For the next three days, dental professionals have the opportunity to enhance their scientific knowledge and to share clinical experiences at the 27th annual congress of the European Association for Osseointegration (EAO). From 11 to 13 October, attendees are welcome to immerse themselves in the rich programme of the scientific meeting that is set to take place at the Messe Wien Exhibition Congress Centre in the Austrian capital.

The programme covers various stages of dental treatment and is presented under the motto “Dreams and reality in implant dentistry”. It aims to explore the clinical possibilities and boundaries of implantology, emerging techniques and patient expectations. Each of the three days of the congress is focused on a specific topic: the first, on diagnostics, the second, on surgical treatments and the final day, on prosthetics. Furthermore, the programme features 70 renowned speakers from all over the world, hands-on workshops and surgical video sessions. For the first time, the EAO will introduce live surgery sessions that will be directly broadcast into the main auditorium.

The EAO congress provides a forum for dentists to share the latest scientific advances, to meet old friends and make new ones, and to build connections all over the world. Attendees can furthermore seize the opportunity to learn about the newest innovations at the accompanying industry trade exhibition, where 120 companies will present their products, among them Nobel Biocare, Straumann and Dentsply Sirona. Aside from the main programme, EAO visitors can learn about the most recent clinical solutions in more detail at ten industry symposia.

Founded in 1991 in Munich, the EAO has become one of the leading associations within the art and science of osteointegration. The EAO was created as an international and independent exchange forum for all dentists interested in the science of implant dentistry. The very first congress was held in Leuven in Belgium in 1992. The congress website, as well as the EAO 2018 congress app (see additional information on the last page of the EAO today) offer information about the scientific meeting and programme. Current news, interviews, photo galleries and an e-paper version of this today will be available at www.dental-tribune.com or on the Dental Tribune International Facebook page.
The third summer camp of the Junior Committee of the European Association for Osseointegration (JCEAO) brought together 40 scientists and clinicians in the field of dental implantology. The aim of the meeting was to discuss four major topics concerning the development of the discipline: certification, societies and associations, continuing education and innovation. Four working groups outlined the present state and problems of the respective area with the objective of recommending solutions to be implemented in the following ten years.

Since the evolution of new dental treatment techniques and modalities has led to the development of various dental specialties, recognition and certification of dental specialties are important in order to ensure educational standards and clinical skills. Therefore, the JCEAO has proposed the establishment of a certification programme for implant dentistry and the accreditation of training programmes. These regulations would lead to an improved quality of care, benefiting patients.

Concerning dental associations and societies, the JCEAO has suggested improvements in communication with dental students, professionals and patients. The guidelines furthermore involve the development of a positive partnership between dental associations and enterprises to ensure transparent communication links in a dental field between associations, dental professionals, patients, enterprises, media, meetings, healthcare system and continuing professional development. Moreover, the European Dental Students’ Association (EDSA) would ask for a direct representation on the JCEAO Board. The JCEAO also made a suggestion for future developments that could initiate a positive way of communication and education.

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Why the rush?

Dr Scott D. Ganz

For the past several decades, the scientific literature has supported immediate treatment protocols that can deliver single-tooth to full-arch reconstructions with accuracy, consistency and predictability. Therefore, clinicians may want to deliver high-quality care to patients and significantly shorten the treatment time involved in dental implant procedures, but should these immediate implant-supported procedures be considered for every patient without consideration of conventional dental solutions such as root canal therapy, spacer, crown lengthening, or crown and bridge alternatives? Does the new digital workflow provide clinicians and dental laboratory technicians with improved tools to facilitate these accelerated treatment modalities? Is the rush justified? Of course, these questions may relate mostly to an individual clinician’s training and education in diagnosis, treatment planning, and surgical and restorative skill set. Perhaps education is the key, and today there are many opportunities to gain the skills necessary to make decisions for each patient, to determine whether immediate or delayed implant protocols are warranted.
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Innovative dental implant treatment taken to Easter Island on a humanitarian mission

Dental implantology experts and the Foundation for Oral Rehabilitation (FOR) have taken a new treatment solution for edentulism to Rapa Nui, one of the most isolated inhabited locations in the world, also known as Easter Island. The island is home to a population of less than 8,000 and primarily one resident dentist serves the community. Consequently, dental services are limited, and many inhabitants are faced with severe financial restrictions too. In response to this need for care, Dr Rubén Rosenberg partnered with FOR expert network member Dr Kenji Higuchi to initiate this project.

In the weeklong mission led by these two surgeons, 11 Easter Island patients with mandibular edentulism underwent definitive treatment with a fixed full-arch solution. Higuchi is the innovator behind this treatment, the recently launched Trefoil system. Introduced by Nobel Biocare in 2017, the Trefoil system is based on an optimised abutment design that allows for full immediate and permanent functional restoration of an edentulous arch. Each patient received their final prostheses by the team of specialists from various disciplines — all within three days. Utilising only the Trefoil protocol, the treatments were performed in a small, basic clinical setting without further services along with Rosenberg and the rest of the team, who intend to provide ongoing support and care for all 11 patients in the years ahead.

FOR Executive Director Michael Hotze said, “We are deeply honored to have taken part in this project, reaching out to an underserved population in providing their much-needed treatment. It is part of our long-term mission to support better implant treatment around the globe, and I look forward to seeing their successful follow-up in the months and years to come.”

Higuchi added, “With a chair time of only three days, I am very proud to report that our team completed the Trefoil surgical, restorative and laboratory protocols for 11 patients. While we achieved an unimaginable accomplishment, the appreciation and gratitude from the patients humbled our entire clinical team. The improvement in their quality of life will be witnessed by the community for years to come.”

FOR is an independent, international initiative that unites professionals from various disciplines to improve oral healthcare and support humanitarian leadership. Since its inception in 2013, FOR’s mission has been to help treat more patients in a humanitarian manner that best reflects innovation and the highest standards of scientifically based treatment. To record this project, a professional film crew followed the progress at every step for a video documentary.

Nanostructured surface fights bacteria growing on dental implants

Micro- and nanotechnology are gaining importance in the medical field and particularly in implantology. Dental implants provide a great way of improving patients’ quality of life. However, the risk of inflammation still exists and could, at worst, lead to the removal of a patient’s implant. To address this issue, researchers at the Karlsruhe Institute of Technology (KIT) together with experts in dental implants, have now developed a nanostructured surface that reduces the growth of bacteria to accelerate wound healing after implantation.

Titanium is the material of choice for implants because it is bio-compatible and ensures good osseointegration. So far, optimisation of dental implants has focused mainly on the titanium surface in order to further improve this process. However, titanium around dental implants may become inflamed even after successful osseointegration.

The main target for bacteria is the abutment. If the gingival tissue does not properly grow onto the abutment, pockets may form through which bacteria can reach the jawbone and cause inflammation. If this occurs, the whole implant has to be removed. KIT’s Biomedical Microtechnology (BioMEMS) team at the Institute of Microstructure Technology (IMT) wanted to solve this problem. Their research is based on an optimised abutment developed by the implant manufacturer Abutments4life, a partner of the project. Grooves smaller than the width of a hair run around the abutment and guide the cells responsible for wound healing in the right direction. In this way, tissue repair is accelerated. “This system is our point of departure,” said Patrick Doll, a PhD student at the IMT. Further development focuses on two aspects: more precise structuring of the grooves for better guidance of the cells, and the search for an optimal nanosurface to which bacteria cannot attach.

With an electron beam lithography system, Doll produced columnar structures, which were then used to carry out adhesion experiments with typical test bacteria. Moreover, the structures were constantly varied. The results demonstrated that, depending on the distance and arrangement of the columns, adhesion and the formation of biofilm was delayed. Hence, recovering cells would have more time to close the wound, an effect that could otherwise be achieved by antibiotics only.

“We think that our structural approach is very promising,” emphasized Doll. The production of the silicon-based nanostructures is accurate and reproducible. In the course of the project, the researchers also developed methods for the transfer to titanium.

“We are proud to have been able to contribute to the improvement in their quality of life and the enhancement of their confidence and self-esteem. The patients were excited by the prospect of having their edentulous condition restored in a humanitarian manner that best reflects innovation and the highest standards of scientifically based treatment,” said FOR Executive Director Michael Hotze.

“This is an incredible accomplishment,” concluded Prof. Andreas Guber and Dr Ralf Ahrens, who lead the BioMEMS research group. The project was funded by the Federal Ministry for Economic Af-
A new report on the global dental implant market features key industry trends across the product, material, end-use, and regional landscapes. The report was compiled by research and consulting provider Global Market Insights and projects that the market’s revenue will exceed $5.2 billion by 2024.

The surging prevalence of oral health issues such as dental caries and periodontal disease, coupled with the soaring geriatric population base susceptible to tooth loss, has significantly fueled the dental implant market growth. In addition, rapid developments in implant technology and the increasing rate of dental and cosmetic surgery for aesthetic reasons have positively influenced the industry share in the recent years.

Dental implant supply to clinics accounted for the largest revenue share in 2017, followed by hospitals. The availability of advanced technological procedures for dental implantation surgeries in clinics and hospitals has been responsible for driving this segment.

According to the report, the German market held the largest share in Europe, accounting for $289.6 million in 2017, owing to a large edentulous geriatric patient base generating high demand for dental implants across the country. The US implant market grew to over $1.1 billion last year, owing to a rapid rise in the number of baby boomers reaching geriatric age along with an increase in prevalence of oral disorders in the country. The Canadian implants industry size was valued at over $84 million in 2017 and is projected to register a commendable compound annual growth rate (CAGR) over the next six years. The regional growth can be attributed to the presence of a favourable reimbursement scenario in the country coupled with the rising geriatric populace.

For the Asia Pacific region, a rapid CAGR of 6.5 per cent is forecast over the projected time frame. Emerging markets in India and China will grow at a robust rate because of the expanding geriatric population, rising dental tourism, and increasing disposable income and healthcare expenditure.

The report, titled Dental Implants Market Size by Product (Tapered Implants, Parallel Walled Implants), by Material (Titanium, Zirconium), by End-use (Hospitals, Dental Clinics), Industry Analysis Report, Regional Outlook (U.S., Canada, Germany, UK, France, Italy, Spain, Russia, China, India, Japan, Australia, South Korea, Brazil, Mexico, Argentina, South Africa, Saudi Arabia, Israel), Application Potential, Competitive Market Share & Forecast, 2018–2024 was published online on 20 August 2018. **

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* According to a recent report, the global dental implant market will continue to rise in value for the next six years.

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Revenue of global dental implant market expected to further increase

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Intra-Lock, a US acquisition of company’s dental will advance the three separate inners, has announced animal health, and services to office-based dental, and.

Well, it’s a great theme, as we read more and more articles about implant treatments with substantial follow-up periods with high survival and success rates. Of course, these publications and trials are performed according to strict and controlled criteria that sometimes are not the reality of a typical dental office. Every day, we treat patients who have systemic disease, are smokers, or take medication that can jeopardise the whole implant treatment. We do not have exclusion criteria as some of these publications do, and we are much more exposed to failure.

The theme of the Osstell Scientific Symposium is “Confidence and predictability in implant treatments and empowering new treatment techniques”. What are your expectations of the symposium?

In the Netherlands, financial terms for these acquisitions were not disclosed. Pournaras also emphasizes the geographic footprint in Europe with the acquisition of a majority interest in Pro-Cam, Implants B.V., and CAMLOG’s exclusive distributor in the Netherlands. Henry Schein is positioned in the premium implant segment. Its expansion into the in-wire segment of the dental implant market, on the other hand, has been made clear through the planned acquisition of a majority interest in Medentis Medical, a dental implant manufacturer based in Germany.

“We now have clear guidelines to practise much more predictable implant dentistry”

One of the speakers at the Osstell Scientific Symposium at the 2018 EAO congress is Dr Francisco Teixeira Barbosa, who will be presenting on e-learning.

You have contributed to the Osstell Implant Stability blog, and your entry was one of the most read last year. To whom is this blog directed and on what topic did you report in your post?

Anyone may write about a topic of personal interest. I always think about who the potential audience is. This article was about a technique that has not yet been validated by scientific literature, but has been widely commented on by dental practitioners: progressive loading.

You have written articles on digital dentistry. How is digital dentistry going to influence implantology in the future?

I think that digital dentistry is already influencing implantology. If you look at the Rogers diagram and how technology spreads among the population, we can say that today digital dentistry is not only for early adapters anymore. The majority has already implemented digital dentistry in their daily practice, and this number is growing day by day.

Digital protocols are providing much more predictable and easier workflows for clinicians. Communication with the lab technician is clearly easier when we use a digital workflow, and also the interaction with the patient is improved by digital dentistry. After the use of anaesthetics and osseointegration, digital dentistry is without doubt the third most crucial revolution in modern dentistry.

Thank you very much for the interview.

Dr Francisco Teixeira Barbosa performing prophylaxis treatment on San Andres Island in Columbia. (Photograph: Francisco Teixeira Barbosa)

Our new colleagues at Intra-Lock will be leveraged to create new generation products for BioHorizons and CAMLOG product lines,” continued Giorno.

With this new ownership position, Henry Schein, Medentis will accelerate several important, ongoing strategic initiatives including expanding our position in the fast-growing emerging markets,” commented Medentis founder and CEO, Alexander Scholtz. “My father ran a dental laboratory and I have spent my entire career in the dental industry, including serving as Practice Manager of an implant center in Cologne. As such, I fully appreciate the importance of quality products, value and excellent customer service. I am delighted to be aligning Medentis with the global dental leader Henry Schein, and look forward to the many opportunities to advance the practice of dentistry.”

Stanley M. Bergman, Chairman of the Board and Chief Executive Officer of Henry Schein, added, “The dental implant category has become increasingly important and we are committed to offering customers a wide array of the products and services associated with implant dentistry, thereby providing a complete solution for the benefit of the dental practice.”

Bergman continued, “We believe that with the investments we have made in CAMLOG, BioHorizons and now Intra-Lock, Medentis Medical and Pro-Cam Implants, we are well positioned to compete in the high growth global dental implant market. We welcome our new colleagues to Team Schein and look forward to continued success together.”

You have contributed to the Osstell Implant Stability blog, and your entry was one of the most read last year. To whom is this blog directed and on what topic did you report in your post?

Anyone may write about a topic of personal interest. I always think about who the potential audience is. This article was about a technique that has not yet been validated by scientific literature, but has been widely commented on by dental practitioners: progressive loading.

As it is an almost “forbidden” topic to mention in scientific meetings because it has not yet been proven reliable and we still do not have a clear protocol for implementing it, I just tried to open Pandora’s box and create a discussion about it. Thankfully, I survived the public opinion. At times, you have to take risks and talk about difficult topics if you want your content to be disseminated.

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Thank you very much for the interview.

Dr Barbosa, you will be giving a lecture titled “Educational models and online platforms” at the Ostell symposium. What topics will you be emphasising during your presentation?

Well, since the appearance of the Internet, educational models have been undergoing changes compared to the models we were used to in the past, which mainly took place in a classroom or an auditorium. Nowadays, information is everywhere; we are just a click away from receiving a flood of articles, webinars, guides, books and other content that is available worldwide on the Internet.

During my presentation, I will be focusing mainly on what kind of content is essential for our field and how we should be aware of whether that information is reliable and trustworthy. We have to keep in mind that what we learn online has to be evidence based and the credibility of the author has to be verified. This way, we can implement the acquired knowledge in our daily practice with patients.

Furthermore, I will be demonstrating Osstell’s educational offering such as how they create and provide online content to educate their audience. They explain from the basics what osseointegration or primary stability means and how Osstell is linked with implant dentistry biology. In addition, I will be highlighting Osstell’s vision and commitment to helping clinicians by creating clear guidelines to obtain predictable results in the daily practice.

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Thank you very much for the interview.

Henry Schein, the world’s largest provider of healthcare products and services to office-based dental, animal health, and medical practitioners, has announced three separate investments that will advance the company’s dental implant business strategy.

The company’s acquisition of Intra-Lock, a US-based dental implant manufacturer and sales business, is intended to enhance Henry Schein’s position in the premium implant segment. Its expansion into the in-wire segment of the dental implant market, on the other hand, has been made clear through the planned acquisition of a majority interest in Medentis Medical, a dental implant manufacturer based in Germany.
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Bone grafts are used as a filler and scaffold to facilitate bone formation and promote wound healing if necessary. Bone grafting is possible because bone tissue has the ability to regenerate completely if the space into which it has to grow is provided.

Today, guided bone regeneration (GBR) has become more predictable owing to advanced augmentation techniques and is a standard in dental implantology. Success depends on the defect morphology, but the importance of ridge morphology must not be underestimated. An adequate therapy has to be used in every individual case, and critical factors must be assessed and controlled. Primary wound closure, clot stability and angiogenesis are important factors that influence implant healing. Complications can occur in late and early stages of treatment and may be based on biomechanical, prosthetic and biological reasons. Even contaminations found on implants increase the risk of implant failure.

GBR is in general critical for use in smokers owing to reduced wound healing and vascularisation. Three case reports in which we used GBR in heavy smokers are presented here. Additionally, vertical, horizontal or 3D mandibular augmentation in the posterior mandible was done, and this required particular experience and increased the risk of failure. The rate of implant failure is greater among smokers than in non-smokers and there is a tendency to a higher failure rate with the increasing number of cigarettes per day. One of the authors has substantial experience in treating smokers and has well-founded knowledge of placing dental implants for more than 30 years with a low rate of implant failure.

Smoking

Reports in the literature show lower survivability of dental implants in smokers.1-4 One possible mechanism by which smoking might affect osseointegration is a lower blood flow rate owing to increased peripheral resistance and platelet aggregation. Tobacco directly affects osseoblast function. In general, smoking is a main risk factor for failure. If smokers are treated with implants, good bone quality is necessary. Excellent primary stability was gained in all the cases reported on here.

Case presentation

Three case patients are presented here in detail. The patients were treated according to our new protocol that we developed especially for extreme smokers between August 2015 and July 2017. In total, 12 implants were inserted. The patients were all heavy smokers, but were in good physical condition and had very good oral hygiene.

The first was a 51-year-old patient who smoked 20 cigarettes per day and suffered from diabetes and stress (Figs. 1–8). The second was a 76-year-old male patient in good physical condition who smoked 40 cigarettes per day. He underwent reconstruction of the premaxilla (Fig. 9–13). The third was a healthy female patient of 24 years of age who smoked 20 cigarettes per day. She required a sinus lift in region #25 (Figs. 14–21). The patients were informed of the intended process in detail and signed the surgical protocol containing information concerning possible risks of failure and complications, as well as information on the alloplastic and synthetic materials to be used.

Patient diagnostics

The smokers were treated owing to atraumatic age-related root fractures, advanced caries, periodontitis, trauma or failed endodontic treatment. The patients were treated in our private practice by the same surgeon. None of the patients had controlled severe diabetes, drug addiction or alcoholism. Pre-implantation diagnostics was performed in all three cases.

Surgical phase

Implant placement was performed under local anaesthesia after pre-medication with antibiotics. The osteotomy was extended gradually, according to the intended implant diameter. After the incision, the site was cleaned and necrotic or inflammatory tissue was removed. Osteotomy sites were prepared with a sequential order of drills as recommended by the manufacturer. Implants were inserted into the prepared osteotomy sites at an insertion torque of 45 Ncm and adequate primary stability was obtained. Suturing was performed with a 4/0 thread (RESORBA Medical).

After four weeks, a site-specific full-thickness flap was raised buccally in Case 3 by vertical releasing incisions without including the papillae of the adjacent teeth (Figs. 16–19). In the aesthetic zone, no vertical incisions were made. In order to optimise the situation of the soft tissue, we placed a pedicle flap (connective tissue graft from the palate). After atraumatic flap elevation, the granulation tissue was removed. The patients were treated with helium light laser therapy (predent medical) in order to minimise bacteria (Fig. 9). The tapered implants (Hager & Meisinger) were placed in the optimal positions. After placing the cover screws, augmentation was performed using resorbable alloplastic material. In two cases, a thickness flap was raised after 12 weeks in order to access the cover screw. In 85% of cases implant stability was evaluated using resonance frequency analysis (Oststell ISQ). A healing abutment was placed and the flap was sutured using 4/0 sutures (RESORBA Medical). Finally, after nearly two weeks, a titanium abutment was placed and a cemented metal-ceramic restoration was fabricated.

Medication

After microbiological examinations, antibiotics (Clindamycin Aristo 600, Aristo Pharma) were given t.i.d. and later b.d. until surgery. Mouth rinsing with Chlorhexamed (GliaxSmithKline) was performed. Local anaesthesia was performed with Ultracain DS forte (Hoechst).

Each implant was wet with hyaluronic acid or the patient’s own plasma. After completion of the surgery 40 mg of Dexamethason (Ratiopharm, IM) was injected.

After surgery, 20 mg of Prednison (Zenapharm) was prescribed (one tablet t.i.d., then half a tablet t.i.d. and finally a quarter of a tablet t.i.d.). In order to minimize swelling five arnica globules were given.

Postoperative treatment

Postoperative intranasal periapical radiographs were taken, to confirm the accuracy of the implant placement. Postoperative medications included antibiotics.

Digital radiographic images were taken at the time of surgery, 24 hours postoperatively and one month later in order to evaluate implant success (Figs. 6, 7, 11, 13, 15 & 20). In none of the patients inflammatory processes were found and all implants remained stable.

Attention from smoking should be extended at least eight weeks after the implantation in order to permit the healing phase of the osteo- blasts to take place.

Follow-up examination

Follow-up examinations were performed according to the criteria of Albrektsson et al. and Buser et al.1-4 These success criteria for implants are widely cited and generally accepted. A lack of osseointegration is commonly distinguished by implant mobility and radiolucency. The criteria used describe the absence of

Guided bone regeneration in smokers—Use of synthetic bone blocks

Dr Dr Branislav Fatori & Dr Inge Schmitz, Germany

Fig. 1: Initial situation: severe bone defects and implant in situ.

Fig. 2: Micro-preparation in order to achieve bone formation.

Fig. 3: 3D modelling of implants.

Fig. 4: Application of periost membranes.

Fig. 5: New bone around implants.

Fig. 6: Detail of new bone formation.

Fig. 7: Situation after treatment.

Fig. 8: Final situation.
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persistent subjective complaints, such as pain, foreign body sensation and/or dysesthesia; absence of recurrent peri-implant infection with suppuration, of mobility, of continuous radiolucency around the implant; and the possibility for restoration.

Bone grafting

Bone grafting is a surgical procedure that replaces missing bone with material from the patient's own body or an artificial, synthetic or natural substitute. The diverse options available are summarised as follows:

Autologous or autogenous bone grafting involves utilizing bone obtained from the individual receiving the graft. Autogenous bone grafts are regarded as the gold standard. Their use can, however, evoke many problems, such as painful wounds and operation risk if intraoral bone is not available.

Alloplastic grafts are synthetic and may be made from hydroxyapatite. Alloplants like Nanocoll (Arrocos), CERAGRAF (curasan) and Gore-Tex (W.L. Gore & Associates) can be used for small defects; for larger defects, membranes will additionally be necessary. Growth factors can enhance graft integration. Growth factors bind to receptors on cell surfaces and stimulate the intracellular environment to act. The addition of bone morphogenetic proteins 2, 4 and 7 to the culture media can also influence the stem cells towards osteogenic lineage.

GBR technique

In our cases Nanocoll, pericard membrane (imperiOs) and autologous bone chips were used for augmentation. Nanocoll is an efficient nanostructure nanocrystalline hydroxyapatite embedded in a highly porous silica gel matrix. NanoBone is a safe product and stimulates the formation of collagen and bone. As an effect, many osteoclasts are seen in the early stage of regeneration. Nanocoll has been on the market three years in the form of putty. NanoBone putty has a high consistency and is optimal for use to rebuild vertical bone. In general, no additional membranes are necessary. Its special structure results in rapid bone formation. As the osteoclasts resorb the granules, NanoBone is completely substituted by bone and no foreign substances will influence natural biomechanics. Alternatively, NanoBone block material is now on the market and is a safe and rapid solution for block augmentation. Animal studies have shown that it induces quick bone formation. It offers an alternative to autogenous bone blocks for improving the implant bed in the case of vertical and horizontal bone deficits. In two patients with defects of the lower jaw, NanoBone block was used to optimise horizontal defects. NanoBone material was fixed with CAMLOG screws and a collagen membrane was used (RESORBA Medical).

Results

Five of the 12 inserted implants were lost. In Case 1, implants were not osseointegrated owing to peri-implant infection. The patient was a heavy smoker with diabetes and stress as co-reasons for implant failure. In two of the cases, we saw new bone covering the screws. After 12 weeks, the defects were filled with new bone. In Case 1, GBR was again necessary around one implant.

Discussion

Final evaluation of the success of NanoBone (putty, granulate and blocks) can only be done after clinical and histological results have been completed. A mixture of 30 per cent of Nanocoll putty and 70 per cent of autologous bone chips has shown good results and been described as the gold standard in the literature. We have experience of using NanoBone in the treatment of alveolar ridge defects (Cologne Classification of Alveolar Ridge Defects). It has still to be proven if our technique has the same positive results as other techniques.

Conclusion

NanoBone blocks and putty show a high success rate. From our point of view, the material can be evaluated as very good and comparable to other products on the market.

Editorial note: The authors disclosed that they have no conflict of interest and that the patients agreed to their data being published. This article was originally published in implants—international magazine of oral implantology 2/18.

CASE 2

Fig. 6: HELBO laser therapy in order to reduce bacteria.
Fig. 10: NO augmentation using Nanocoll.
Fig. 11: Put-op dental panoramic tomogram.
Fig. 12: Screwed on superstructure.
Fig. 13: Dental panoramic tomogram showing superstructure.

CASE 3

Fig. 14: Dental panoramic tomogram of initial situation.
Fig. 15: Implant fixed with pins.
Fig. 16: Augmentation and sinus elevation.
Fig. 17: Use of membranes. Pins visible.
Fig. 18: New bone around implant.
Fig. 19: Pins embedded in new bone.
Fig. 20: Integrated implant.
Fig. 21: Final situation.

Dr Inge Schmitz
Georgius Agricola Stiftung Ruhr University for Pathology Ruhr-University Bochum Bürde-de-la-Camp-Platz 1 44789 Bochum Germany
inge.schmitz@rub.de

Dr Dr Branislav Fatori
Rolandstraße 11 45128 Essen Germany
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DENTAL IMPLANT SURFACES FOCUS OF EXTENSIVE NOBEL BIOCARE EAO 2018 OFFERING

Implant design and surface quality are critical factors for successful long-term clinical results. At an industry satellite symposium sponsored by Nobel Biocare and being held during the 2018 EAO congress, internationally prominent clinicians will be discussing whether innovation in surfaces is possible and where it will lead future developments in the field.

In a session moderated by Austrian implant specialist Dr Gabor Topper, Prof. Ann Wennerberg (Sweden) and Dr Peter Schieppbach (Switzerland) will be addressing unmet needs in surface technology and demonstrating how new innovations could help to enhance soft- and hard-tissue integration. The symposium will further provide congress attendees with expert perspectives on the scientific foundations of long-term outcomes.

Dr Tristan Saas from the Netherlands, for example, will be giving insights into how he has achieved success using the NobelActive implant system with immediate protocols over the last ten years. Dr France Lambert (Belgium) will be explaining how advanced guided bone regeneration (GBR) materials and treatment protocols will stretch the boundaries of GBR in the future, while Dr Markus Schles (Germany) will be presenting GalvoSurge, a possible new solution for implant cleaning.

Nobel Biocare’s industry satellite forum will take place on Friday, 12 October, from 17:00 to 19:00 in the Gran room. While attendance is free with registration, places are not guaranteed, hence attendees are invited to come early to ensure their seats.

At the Nobel Biocare booth, attendees interested in developing their practices can take part in several hands-on sessions and learn, among other things, how to avoid mistakes with immediate implant placement. In addition to these activities, they will be able to explore the company’s extensive product portfolio, which includes the Trefoil system and All-on-4 treatment concept, the crest regenerate product line and the recently launched NobelPearl ceramic implant system. Solutions for a fully integrated digital workflow, including the DTX Studio suite, NobelClinician and the recently added X-Guide dynamic navigation guidance system, will also be on display.

Nobel Biocare, Switzerland  
www.nobelbiocare.com/eao  
Booth D-02

WITH ABUTMENTS4LIFE, IMPLANTOLOGY HAS NEVER BEEN EASIER

With the Abutments4life range, Swiss company Cendres+Métaux is setting new benchmarks in the field of implant prosthetics. Abutments4life hybrid abutments are fully anatomically prosthetic solutions for implants.

The basic idea behind the development of the products was to follow natural morphology and simplify aesthetic challenges and design processes for maximum efficiency for both the treating dentist and the patient.

The hybrid abutment is composed of a prefabricated anatomical abutment with an angled screw channel and a bonded zirconia cap. The hybrid abutment can be inserted directly during implantation and can be ground introrally. Owing to the biologically optimized nano-coated surface, the soft tissue can attach quickly and easily. After only three sessions, the final crown is placed after impression taking.

Abutments4life complements Cendres+Métaux’s existing range of prosthodontic dental implant solutions for dentists and dental technicians.

I am convinced that this product offering will help to make the cooperation between dental laboratories and dentists even more efficient. For me, the patient benefits are impressive,” stated Dr Arne-Christian Faisst, CEO of Cendres+Métaux Medtech division. “Abutments4life supports the vision of Cendres+Métaux Medtech to become one of the leading providers of dental solutions.”

Cendres+Métaux has a long tradition in manufacturing implants and dental prostheses. For over 100 years, customers have relied on its skills in processing precious materials into high-quality products with the utmost precision, according to the company. The combination of experience and innovation has led to promising successful solutions.

Cendres+Métaux, Switzerland  
www.cm4.ch  
Booth B-43

WIN A TRIP TO SALZBURG WITH THE W&H IMAGE CAMPAIGN

Get your phone ready, smile, take a photo and post your selfie! W&H’s ‘From a patient to a fan’ image campaign is running a big competition until the end of the year.

In spring, W&H launched its ‘From a patient to a fan’ image campaign, which puts dentists and dental professionals in the spotlight. The aim is to celebrate those everyday heroes who ensure their patients are in safe and reliable hands.

“From a patient to a fan” image campaign run wild. The best images with wit and originality and let your imagination run wild. The best images will stand to win some fantastic prizes. The main prize is two trips to Salzburg, each for six people, including flights and three nights in a four-star hotel. W&H has its fingers crossed for you and looks forward to receiving your creative ideas!

The competition runs until 31 December. The prizes are non-transferable and may not be redeemed for cash. Further information on the prizes and conditions of entry may be found at patient2fan.com.

W&H, Austria  
www.wah.com  
Booth S-24

* By that simple take a smile, upload the photo to patient2fan.com and with a bit of luck, you could win a prize: W&H/Devia

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CENDRES+MÉTAUX Medtech

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From a patient to a fan.
With first-class dental solutions by W&H for every challenge.

#patient2fan
Together we make it happen!
Planmeca's powerful Romexis software platform features all the necessary tools for a fully digital implant workflow. The software allows users to design their own implant guides easily and quickly at no extra cost. From planning to manufacturing, the entire workflow can be handled and completed with the Planmeca Romexis software in six simple steps.

Step 1: Smile design
Use the Romexis Smile Design software module and a 2-D photograph of the patient for smile analysis, design simulation and patient motivation.

Step 2: CBCT imaging
Acquire a CBCT image of the patient with a CBCT unit, such as a Planmeca ProMax 3D unit or the brand-new Planmeca Viso unit.

Step 3: Scanning and virtual crown design
Take a digital impression with Planmeca Emerald or any other intraoral scanner and design a virtual crown with the integrated Planmeca PlanCAD Easy software. The completed design will immediately be available in the Romexis software for implant planning.

Step 4: Top-down implant planning
Create a completely virtual set-up for the implant plan by combining the patient’s CBCT image, surface scan and virtual crown using the Romexis software. Select your preferred implant and guided surgery kit from the software’s extensive library and determine the optimal implant position.

Step 5: Implant guide design
Design an implant guide with just a few clicks—the software will automatically complete the guide design based on your implant plan.

Step 6: 3-D printing
Manufacture your implant guide with any suitable 3-D printer, insert a metal sleeve ordered from the manufacturer and proceed with surgery.

As it is a truly open system, all standard image formats can be imported into the Romexis software and completed guide designs can be exported in STL file format at no extra cost.

Planmeca, Finland
www.planmeca.com/implantology
Booth S-18
The demand for aesthetic, natural-looking restorations is continually increasing. This trend favours ceramic implant solutions with high levels of biocompatibility, particularly zirconia, known for its excellent soft-tissue compatibility. The CERALOG Implant System is established and has been in clinical use for more than seven years. The implants offer a high level of predictability and provide aesthetically pleasing results, according to the company. The two-piece design of the system, which allows for screw-retained prostheses, provides many benefits. Owing to the simplified prostheses, lean instrumentation and clearly structured surgical procedure, the CERALOG Implant System is easy to use. Options for the treatment workflow include flexible trans- or sub mucosal healing of the two-piece CERALOG Hexalobe Implant and transmucosal healing of the CERALOG Monobloc Implant.

The implants are made of yttria-stabilised tetragonal zirconia, which is a ceramic widely used in the dental industry. The ivory colour of the material, which is very close to that of a natural tooth, and the properties of zirconia lead to natural-looking results. Zirconia is chemically inert, making it especially suitable as an implant material. Owing to the manufacturing process of ceramic injection moulding, it offers an outstanding combination of excellent mechanical properties and high strength, according to the company.

The CERALOG Hexalobe offers the ideal implant–abutment connection. It was developed and optimised specifically for the zirconia implant. The force transmission is introduced optimally into the implant. Furthermore, the design offers rotational stability and precise manufacturing ensures a long-term stable outcome of the restoration.

The prostheses of the CERALOG Implant System consist of straight and angled abutments made of the polymer polyether ketone ketone (PEKK). The abutment is fixed to the implant via either a titanium or a gold screw. PEKK is easily processed with conventional milling equipment and belongs to the polyaryl ether ketone polymer family. These materials are required and used for extreme conditions, for example in automotive engineering, the aerospace industry and medical engineering. Because of their chemical structure, they offer tensile strength, rigidity and hydrolysis resistance. In addition to its long-standing use in orthopaedics, PEKK covers a broad spectrum of indications in dentistry, such as in restorations where stress shielding has to be reduced. The ductility of PEKK reduces the stress on the implant and simulates a tooth-like behaviour.
The innovative ultrasonic Piezotome CUBE surgical device from ACTEON aims to make dental surgeries safer and more predictable. By improving the experience of bone surgery procedures, the device represents a new approach to minimally invasive surgery. This is particularly relevant for extractions, for which the use of predictable and safe technology is essential to achieve superior results for every patient.

During extractions, it is sometimes difficult to preserve the alveolar bone, particularly when rotary instruments are used. This technique often leads to piercing of the Schneider’s membrane with a bur or to sacrificing of the alveolar bone in order to remove the tooth or tooth fragments. Piezotome CUBE offers an alternative tool for extractions. Tips that have been designed specifically for this procedure are very thin, allowing the practitioner to precisely insert the tip to separate the root from the bone by gently cutting the periodontal fibres, thus allowing for immediate implant placement by keeping the bone structure intact.

ACTEON is inviting all EAO congress attendees who are interested in making surgery and its outcomes more predictable, to join its symposium on 11 October from 10:30 to 12:30 in the Innsbruck room to learn more. The session will be focusing on the application of new gold standard bone management in everyday practice and preserving the original anatomy through surgeries that are less invasive and shorter treatment protocols for better patient acceptance. Dr Angelo Troedhan will be presenting a live surgery video demonstration of sinus lift and crest splitting. He will also be illustrating the possibilities of immediate implantation thanks to the perfect alveolar ridge preservation facilitated by Piezotome CUBE.
Precision guidance for increased accuracy within 0.5mm of treatment plan*
Easy to use, reducing time and expense with a simplified workflow
Provides even greater value from your CBCT data
Enables minimally invasive flapless drilling without a physical guide
Compatible with any implant type, drill system and all CBCTs currently on the market

"Dynamic navigation allows more advanced clinical protocols which help me to achieve my goal of high quality patient care. My patients are very happy with Navident."
Prof. Dr. Tadeusz Morawiec, Poland (pictured)

Try Navident’s precision guidance for yourself. Call +32.475.75.52.26 or email info@claronav.com
Visit us at EAO 2018. We are located at stand No S21

Interact with the clinical expert in the field of dynamic navigation
Meet the Expert sessions will be held during the EAO in our booth on Friday Oct 12 and Saturday Oct 13.
Meet the Expert sessions provide participants with the opportunity to be updated about clinical cases performed with Navident in a highly interactive manner. Each session will consist of informal discussions arising from its question and answer format.
Visit dns.claronav.com for more info on tailor-made courses about dynamic navigation.
Learn more at EAO 2018. We are located at stand No S21
Biotech Dental provides a combination of innovative technologies enabling the development of a new digital approach for all dental professionals. From additive manufacturing to digital impression taking, to artificial intelligence, to photo-biostimulation, the company, driven by CEO Philippe Véran’s vision, has constantly reinvented itself with the ultimate goal of making dental care accessible to all patients.

In 2006, Biotech Dental acquired PolyShape, a European leader in 3-D printing, to adapt manufacturing techniques for aerospace, Formula 1 and dental prosthetics. With these new processes, the company promotes an entirely made in France system, offering products of high quality at a fair price. The addition of material allows freedom of design that no other manufacturing technique can achieve, enabling the company to offer a wide range of products, such as Smilers transparent aligners and Circle removable prosthesis.

Biotech Dental distributed the smallest intraoral scanner, Condor, on the dental market first in 2014. Using powerful software, the device substantially helps the practitioner throughout the diagnosis and treatment stages while facilitating communication with the patient and the prosthetist. Today, used in a large number of dental practices, the scanner has become an essential tool of the modern dentist.

In 2015, the company entered the photo-biostimulation market with the ATP38 modulation device. This breakthrough technology reduces treatment time by optimising regeneration during post-surgery healing.

Finally, in 2016, Biotech Dental complemented its product range with an innovative digital architecture based on biomimetics and artificial intelligence. This allows dentists and prosthetists to work on the same digital file, via an ergonomic and powerful interface, respecting the anatomy of the patient as closely as possible.

Biotech Dental has, over the years, been able to create a unique ecosystem in which innovation and research are integral parts of the company’s identity. Practitioners and prosthetists have access to various solutions on the market to give back all patients their smiles.

27th EAO Annual Scientific Meeting

Biotech Dental, France
www.biotech-dental.com
Booth S-09
CLEANIMPLANT TRUSTED QUALITY MARK PROVIDES INCREASED SAFETY FOR PATIENTS AND PRACTITIONERS

By Dr Dirk U. Duddeck

Michael Norton, Past President of the Academy of Osseointegration, summed up a problem in the implant market, “Dentists have to rely on the word of manufacturers and the FDA or CE marks to feel sure that the implants they are using are being manufactured to a standard one would expect of an implantable dental device. Sadly, this is often not the case.”

Residues on sterile packaged implants, in particular, organic particles from the production or packaging process, are strongly suspected to be responsible for incomplete osseointegration of dental implants or even loss of bone during the early healing period.

Four consecutive studies revealed alarming remnants and contaminants in the SEM-based quality assessment. Areal pollution and particles with iron, copper, chromium, nickel, tungsten, sulphur and large quantities of stainless-steel particles, as well as remnants of polytetrafluoroethylene and other significant organic contaminations gave cause for concern.

With the variety of implant systems offered on the market, it has become increasingly difficult for the dentist to choose a safe system for the practice. Based on a consensus paper signed by renowned scientists, the independent non-profit CleanImplant Foundation established a new global quality seal providing exactly this information. Implant companies with their systems already carrying the “Trusted Quality” mark, such as MIS V3, MegaGen AnyRidge, RIT UniCa, Nucleus T6 and Navi Repli cate will present their tested products at the EAO 2018. In addition, other implant systems are currently in the process of examination. The most recent implant manufacturer that will be awarded at the EAO is Bredent, based in Senden in Germany, for their implant system blueSKY. The scientific advisory board proved compliance with the criteria required for issuing the quality mark. The official handover of the certificate is taking place at the Bredent booth (#S11) on 11 October at 15:00.

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Practitioners interested in a personalized certificate for their practice, and implant manufacturers who want to apply for the new quality mark can find more information and a correspondent newsletter on the project’s homepage.

CleanImplant, Germany
www.cleanimplant.com

NAVIDENT 2.0 OFFERS DYNAMIC NAVIGATION FOR DENTAL IMPLANTATION

By using the CBCT image as a kind of map, ClaroNav’s Navident guides clinicians much like a GPS guides drivers, offering them an easy-to-use, accurate, portable and affordable method to aid in the planning of desired restorations and implant placements. Now, ClaroNav is showcasing the new Navident 2.0, designed to further streamline everyday digital dentistry workflows, at the EAO.

With Navident 2.0, clinicians will no longer be required to perform an extra scan. Instead, they can use the diagnostic scan already available for the patient. Making a stent is no longer required, saving clinicians valuable time. Known as Trace and Place, this is a game-changing development for dynamic navigation. With Trace and Place, the Navident 2.0 workflow is efficient and user-friendly and can be seamlessly integrated into the daily clinical practice.

“Trace and Place is a real tipping point for dynamic navigation guidance”, said user Dr George Mandela ris, a periodontist from Chicago in the US. “It has streamlined and simplified the workflow in both the diagnostic and surgical phases to allow state-of-the-art technology to be an everyday component of my surgical implant practice. I cannot imagine going back.”

Implantology specialists who have used Navident 2.0 express
Wiener Wiesn-Fest 2018
- When: 27 September to 14 October
- Starting time: daily at 11:30
- Where: Kaiserwiese Prater
  - www.wienerwiesnfest.at

Enjoy the authentic Oktoberfest feeling right in the heart of Vienna.

The Wiener Wiesn-Fest, a customs and folk music festival, pitches its tents on the Kaiserwiese in the Prater once more. Austrian beer, regional food, local craftsmanship, enchanting folk music and traditional outfits ensure a great atmosphere. The festival takes place in lovingly decorated tents, cozy beer gardens and rustic wooden chalets. The Wiesn-Fest live parties, a central open-air stage and afternoon concerts ensure a unique experience.

Original Wiener Schnitzel
- Where: Restaurant “Pürstner”, Riemergasse 10
  - www.puerstner.com

In the heart of Vienna, where the masters of the saddler’s guild once settled, you will find the “Pürstner” restaurant—a symbol of Viennese lifestyle. For three generations the Pürstner family has been running the restaurant and has made it flourish as Austrian hospitality and friendliness dominate their service. Themed rooms create a cozy rustic atmosphere where you can savour original Wiener schnitzel with fried potatoes.

Volksoper
- Where: Währinger Straße 78
  - www.volksoper.at

It was first performed in 1874 in Vienna and has been part of the regular repertoire ever since. The plot revolves around a rich man named Eisenstein who, on his way home from a costume ball, leaves his friend, Dr Falke, on the street, disguised in a bat costume and intoxicated after having had too much to drink. Dr Falke is thereafter laughingly referred to as “Dr Bat”, which is why he plans to get his revenge on Eisenstein. Eisenstein is invited to a party only to find out that it is a trap set by Dr Falke. At the party everyone plays an assumed part, and later must share in the guilt of deception, but somehow everything works out in the end.

- Date: 12 October—Ballet by Jorma Elo “Ein Sommernachts Traum” (A Midsummer Night’s Dream)
  - Time: 19:00 to 21:15
  - Rustling leaves, an enchanted forest, magic juice, fairies, amazons and wood spirits—this is William Shakespeare’s comedy “A Midsummer Night’s Dream”, with music composed by Felix Mendelssohn Bartholdy and choreographed by Jorma Elo. The ballet premiered worldwide at the Vienna State Opera in 2010 and was first performed at the Volksoper three years later to great acclaim.

- Date: 13 October—Premiere of Operetta by Gustav Albert Lortzing “Zar und Zimmermann” (Tsar and Carpenter)
The comic opera is based on the historical grand embassy of Peter the Great. Tsar Peter is working in disguise in Saardam in Holland, in order to acquire shipbuilding skills for his navy. He meets a fellow Russian named Peter Ivanov who is in love with Marie, the niece of simple-minded Mayor Van Bett. Van Bett is told to find a foreigner called Peter and several ambassadors try to track down the monarch, but having more than one Peter around results in numerous instances of mistaken identity.

Spanish Riding School (performances)
- When: 13 and 14 October at 11:00
- Where: Michaelerplatz 1, in the Hofburg
- www.srs.at

The famous performances by the Lipizzans—the Ballet of the White Stallions—take place in the baroque Winter Riding School at Hofburg Palace. Built in the 18th century, the riding hall is one of the most beautiful of its kind in the world. This environment, accompanied by classical Viennese music, makes the wonderful presentation by the riders and their Lipizzans even more enjoyable, especially since the performances are the result of years of training for both.

Additional useful information for the city of Vienna:
- Time zone: CEST Central European Summer Time, UTC/GMT + 2 hours
- Emergency numbers: Ambulance service: 144/Police: 133
- Currency: Euro
- Tourist Information: Albertinaplatz 1, open daily 9:00 to 19:00
- Austria’s Foreign Ministry: Ministry for Europe, Integration and Foreign Affairs: www.bmeia.gv.at

- Credit card acceptance: The most accepted cards are Mastercard and Visa, which can be used in most supermarkets, hotels and petrol stations. While payment is free of charge, withdrawing money at an ATM usually includes a service fee.

Additional information for the EAO congress:
- Congress app:
  The congress registration fee includes the free use of the congress app. EAO attendees can use this app to view the programme, to look at individual sessions and to browse abstracts. At the end of the congress, participants can send themselves an individual visit report, including personal notes and bookmarks. Over the years, the app has become an essential tool with exclusive scientific content with the aim to go paperless in the near future.
Stay original. Trust in 10+ years of clinical experience.

NobelActive®
- Over 10 years of clinical experience
- 41 clinical studies
- 98.5% mean implant survival rate*
- 2,600+ patients evaluated
- 14,300+ implants clinically studied

* Up to 5 years of follow-up


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