issn 1616-6345

Vol. 8 • Issue 2/2007

implants

international magazine of oral implantology

2 2007

_case report

The significance of mitochondrial efficiency in the regeneration and rate of healing when using dental implants

_implant innovations

Periointegration: New technologies from turbine construction revolutionize implantology

_worldwide events

Great Turnout at DGZI Convention in Dubai

DGZI Deutsche Gesellschaft für Zahnärztliche Implantologie e.V.

dti] Dental Tribune International

Dr Rolf Vollmer
1st President & Treasurer of DGZI

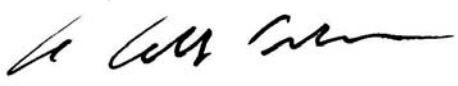
International activities of DGZI

Dear colleagues, dear friends,

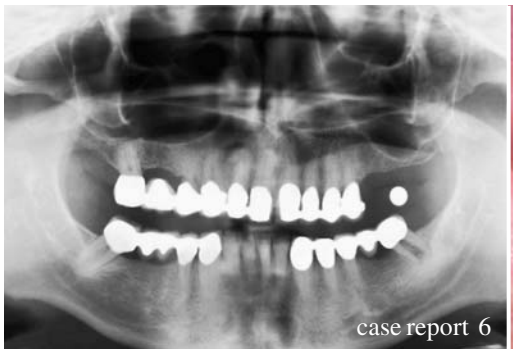
Some of our colleagues probably wonder why a professional association such as DGZI, which is so successful in Germany, is also increasingly playing a role on the international level. Of course, other countries too, practice good implantology under medical aspects, meeting international requirements. Nevertheless, it is more important that dentists and colleagues from many countries meet to discuss and exchange their experiences regarding the opportunities provided by modern implantology care for the benefit of our patients. Major topics of the international meetings eg with top functionaries from the General Dental Councils include the establishment of uniform quality standards both for the training of our colleagues and for the equipment of surgeries. The DGZI's opinion on this matter is sought-after. In particular in a tense international situation characterized by trouble spots, getting to know one's colleagues, building bridges and making friends is more important than ever. Our current issue includes reports about as many as four implantology conferences, where our DGZI played a major role: In the United Arabic Emirates on the occasion of the "3rd Arab German Implantology Meeting of DGZI", the AO Meeting in San Antonio, in Kuwait and in Sudan. In all these places across the globe, colleagues met to exchange their experiences, to discuss cases encountered in their surgeries or to meet outside the conference during events. I was delighted to see how international DGZI and how renowned it is around the world. For example, more than 75 dentists from Iraq—a novelty, bearing in mind the tense situation—attended the conference in Dubai; together with more than 150 other participants, for three days in Dubai, they improved their skills, discussed and communicated and made friends with colleagues from other countries. On the fringes of this year's annual meeting of the AO, the American Academy of Osseointegration in San Antonio (Texas), representatives of a wide variety of international professional associations met for a top-level meeting to discuss further cooperation on the business level—a great success for our association, which is the leading coordinator in this area. Allow me to return to the beginning of my editorial: Yes, dear colleagues, it is important that we take a pioneering role here in dental implantology in Germany. For more than 35 years, we as DGZI have faced this leadership role on the occasion of the Consensus Conference, during our conferences, and also during the many, many further training events held under the aegis of the DGZI. However, our activities abroad—this issue includes a lot of information about them—are just as important. Why don't you attend one of our annual conferences, this year's international annual congress in Düsseldorf or the "4th Arab German Implantology Meeting of DGZI" in Dubai next year? We would be delighted to meet you there! Any maybe you will make friends with colleagues from other parts of the world.

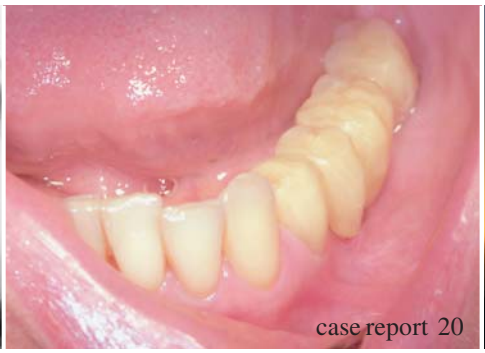
Now go ahead and enjoy our current issue of 'Implants'!

Sincerely,



Dr Rolf Vollmer





editorial

report

events

news

about publisher

Balloon-Lift-Control (BLC): a minimal-invasive system for the elevation of the sinus floor mucosa

Part 2

author_Klaus-U. Benner, Florian JM Bauer and Karl-H. Heuckmann, Germany

Results: Case report

In Figures 10 to 15 the course of a clinical sinus floor membrane elevation using the BLC System is presented with intraoral photographs and panoramic x-ray scans.

One week before the surgical operation the patient (Z. E., 43 year-old male) was verbally informed about the operation technique and risks, and also by a letter. On the operation day the patient was in good healthy condition, anamnesis and gross clinical examination did not show any signs of cardiovascular or metabolic diseases; also allergic reactions against iodine or thyroid gland dysfunctions were not known.

Figure 10a gives the local preoperative situation in the upper jaw of the patient (mirror view). The teeth in region 25 to 28 are missing. The clinical aspect indicates that a significant resorption has taken place in the edentate area of the alveolar ridge. Figure 10b shows the splint in situ performed with a reference ball that is placed in the area of the surgical operation provided. The respective panoramic x-ray scan in Figure 10c shows that the height of bony sinus floor has been reduced by the resorption processes to a minimum of 0.4 mm.

Figure 11 demonstrates the removal of the attached gingiva (a). The mucosa is drilled up to the compacta of the sinus floor using a trephine drill (b). The mucosa punch is kept in a sterile compress soaked with physiological saline for the ex-vivo-preservation of its vitality (c). In Figure 11d the distance tube with the guide is positioned to the denudated bone; the appropriate drilling weakens the bony sinus floor to a residual thickness of 1 mm.

Figure 12 shows that the borings coming to hand—bone chips and marrow—are harvested in a sterile chamber (a) to be subsequently mixed with ß-tricalciumphosphate (b) and autogenous venous blood (c).

Figure 13 shows the positioning of the osteotome guidance instrument into the osteotomy and its underpin by the apical security screw (a). Upon the handle of the inserted mandrin, two soft beats are directed with a hammer to impress the residual bony floor (after milling) 1.5 mm into Highmore's antrum (b).

Following a positive mobility test of the impressed bone (and attached mucosa), the osteotome guidance instrument is reinserted and the mandrin replaced by the ventilated balloon catheter (Fig. 14a). Then the balloon is blocked-up repeatedly (at least 5 times) with increasing fluid volume.

After removal of the osteotome guidance instrument, the balloon catheter is directly reinserted into the elevated subantral/submucosal space (Fig. 14b) and blocked-up with the radio-opaque fluid. The result of the balloon-assisted mucosa lift is demonstrated in the panoramic x-ray-scan (Fig. 14c). The balloon contains 1.5 cc of Ultravist; the space

Fig. 10_Case report, patient Z. E., 43-year old male: (a) Mirror view of local preoperative situation. (b) With splint using a reference ball. (c) Panoramic x-ray scan with reference ball (diameter 5 mm) in the area of designed augmentation and implantation.

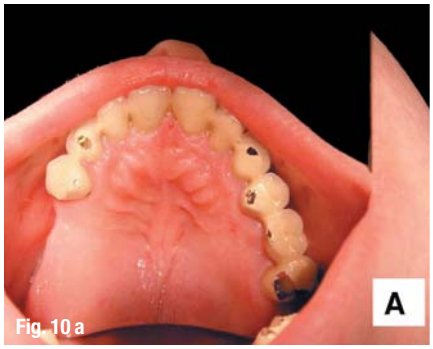


Fig. 10 a

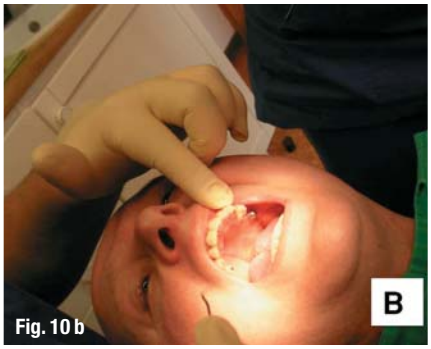


Fig. 10 b

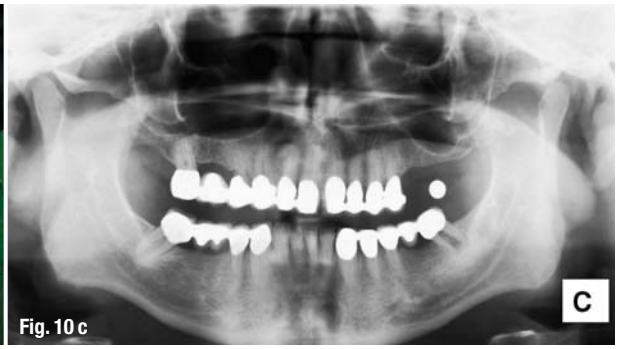


Fig. 10 c

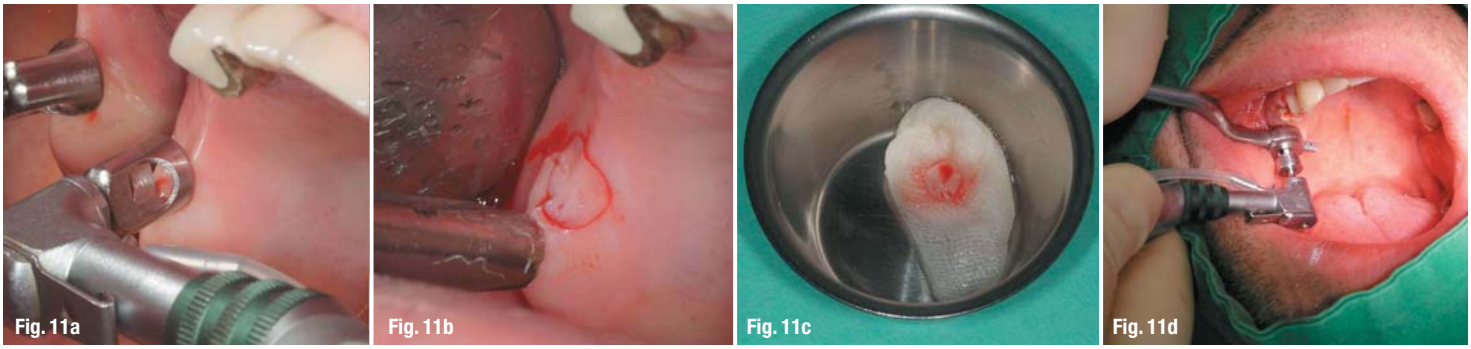


Fig. 11_Case report, patient Z. E., 43-year old male: (a) and (b) Instrumental gingiva punching. (c) Gingiva punch stored in a sterile container with a saline saturated swab. (d) Milling the alveolar process using the distance guide with the proper distance tube (the bony sinus floor is thus reduced to a thickness of approx. 1 mm).

gained, however, amounts to 1.8–2 cc and the height of the elevation of the Schneiderian membrane comes to 12 mm.

After removal of the balloon catheter, the augmentation mixture (Fig. 12) is inserted through the osteotomy in layers (Fig. 15a). The prefinal aspect (before insertion of the gingival punch and its fixation by a suture) is shown in Fig. 15b. The postoperative panoramic x-ray scan (Fig. 15c) demonstrates that the submucosal space is totally filled by the augmentation material.

_Discussion

The BLC System for the sinus floor mucosa elevation in all pre-clinical and clinical studies published up until now2–6 proved to be a simple, easy to learn and comfortable to handle technique. Whether the gingiva propria covering the alveolar ridge is taken off by punch or mucoperiosteal flap remains the decision of the implantologist.

The first step to be taken in careful consideration is the weakening of the bony floor of the sinus by precise milling. This should, by no means, penetrate the sinus floor compacta completely. All subsequent steps are secured by the precise interplay of the BLC instruments: The remaining bone is cautiously pushed with the mandrin towards the subantral space, and the sinus membrane is detached by the application of a balloon that can gradually be blocked up.

Special surface reliefs of the sinus floor like the Underwood septa mentioned are—in the height of less than 5 mm—no obstacle for the BLC system and no cause for possible ruptures of the membrane. These traumas, however, are very often associated with the use of both the direct and the indirect sinus lift techniques.

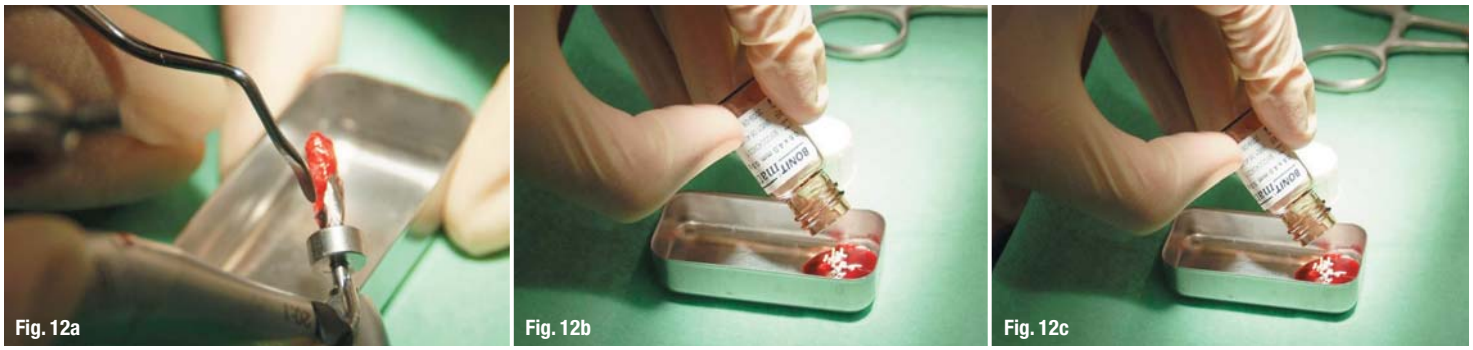
According to the author, the Summers OSFE method[9] is limited to a maximum elevation height of 3–4 mm. The BLC System renders it possible to lift the Schneiderian membrane up to a height of 10 mm and more, still remaining on the safe side.[2,3] Numerous pre-clinical experiments with human preparations[3,6] have shown that the benchmark area of the sinus membrane is located in the deepest layer of the lamina propria, the reticular stratum (exact histological definitions are defined in paper #3).

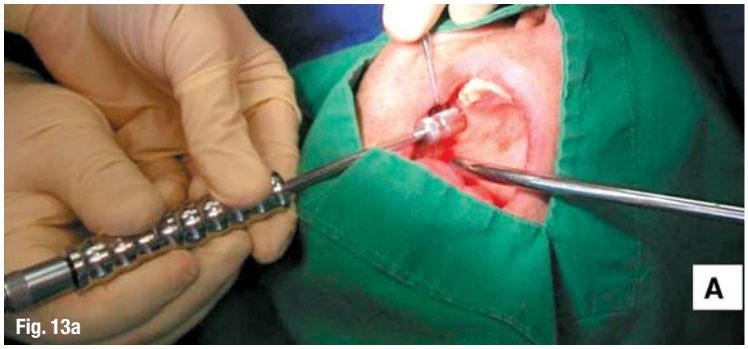
This layer obviously seems to be the so-called locus minoris resistentiae of the sinus mucosa as far as its detachment from the lying bone underneath is concerned. Therefore, the nutritional layer of the sinus mucosa, the vascular stratum of the lamina propria, is always kept intact when employing the balloon assisted mucosa separation.

On the one side, this means that the Schneiderian membrane lifted with the balloon is always capable of being sufficiently supplied by blood from the edges of its elevation. There is no risk of the development of a mucosa necrosis due to a lack in blood circulation. On the other side, the periosteal part of the reticular layer of the mucosa remains in contact with the bone walls—from here vascularisation and osteoneogenesis in the augmentation material can proceed immediately after its implantation.

The use of a distance tube and guidance system for the precise milling of the bony sinus floor has at

Fig. 12_Case report, patient Z. E., 43-year old male: Preparation of the augmentation material to be used. (a) Bone chips harvested during milling of the alveolar process are kept in a sterile chamber. (b) Bonit Matrix® (1.0 cc) is mixed with the autogenous bone chips harvested. (c) Venous blood is added to the augmentation material.





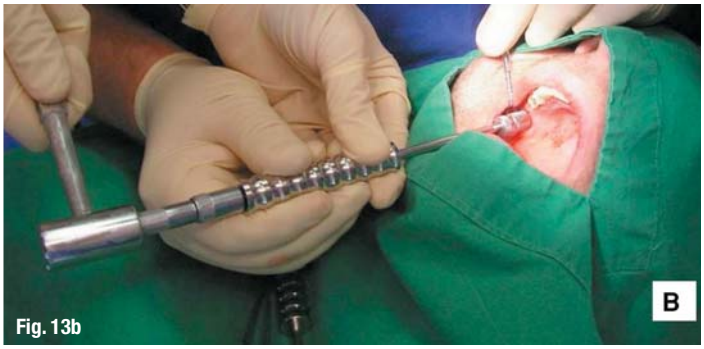


Fig. 13_Case report, patient Z. E., 43-year old male: (A) Insertion of the osteotome instrument into the bore hole and positioning of the security screw to gingiva level. (b) Impression of the residual bone into the sinus (approx. 1 mm) by a few slight beats upon the grip of the mandrin.

least two positive effects. First, the Schneiderian membrane is protected against drilling trauma. Second, this system possesses a major positive psychological aspect. The hand with the milling-supporting instruments is separated from the hand with the drill. Thus, the milling procedure can be conducted with a higher accuracy.

Besides its radiological visibility, the use of Ultravist 240 as a blocking-up fluid has the following advantage: The force that is applied with manual pressure on the piston of the syringe operates more slowly and more controlled due to the higher viscosity of the contrast medium compared to saline.

With the BLC System the entry to the sinus floor can be chosen individually:

(1) For example, a crestal access is decided when the simultaneous insertion of an implant is possible.

(2) The ventro-lateral entry to the maxillary sinus can be selected when an upper jaw bridge is still in function and the alveolar bone beneath exhibits a vertical height of less than 3 mm.

Clinically the BLC System has been used so far in more than 800 clinical cases.[2,4,5,7,8] One of these cases is demonstrated in the submitted publication. Here a two-phase procedure of augmentation and implantation due to osseous conditions (Fig. 10c) was inevitable.

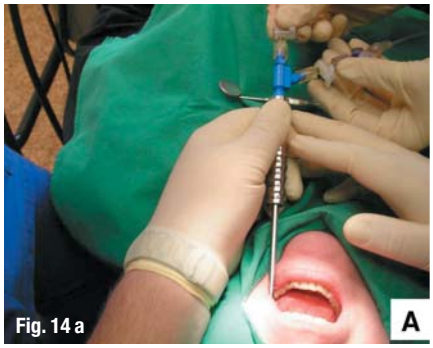
After milling and opening of the entry to the sinus floor, it could be established with a probe that the infractured residual bone with its surrounding sinus membrane was freely movable. It must be repeated that safe access to the sinus is not guaranteed with the cylinder drill when the vertical bone height has not been exactly established. The special guidance system for the use of twist drill with a drilling stop supports secure access to the sinus. The movable mandrin-impressed residual bone permits safe introduction of the balloon and its untroubled blocking up to the desired height.

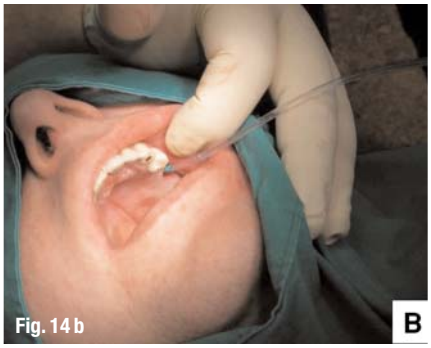
After experience with extensive pre-clinical examinations and clinical observations, the BLC System is easy to teach, to learn and to handle. The time period between milling the entry to the sinus and its closure after bone grafting is relatively short. An experienced implantologist will manage this operation in less than 10 minutes. Another advantage of this balloon lift in comparison with the open lift is obvious: postoperative soft tissue swelling and pain are reduced to a minimum.

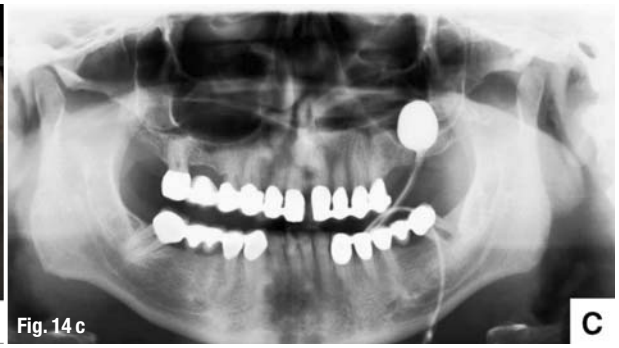
Published clinical studies with the BLC System show that with the balloon, an absolutely sufficient vertical height of the mucosa can be obtained; radiological observations indicate that starting with a balloon volume of 0.2 cc (corresponding to a height of 0.2 mm) each additional 0.1 cc elevates the membrane 0.1 mm. Thus, with a blocking-up volume of 1.0 cc, the balloon lifts the membrane up to 10 mm. This means that the total subantral space amounts to 1.2 cc of volume

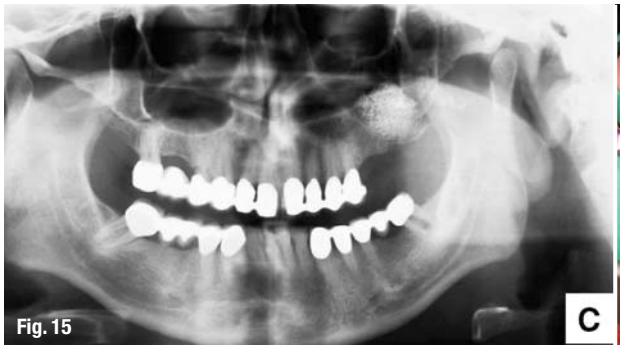
Last but not least, the elasticity and the retraction forces of the sinus membrane elevated with the balloon remain unchanged. Consequently, the balloon-lifted membrane will compact the augmentation material after its implantation, thus supporting the process of stabilization and vascularisation of the

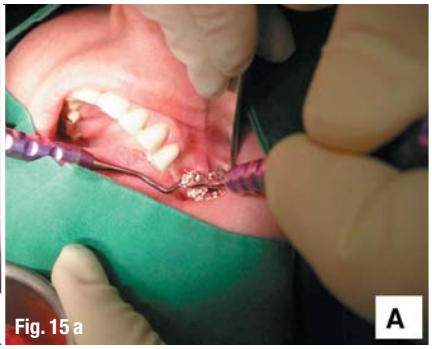
Fig. 14_Case report, patient Z. E., 43 year-old, male: (a) Following the mobility test, the mandrin is substituted by the balloon catheter; this is blocked-up 5 times with a radio-opaque fluidity. (b) After the membrane-elevation procedure, the osteotome instrument is replaced by the balloon catheter, which is blocked-up by 1.5 cc of the radio-opaque fluidity. (c) Panoramic x-ray scan of this balloon in situ.











mixture of autogenous bone chips harvested during milling, alloplastic bone defect filler granules (with internal interconnecting pores) and freshly withdrawn venous blood from the patient.

_Summary

The Balloon-Lift-Control (BLC) System—basically derived from the skin-expansion technique of dermatologists—was primarily discussed by the authors as a sinus-membrane- elevation system in the early 1990s. In 1996, the first experiments were begun using self-constructed PVC catheters to the tip of which condoms were glued. These first experiments were performed on human formaldehyde-fixed head preparations.The resulting PhD thesis[6] was presented before the Medical Faculty of the Ludwig-Maximilians-University of Munich in 2002.

Thereafter, in cooperation with industrial companies and escorted by further in-vitro experiments, a step-by-step system was developed consisting of: (a) a secure bone drilling device for the preparation of the access to the sinus floor, (b) an osteotome set to impress the residual bone into the maxillary sinus, and (c) a balloon catheter to elevate the sinus mucosa to the height necessary for a functionally effective bone augmentation.

In the meantime, numerous results of pre-clinical and clinical tests employing this BLC system have been published. The common consent of these observations is that this technique combines the advantages of a minimal invasive, mostly complication-free treatment with the possibility of creating a vertically optimal implant bed. The application of the BLC System is systematically described and discussed.

The case presented gives a short review of the application of the components of the BLC System and the anticipated results. Despite the prima vista simplicity of the system components and its relatively easy application, it is highly recommended that use the BLC System should be restricted to surgically experienced dentists in possession of a profound knowledge of the orofacial topographic anatomy and having a command of the basics of bone atrophy, osseous regeneration and bone remodelling._

Refernces

[1] Baumann, S (2007): Untersuchungen zum BLC-System an frischen Sägetierkiefern. Masterthesis DUK Krems.
[2] Bauer, FM, and KU Benner (2005): Die Ballon-assistierten Sinusboden-Schleimhaut-Elevation – erste klinisch Resultate. Implant. J. 3:62–65.
[3] Benner, KU, Bauer, FM, and KH. Heuckmann (2005): Die Ballon-assistierte Sinusboden-schleimhaut –(BASS)-Elevation – Anatomische Studien mit einer minimalinvasiven Technik. Implantologie 13/1:53–60.
[4] Bieker, WM (2006): Balloon-Assisted Sinus Floor Elevation—An Alternative to open Sinus Elevation? EDI Case Studies 26–30.
[5] Bieker, WM (2006): Balloon Lift Control—The better alternative to a lateral sinus floor elevation? Identity, 40–45.
[6] Black, P (2002): Sinusbodenelevation: Entwicklung eines ballonassistierten Verfahrens. Inaug. Diss. LMU München.
[7] Eenhuis, U (2007): Sinusboden-Schleimhaut-Elevation: Klinische Untersuchungen zum Ballon-Lift-Control (BLC) System. Masterthesis DUK Krems.
[8] Kirste, M (2007): Das Ballon-Lift Control (BLC)-System mit 'in vitro' und 'in vivo' Studien. Masterthesis DUK Krems.
[9] Summers, RB (1994): The Osteotome Technique: Part 3 – Less invasive methods of elevating the sinus floor. Article 1. Compend Contin Educ Dent of volume XV NO. 6, 698–708.
[10] Tatum, OH Jr (1986): Maxillary and sinus implant reconstruction. Dent Clin North AT 30:207–229.

_author implants

Prof Dr Klaus U. Benner

Lindenstraße 2
82100 Germering, Germany
Phone: +49-89/8 40 49 67
Cell: +49-173/5 65 42 54
Fax: +49-89/89 42 91 53
E-mail: kubenner@t-online.de

Fig. 15_Case report, patient Z. E., 43 year-old male: (a) Augmentation mixture put through the bore hole into the submucosal space. (b) Final view of the operation site before closing the soft tissue defect with the gingiva punch kept in sterile saline (mirror view). (c) Panoramic x-ray scan with the implanted augmentation material.

The anterior maxillary implant and a high smile line: Often a great challenge

author_Bert Eger, Germany

This case report is based upon a speech held at the 36. International Annual Congress of DGZI in Munich on 13th of October, 2006. Placing an implant in the anterior sector of the maxilla with clear indication poses a great challenge in most situations, especially when the patient shows a high smile line and the treatment has been delayed. Today, however, osseointegration is no longer the only criterion when assessing the outcome of an implant treatment: The aesthetic result has become just as important. In the following, a passionate mountaineer explains two completely different initial situations after the loss of the upper left lateral incisor, and its replacement.

_Teufelsberg Mountain, 120 m, Berlin, uncomplicated

Especially when critically evaluated, there are not many clear indications for an immediate load implant in the anterior sector of the maxilla. Furthermore, one must differentiate between immediate treatment and immediate load. A possible bone loss and the surrounding soft tissues should be analyzed presurgically.

Our 37-year-old Prophylaxis Assistant had previously had an apicoectomy of the upper left lateral incisor. This apicoectomy was implemented up to the level of the cast crown. Afterwards, the tooth was clinically without symptom. However, after about 15 years it became increasingly mobile and finally reached a mobility of level 3, while being free of irritation periapically. This was most likely caused by the extreme ectomy (Fig. 1).

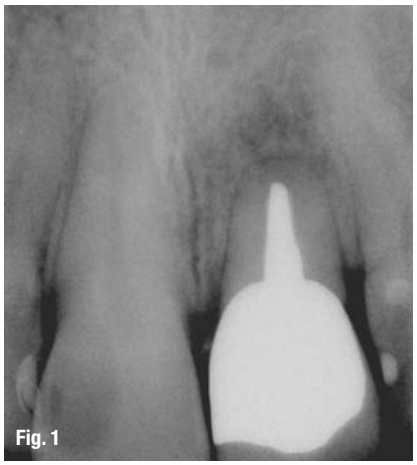


Fig. 1

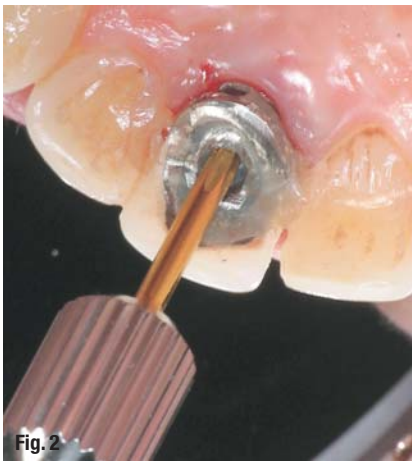


Fig. 2

Despite the low apical brightening we extracted the upper left lateral incisor, protecting the patient with antibiotics (Penicillin 1.5 Mega), and immediately inserted a NOBEL PERFECT implant 5.0 x 13 mm. The previous crown was separated from the extracted tooth and set upon a temporary titanium abutment to be used for about 6 weeks (Fig. 2). In order to guarantee an immediate treatment, but not an immediate load, the crown was not only screwed upon the implant, but the loads were distributed onto the neighboring teeth with help of DUALZEMENT. Furthermore, we deliberately let the temporary crown end above the gingiva line for the first 6 weeks in order to avoid irritations of the gingiva during the highly sensitive healing phase (Fig. 3).

After six weeks, the radiograph showed a healing process without complication (Fig. 4). This was also affirmed by the pinkish shade of the gingiva encountered when removing the temporary abutment (Fig. 5). Seven weeks after the permanent abutment was affixed, the final photograph (Fig. 6) shows an excellent result.

However, the treatment was relatively uncom-

plicated, just as the ascent of the Teufelsberg in Berlin...

_K2, 8,611 m, Pakistan, most challenging peak in the world

When planning implantations in the anterior region of the maxilla, the surgeon should previously analyze the bone topography as well as the surrounding soft tissue. In the case of a 38-year-old woman described in the following, the upper left lateral incisor had been extracted (Fig. 7). The smile line is high and the radiograph showed a buried root, which caused the formation of a fistula (Fig. 8). Even without a CT, the experienced implantologist can vaguely discern a significant facial retraction with loss of the labial substantia compacta (Fig. 9). All augmentations were to be carried out in a sterile environment. We removed the buried root under local anesthesia. Six weeks later, while protecting the patient with antibiotics, we opened a gingiva flap, proving the assumption that the facial osteon was almost completely gone (Fig. 10).

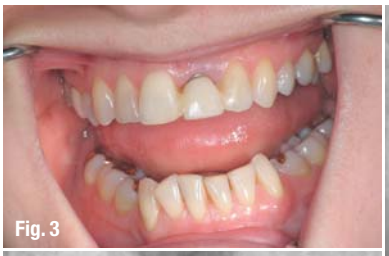


Fig. 3

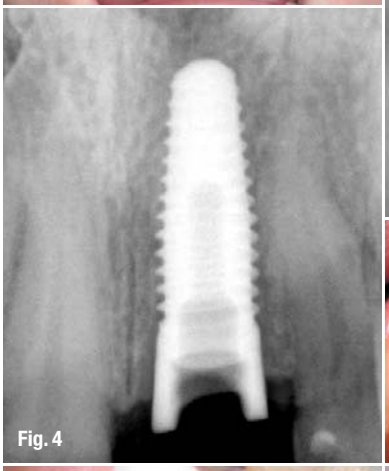


Fig. 4


Fig. 5

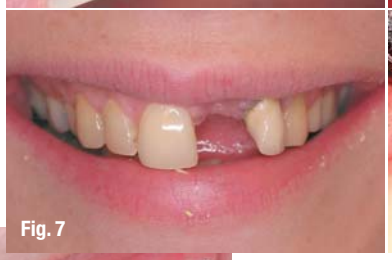


Fig. 7

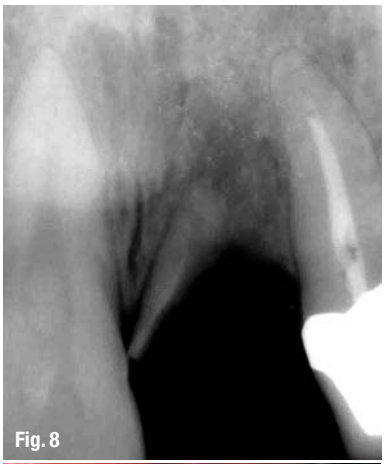


Fig. 8

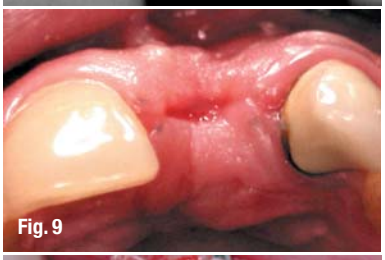


Fig. 9

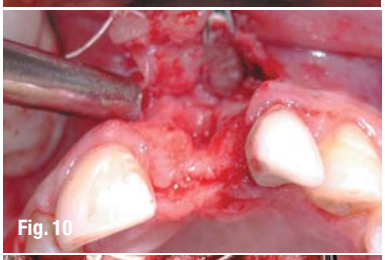


Fig. 10

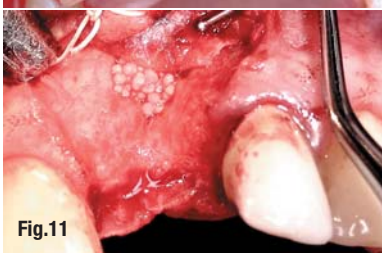


Fig.11

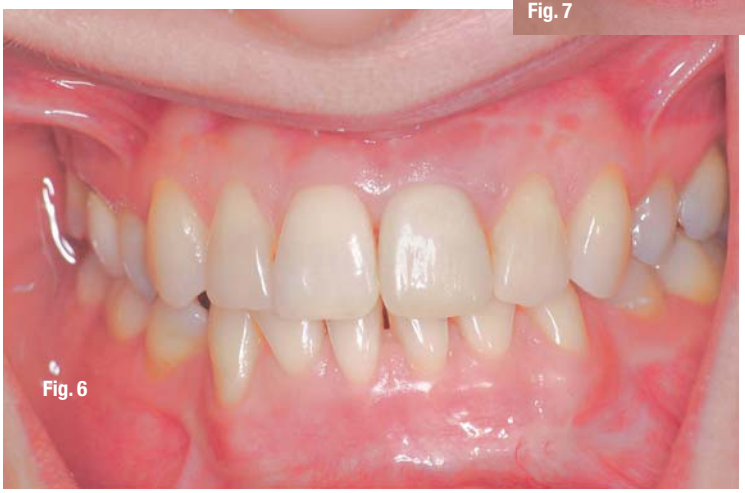


Fig. 6

When finding an alveolar ridge with a thickness of 1–4 mm, it is the prevailing opinion that neither an augmentation with particulate augmentation material alone, nor an alveolar bougienage with osteotomes nor a distraction osteogenesis (single implant!) are possible. After thorough consultation on different bone augmentation materials, the patient decided on using CERASORB (synthetically manufactured tricalcium phosphate). The labial cavity was filled with this bone augmentation material, the material was protected by a membran (GORE OSSEOQUEST, absorbable, barrier function for 6 months) and fixed with absorbable pins (Bio Tack) (Fig. 11).

After four months we reopened the flap (membrane and pins were not yet completely absorbed) (Fig. 12) and freed the surgical field of any granulations. Thus having provided a spacious basis for the osseointegration of the bone

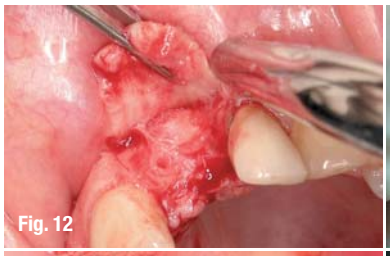


Fig. 12

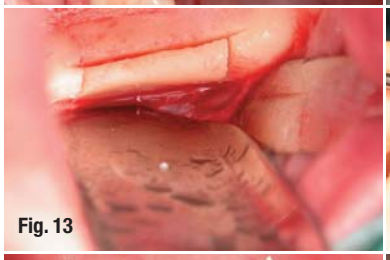


Fig. 13

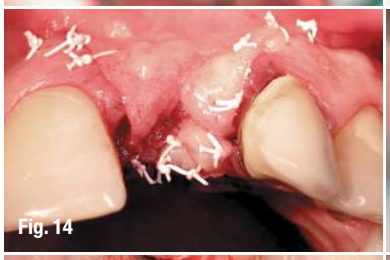


Fig. 14

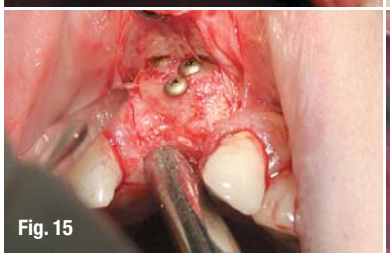


Fig. 15

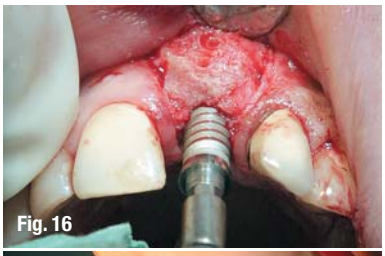


Fig. 16

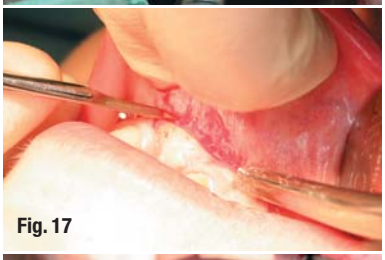


Fig. 17

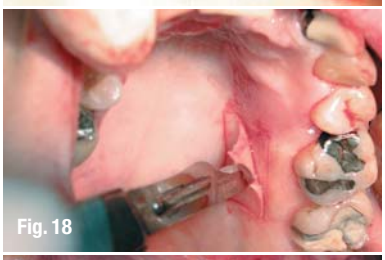


Fig. 18

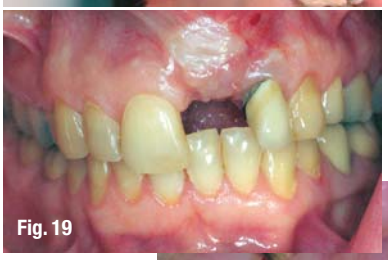


Fig. 19

block to be transplanted, we removed it from the right side of the patient's mandible (Fig. 13), fixing it at the site with 3 OSSEOFIX bone screws. Cortical transplants from the mandible show an easily controllable multiplication of the bone volume, while guaranteeing a quick healing and a very dense bone structure. To provide for sufficient flap material, the mucogingival flap was mobilized (slitted) and fixed with a mattress suture as well as with single button sutures (Fig. 14). This suturing technique creates a high healing certainty, however, the vestibulum becomes flatter as a result.

After another 18 weeks, the flap was opened once again. The clinical check up after removing the periost residue showed a well healed-in bone block and a significantly increased bone volume (Fig. 15). The 3 bone screws were removed and a conical screw implant of company Schütz Dental (IMPLA; 5.3 x 13 mm) was inserted mechanically (Fig. 16).

The oral vestibule became very flat after numerous surgeries in the area of the upper left lateral incisor, making a vestibular build up necessary (Fig. 17). A free mucosa transplant was removed from the left side of the palate (Fig. 18). The color difference between transplant and gingiva does not matter, as the transplant sits slightly above the smile line (Fig. 19).

„Figuratively speaking, K2 was scaled", which in this case means that the highly complex reconstruction of the alveolar process as well as of the mucogingival areas seems to be generally successful. The middle papilla could be a bit longer, however, after discussing it with the patient we set aside any further surgical measures (Fig. 20)._

The author will provide a literature list upon request.

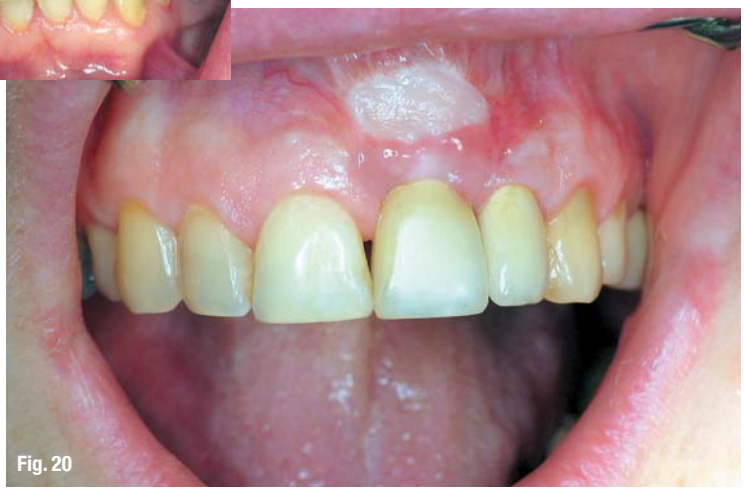


Fig. 20

_author | implants

Dr Bert Eger

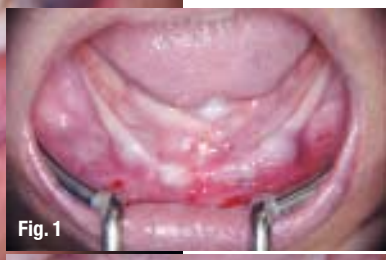
Dental specialist implantology – DGZI
Wrangelstraße 11–12
12165 Berlin, Germany
Phone: +49-30/7 92 83 84
Fax: +49-30/79 70 17 27
E-mail: info@bert-eger.de
Web: www.bert-eger.de

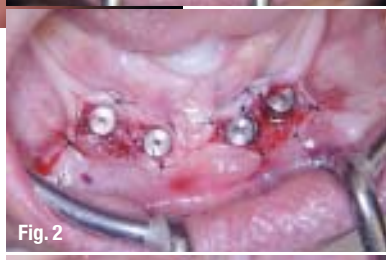
Combination of scalpel and laser-aided, second-stage surgery in the atrophic edentulous mandibula

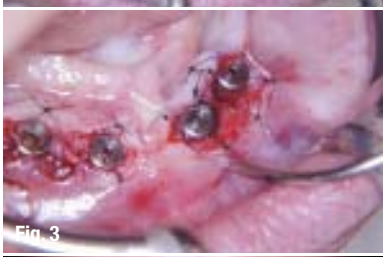
author_ Marcel A. Wainwright, Germany

In this case report the sensible combination of a conventional surgical second-stage approach with the use of a Diodeum Laser is shown.

_case 1







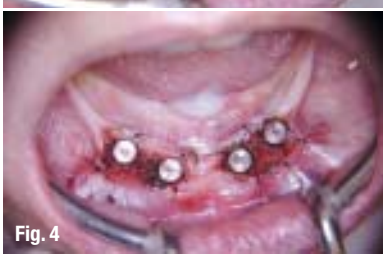


Fig. 1_Situation before second-stage surgery. Massive bone loss with shift of the muco-gingival line and lift of the sublingual area.
Fig. 2_Revealed implants after split flap preparation and fixture of the attached gingiva to the labial and lingual aspect with interrupted sutures.
Fig. 3_Conditioning and modelling of the soft tissues with a Diodeum Laser (Oralia). Simultaneous coagulation of the submucosal tissue is an accompanying effect.
Fig. 4_A clear operation site after soft tissue conditioning with the Diodeum Laser.

_The severely atrophic edentulous mandibula is predestined to be treated with implants in the symphyseal region. Often this is the only way to achieve patient satisfaction and to give a higher level of live quality back as well as function by this relatively simple treatment. The quality and quantity of bone in this region often allows an easy surgical protocol.

Due to a long period of missing teeth, the vertical decrease of bone is combined with a negative effect on the soft tissue. The loss of vertical height of the alveolar ridge is connected with an elevation of the sublingual area and the transfer of the muco-gingival line upwards. A permanent stabile and healthy peri-implant mucosa can only be achieved by a broad margin of keratinized attached gingival.

The patient should be enabled to keep up a perfect oral hygiene especially in the area of implants and the meso-structures. But reality often shows us different things. Plaque and stains on the oral retaining components are not that rare, and this is the reason why professional care four times a year by a DH is mandatory for all of our implant patients.

The peri-implant soft tissues should be conditioned at second-stage surgery. Missing attached gingival can be enhanced by the use of CTG's (connected tissue grafts) from the palatum. Thus, a second operation field is necessary and sometimes refused by older patients. This case report shows how the soft tissue situation can be improved with second-stage surgery around four interforaminal implants in the mandibula.

_Case Report

A 72-year old female with a good health situation in

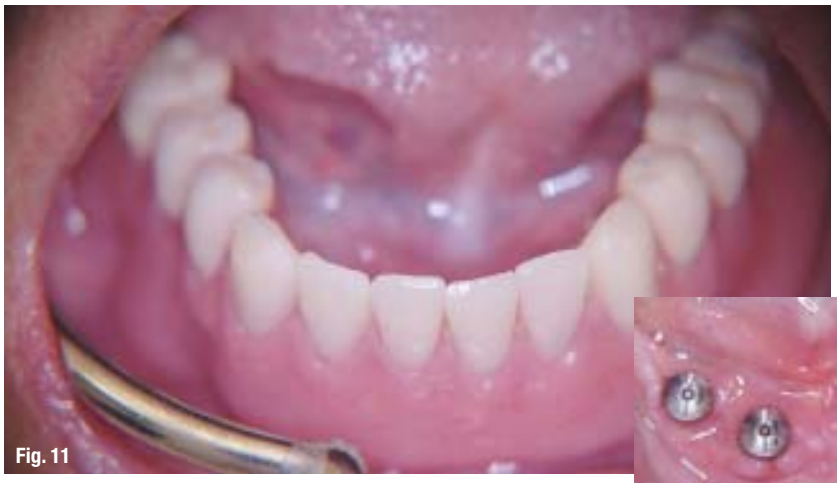


Fig. 11

Fig. 5_Situation one-weekpostop. An improved peri-implant soft tissue situation and good wound healing are visible.
Fig. 6_Two weeks postop the increase of the soft tissue is visible as well as a stabilization of the gingiva.
Fig. 7_Soft tissue situation before impression with an individual tray.
Fig. 8_Impression copings in situ.
Fig. 9_Individually milled Gold Bar fixed with a torque of 32 Ncm.
Fig.10_Basal view of the prosthesis with a galvano retention element.
Fig. 11_Protsthesis in situ.
Fig. 12_Lip profile of a satisfied and happy patient.

2006 was operated alio loco and received four interforaminal implants (3i implant innovations, external hex). After 4-months of normal osseointegration, I planned and performed second-stage surgery.

The intraoral clinical situation revealed massive atrophy of the mandibula with a cranial lift of the sublingual tissues exceeding the height of the alveolar ridge. The thin layer of mucosa let the implants shine through. Figure 1 shows the situation just before surgery.

Before scalpel incision, the evaluation of the attached gingiva propria is mandatory. One main target should be to move the fit-to-use tissue equally around the revealed implants. In the described case, more attached gingiva was visible in the labial aspect and, due to the sublingual lift, less in the oral aspect. Thus, the crestal incision was transferred a bit more to the vestibulum to transfer in a second step this tissue to the lingual part of the peri-implant region. It is important to preserve a gingival bridge between the medial implants to avoid an unintended shift of the flap parts after mobilization, and to keep up a stabile "anchor-area" for suture procedures.

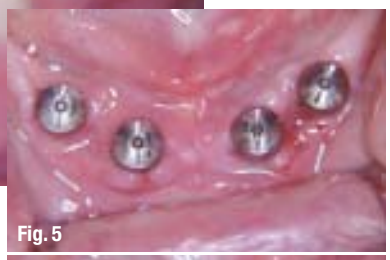


Fig. 5


Fig. 6

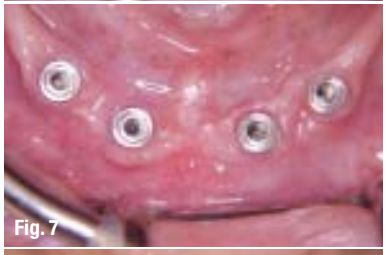


Fig. 7

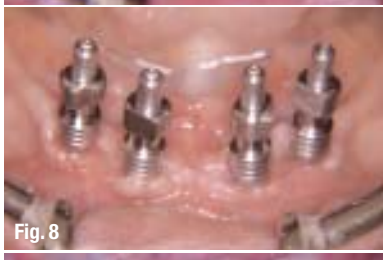


Fig. 8

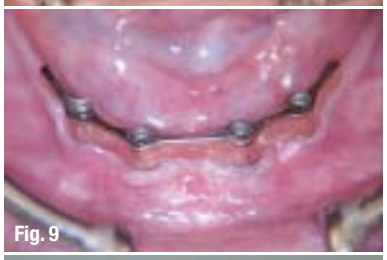


Fig. 9

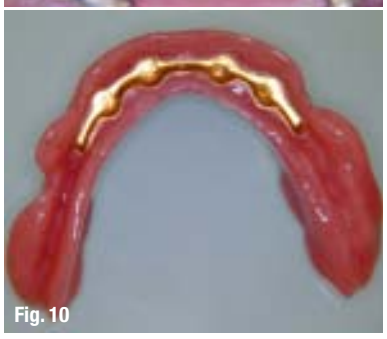


Fig. 10

After infiltration (UDS Forte, Novartis) a split flap preparation followed with a transfer of the flap parts, as described above, to the buco-lingual extension around the healing abutments (*3i*) with suturing (Supramid 5/0, Stoma). The parts between the mobilized flaps will cure per secundam. Figure 2 shows the fixed flap parts and the cover screws of the four interforaminal implants.

After shifting the gingiva around the implants and fixture, a soft tissue modelling, coagulation and conditioning was achieved by the use of a Diodeum Laser (Oralia). The soft tissue treatment was done in program PPR 2 with a frequency of 10,000 Hz and a power of 20 Watts and 2.5 Joules (Fig. 3).

Figure 4 shows the situation after laser soft-tissue conditioning. Due to the hemostatic effect of the laser, the operation area is clear and the patient's postoperative complaints can be reduced efficiently. After the operation procedure the healing screws are inserted and hand-tighten in place. The patient's prosthesis was left with space for the abutments and lined with a soft-lining material.

The patient was asked to rinse for a period of 5 days with chlorhexidine twice a day. The postop control the next day showed a complaint-free patient that only needed one analgetic pill. A layer of fibrin covered the wound and showed a satisfying healing process. The removal of the sutures followed after 7 days, and at this point an improvement of the soft tissue situation around the implants was visible (Fig. 5).

Two weeks post-op a stabile gingival situation was visible around the implants (Fig. 6) with an increase of the ker-

atinized and attached gingiva. Another week later, a pick-up impression with a polyether impression material followed and the construction of an individual milled Gold Bar was done. The bar was fixed with a torque of 32 Ncm and the screw channels were closed with Trim (Bosworth). In case the bar needs to be removed, it can be done with a small ball-shaped, heated instrument. The patient's comfort is enhanced with the use of a galvano retention, and the result is a confident patient with re-established function and esthetic.

_Conclusion

With the combination of a traditional surgical second-stage approach and modern laser surgery, the peri-implant soft tissue situation can easily be improved in the edentulous atrophic mandibula. A stabile soft tissue situation around implants is mandatory for the longevity of implants. The oral hygiene and patient compliance curve shows a sinking tendency related to age and a decrease of the patient's manual skills, thus the importance of a stabile and easy-to-handle soft tissue situation is of the utmost importance. Other traditional surgical steps like vestibuloplasty, connective tissue grafts or surgical lowering of the lingual parts are possible alternatives; nevertheless they are more invasive and more uncomfortable for the patient._

_author implants

Dr Marcel A. Wainwright, Implantologist

Office of Dr Jörgens & Dr Wainwright
Kaiserswerther Markt 25
40489 Düsseldorf, Germany
E-mail: Weinrecht@aol.com

The significance of mitochondrial efficiency in the regeneration and rate of healing when using dental implants

authors_ Brigitte König, Bernd Neuschulz and Rolf Briant,Germany

_Case 1


Fig. 10

Case I_Female, 45-years old.

Maxilla

Fig. 1_OPG of the starting situation, generalised parodontitis.

Fig. 2_Clinical situation 4.5 weeks post extraction, after molecular biological treatment.

Fig. 3_Implant positioning, flapless after CT.

Fig. 4_Fixed provisionals, fitted immediately post-op.

Fig. 5_Definitive fixed reconstruction, fitted 1.5 weeks post-op.

Fig. 6_Optimal result, cosmetically and aesthetically.

Mandible

Fig.7_Implants positioning, falpless after CT.

Fig. 8_Fixed provisionals, fitted immediately post-op.

Fig. 9_Definitive fixed reconstruction, fitted 1.5 weeks post-op.

Fig. 10_Optimal result, cosmetically and aesthetically.

_The number of dental implant procedures is constantly increasing. As absolute implantology activities increase, so do the number of older and/or multimorbid patients. Undoubtedly, impaired wound healing is to be taken into account for these patients.

Yet this aspect is given little or no attention in spite of the optimization of surgical procedures—such as, for example, ultrasound and laser surgery, ozone therapy, bone regeneration using synthetic materials, equine collagen absorbable membranes, the use of minimally invasive methods, as well as three-dimensional OP-planning, simulation and, following on from that, flapless techniques, the improvements to the surface structure and design of implants.

The fundamental aim of those who administer surgical (implantological) treatment is to minimise the repercussions of all sorts of operative procedures, significantly reduce regeneration and healing time, noticeably improve general feeling of wellbeing after operative interventions and provide patients with a fixed tooth replacement (at the very least a provisional) at the end of their operation.

Fig. 1

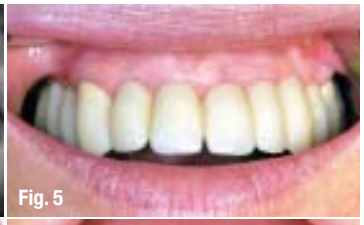


Fig. 5

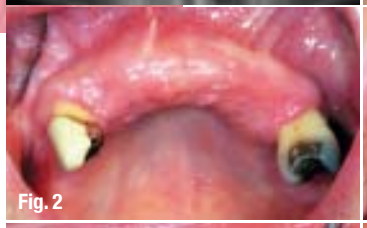


Fig. 2

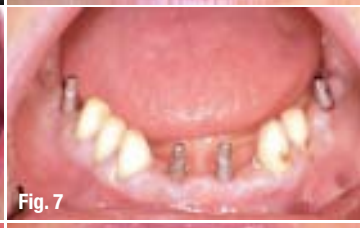


Fig. 7

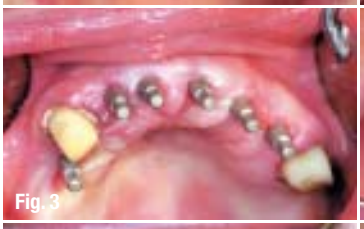


Fig. 3


Fig. 8

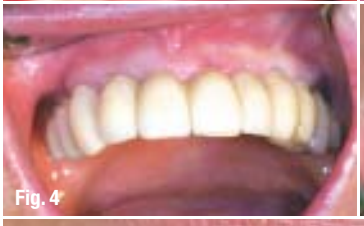


Fig. 4


Fig. 9


Fig. 6

The existing elaboration proves to be of outstanding significance in the functional capability of mitochondria to regeneration and the rate of healing. This is to show the persons administering (oral) surgical treatment that the operations protocol described here can be used simply and efficiently in everyday matters.

Meanwhile, within the realm of scientific knowledge it is clear that "oxidative stress" has a pivotal role to play in the aging process and in the development of chronic illnesses. Oxidative stress defines the imbalance between antioxidants and prooxidants, where the latter predominates.

Every organ and every tissue structure can be the target of an oxidative stress attack, which can lead to various illnesses such as atherosclerosis, diabetes, rheumatism and infectious illnesses, amongst others. Numerous studies have showed that an oxidative/antioxidative balance can delay the occurrence of illnesses and can even prevent them.

The question then arises as to whether purposeful diagnosis of oxidative/antioxidative status and individual molecular biological patient preparation to achieve an oxidative/antioxidative balance before and after the implant-op, is able to produce a sustainable reduction in the regeneration and healing phase.

Results

Included in the tests were 15 potential implant patients and 5 controls, who had no indication of periodontitis.

_Efficiency of antioxidative enzymes

The assessment of receptivity to oxidative stress in this study was made by determining different antioxidative effective enzymes. The body concentration of antioxidative/prooxidative molecules—such as NO, glutathione, ox-LDL-cholesterol, H_2O_2 and others—is influenced by genetic DNA variants of some enzymes, which radical and non-radical oxidants normally metabolise. Selected genetic variants of the relevant enzyme can involve partial or complete loss of function and also an increase in function.

Mitochondrial superoxiddisumtase-2 (SOD-2) and mitochondria nicotinamide-adenine-dinucleotide- phosphate (NADPH) oxidase have a central role to play in the defence of endogenously formed reactive oxygen species (in mitochondria). From the results it is apparent that each of the 15 potential implant patients included in the study possessed significant enzyme systems in one constellation, and this lead to an increased development of reactive oxygen species (ROS) in the mitochondria. Specifically, 93.3 % (n = 14) had limited functions in the NADPH oxidase complex (C242T), which protects against ROS. Of these, 71.4 % (n = 10) possessed SOD-2 in the functional form (16Ala), which lead to a further increase in ROS loading. ROS are not only formed endogenously, but also exogenously through cellular detoxification in the cytoplasma. Ionising radiation, UV rays, metals and harmful substances can intensify the formation of ROS. The defence of the exogenously formed ROS is also dependant upon several enzyme systems to which belong endothelial NO-synthase (eNOS) and glutathione S-transferase, types M1, T1 and P1 (GSTM1, GSTT1 and GSTP1).

_Case 2


Fig. 17

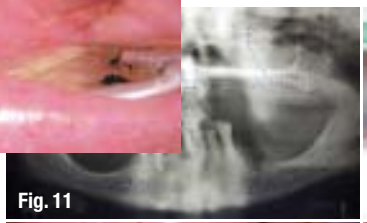


Fig. 11

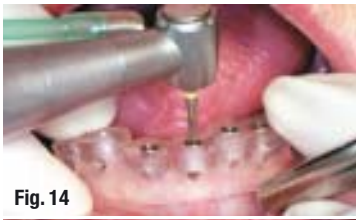


Fig. 14

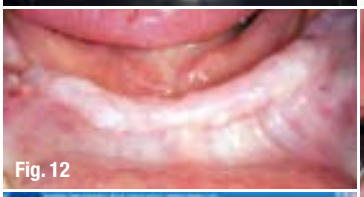


Fig. 12


Fig. 15


Fig. 13

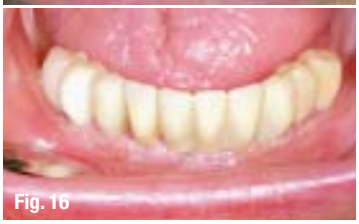


Fig. 16

Case II_Female, **76**-years old.

Fig. 11_OPG of the starting situation, generalized periodontitis.
Fig. 12_Clinical situation 4.5 weeks post extraction, after molecular biological treatment.
Fig. 13_Simulation after CT assessment.
Fig. 14–15_Implants positioning, falpless after CT using a template.
Fig. 16_Fixed provisionals, fitted immediately post-op.
Fig. 17_Definitive fixed reconstruction, fitted 2 weeks post-op, optimal result, cosmetically and aesthetically.

_Case 3


Fig. 25

Case III_Female, 49-years old

Fig. 18_OPG of starting situation, observe redundant bone quality.
Fig. 19–20_Simulation after CT-assessment for implants in regions 35 and 37.
Fig. 21_Differential diagnostic CT assessment to make up the template.
Fig. 22–23_Implant positioning, flapless, using template after molecular biological treatment.
Fig. 24_OPG of the implant positioning.
Fig. 25_Fixed provisional immediately postop.
Fig. 26_Definitive fixed reconstruction, fitted two weeks post-op, optimal result, cosmetically and aesthetically.

Fig. 18

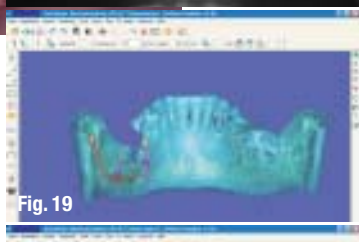


Fig. 19

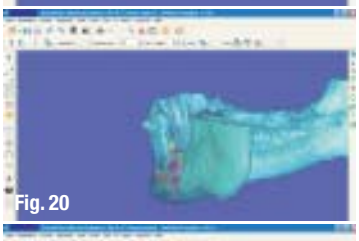


Fig. 20

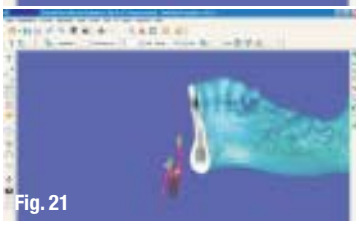


Fig. 21


Fig. 22

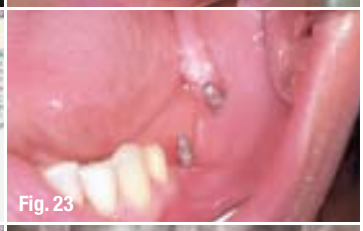


Fig. 23


Fig. 24

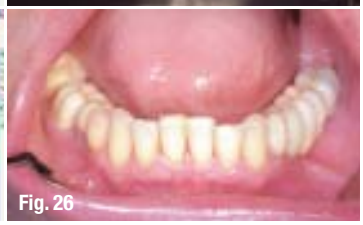


Fig. 26

Only 5 patients (33.33 %) had the enzymes GSTM1, GSTT1 and GSTP1 in their functional wild-type form. GSTM1/GSTT1 (deletions mutants) were completely lacking in 46.6/6.6 % of patients. In 11 patients, polymorphism existed either as a heterozygous (n=9) or homozygous characteristic (n=2), in the promotor of the eNO synthase gene T786C.

Infections can also be the cause of the formation of ROS. In 13 of the 15 patients, parodontogenic microorganisms, which cause acute and chronic infections, could be detected in the gingival pockets. The inflammatory reaction to a microbial stimulus is determined by variants in the interleukin-1 (polymorphisms at position -889 of human interleukin (IL)-1A-gene, to position +3953 of the human IL-1B-Gene) and interleukin-1-receptor gene (position +2018).

It is in this way that defined single nucleotide polymorphisms (SNPs) in these genes lead to soaring inflammatory reactions including increased production of ROS and, as a result, to destructive cellular processes with tissue damage. 80 % of the people examined had a genetic disposition to increased inflammatory reaction to infections and so have an increased quantity of ROS.

The results clearly show that potential implant patients have enzyme systems that have functional impairments, not being able to inactivate endogenously and exogenously formed ROS (Ill. 1).

_Damage by oxidative stress

Through the combined measurement of various biomarkers, exact details can be made about the cellular damage that has already occurred through oxidative stress, either endogenously or exogenously generated.

By measuring the oxidation products of lipids (ox-LDL; anti-ox-LDL- auto-antibodies), the destruction of vascular lipoproteins is defined, while measuring 8-hydroxy-guanosine (8-OHdG) shows the oxidative destruction inside the cells, ie, the genetic information. Oxidative destruction of proteins and enzymes reflects the identification of advanced oxidation protein products (AOPP). The abovementioned metabolites were measured in the patients' blood (plasma; serum) and urine.

It is clear from the results that all the potential implant patients who were examined already showed evidence of damaged lipoproteins (ox-LDL). Oxidised LDL has been proved to cause an induction of mitochondrial superoxide dismutase (SOD-2) and, in connection to it, the increased production of H_2O_2 leads to mitochondrial stress and, in the end, to a reduction in the function of immune effector cells (eg, macrophages) and cell death (apoptosis). The oxidative damage to intracellular structures, eg, to DNA and cellular proteins, was observed in 40 % of the patients.

These results clearly show that there is an imbalance between oxidative processes and antioxidative reserves. Oxidative stress has already lead to the accumulation of oxidative defects (Ill. 2).

Schedule 1

Ingredients MitoCur® HG
Coenzym Q 10
Carnosin
Alpha tocopherol acetate 50
Vitamin C
Taurin
Alpha-lipoic acid
Thiamine nitrate
Pyridoxin
Cyanocobalamin
N-Acetylcysteine
Methylsulfonylmethane (MSM)

Schedule 2

	Ox-LDL (U/L)*		Homocysteine (µmol/L)**		Thiole (µmol/L)***	
Patients	**Before**	**After**	**Before**	**After**	**Before**	**After**
P1	258.01	120	12.9	8.3	252.89	471.34
P2	179.64	80	17.4	8.5	203.43	389.23
P3	182.69	85	21.8	9.7	295.84	368.19
P4	166.41	95	13.1	9.7	194.12	338.82
P5	228.1	70	10.1	8.5	243.55	341.69

Normal ranges: * < 100 U/L; ** < 10 µmol/L; *** > 310 µmol/L

_The balance status of oxidants/antioxidants

Current oxidant/antioxidant status in the patients' serum was measured. In addition, oxidative effective peroxides, homocysteine and the antioxidative antagonists such as glutathione, SOD-2 and glutathione peroxidase and glutathione reductase were identified.

Along with peroxides, increased concentrations of homocysteine are toxic to cells. It is currently assumed that hyperhomocysteinemia leads to dysfunction and injury of the endothelial vessel, which results in thrombocyte activation and thrombosis activation. Damage to endothelial tissue is caused by reactive oxygen species.

The pathobiochemical potential of homocysteine should not be underestimated since this substance results at an important metabolism interface and accounts for disruptions to the entire methyl groups and sulphur metabolic groups. To the latter belong metabolites such as glutathione and taurine, which in turn have an important part to play in the framework of antioxidative protective systems.

In 4 patients (26.7 %), strongly increased peroxide loading was discernible, which can no longer be compensated for by a rise in antioxidative enzyme systems. Homocysteine levels in the patients examined were either within the range of limited conditions (n=4) or were clearly increased (n=11).

Among the 11 patients with seemingly normal peroxide mirroring in serum, 10 patients showed compensatorily increased activity of the antioxidative effective enzymes SOD-2, glutathione peroxidase and glutathione reductase. The concentrations of non-enzymatic antioxidants—eg, the proteinthioles and the glutathione—were clearly lowered in all patients. Tests of different working groups have shown that under mitochondrial stress—eg, from ox-LDL—the intracellular concentration of the mitochondrial H_2O_2 scavenger glutathione (GSH) was significantly decreased. With the results quoted above it has been clearly proved that visible signs of oxidative stress in all potential implant patients were exceedingly relevant.

_Status of the oxidant/antioxidant balance after treatment

In the following, 5 people with a moderate degree of antioxidative/oxidative imbalance were chosen and were subject to standardised, preoperative preparative procedures with MitoCur HG® (Adler Pharmacy, Niederfischbach, Germany), for a total period of four weeks.

The combination (Schedule 1) of substances and concentrations has been selected in such a way that deficiencies in antioxidative capacities can be balanced out. This is done by directly supplying antioxidants that are lacking and also by providing essential components for antioxidative effective enzyme systems (eg, SOD-2) and antioxidative effective molecules (eg, glutathione).

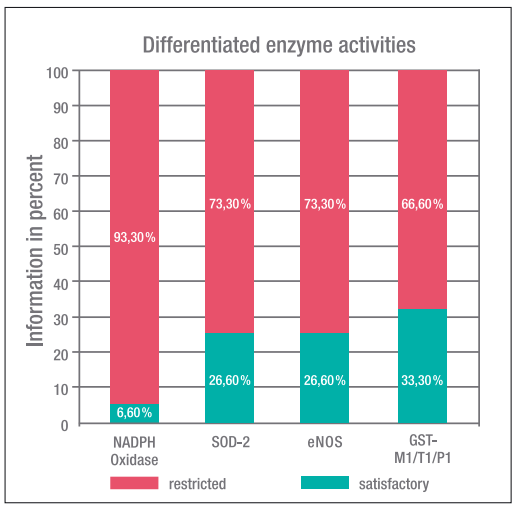


Illustration 1_Ability of antioxidative mitochondrial and non-mitochondrial enzyme systems to work in potential implant patients (n = 15).

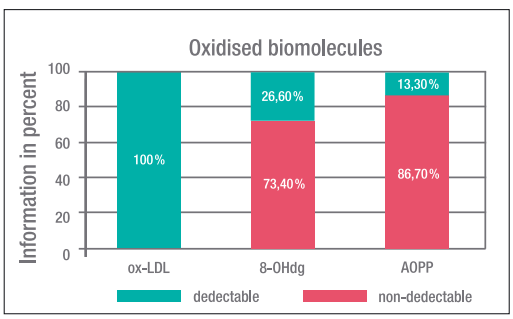


Illustration 2_Damaged biomolecules by oxidative stress (n = 15).

Afterwards the parameters ox-LDL, homocysteine and glutathione were selected as a biomarker for oxidative stress. All parameters can now be found in the reference section (Schedule 2).

Therefore, MitoCur HG® is able to restrict various switch points of oxidative stress and stabilise mitochondrial function.

_Summary

The examinations showed that, to varying degrees in all potential implant patients, biomolecules were changed by reactive oxygen species. Through relevant treatment methods, that is by taking MitoCur HG®, an oxidative/antioxidative balance can be once again established. The data and results established in the study verify the pathophysiology of disturbances to wound healing and clearly explain on a molecular level the significant reduction (60–80%) of regeneration and healing times in operative interventions. It is sustainable recommended that the operations protocol used in the study should be used as a standardised preoperative preparation procedure.

Minimally invasive operative handling after molecular biological preoperative management is shown in the following three clinical cases.

_Material and methods

_Homocysteine, Folic Acid and Vitamin B12 were determined with Immulite, from DPC Biermann (Bad Nauheim; Germany), according to the manufacturer's instructions.

_Substantiation of 8-OHdG is carried out quantitatively using a competitive in vitro ELISA test with monoclonal antibodies (Immundiagnostik AG, Bensheim, Germany).

_Substantiation of ox-LDL and anti-ox-LDL-autoantibodies was carried out quantitatively with a competitive in vitro ELISA-Test with monoclonal antibodies (Immundiagnostik AG, Bensheim, Germany).

_In determining peroxides, total lipid- and hydroperoxides were measured (Immundiagnostik AG, Bensheim, Germany).

_To determine total antioxidative capacity in serum, photometric ELISA method in EDTA-plasma was carried out and a fasting venous blood sample used (Immundiagnostik AG, Bensheim, Germany).

Genotyping was carried out according to molecularbiological standard procedures (eg, PCR, sequencing; pyrosequencing) and as stated in the instructions.

The literature list can be requested from the author.

_author | implants

Dr. Rolf Briant

Kaiser-Wilhelm-Ring 50, 50672 Cologne, Germany
Phone: +49-2 21/12 30 12
Fax: +49-2 21/13 59 42
E-mail: info@dr-briant.de
Web: www.dr-briant.de; www.sanfte-implantologie.de

Great Turnout at DGZI Convention in Dubai

More than 230 dentists from all over experienced convention's highlights



_The third Arab German Implantology meeting took place once again this year between April 5 and 6, 2007, in Dubai. It was organized in cooperation with the Emirates Medical Association/Dental Society (comparable to German BZÄK [Federal chamber of German dentists]). The convention's chairman Dr Rolf Vollmer and its scientific chairman Dr Mazen Tamimi welcomed more than 230 participants at Taj Palace Hotel's congress center that was brimming with participants. Participants from an excess of 15 countries, including the Gulf region and other regions attended the implantology event this year as well. The organizers were particularly pleased about their colleagues from Iraq and Sudan, who were able to attend this exciting convention for the first time, and welcomed 75 members and the Iraqi Implantology Association's board that had come from Bagdad on a specially chartered plane, and almost 30 participants including the Sudanese Implantology Association's president. Making ample use of this opportunity right from the start, the participants actively exchanged their thoughts and ideas. The Dental Chambers' presidents from ten additional middle-eastern countries also attended the conference. This target group was particularly interested in learning more about German implantological care standards for patients especially with regard to quality assurance, in view of implementing them in their countries, and in establishing training guidelines for future implantologists in their respective countries. Many interesting conversations were held throughout the course of the convention and it became obvious that there existed a lot of interest by these regions as well with respect to superior patient care and quality. The workshops and presentations provided excellent insights into the regional and international dental implantology standards. During the opening ceremony, Dr Mazen Tamimi and Dr Rolf Vollmer thanked the president of the dental chamber of the United Arab Emirates, Dr Aisha bin Sultan, in particular for his excellent cooperation during the preparatory phase of this convention, which significantly contributed to its huge success. The first presenter was Dr Nicole Geha from Lebanon, who showed how the maxillary sinus is supplied with blood, and explained the importance for implantologists. The images showed preparations that had been prepared according to Gunther von Hagen's method. They provided the audience with some never seen before insights into sinus anatomy. The presenter team Dr Rolf Vollmer/Dr Martina Vollmer/Dr Rainer Valentin, and Prof Dr Werner Götz of Bonn University explained various sinus augmentation techniques including their indication. Prof Götz illustrated how special histological samples are examined that had been removed from the augmented material. The presentation by Dr Mazen Tamimi described the function of micro- and macro-movements of dental implants, augmentation mate-



rial and distance osteogenesis. Dr Roland Hille, Dr Frank Palm, and Dr Suheil Boutros (USA) subsequently, addressed individual esthetic problems and possible solutions. Dr Hani Abdul Salam (Canada) described the effects of electrostimulation on osseointegration.

Prof Dr Karli Döring of Chemnitz presented clinical experiences and treatment alternatives for osteonecroses induced using bisphosphonate. Impressive images illustrated that additional research is urgently needed in this field. Dr Guido-Jan Kisters reported on piezoelectric surgery applications. Dr Curneyt Karabuda (Turkey) analyzed which criteria would indicate an immediate or later insertion within the context of individual tooth implants, and when and how pressure could be exerted on these implants.

Dr Walid Sadeq (Saudi Araba) explained how adhesion of secondary parts on short implant superstructures could be improved by altering the surface condition. A highlight of the second conference day consisted in the presentation by Prof Dr Werner Götz, who researches dental stem cell technology. A very interesting aspect of his presentation was the cultivation of additional bone tissue, which could replace augmentation with foreign-body materials in the future. This research shows some very interesting potential for the future.





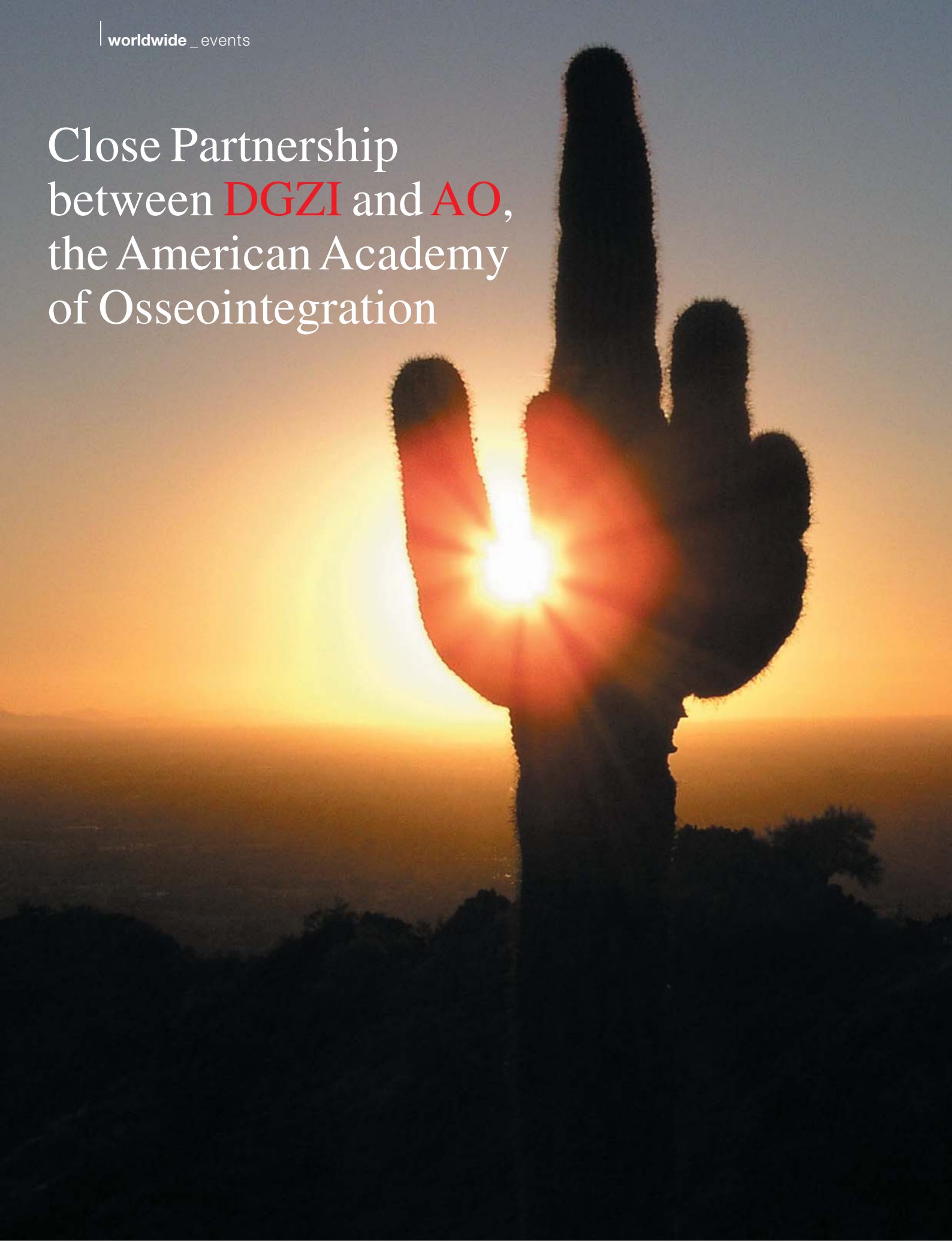
Dr Dr Walid Ayad reported on a simultaneous sinus lift and implant surgery.

Dr Dr Wolfgang Hörster demonstrated on several examples how esthetically excellent results can be achieved by using navigated and/or computeraided implantation. Dr Dr Roland Streckbein illustrated what materials are used for creating implant threads to achieve better primary stability and more consistent bone contact. Dr Robert Laux reported on new prefabricated modules for conus crowns and the possibility for achieving optimal adhesion for removable prostheses with very little dental effort. These systems can parallelize themselves and adjust for divergences of up to 20 degrees. Dr Dr Manfred Nilius reported on advanced implantology procedures including nasal corrections and face lifts. Many participants attended a dental trade show featuring German and international companies. DGZI was represented by board members Dr Rolf Vollmer, Dr Roland Hille and Dr Rainer Valentin. On the convention's sidelines, the attending presidents of professional implantology organizations and the Dubai hosts held various summit meetings. All representatives of chambers and associations agreed that this success must be continued and to organize the "4th Arab German Implantology Meeting" on March 7–8, 2008, immediately following the AEEDC in Dubai. For more inforation and a report on DVD on this year's convention, contact DGZI's office in Düsseldorf, Germany._



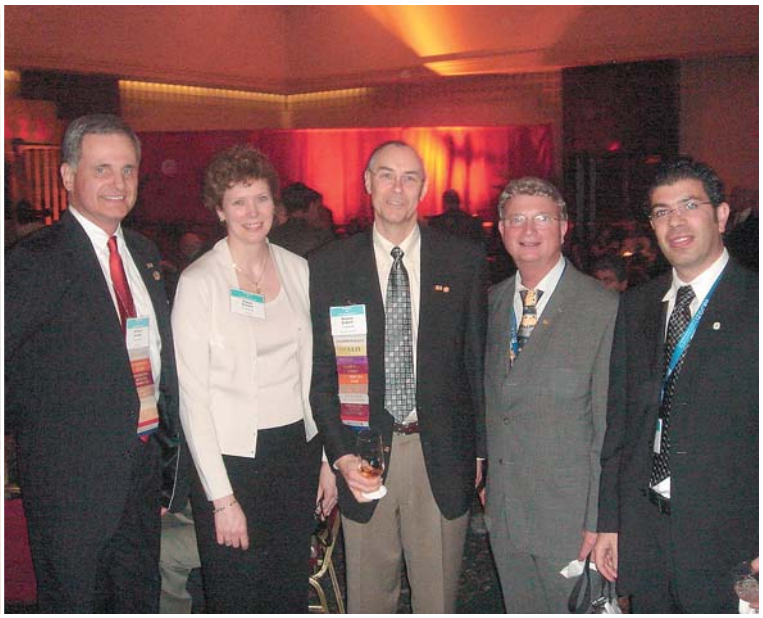


Close Partnership between DGZI and AO, the American Academy of Osseointegration





The convention of the American Academy of Osseointegration took place between March 8 and March 11 in picturesque San Antonio, Texas. This year's theme was "Current implant challenges: interact today to act tomorrow". Board member Dr Rolf Vollmer and the international DGZI division's representative, Dr Mazen Tamimi from Jordan were present to represent DGZI [German dental implantology association]. Dr Torsten Hartmann from DGZI headquarters in Düsseldorf also attended the convention. This year's program of the largest American implantology association was marked by various innovations. AO's main podium served as an interactive platform where moderators, presenters, and the attending dentists could interact, and it was also equipped to poll participants and to project the results on a screen. First, the audience was asked about its opinion regarding a specific case involving implants, surgery, and prosthesis. After the presenter had explained his proposed solutions and his opinion on this topic, the audience was polled a second time to find out if their opinion had changed or not. The topics "computer guided implantology" and "digitally guided bone augmentation" were also widely discussed. The discussions did not only address the success stories, but also any failures. Additional topics discussed were "Immediate und early loading in various segments of the maxillary". Traditionally, AO's presidency is passed on to another member during the annual convention. During a solemn ceremony, acting president Dr Ed Sevetz conferred the presidency to Dr Steve Eckert. Once again, the hosting organization AO had organized an International Relations Luncheon, which is now almost a tradition. It was attended by host AO, DGZI, ADI (England), the Australian Osseointegration Society (Australia), and the Brazilian Academy of Osseointegration. Among the topics discussed were continued improvements of international relations, the promotion of respective conventions, and reciprocal member benefits. The parties are planning to arrange an annual continuing education program in the future For more information and links, please visit us at: www.dgzi.de.



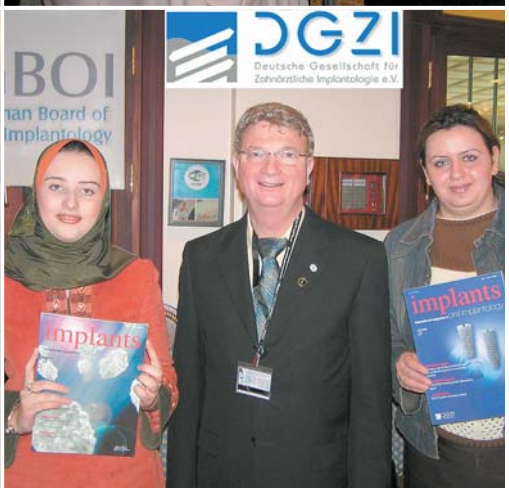
Kuwait Dental Association—
13th Conference, January 13–15, 2007

_The 13th Conference of the Kuwait Dental Association took place from the 13th to the 15th of January 2007. This common dental congress put its emphasis on implantology.

The board of the German Society of Dental Implantology (DGZI) was represented by Dr Rolf Vollmer. Dr Mazen Tamimi, board member of the DGZI International, enriched the program by giving a lecture.

The conference proceeded in the festive hall of the Kuwait Radisson SAS Hashimi II. Hashimi II is the world's biggest ballroom ever built.

The DGZI had one stand at the fair. The interest towards the German society of implantology itself was huge, but it was also huge according to the options for further international training regarding oral implantology. Dental implantology is a very fast developing faculty, especially in the Gulf States.



Therefore, dental chambers are making huge efforts to prevent imposture and they want to make sure that only highly qualified colleagues get a licence to insert implants in the future.

The interest in the long-lasting educational programs of the DGZI was very big. The representatives of the DGZI spoke to various dental chambers and reported about the experience they already have in Germany. For their colleagues, it was quite interesting to realize that, according to court decisions, implantology had to be the main subject of the dental chambers.

The local dental chambers intend to use the experience of other countries in order to prevent them from making the same mistakes. The general tendency in the Gulf States is about the invention of rules that are similar to those in Saudi Arabia and, in addition, they only want to admit those colleagues into the field of implantology who are qualified.

Almost 500 participants surely regarded the 13th Kuwait Dental Association Conference to be quite a success. The DGZI representatives thanked in particular Dr Hisham Abueljebean for his moving efforts to introduce the DGZI in Kuwait and to take care, as an honorary representative, of the organisation and the distribution of the international magazine of oral implantology in Kuwait.

On the occasion of the 3rd German-Arab Dental Meeting in Dubai, presidents of the dental chambers of the Gulf States and neighbouring countries are going to consult about the enlargement of the cooperation with the DGZI.

The DGZI wants to thank the Kuwait Dental Organisation and particularly Dr Ahmad Abdul Rahman Asad, Dr Ibrahim Ismail, Dr Taleb H. Al-Sarraf, Dr Hasan Q. Khajah and Dr Hala M. Al-Bannay for the excellent organisation and hearty welcome._

Report: 1st Sudanese Implantology Symposium

_On the initiative of Dr Ahmad Fadl, Dr Mazen Tamimi, and the Sudanese Oral Health Association, the first Sudanese-German Implantology Symposium took place during the 16th and 17th of December, 2006. About 200 attendants met in the perfectly technically equipped Friendship Hall, the first neutral meeting in Karthoum.

The number of female participants was remarkably high. Colleagues from Sudan explained on inquiry that the proportion between female and male dentists is about 80:20. The Implantology Symposium, which was mainly organized by the DGZI board members Dr Rainer Valentin, Dr Rolf Vollmer and Dr Mazen Tamimi from Jordan, covered a wide spectrum from the basics of implantology to modern advanced methods.

It became obvious that the interest towards dental implantology is very high. In fact, this was proved by a visit to a private dental university during the next day. The modern equipment reached from units and intraoral cameras to the possibilities of sterilisation and x-ray. The colleagues' thirst for knowledge was as remarkable as their politeness towards the foreign referees. This could also be recognized during the event of the evening which ended with a photo-shoot. Visiting the Minister of technology made a round finish.

At the end of the event, all participants agreed that the Sudanese Implantology Symposium should not remain the one and only event for Africa's most expansive country. Hence, the next meeting is planned for December 2007, a season which is considerably warm in comparison to European conditions._








Periointegration: New technologies from turbine construction revolutionize implantology

At IDS 2007, Clinical House presented the PerioType implant system for the first time. The system was developed in cooperation with the Fraunhofer Institute, the Academy of Periointegration and international technological partners. An interview with Dirk-Rolf Gieselmann, CEO Clinical House Europe GmbH.

Mr. Gieselmann, after five years are you once again getting involved with highly innovative products on the dental implant market? What did you do before?

After the successful introduction of the 3i implant system and the subsequent establishment of invisalign, the invisible brace, I changed to the market leader in the sectors of traumatology and orthopaedics using Synthes Implants in 2002, which is now Clinical House. Following a successful management buyout, I focussed on introducing the artificial spinal disc, Prodisc. As one of the main shareholders, I then took a position on the company's supervisory board. Shortly afterwards the decision was made to actively invest in the research and development of dental implants. Today, Clinical House Group covers the entire spectrum of surgical implants from head to toe. We are currently the market leader in our core business area with a turnover of around 65 million Euros and have around 140 employees.

You manage the dental side Clinical House Europe. What is this sector mainly concerned with?

Clinical House Europe, whose headquarters are in Zurich, is a globally active and modern producer of medical engineering products with sites in Germany, Switzerland and South Korea. It is basically involved with the global development, production and marketing of dental implants. Our philosophy is to use it to present a genuine break-through innovation. To this end we have linked up advance technologies from Germany, Switzerland, the USA and South Korea in order to create a unique product line.

What can we expect from CHE on the dental implant market?

Our major concern is periointegration, because increasing numbers of patients and therapists are keen to keep the inserted implants in place in the long term. Every tenth dental implant of more than 500,000 a year in Germany alone is at risk of periimplantitis, at the latest 15 years after insertion. Germany's top implantologists are now setting a new goal against this disease: Periointegration—the long-term stability of hard and soft tissue around

_info

implants

Periointegration – a definition

author_ Prof Dr Hannes Wachtel, Munich

Dental implants are open implants: They are connected to the bacterially-colonised oral cavity. For this reason, a stable epithelial and connective tissue attachment to the implant shoulder and the implant abutment must be ensured, ie, a perfect bacterial barrier against infection of the underlying tissue (connective tissue and bone) from the oral cavity area, provided by a soft tissue collar. While problems of long-term anchoring of enossal implants in the bone (osseointegration) largely appear to have been solved, the second major problem, the implanto-gingival seal, consisting of the subepithelial connective tissue and the epithelium, which together are also known as periimplantary mucosa, requires further discussion and development. As the term "osseointegration" selectively represents the imteraction of the implant with the bones under stress, the expression "periointegration" not only covers the bony and soft tissue aspects of implant integration, but also the aesthetic and microbiological factors of implant treatment. Periointegration means the integration of an implant in its environment in the broadest sense.

With regard to the integration of the implant into the tissues of the mouth, factors such as the stability of the periimplantary bone level and the long-term hold of the periimplantary soft tissue complex play a significant role. In particular, the long term stable attachment of the soft tissue sleeve to the implant shoulder or the abutment appears to be of great significance in this respect. In contrast to teeth, no insertion of collagen fibres is observed on the surface of the implant, so this area of the periimplantary soft tissue must be considered a locus minoris resistentiae. However, the term "periointegration" describes the possibilities of long-term reductions in plaque accumulation and biofilm formation on the implant and supra structures through the use of modern materials and surfaces. New studies have shown that, in cases of insufficient oral hygiene and insufficient follow-up care of inflammation, periimplantitis, not only of the periimplantary soft tissue, but also of the bony supporting tissue, is to be expected in 30% of all cases. With regard to the aging of the population that is currently being observed, this can have major consequences, because, with increasing longevity, cleaning the often complicated implant structures becomes increasingly difficult and the risk of periimplantitis thus increases significantly.

The long-term stable incorporation of the implant without the papillary and buccal structures receding, even in aesthetically critical areas, must be the aim of any implant treatment. The preservation of the tissue and the marginal stability has particular significance for aesthetic and healthy integration of a dental implant, especially in this area. However, there are major limitations today, especially in the area between two neighbouring implants. In these cases, there is a vertical loss of bone and then a partial loss of interproximal soft tissue because of the key shaped defect that is formed from both sides.

Improved attachment of the periimplantary structures on modern implant and abutment materials and a reduced key-shaped defect through technologies such as platform-reduced superstructures, "platform switching", can ensure that, even with multiple adjacent implants, better aesthetic treatment results that are stable in the long term can be achieved.

the implant. Clinical House Europe has made it their job to develop an implant design and coating technologies that significantly improve periointegration. With cooperation partners such as the Fraunhofer Institute Brunswick and our technological partners in South Korea and the USA, we have been able to achieve this aim. Starting from March 20, we will be introducing a complete PerioType implant system.

What's special about PerioType implants?

PerioType has given us a complete implant portfolio that can fulfil the entire indication spectrum of a professional user. Unique advantages of the system such as periointegrative coatings, a bacteria-proof connection point and a bioactive implant surface make the PerioType a future alternative to well-known implant systems. PerioType also offers a standard implant system with pre-assembled posts, multi-functional prosthetic components and an increase in efficiency in process sequences that clearly reduces the total cost of supply. It means we can combine economy, quality and innovation.

Your motto is "aerospace meets implantology". What does that mean exactly?

We would like to emphasise the technology transfer from turbine construction to dental implantology. In this sector we're a big step ahead of our competitors. The gas flow sputtering process, a zirconium oxide coating developed with the Fraunhofer Institute, taken from turbine construction, is totally unique. A whole new perspective for improving periointegration is created by miniaturising this

_info implants

The strongest material bond imaginable

Clinical House Europe GmbH and the Fraunhofer Institute for Surface Technology in Brunswick have miniaturised the gas flow sputtering process to make it usable in dentistry.
The gas flow sputtering process is a technology that was originally developed for building high-performance turbines in aircraft and power station construction. It creates an atomically bonded coating that can withstand extreme temperature and pressure stresses.
For coating tooth implants, a gas flow sputter source is fitted with zirconium targets. Ions are created by discharging hollow cathodes. The ions are accelerated onto the target, where they remove its surface. The flow of gas carries the material out of the source. In the space between the source and the substrate or components to be coated, the material comes into contact with oxygen that is also activated in the plasma, so that a layer of zirconium oxide is deposited on the surface of the component part.
With implant coating, it is important to create a zirconium oxide coating on the surface that is resistant to chemical influences that might affect the titanium base material. This type of coating can only be created using certain thin film processes, sputtering processes in particular. Chemical compounds created in this way are the most solid material bond imaginable. The coating cannot be removed without destroying the base.

technology so that it can be used in dentistry. Implants and prosthetic parts can be fitted with an atomically firmly fixed, white zirconium oxide coating in the areas relating to soft tissue. A reduced accumulation of plaque and optimisation of soft tissue attachments encourages sustainability and tissue stability. At the same time, mechanical benefits can be used as the active ingredients for implants in the enossal area.

Who developed the PerioType system?

We have had three patents registered especially for the PerioType Expert implant system and have placed the focal point of our research in Germany and Switzerland. Because we operate on a global scale, we also have cooperation and development partners in the USA and South Korea. For their part they have also contributed important stimuli and production innovations. We are arranging scientific cooperation with the Academy of Periointegration, a research group with top experts promoting an international scientific exchange. In cooperation with our partners in the USA and South Korea, we also offer an implant system that is capable of competing on an international level.

How did you choose your international cooperation partners?

Together with our partners we have combined our joint philosophy for developing an implant system for improved periointegration. We have allocated various research projects as part of our cooperation, so we can make good use of core skills and resources. Currently, the development of the bioactive implant surface is mainly being developed in the USA. The zirconium oxide technology originates from Germany and the spherical implant shoulder comes from Switzerland. The new type of surface coating for the implant and construction originated in South Korea. Europe has not been the sole axis of the world of implantology for a long time. For example, 1.1 million tooth implants are placed every year in South Korea alone. With 42 million residents, the ratio per patient is four times as high as in Germany. Would you ever have guessed? The knowledge and experience of production and the quality of the products are extremely high. The prices for implants and the salaries paid are moving towards the German level. On the whole, South Korea is a very interesting partner for technology transfer in the Asian market._

_contact implants

Clinical House Europe GmbH

Löwenstrasse 2
8001 Zürich, Switzerland
Phone: +41-44/220 10-60
Fax: +41-44/220 10-69
E-mail:info@periointegration.ch
www.periointegration.ch

Selected Events 2007/2008

		Location	information
	MAY 2007		
May 20–24	*Nobel Biocare World Conference 2007*	Las Vegas, U.S.A.	Web: www.nobelbiocare.com/worldconference
	JUNE 2007		
June 15–16	*International Conference of Facial Esthetic (ICFE)*	Vienna, Austria	Phone: +49-3 41/4 84 74-3 08 Fax: +49-3 41/4 84 74-3 90 Web: www.oemus.com
	SEPTEMBER 2007		
September 7–8	*4. Forum of Innovations in Dentistry*	Leipzig, Germany	Phone: +49-3 41/4 84 74-3 08 Fax: +49-3 41/4 84 74-3 90 Web: www.oemus.com
	OCTOBER 2007		
Oktober 5–6	*37th International Congress of DGZI*	Düsseldorf, Germany	Phone: +49-3 41/4 84 74-3 08 Fax: +49-3 41/4 84 74-3 90 Web: www.oemus.com
	NOVEMBER 2007		
November 7–11	*AAID 56th Annual Meeting*	Las Vegas, U.S.A.	Web: www.aaid.com
November 23–28	*The 2007 Greater New York Dental Meeting*	New York, U.S.A.	E-mail: info@gnydm.com
	MARCH 2008		
März 7–8	*4th Arab-German Implantology Meeting*	Dubai, U.A.E.	E-Mail: office@dgzi-info.de

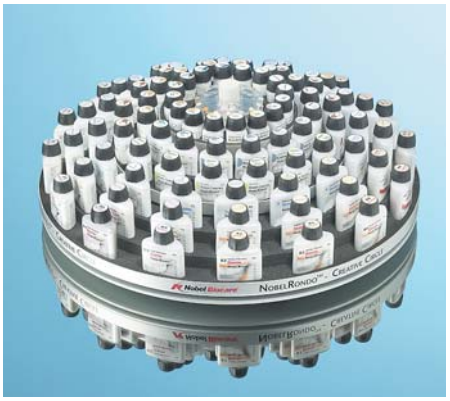


Manufacturer News

Nobel Biocare

NobelRondo™: The creative circle is now even more creative

Nobel Biocare has added to its superior line of porcelain esthetics with the release of NobelRondo Press. NobelRondo Press is an incredibly versatile porcelain solution that can be pressed onto Procera® Abutments, Crowns and Bridges in alumina and zirconia, as well as Procera Laminates in alumina. NobelRondo Press can also be used in a Solo™ technique for individual inlay, onlay, overlay and veneer applications.



NobelRondo Press porcelain is easily applied and highly suited for the initial build-up of permanent esthetic solutions. The complete assortment for NobelRondo Press consists of Standard and Professional series kits in both zirconia and alumina. The complete NobelRondo creative circle features:

- One of the strongest porcelains available (120 MPa)
- Non-abrasive porcelain that can be highly polished chairside
- High-level esthetic results from a unique layering technique
- Useable in all indications
- Standard, professional and premium level assortments
- Easy ergonomics

Nobel Biocare AB
Bohusgatan 15
S-40226 Gothenburg, Sweden
E-mail: info.sweden@nobelbiocare.com
Web: www.nobelbiocare.com

Bego

The BEGO SEMADOS®-RI Implant System

15 years' experience with internal connections and 10 years' experience with compression thread designs have been combined in a new implant. BEGO Implant Systems has started the market introduction of its new implant system SEMADOS RI, developed in collaboration with Dr Dr Roland Streckbein from Limburg.

The Semados-RI Implant System is intended for practitioners who expect an implant system to provide the highest degree of functionality, reliability and economy. The new implant system consists of root-shaped implants in four sizes (3.75 to 5.5 mm) and in lengths from 8 to 15 mm. The new implant is designed to achieve especially good results with D3 and D4 bone qualities. It can, nevertheless, be used equally well for D1 and D2 bone qualities, in which case the bone cavity is prepared with an ablative screw tapper.

The implant has a completely new, patented thread design. The use of suitable drills and bone-condensing thread formers in combination with the special outer structure of the implant creates a defined compression in the implant bed, and therefore promotes excellent primary stability.

Furthermore, the microthread in the neck region of the implant significantly reduces stress in the crestal bone layers. In addition, the polished implant shoulder reduces the accumulation of bacteria and plaque at the transition between bone and soft tissue. Irritation-free mucosal apposition is accompanied by a substantial minimisation of marginal bone resorption. The implant-prosthesis interface is unchanged to the interface incorporated in the BEGO Semados® S-line.

The BEGO Semados-RI implant surgery protocol involves no more than five tools to safely prepare the cavity for implantation. The new surgery tray features a modular configuration, and when fully equipped contains all the system instruments necessary for both treating patients with Semados-S and -RI implants.

For the Semados implant systems, BEGO offers its patented Easy Handling placement system. This allows the implant to be removed from its sterile packaging in just a single action, thus avoiding unnecessary contamination of the implant caused by handling during unpacking.

The implant-prosthesis connecting interface consists of a combination of internal hex and internal taper, as with the BEGO Semados-S implant. The hex, which acts as integrated anti-rotation protection and a means of locating tools, displays the lowest degree of geometrically defined rotational play compared to octagonal or polygonal systems. The taper in the Semados implant systems "S" and "RI" is created with 90°, and gives the practitioner a 45° range of angulation for two or more implants in relation to each other.

The Semados implant-prosthesis interface is regarded as one of the most bacteria-proof, as confirmed by various studies. Simple platform switching helps to reduce marginal bone resorption. The sand-blasted and etched surface is designed for good deposition of endogenous proteins, leading to very good bone coverage values during osseointegration.

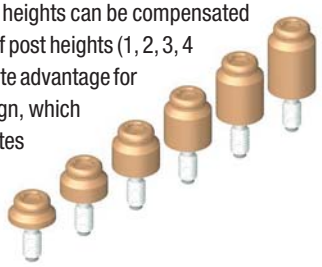
Bego Implant Systems GmbH
Technologiepark Universität
Wilhelm-Herbst-Straße 1
28359 Bremen, Germany
E-mail: info@bego-implantology.com
Web: www.bego-implantology.com

Oraltronics

The "Locator" for all Endopore implant types

The Locator system is an asset for Endopore implants with internal connection as well as external hex. The locator enables a compensation of divergencies between implants of up to 40°.

Effective immediately, this solution is also available for cover dentures of Endopore implants with internal hex. The low post profile of the Locator is especially favorable for small interocclusal spaces. The different gingiva heights can be compensated by a large selection of post heights (1, 2, 3, 4 and 5 mm), an absolute advantage for the patient. The design, which adjusts itself, facilitates the insertion of the cover denture safely. The long lifetime of the individual components is especially user friendly, which offer long, secure and functional reliability due to their superior wear resistance.



.

ORALTRONICS Dental Implant Technology GmbH
Herrlichkeit 4
28199 Bremen, Germany
E-mail: info@oraltronics.com
Web: www.oraltronics.com

Omnia

Standard and customized procedure packs for implantology from OMNIA

Demands

In the modern surgical environment, ergonomic operating theatre preparations and later tidying of the used materials is becoming a more and more pressing demand. The natural evolution of cotton materials pre-assembled for use in the sterilization room leads us more and more frequently to the use of products that do not imply expensive regeneration operations, which could also compromise operator safety; thus the demand for modern Procedure Sets in NWF.

If we also consider the wide variety of disposable sterile products, as well as the variety of needs of each surgical team, it is easy to imagine how much time and energy is used, often pointlessly, in this activity. Furthermore, preparations done using loose materials are more difficult to control in terms of management costs.

The solution

Using specific procedure sets and using procedures that standardize the preparation of the sterile environments, it is possible to reap large benefits, saving both time and money. At this point, a valid control tool is also available to assess the cost of each individual surgical operation.

How to compile a customized surgical set

To compile a customized surgical set, we must first of all establish the space involved, then, according to the relative surface areas, we must decide what needs to be isolated in a sterile manner. Then we need to establish how many operators are involved in the surgery, and how many of these must be "sterile". Then we must decide how to use the drapes and other barrier systems on the patient (eg, drapes with U-shaped splits or circular holes, absorbent-waterproof or breathable drapes for longer operations).

Finally, there is a wide range of sterile accessories that can be included in the customized sets, including: Omnisleeve sheaths with inserter, transparent PVC drapes, bags for contaminated waste or cotton or NWF gauzes and pads. Of course, the quantity and size of the products must be selected according to the actual demands of the surgical team.

Each product in the customized procedure sets is also supplied bearing the name of the surgical team. To respond to the legal product traceability requirements in the medical field, each label in the sets produced by OMNIA has an adhesive sticker indicating the product code, expiry date, production batch and method of sterilization. This label can be placed in the patient records to demonstrate that the sterile material used complies with the applicable regulations.

OMNIA S.p.A.
Via F. Delnevo, 190sx
43036 Fidenza (PR), Italy
E-mail: info@omniasrl.com
Web: www.omniasrl.com

J.Morita

Powerful, hygienic, quiet: the new TwinPower turbine range

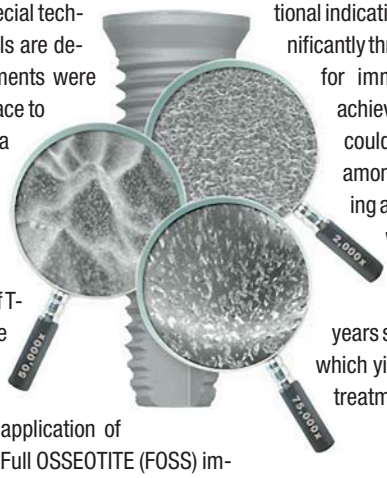
The new TwinPower turbine range from J. Morita is intended not only to deliver more power than existing turbines, but also to provide hygienic benefits. These characteristics can be seen in two innovations. First, the dual turbine system consists of two rotors separated by special valves, and three drive jets. These provide the energy for the first rotor, and feed the second with the exhaust air from the first. The result is up to 50% more stable torque, benefiting both the dentist and the patient. According to the manufacturer, the more even cutting force enables more precise work and helps to preserve tooth material. The tactile sensation is almost like that from contra-angled handpieces. A cut-out is provided for safety, with a rubber brake ring bringing the instrument to a stop within two seconds.

Second, the zero-suckback system in the turbine head forms an effective barrier to contaminated dirt and aerosol. The drive air flows in capsules into an anti-suckback diffuser in which it is compressed. This prevents particles flowing into the turbine itself. The compressed air is discharged through a star-shaped aperture under the turbine head. This benefits the patient especially, as the cold air is no longer blown into the sensitive area being treated. The instrument is comfortable to use and runs very quietly. The irritating buzzing noise from conventional turbines is substantially reduced with this technology.

J. Morita Europe GmbH
Justus-von-Liebig-Straße 27a
63128 Dietzenbach, Germany
E-mail: Info@JMoritaEurope.com
Web site: www.JMoritaEurope.com

BIOMET *3i*

BIOMET *3i* presented its new NanoTite surface technology to the specialist press at its press conference. According to the guest speaker Dr Dr Andreas Valentin, NanoTite is a synergy of the proven OSSEOTITE surface and ultra-modern additive nanotechnology. In a special technique, nanometer sized calcium phosphate crystals are deposited on the surface. Extensive animal experiments were conducted in the development of the NanoTite surface to confirm the potential of the new technology. In a push-in model on rat femur, the mean maximum intrusion forces for the NanoTite implants were over 200 percent higher than for the control implants with FOSS (Full OSSEOTITE Surface). Similarly significant differences were also revealed in a series of T-Plant studies investigating the contribution NanoTite treatment makes for the OSSEOTITE surface. The data have been submitted for publication. The preliminary clinical results of investigations on the application of nano-scale CaP single crystal bearing surfaces on Full OSSEOTITE (FOSS) implants confirm the excellent superiority of a nanostructured as opposed to a conventional microstructured implant surface. In-vitro tests and preliminary animal experiments indicate that NanoTite surfaces may represent an important step towards accelerated biomimetic osseointegration. In accordance with current literature, nano-structured surfaces demonstrate an enormous increase in the total surface area averaging 200 percent compared with conventional, micro-textured surfaces. The biological advantages observed indicate strong Van-der-Waals forces between the nano surface structure and the protein matrices initially adsorbed. For the user, this could mean that the success rate for conventional indications and especially for borderline indications could be raised significantly through the use of NanoTite implants. New, faster therapy concepts for immediate loading, the avoidance of complex augmentations achieved through the safe and durable anchoring of short implants, could have a positive impact on the acceptance of dental implants among patients. Patients who cannot have implants or only by accepting a high risk due to certain contra-indications, could then be treated with standard NanoTite implants with predictable results. BIOMET 3i has invested over 4 million Euros in the research and development of new surface technologies over the past four years so as to offer implantologists a nanotechnological, novel product, which yields improved performance and therefore safe and predictable treatment, especially for demanding and borderline indications.

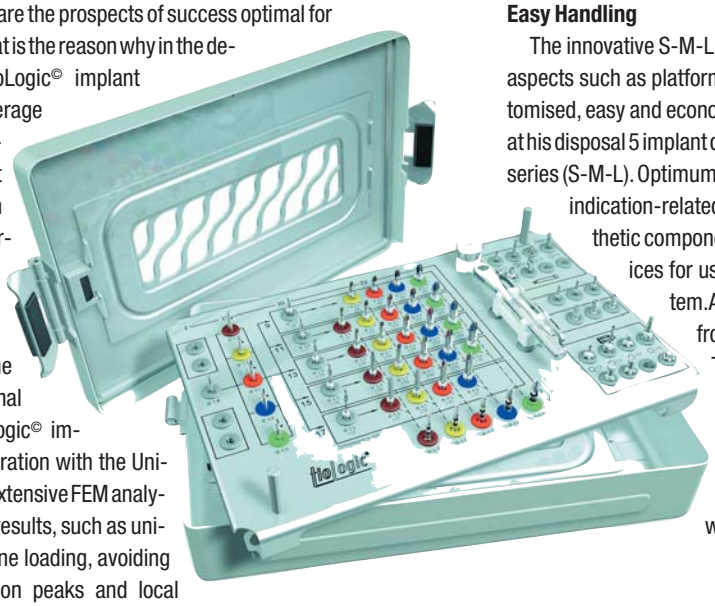


BIOMET *3i* Deutschland GmbH
Lorenzstraße 29
76135 Karlsruhe, Germany
E-mail: zentrale@3implant.com
Web: www.3i-online.de

Dentaurum

tioLogic© dental implants— the logical evolution

The factors influencing the outcome of any treatment with implants can be reduced to three sets of requirements which, over many years of practical application, have proved to be basic success factors: Safety–Aesthetics–Handling. Only if the requirements in these three areas are all fulfilled to a high degree at the same time are the prospects of success optimal for an implant system. That is the reason why in the development of the tioLogic© implant system above-average importance was attached to an intelligent combination of proven elements with pioneering innovations.



Maximum Safety

Development of the FEM-optimised external geometry of the tioLogic© implant included collaboration with the University of Bonn. Their extensive FEM analyses confirm the good results, such as uniform, conservative bone loading, avoiding bone-damaging tension peaks and local overloads. In doing so the areas of thread design (fine/coarse pitch thread), thread geometry and conically cylindrical implant shape were analysed individually. The result was an implant system which is genuinely convincing on account of its excellent primary and secondary stability.

Perfect Aesthetics

Nowadays it is absolutely essential for an implant and its superstructure to allow aesthetically perfect solutions which are reliable in the long term. In this way the design of the internal joint on the tioLogic© implant makes it possible to avoid aesthetically relevant intrusions and ensure excellent interface stability. In order to achieve the latter the internal geometry was developed on the basis of FEM analyses and its stability was confirmed at the Fraunhofer Institute by conducting a fatigue strength test in accordance with ISO (DIN EN ISO 14801).

Easy Handling

The innovative S-M-L concept of the tioLogic© implant system incorporates aspects such as platform focussing and allows new perspectives for his customised, easy and economical work with a high level of reliability. The user has at his disposal 5 implant diameters, 5 implant lengths and 3 prosthetic abutment series (S-M-L). Optimum increments in implant diameters and lengths allow an indication-related procedure. An extensive range of surgical and prosthetic components, plus an exemplary comprehensive range of services for users and patients, serve to round off this implant system. At the parent company, Dentaurum, one can benefit from more than 120 years of experience in prosthetics. This sound foundation in conjunction with over a decade of experience in implant dentistry has enabled empirical, user-oriented development in close collaboration with clinical experts and practitioners. Detailed information can be obtained on the internet at www.tioLogic.com or on the free tioLogic© info CD.

Dentaurum Implants GmbH
Turnstraße 31
75228 Ispringen, Germany
E-mail: info@dentaurum-implants.de
Web: www.dentaurum-implants.de

Dr. Ihde

Dr. Ihde Dental: S Implants for Sophisticated Aesthetics

For more than ten years now, Dr. Ihde Dental has been manufacturing and marketing well-established and clinically proven implant systems. These implants are known for their ease of use and their excellent cost/benefit ratio in Germany, Europe and beyond.

The top of the line is the versatile S Implant System. These classical cylindrical implants yield excellent results for bridges and bar attachments as well as for single-tooth restorations. S Implants are available in all popular sizes. They are inserted in a two-stage surgical approach. Thanks to the great selection of available prosthodontic accessories, the S Implant line achieves impressive and sophisticated aesthetic results. All instruments and components are optimally attuned to each other, giving the system a well-organized and rational structure and keeping necessary inventory levels to a minimum.

A comprehensive and detailed implant catalog is available in English. Competent exclusive dealership agreements are still available for several Asian countries and for Australia. Interested parties are encouraged to make contact with Dr. Ihde Dental's management, either at IDS Cologne or directly with company headquarters in Munich. An overview of the company's product line can be found at www.ihde-dental.de.

Dr. Ihde Dental GmbH
Erfurter Straße 19
85386 Eching, Germany
E-mail: info@ihde-dental.de.
Web: www.implant.com

curasan

All-in-one implant system from curasan

The REVOIS "REVOlutionary-Implant system" supplied by the German company curasan AG provides optimum time and cost management thanks to easy handling, high initial stability and top aesthetics for the patient. According to the company, a high degree of precision can be achieved with a minimum number of parts while all components perfectly match. The core of this innovative system is formed by the ready-fitted multifunctional precision abutment, which fits all implant diameters. In addition, the company offers Cerasorb at IDS 2007, a synthetic bone regeneration material that has developed into an umbrella brand for a variety of products. Nevertheless, the company has announced to considerably expand its existing portfolio within the next two to four years.

curasan AG
Lindigstraße 4
63801 Kleinostheim
Germany
E-mail: revois@curasan.com
Web: www.curasan.de

CAMLOG

CAMLOG extends price guarantee for Germany until 2008

Only a few years after the introduction of the CAMLOG® Implant System in 1999, CAMLOG implants have reached the number two position in the German market.

True to the company's philosophy that conduct on a partnership basis is the ideal way of achieving mutual success, CAMLOG announces at the IDS 2007 that its 2005 price guarantee for Germany has been extended for another two years until the end of 2008.

CAMLOG further emphasizes its conviction of first and foremost serving its market partners instead of increasing shareholder value; today, such a counter-cyclical declaration could almost be filed in the category of 'rarity values'.

CAMLOG Vertriebs GmbH
Maybachstraße 5
71299 Wimsheim, Germany
E-mail: info.de@camlog.com
Web: www.camlog.de

implants
international magazine of oral implantology

an DGZI publication published by Dental Tribune International

DGZI Deutsche Gesellschaft für Zahnärztliche Implantologie e.V.

dti] Dental Tribune International