribute to the scientific programme for the World Summit Tour:

Tomas Albrektsson, University of Gothenburg, Malmö University, Sweden

Christoph Hämmerle, University of Zurich, Switzerland

Ye Lin, Peking University, China

Jan Lindhe, University of Gothenburg, Sweden

Clark Stanford, University of Illinois at Chicago, USA

Meike Stiesch, Hannover Medical School, Germany

Tetsu Takahashi, Tohoku University, Japan


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THE DENTAL PUBLISHERS

Interview with Dr Franck Renouard

Successful error management: What physicians can learn from pilots

Approximately 80 per cent of all aviation accidents are caused by human error. For some time now, the book "The Search for The Weakest Link: An Introduction to Human Factors", jointly authored by famous French oral surgeon Dr Franck Renouard and flight instructor Jean-Gabriel Charrier, has caused a sensation among physicians and drawn enthusiastic comments from opinion leaders among oral surgeons and oral implantologists. Approximately 50 per cent of serious incidents in clinics and dental practices could be avoided by introducing procedural elements commonplace in the aviation industry, such as checklists or the dual-control principle. Franck Renouard and Jean-Gabriel Charrier have compiled the results of their professional experience to analyze errors and to develop efficient error-prevention strategies. EDI Journal, who took notice of this book very early and already published a review in its 01/2013 edition, now learned more about the topic during an interview with Franck Renouard.

How many glasses of wine did it take for you and Jean-Gabriel Charrier to come up with the idea of writing this, let us say rather unconventional, book?

It may look like an idea born out of an overabundance of adult refreshments ... The fact is, however, that the idea occurred to me much earlier, about 20 years ago, when I had an accident as a private helicopter pilot. This accident, which occurred during take-off, is described in the book in detail. I immediately realized that the ship (that's what some pilots call their machines!) had a technical problem, but it turned out very quickly that I was the one who had made an error. After the investigation, I could have shrugged off the whole thing – human error, a human culprit (me) – but that seemed just too simple. So I started reading up on a lot about aviation accidents, and many books on human behaviour and cognitive processes. What I found was ››

The dual-control principle is one of the procedural elements introduced to prevent aviation accidents caused by human error.

Photo: fotolia/Angelo Giampiccolo

Dr Franck Renouard

an absolutely fascinating world. I also had the good fortune to meet lots of people who work with safety processes, and that gave me deep insights into the nature of our own work.

Such as? What would be a practical example?

When we talk about complications at our conferences and in training courses, we often think in terms of two types of technical problems, which we can categorize as biomechanical complications ("overloaditis") or biological complications ("periimplantitis"). But we never talk about what role our own behaviour might play in the development of these complications. Therefore, in our book we added two more categories of human-related complications, those involving a conscious infraction (we might call that "cheateritis") and those involving ignorance ("dumbbellitis"). The first category includes everything that goes wrong because the practitioner boldly flouts the rules and the second includes all kinds of complications caused by simple error. This difference – between a conscious departure from the approved set of rules and an accidental, non-deliberate and non-repeatable departure from what one set out to – is of great importance. The first is an ethical problem, while the second is a problem of how people function. Consistent application of our "human factor" concept can reduce the number of errors we make and the severity of their consequences significantly. I myself was able to significantly improve my practice by cautiously introducing this concept over the past five years. There are a number of colleagues who, by way of fairly straightforward application of the tools and strategies detailed in our book, have greatly reduced their own stress levels and cut down on the, often banal, time killers that can waste a disproportionate amount of time and money.

Some of the people I discussed your book with felt that most dentists were not exactly keen on learning more about their own shortcomings and about their own selves as potential sources of error …

Then they would be ill advised, since as so often, ignoring the problem does not solve it. The only – repeat: only – way to improve safety in any human endeavour is to learn more about one's own mistakes, to share our experiences about them and to work on them. In commercial aviation, a self-reporting system called Rex ("Report your experience") allows all pilots and crew members to share their experience and knowledge of incidents so as to better identify pitfalls and hazardous situations and to jointly develop preventive measures. If you allow yourself to be buried in your practice, you will never be able to benefit from the experience of your peers. Let me give you a simple example: I know of no dentist who has never had a problem with motor speed. You think you are working out a low speed that is safe for implant placement, but in fact the motor is rotating much faster. In the worst case, the implant might then simply disappear into the sinus or injure the alveolar nerve. I keep mentioning this problem in my lectures, and nearly half of the audience will raise their hands when asked if this was something they could relate to. And yet no one ever seems to draw the consequences, the problem is almost never discussed in training, the dental industry disseminates no special safety instructions, and engine manufacturers have not yet managed to provide an automatic alarm to alert operators when a certain speed is exceeded in their products. There are plenty of other, similar examples from dentistry and oral implantology I could name.

Sometimes I lecture on human factors before representatives of the nuclear industry. I can tell you, when it comes to a culture of safety, our discipline is still living in the Stone Age. It is simply amazing how much money and energy we spend on discussing the benefits of platform switching, but no one is interested in a similar intensive discussion about how the person of the dentist influences his or her own success rate. Don't you think it is time for this to come out in the open?

I therefore hope that the book will help open some minds to this issue, inducing more and more dentists, lecturers, trainers and industry representatives to incorporate the concept in their in-office procedures and other activities.

Dr Renouard, thank you for this enlightening interview.

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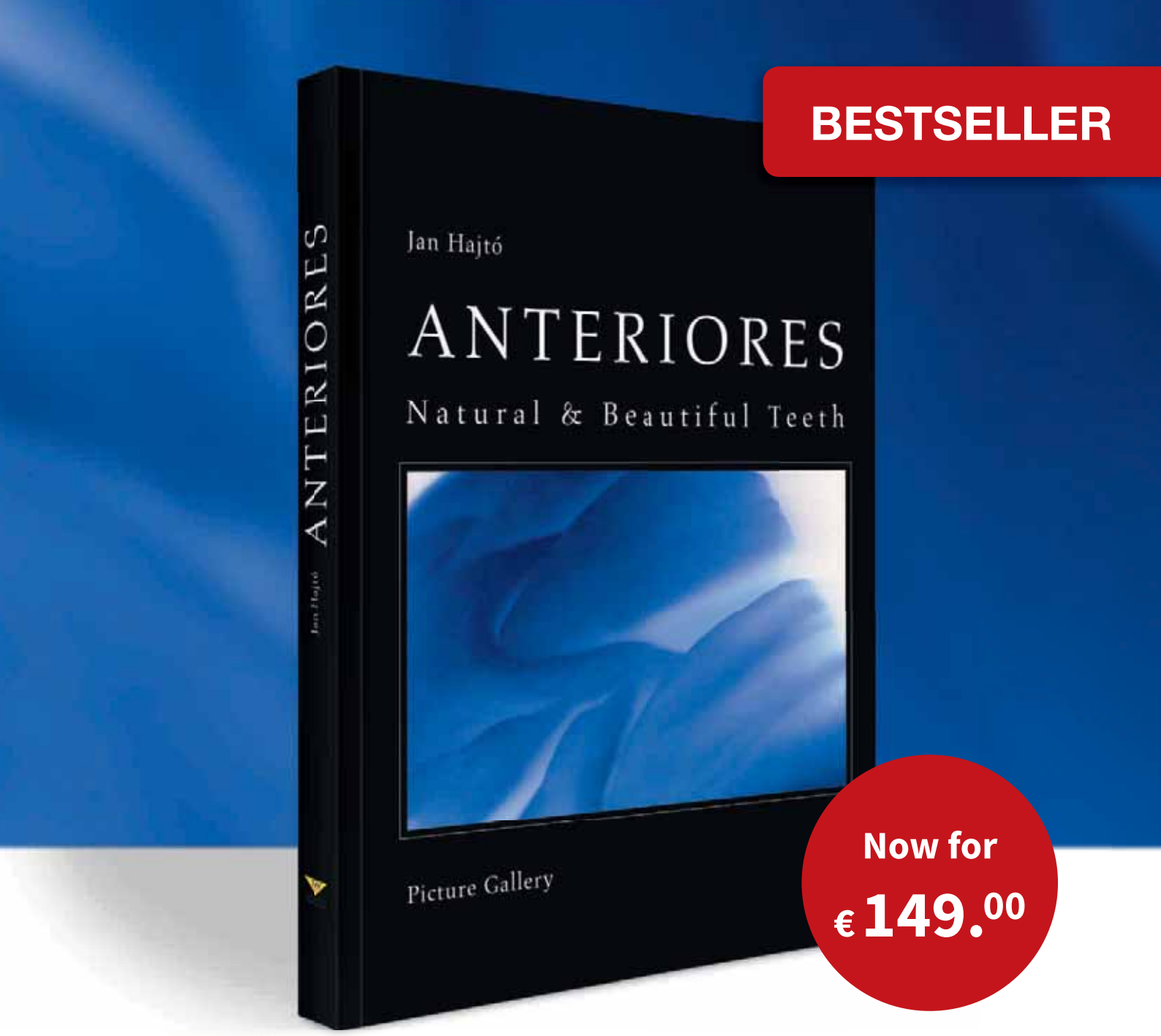

ANTERIORES – Natural & Beautiful Teeth
by Dr Jan Hajtó

Picture Gallery

This book aims to be highly visual and inspiring. A selection of naturally beautiful anterior teeth is presented in the form of a coloured atlas. The cases are systematically arranged according to gender and an approximate classification of the regularity of the dentition. This collection will become indispensable as your manual for the aesthetic planning and production of anterior restorations or as an aid to communication between dentist, patient and dental technician.

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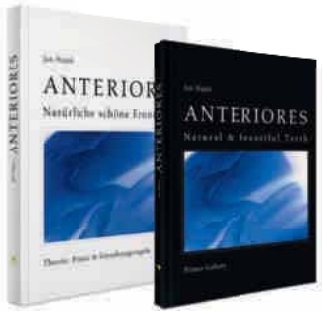

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THE DENTAL PUBLISHERS

6th International Camlog Congress – Interview with Professor Piotr Majewski and Professor Frank Schwarz

A high-quality congress programme

Camlog has a new answer to the overload of scientific content we all have experienced at congresses before: "Tackling everyday challenges" is the motto of the 6th International Camlog Congress, to be held in Krakow, Poland, from 9 to 11 June 2016 (see page 90). The motto promises to focus on hands-on aspects of implant dentistry in daily practice. However, with Professor Jürgen Becker as President of the Camlog Foundation and this year's congress presidents, Professor Piotr Majewski and Professor Frank Schwarz, the newly appointed president of DGI, participants can rest assured that there will be a watchful eye on science, too. EDI Journal spoke to the two presidents to learn more about this year's attractions.

Professor Frank Schwarz

Professor Piotr Majewski

Give us some reasons why the upcoming ICC in Krakow should not be missed ...

Schwarz: For the first time, a pre-congress with full emphasis on digital dentistry today and tomorrow will take place before the traditional workshops. This pre-congress distinctly focuses on interdisciplinary workflows and provides exciting highlights across the entire range of digital options. The programme of the following congress days promises to be exciting and will perfectly link practice and science, as already mentioned. The interactive network lounge will no doubt present an innovative platform for networking, especially for the younger participants: Speakers and moderators will be present at set times in order to discuss any upcoming issues or questions in an amicable setting.

Majewski: In addition to the scientific programme, it is also important not to forget the beauty of Krakow, especially in June. Not many people have been to Krakow, but the ones who have visited the city before are infatuated. Our ancient capital entices visitors with legendary attractions, a very relaxed lifestyle as well as an abundance of arts and cultural highlights. Participants will enjoy the state-of-the-art ICE, which is one of the most renowned and exclusive congress centres in Europe – it boasts a fascinating architecture, outstanding acoustics and an excellent technical infrastructure.

What do you personally consider to be the hottest congress topic?

Schwarz: I am really looking forward to the team discussions and the debate on Saturday. On Friday afternoon, which focuses on daily practice, successful teams will be presenting their treatment concepts. In contrast, the Saturday is dedicated to science and a highlight will be the "battle" in the afternoon, when controversial topics will certainly attract everybody's attention. The audience will be invited to participate actively by asking questions or giving statements.

Majewski: In my opinion, one of the most interesting topics will be the "team approach concepts", which are often neglected in our daily practice. For young doctors, to be given practical guidelines supported by scientific evidence and clinical experience is very important. I am also very excited about Saturday's discussion concerning controversial, difficult questions and appropriate answers in contemporary implant dentistry.

We heard something about Mickey Mouse being there, too ... ?

Majewski: ... yes, in a certain way. Our special guest *Markus Gross* is not only Professor of Computer Sciences at the ETH Zürich, but also Director of Disney Research. He will give us fascinating insights into the realistic modelling and animation of human faces. Initially, these techniques were used for special effects, but the technology holds great potential for medical applications. The "Virtual man" will no doubt enthral the audience with futuristic images and technologies.

Thank you very much, Professor Majewski and Professor Schwarz, for these interesting insights.

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More information and registration

Camlog Foundation · www.camlogcongress.com

The heart of the Thommen Implant System celebrates its 30th anniversary

Proven implant-abutment connection

There are few things that influence the reliability of a dental implant more significantly than the implant-abutment connection. After placement in the implant bed, the connection plays a vital role in terms of quality, aesthetics and long-term clinical success of the reconstruction. The Thommen Medical implant-abutment connection has been proven for 30 years, demonstrating daily that clinical success is not the result of chance.

The connection combines all the features of an ideal implant-abutment interface: a stabilization ring and an internal hex. This combination ensures optimal mechanical stability and a highly precise fit. The Swiss-manufactured components of the Thommen implant connection play a crucial role in the optimal integration of the soft tissue and the stability of the marginal bone. Furthermore, the specific design of this connection – along with Thommen's exclusive small abutment screw – provides protection against excessive mechanical forces while offering superior design freedom for implant aesthetics.

The Thommen implant-abutment connection was introduced in 1986. Since then, oral implantology has seen many changes and advances, as have Thommen and the Thommen Implant System. But the heart of the system, the Thommen implant connection, is still unchanged after all these years.

"Why should we change something that is clinically proven?", asks *Dr Daniel Snétivy*, CTO at Thommen Medical. *Dr Ueli Grunder*, a specialist practice partner in Zürich, adds: "We generally see absolute stability of the soft and hard tissue around Thommen Medical implants and we are convinced that the implant-abutment connection is an enormous factor in this."

More information

Thommen Medical AG · www.thommenmedical.com

Thommen implants successfull in study

A recent clinical study performed by Hicklin, Schneebeli, Chappuis, Janner, Buser and Brägger at the University of Bern demonstrated that Thommen Medical implants with the Inicell superhydrophilic surface can be successfully restored 21 days after implant placement. All implants were considered fully integrated at the 6-month follow-up examination, resulting in a survival and success rate of 100 per cent.

This study confirms not only previously published results, but highlights additional benefits: Functional occlusal loading 21 days after implant placement is a safe and predictable treatment option when utilizing Thommen Medical Implants with the Inicell superhydrophilic surface. No complications were reported within the observation period. The radiographic crestal bone loss analysis confirmed the marginal bone stabilization just beneath the machined (1 mm) implant collar.

Patient satisfaction was very high, due to the shortened healing time experienced between implant placement and prosthetic reconstruction.

Based on the excellent clinical results, Thommen Medical implants with the Inicell superhydrophilic surface are a currently renowned for rapid and sustained tissue integration. Thommen Medical once again demonstrates its commitment to the needs of clinicians and their patients – which is always at the center of Thommen Medical's research activities – and its focus on ergonomics and simplicity in product development.

More information

Thommen Medical AG
www.thommenmedical.com

Excellent results for Straumann implants

A large retrospective study of dental implants in a broad clinical setting with 427 patients and 1578 implants from various manufacturers with a 9-year follow-up showed significantly lower odds ratios for moderate/severe peri-implantitis with Straumann Tissue Level SLA implants than other implant systems evaluated. The study was published in peer-reviewed Journal of Dental Research.

The results from a large independent study on peri-implantitis have shown that there are substantial differences between implant systems and the occurrence of peri-implantitis. Using the national data register of the Swedish Social Insurance Agency, *Dr Jan Derks* and colleagues from Gothenburg University in Sweden randomly selected 427 implant patients from a population of approximately 25,000 patients treated nine years previously by more than 800 clinicians. The selected patients were assessed for typical indicators of peri-implantitis, including bone loss, bleeding, and pocket depth around their implants. The investigators observed that the extent of moderate or severe peri-implantitis differed between the implant systems and that the odds ratio of developing it was more than three times higher in the patients treated with products of other evaluated manufacturers. With some exceptions, the competing products had a TiUnite or a TiOblast surface; all the Straumann implants were Tissue Level SLA. The results, which were presented at the 2015 EAO and have now been published in the Journal of Dental Research, add weight to previously reported findings showing high success rates with Straumann implants. The findings are highly relevant for dentists who base their choice of implant on independent clinical evidence.

More information

Institut Straumann AG · www.straumann.com

Interview with Professor Friedrich W. Neukam, Chairman of Osteology Monaco 2016

Learning the WHY and HOW in regenerative therapy

At the International Osteology Symposium 2016, the preservation of teeth is one of the most important topics for Professor Friedrich W. Neukam. Dr Heike Fania spoke to him in his role as the symposium's Chairman about what this implies exactly and what other important questions will be addressed in Monaco in April 2016.

Professor Neukam, the scientific programme of the International Osteology Symposium 2016 in Monaco will be held under the motto "Learning the WHY and HOW in regenerative therapy". Which contents will bring this motto to life?

In our daily practice routine, we need to examine all procedures that we have been applying for years – and quite successfully as we believe. The reason is that our knowledge has changed rapidly within the space of only a few years. That, too, is one of the objectives of the Osteology Symposium in Monaco 2016: We want to question things and to give dental practitioners a benchmark by reviewing established techniques in regenerative therapy, while at the same time posing the question of what is the most suitable procedure to achieve a predictable treatment goal. Of course, a further objective is to present the current state of knowledge and the latest research results in the regeneration of oral tissue, to discuss these topics and to demonstrate their clinical implementation for dental practitioners.

The programme covers a broad spectrum of topics in oral regeneration. Which of these are most important for you?

The long-term success of regenerative measures, the preservervation of teeth as well as implants in healthy oral hard and soft tissue conditions. "Teeth for a lifetime" is a very important subject for me, to achieve the dream of preserving teeth for a lifetime if at all possible, and, of course, this also applies to implants. Which possibilities do the techniques of bone regeneration and soft tissue regeneration offer for various indications – be it in the posterior or the anterior regions – while ensuring a long-term aesthetic outcome? Of particular importance to me is the question of which decisions we take and

Professor Friedrich W. Neukam

which treatment path we follow if the extraction of a tooth proves inevitable, as there is a number of options available in that case. We have to consider the various treatment options, which is why I am looking forward to the interactive discussion on "Decision making after tooth extraction". The discussion group includes experts with many years of clinical experience who will be presenting the use of regenerative techniques for preserving hard and soft tissues.

You have just mentioned the topic "Teeth for a lifetime". What exactly are the questions relating to this part of the programme?

Well, as already mentioned briefly, I believe that everyone wishes to keep their teeth for a lifetime if possible. For me, the questions of periodontal treat-

Osteology Monaco 2016

All information on the programme, workshops and poster exhibitions as well as registration is available on www.osteology-monaco.org.

ment and regenerative therapy options are at the forefront here. However, what I truly look forward to, is how the "HOW" will be presented. For me this also means that one must receive clear information on when these measures are not effective, and I think that a crucial question will be answered in the course of our event: When do we need to extract teeth in order to enable other treatments, such as regenerative techniques but also implant restorations in the local tissues.

A major poster exhibition will also be held as part of the Osteology Monaco event, together with the Research Forum where current research results will be presented.

What, in your opinion, are the most important topics which have so far been covered in research?

If we look at the regenerative options available today, pre-clinical research results, and of course, clinical studies relating to bone preservation after tooth extraction as well as the preservation and reconstruction of the soft tissue are of prime importance to me as they have a major influence on our clinical treatment modalities.

If your colleagues asked you why they should participate this year's Osteology Monaco, what would you tell them?

First of all I would not focus on the casino in Monaco, but I rather believe that the Osteology Foundation and the International Osteology Symposium in Monaco have become the standard – a worldwide standard for regenerative measures in the oral cavity. This is where experts from across the globe meet to state their positions on current topics, research results as well as clinical questions. In other words, this is a highly attractive forum with a programme which is also devoted to entirely practical aspects, namely the "WHY" and the "HOW" in regenerative therapy.

Thank you for the interview, Professor Neukam.

Dr Heike Fania

Zest expands dental portfolio with acquisition of Danville

A compelling strategic logic

Zest Anchors, Inc. recently announced the acquisition of Danville Materials, LLC, a manufacturer of restorative consumables and small equipment for the dental market, from Inverness Graham Investments. Zest is a portfolio company of Avista Capital Partners, a private equity firm.

"For more than 40 years, Zest has been a global leader and pioneer of overdenture treatment technologies focused on improving the lives of edentulous patients, including the market leading Locator Attachment System", said *Steve Schiess*, Zest's CEO. "The acquisition of Danville will enable Zest to expand its broad range of treatment solutions to patients caring for their natural teeth, as well. Danville's high quality line of dental consumables, market leading micro-etching and air abrasion products and unique offerings, including perioscopy, will strongly complement the clinical solutions available at Zest today."

Garrett Sato, Danville's CEO, added: "The combination of Zest and Danville will produce a stronger combined entity. The application of Zest's marketing and education capabilities to the Danville product portfolio will increase the number of clinician users and, in turn, solidify dealer relationships. The timing is excellent as it coincides with Danville's launch of Bulk EZ, a highly innovative dual cure restorative composite."

Sriram Venkataraman, Partner at Avista, said: "The combination of Zest and Danville's market-leading portfolio is part of our commitment to driving the next phase of Zest's growth. The addition of Danville's compelling product set to Zest's strong portfolio will further position the company to continue delivering valuable innovation to the dental community."

More information

Zest Anchors, Inc.
www.zestanchors.com

Straumann receives prestigious Pierre Fauchard Academy Dental Trade and Industry Recognition Award

Service and merit to the profession and community

Straumann is the recipient of the prestigious Dental Trade and Industry Recognition Award 2015 presented by the Pierre Fauchard Academy (PFA). Presented annually since 1994, the award honors an outstanding leader in the field for contributions to dentistry and the community.

The 2015 award was presented in Washington D.C. at the PFA Annual Awards luncheon concurrent with the American Dental Association Sessions in recognition of the company's "service and merit to the profession and community, well above recognized standards".

PFA President *Dr Karyn Stockwell* cited Straumann for "outstanding contributions ensuring the highest standards of care for our patients. Straumann's commitment to ongoing clinical research and contributing to communities through outreach to developing regions, ongoing commitment to Ectodermal Dysplasia patients, the Young Professional Award in Regenerative Dentistry and the Straumann AID charitable programme have exemplified the mission of the Pierre Fauchard Academy by providing excellence in research, public service, education and leadership development in oral healthcare worldwide."

"It is a great encouragement to receive recognition for things that often go unseen and unnoticed", said *Marco Gadola*, CEO of Straumann. "We share it with countless unseen dentists and colleagues whose selfless support is an essential part of our efforts to enhance patient care and to give smiles to the less privileged. We sincerely thank them and the Pierre Fauchard Academy."

More information

Straumann Holding AG
www.straumann.com

Hans Geiselhöringer appointed President of Nobel Biocare

"We will continue our strong commitment to innovation"

As of 1 January 2016, Hans Geiselhöringer has taken over as President of Nobel Biocare. The appointment was made to strengthen the organization around its strategic goals.

Since 2011 *Hans Geiselhöringer* has served as Executive Vice President of Global Research, Products and Development, shaping a highly competitive product and innovation pipeline. Prior to that he was Executive Vice President Global Marketing and Products from 2010–2011 and Head of NobelProcera and Guided Surgery from 2009–2010. *Geiselhöringer* joined Nobel Biocare as Head of NobelProcera in 2008 and was appointed a member of the executive committee in 2009.

From 2004 to 2009, *Geiselhöringer* acted as Global Speaker for Nobel Biocare. With his recent appointment he becomes the first Nobel Biocare customer and dental expert in the company's history to take the reigns as its highest ranking executive.

Hans Geiselhöringer

In 1998, *Geiselhöringer* founded DentalX GmbH, a dental laboratory chain specializing in implantology, anaplastology, functional and esthetic reconstructions and imaging technologies. He is a trained dental technician and possesses great technical knowledge of the implant and CAD/CAM industries, as well as deep customer understanding and insights, enabling continuity of innovation at Nobel Biocare. As a renowned expert on dental technologies and materials, he has published and co-published various clinical and research articles. Furthermore, he is a member of numerous international dental associations and a recognized lecturer at dental conventions throughout the world.

As *Geiselhöringer* states: "Our focus on the patient remains steadfast and constant. Everything we do will continue to be patient-centered, clinically relevant and evidence-based. To strengthen our leadership in implant-based dentistry, we strongly focus on providing integrated digital solutions to improve the customer experience and increase productivity on all levels while ensuring a high level of clinical success and predictability. With our counterparts at KaVo Kerr Group, we have all the pieces in place today and we are grouping our highly skilled global teams together to form the industry's new digital dentistry powerhouse. In summary, we at Nobel Biocare will continue our strong commitment to innovation, providing an ongoing pipeline of superior solutions that helps more customers treat more patients better." ■

More information

Nobel Biocare Holding AG
www.nobelbiocare.com

Comfour by Camlog

Comfortable system for both users and patients

Comfour is Camlog's new system for occlusally screw-retained restorations in edentulous or partially edentulous jaws. Due to its many technical highlights, Comfour allows the realization of several treatment concepts. In addition to occlusally screw-retained bridges for immediate and delayed restorations, the multi-optional system also facilitates bar-retained and single-tooth restorations on straight and angled bar abutments.

Comfour offers a range of options to master the challenges in clinical practice routine more easily and more quickly. The versatile Comfour abutments feature a slim design. All components show a delicate and compact design, which considerably simplifies the provision of prosthetic restorations in both the laboratory and the dental office, and increases wear comfort for patients.

Comfour saves time and is flexible in use. The system offers additional prosthetic options at abutment level and has a number of technical advantages, such as its antirotational mechanism and the Guide-compatible aligning tools. These are used for finely adjusting the cam alignment during implantation and for the visual representation of the screw access channels of the prosthetic restoration. The 17° and 30° angled bar abutments feature a particularly slim design in the subgingival region to allow plenty of space for peri-implant tissue. The abutments are available as type A and type B (60° offset cam arrangement). The sterile bar abutments can be inserted immediately after surgery and either fitted with the temporary restoration or sealed with a healing cap. The angled bar abutments can be removed safely from the packaging using the pre-mounted, flexible handle and be transferred into the mouth with the same handle, where they can then be placed precisely. To tighten the abutment screw, the flexible handle mounted in the thread for the prosthetic screw is simply bent to the side. The M1.6 prosthetic screw of the Comfour system offers extra stability.

Useful additional components are the titanium caps for both temporary and definitive restorations. The scan caps for bar abutments create an interface for the digital design and fabrication process, allowing frameworks and bars to be fabricated via CAD/CAM solutions.

More information

Camlog Biotechnologies AG
Margarethenstrasse 38 · 4053 Basel · Switzerland
info@camlog.com · www.camlog.com

Bioimplon Hypro-Sorb X

Product:
Hypro-Sorb X

Indication:
Alveolar ridge preservation and haemostasis

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www.bioimplon.de

Hypro-Sorb X is a root-shaped cone of pure, crystalline, bovine atelocollagen. It is indicated to stop the bleeding after tooth extraction and to help preserve the alveolar ridge. The Hypro-Sorb X cone is made of 99.9 per cent type I atelocollagen, a modified collagen from which immunogenic telopeptides have been biochemically eliminated. The atelocollagen ensures maximum tissue biocompatibility and safety. Thus, the Hypro-Sorb X cones can be implanted without any adverse reactions and guarantee excellent wound healing characteristics. Their mild bacteriostatic effect and strong hydrophilicity result in optimal cell adhesion and blood absorption. The special shape of the cones fits precisely into the extraction socket and, if needed, can be cut to size without loss of its haemostatic property, which enables perfect handling. Due to the strong haemostatic effect, the bleeding is stopped quickly and soft tissue healing is accelerated. The cones are resorbed within two to four weeks.

Zest Anchors Locator R-Tx

Product:
Locator R-Tx

Indication:
Dental implantology

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January 2016 marked an evolution for implant-retained, tissue-supported overdenture solutions with Zest Anchors' introduction of the next generation Locator R-Tx Removable Attachment System. Building on 15 years of clinical experience with the award-winning Locator, it is a better, simpler, and stronger system that relies on the same restorative techniques as its predecessor.

With Locator R-Tx clinicians will quickly realize practical benefits:

- A novel, new to dentistry DuraTec titanium carbon nitride coating that is aesthetic, harder, and more wear resistant.
- An industry standard .050"/1.25 mm hex drive mechanism – no special drivers are required.
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Nobel Biocare NobelDesign Software

Product:
NobelDesign Software

Indication:
CAD software

Distribution:
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Switzerland
info.switzerland@nobelbiocare.com
www.nobelbiocare.com

The newly introduced NobelDesign is an efficient and intuitive software for the computer-aided design of NobelProcera dental restorations. By combining advanced CAD tools with access to a wide range of NobelProcera restorations, NobelDesign will help dental professionals offer a greater range of superior prosthetic solutions to patients.

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.....

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(For information on BDIZ EDI Directory of Implant Dentists see overleaf)

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Fax: + 49 (0) 228-93592-46
E-Mail: office-bonn@bdizedi.org
Homepage: www.bdizedi.org

Calendar of Events

	Event	Location	Date	Details/Registration
4/2016	**4th International Implantology Days**	Baden-Baden Germany	8–10 April 2016	HL-Dentclinic & Academy www.hl-dentclinic.de
	Dental Salon	Moscow Russia	18–21 April 2016	Dentalexpo www.dental-expo.com
	International Osteology Symposium 2016	Monaco	21–23 April 2016	Osteology Foundation www.osteology-monaco.org
	Dentaurum International Dental Conference	Berlin Germany	22–23 April 2016	Dentaurum Implants www.dentaurum.com
5/2016	**1st TRI World Tour**	Istanbul Turkey	7 May 2016	TRI Dental Implants www.tri-implants.com
	2nd Congress Quintessenza Edizioni	Verona Italy	26–28 May 2016	Quintessenza Edizioni www.quintessenzaedizioni.com
	3rd MIS Global Conference	Barcelona Spain	26–29 May 2016	MIS Implants Technologies www.mis-implants-com
6/2016	**6th International Camlog Congress**	Krakow Poland	9–11 June 2016	Camlog www.camlog.com
	Nobel Biocare Global Symposium	New York USA	23–26 June 2016	Nobel Biocare www.nobelbiocare.com
9/2016	**FDI Annual World Dental Congress**	Poznan Poland	7–10 September 2016	FDI World Dental Federation www.fdiworldental.org
	EAO Annual Scientific Congress	Paris France	29 September – 1 October 2016	European Association for Osseointegration www.eao.org/eao-congress
10/2016	**11th International Conference of the DGÄZ**	Tegernsee Germany	6–8 October 2016	DGÄZ www.america-meets-europe.com

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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

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[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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