issn 1616-6345

Vol. 8 • Issue 4/2007

implants

international magazine of oral implantology

4 2007

_case report
Bone Tissue Engineering with BMPs

_social events
Annual Congress of DGZI in Düsseldorf was again a great success

_social news
DGZI Implant Dentistry Award

DGZI Deutsche Gesellschaft für Zahnärztliche Implantologie e.V.

dti] Dental Tribune International

"Coming together is a beginning; keeping together is progress; working together is success."

(Henry Ford)

Dr Torsten Hartmann
Chief Editorial Manager

Dear readers,

These opening words—spoken by a great man—still carry great weight today and have indeed guided the DGZI through the past year as it sought to strengthen international, non-commercial cooperation and facilitated the exchange of implantological experience and knowledge. Taking a moment to reflect on many reports of national and international meetings in our magazine over the year, we see the professional discussions taking place, cooperations and numerous friendships established.

With its more than 3,300 members in Germany, the DGZI has become international without abandoning its local roots. It can be proud of numerous direct cooperations with implantological professional associations across the US, Europe, Asia, the Arabic region and the newest collaboration with the Japanese Implantology Association, the AIAI, totaling a network of over 11,000 implantologists around the world.

DGZI president Dr Friedhelm Heinemann's summary of "success across the board" at the conclusion of the International Dental Show (IDS) in Cologne in March 2007 accurately summed up the conference, where the DGZI presented itself with its own stand for the first time. "While it is important to make your presence felt," observed Dr. Heinemann, "it is only important when you truly have something to say and when your words are backed up by authentic, practical concepts applicable to members." Thanks to the concentrated efforts of management and the many active DGZI members, this idea was successfully turned into reality in recent years. "DGZI's successful trade fair presence was a direct result of this dedicated work," continued Dr. Heinemann.

First vice president Dr Vollmer opened the Arab-German DGZI congress in April by addressing the audience as "dear friends" and subsequently finding fitting words for the close, friendly cooperation with several professional associations in the Arab region. The 37th Annual International DGZI Conference in Düsseldorf in October was the most important event of the year and once again proved itself an outstanding success, boasting the attendance of 600 participants representing 16 different countries. Renowned national and international speakers addressed topics surrounding biological principles and technical implantological possibilities, and a large delegation from the partner association AIAI was able to attend.

In closing, I'd like to mention the 4th Annual Arab-German Implantology Meeting on March 7 and 8, 2008 in Dubai, where we'll again welcome a large number of participants and speakers from the world over—you definitely won't want to miss this conference in one of the world's most exciting cities.

And now, please enjoy this year's final issue of IMPLANTS.

In the name of the editorial board and the entire editorial staff, I wish you a wonderful rest of 2007 and a successful start to 2008!

With warm regards

Dr Torsten Hartmann

editorial

report

events

news

about publisher

Cover image courtesy by CAMLOG Biotechnologies AG.

Patient requirements and oral reality

author_ Annette Felderhoff, Hans Geiselhöringer, Germany

_This case describes a combined surgical—prosthetic rehabilitation of the upper and lower jaw. Because of a severe loss of both bone and soft-tissue, the vertical dimension of the jaw had to be reconstructed. The treatment was planned in advance using a combined technique of computer technology and medical knowledge. A surgical template based on CT-data was fabricated to determine the appropriate position of the implants and the prosthodontics. This procedure allowed us to fulfil the patient's demands: tight-fitting dentures, minimally invasive surgery, and immediate loading. We give a detailed account of the procedure in the lower jaw.

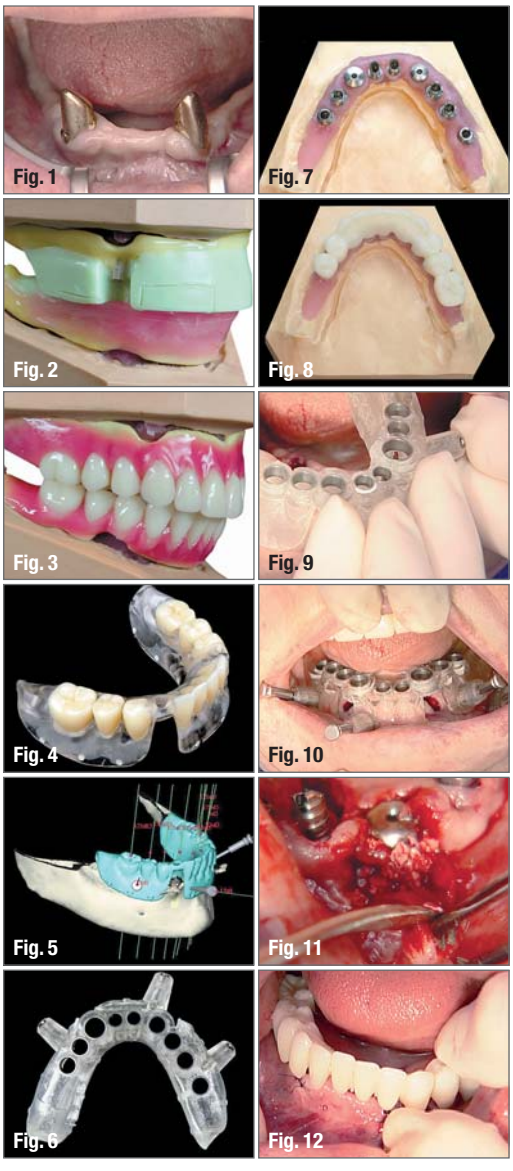


Fig. 1_ Lower jaw before extraction and implantation.
Fig. 2_ Functional, cosmetic, and phonetic bite.
Fig. 3_ Set up.
Fig. 4_ CT or DVT template.
Fig. 5_ Nobel Guide planning lower jaw.
Fig. 6_ Stereolithographic, manufactured OP template.
Fig. 7_ Master model with provisional abutments.
Fig. 8_ Provisional, fibre-supported composite bridge.
Fig. 9_ Nobel Guide OP template.
Fig. 10_ Nobel Guide OP template fixed with anchor pins.
Fig. 11_ Immediate implant placement, augmentation.
Fig. 12_ Provisional immediate supply.

_Patient

Our patient was a 65-year old, non-smoking female with inconspicuous general anamnesis. Her stated requirements included: minimally invasive surgery, no hip-craft, immediate loading, a tight-fitting prosthesis in the upper and lower jaw (including the provisional), full function, natural aesthetics, and fullness of the upper lip. Prior to surgery, the patient had over dentures in the upper and lower jaw. Due to periodontal problems, extraction of the remaining teeth was unavoidable. The loss of bone and soft-tissue had led to a loss of the vertical dimension and the appearance (e.o.) of a thin lip vermillion, a deep nasolabial wrinkle, and sunken cheeks.

_Upper jaw

The upper jaw was augmented with autologous bone, implanted and fitted with a composite-veneered Procera implant bridge Titanium on a provisional base.

_Lower jaw

The patient had over dentures on 33 and 43 in the lower jaw. These teeth had to be removed due to combined endodontal—periodontal problems. Following the requirements of the patient, we planned immediate implant placement (region 33 and 43) after extraction. The intraoral situation and the radiographic results demonstrated preoperatively that bone augmentation would be necessary in this area. In order to achieve a non-loaded healing period for those implants, we planned a provisional glass fibre-reinforced plastic framework on temporary abutments on the other implants.

_Radiographic guide

Following impressions for functional and phonetic bite, similarly to the fabrication of dentures, a wax-up was produced in the laboratory and transferred into plastic—the radiographic guide. The radiographic guide includes information on the position of the teeth. It also simulates soft tissues and toothless areas. This template preoperatively shows the final outcome of the prosthetic restoration and allows the patient to see the aesthetic results in advance.This guide is transferred 1:1 into the operation splint. Therefore, in addition to the aesthetic, functional, and phonetic considerations, it is very important—especially in the toothless jaw—that the radiographic guide is a perfect fit.

_Computertomography

Two CT scans were made. One scan was of the patient with the radiographic guide (i.o.) and a radiographic bite for the fixation of the template position. The other scan was of the radiographic guide on its own. The second separate scan of the template creates an exact replica of itself. This is important for creating an accurate OP template. The CT data (DICOM files) are imported into the Procera software-planning program. This program provides cross-sections and 3-D views of the bone model and of the radiographic guide at all possible levels.

_Computer-assisted planning

Optimum positioning of eight implants (Brånemark Groovy) was performed directly on screen. It was possible to virtually analyse various surgical and prosthetic factors, such as bone density, tooth positioning, occlusion leverage, soft tissues and length, quantity, and angle of the implants. This made it possible to have the protrusion points of the implants' screw-channels located in the fissure of the prosthetic reconstruction—essential for aesthetics, stability, and veneering.

_The operation template: converting it into clinical reality

Using the stereolithographic method, the OP-template was fabricated on the basis of the planning data. With the OP-template, flapless surgery is possible in regions where bone augmentation is not necessary. The secure fit of this template on the gingiva is achieved using bone-supported anchor pins.

_Preoperative prosthetics

The master model was created using the OP template. Following this, the temporary, glass fibre-reinforced composite bridge with temporary abutments was manufactured on implant replicas.

_Template-guided implantation

At the patient's request, the operation was carried out under analgosedation. Teeth 33 and 43 were gently extracted. The fixtures were inserted on each side, beginning with the penultimate implants. Lastly, implants 33 and 43 were inserted using the template. The OP template was removed. It was clear from the CT-data that the bone was insufficient in regions 33 and 43. This made augmentation necessary using the GBR method with autologous and bovine bone. The augmentation site was covered with a membrane.

_Provisional care

The temporary composite bridge was cemented on individualised abutments. Implant 43 was sealed using gingival formers. In implant 33 closed healing took place.

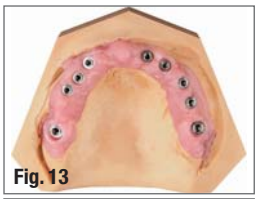


Fig. 13

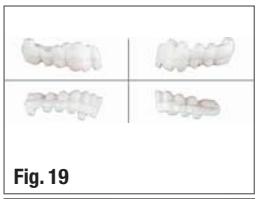


Fig. 19


Fig. 14

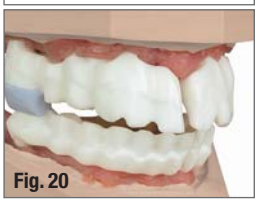


Fig. 20

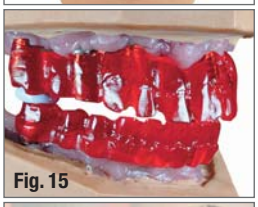


Fig. 15


Fig. 21


Fig. 16


Fig. 22

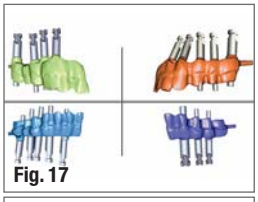


Fig. 17


Fig. 23


Fig. 24

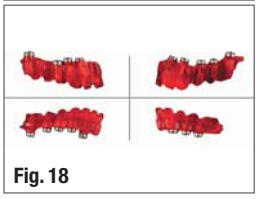


Fig. 18


Fig. 25

Fig. 13_ Master model of the upper jaw.
Fig. 14_ Master model of the lower jaw.
Fig. 15_ Synthetic mock up.
Fig. 16_ Forte Scanner sensing Procera implant bridge.
Fig. 17_ Procera implant bridge generated in Procera program.
Fig. 18_ Synthetic mock up.
Fig. 19_ Procera zirconia implant bridge of the upper and lower jaw.
Fig. 20_ Procera zirconia implant bridge.
Fig. 21_ Frame testing.
Fig. 22_ X-ray control, perfect fit.
Fig. 23_ Procera implant bridge of the lower jaw.
Fig. 24_ Procera implant bridge of the upper jaw.
Fig. 25_ Perfectly reconstructed liprofile.

_Final prosthetics

Due to the considerable loss of vertical dimension, we opted for a screw-based solution.

Following a 5-month healing period, impressions were taken of the lower and upper jaw at the implant level. Two bridge segments of the wide-span screw Procera Zirconia implant were planned. The bridge framework segments were converted into a plastic model and read using a Procera Forte scanner. On the basis of the scanner data, the bridge frameworks were then milled with an accuracy of 0 µ out of a homogenous zirconium block in Sweden and veneered in the laboratory using Nobel-Rondo for the zirconia bridges. The heavily resorbed gum was also veneered using Nobel Rondo Gingiva Zirconia. In the upper jaw, a segmented Procera Zirconia implant bridge, veneered with Nobel Rondo was manufactured according to the procedure described for the lower jaw.

_Conclusion

The advanced planning method makes immediate loading with a prefabricated provisional denture possible, because the prosthodontic result can be seen in advance. The treatment is predictable and reliable due to the 3-D planning program. The procedure is minimally invasive because in most regions flapless surgery is possible. This technique requires close, professional cooperation between the dentist / surgeon and the laboratory technician._

References:

[1] Ganeles J, Rosenberg MM, Holt RL, Reichmann LH: Immediate loading of implants with fixed restaurations in the completly edentulous mandible: report of 27 patients from a private practice Int J Oral Maxillofac Implants 2001; 16:418–426

[2] Glauser R, Ruhstaller P, Windisch S, Zembic A, Lundgren AK, Gottlow J, Christoph HF, Hammerle F: Immediate occlusal loading of Brånemark System TiUnite Implants placed predominantly in soft bone:4-results of a prospective clinical study. Clin Implant Dent Relat Res 2005; 7(suppl.1):52–59

[3] Schnittmann PA, Wöhrle PS, Rubenstein JE, DaSilver JD, Wang NH: Ten-year results for Brånemark System TiUnite Implants immediately loaded with fixed prostheses at implant placement. Int J Oral Maxillofac Implants 1997; 12:495–503

[4] Van Steenberghe D, Glauser R, Blomback U, Andersson M, Schutyser, Pettersson A, Wendelhag I: A computed tomographic scan-derived customized surgical template and fixed prosthesis for flapless surgery and immediate loading of implants in fully edentulous maxillae: A prospective multicenter study. Clin Implant Dent Relat Res 2005; 7(suppl.1):111–120

_contact implants

Dr Annette Felderhoff
Steinsdorfstr. 14
80538 München, Germany
E-mail: praxis@dr-felderhoff.de

ZTM Hans Geiselhöringer
Lachner Str. 2
80639 München, Germany
E-mail: geiselhoeringer@dentalx.de

Immediate Implant Placement optimizes anterior esthetics—clinical considerations and case report

authors_Frank C. Lazar, Hans-Jürgen Hartmann, Alexandra Steup, Germany

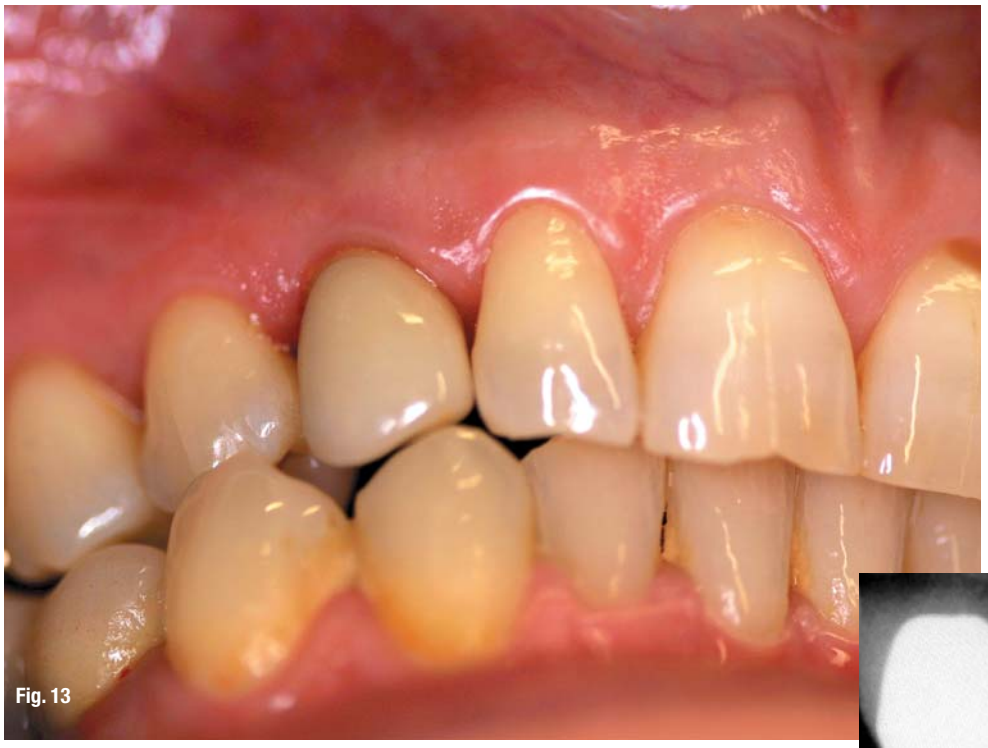


Fig. 13

_The outcome of esthetic implant-supported tooth restorations in the anterior region of the upper jaw is the greatest challenge both surgeons and prosthodontists are confronted with. The conclusive scientific evidence over the past decade showed invariably that hard and soft tissue loss following tooth extraction can only be prevented by immediate implants. Although their indications are limited in the anterior maxilla, immediate implants should always be considered when an upper incisor would have to be extracted.

However, esthetic aspects, loss of alveolar bone during the extraction process or due to previous periodontal infections may rule out immediate implant placement. Consequently, the risk of minor hard and soft tissue loss associated with delayed or submerged implant protocols may have to be put up with.

Facing immediate protocols, the surgeon carefully has to consider the subsequent prosthodontic work when placing implants. In detail, it has to be ensured that implant positioning and/or additional bone grafting permits optimal crown design, perfect occlusion and soft tissue restoration of the papilla. Because of the tapering roots of upper anterior teeth, the placement of screw-shaped implants may be more difficult than conical implants. The im-

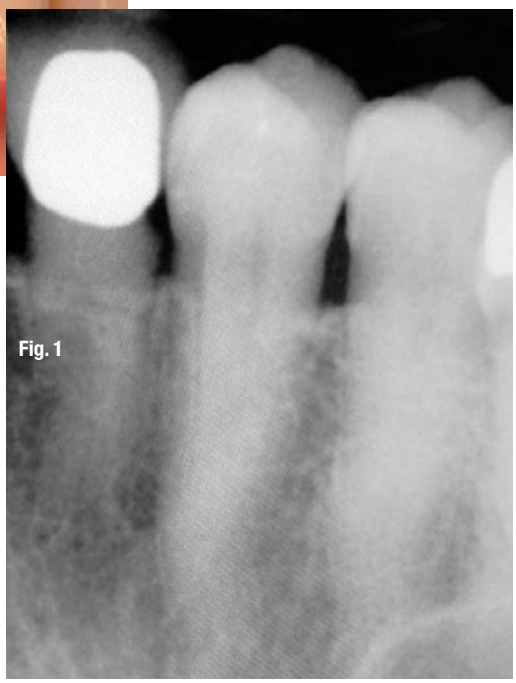


Fig. 1

plant-to-tooth distance and the inter-implant distance as well as the hard tissue support of the mucosa also need to be attended to. Finally, both optimized implant thread design and implant surface will provide highest primary stability regardless of whether bone quality or volume will be found to be inappropriate.

The historical recommendations for immediate implant placement reported by Schulte continue to be valid and are still being followed in minimal invasive surgery today.

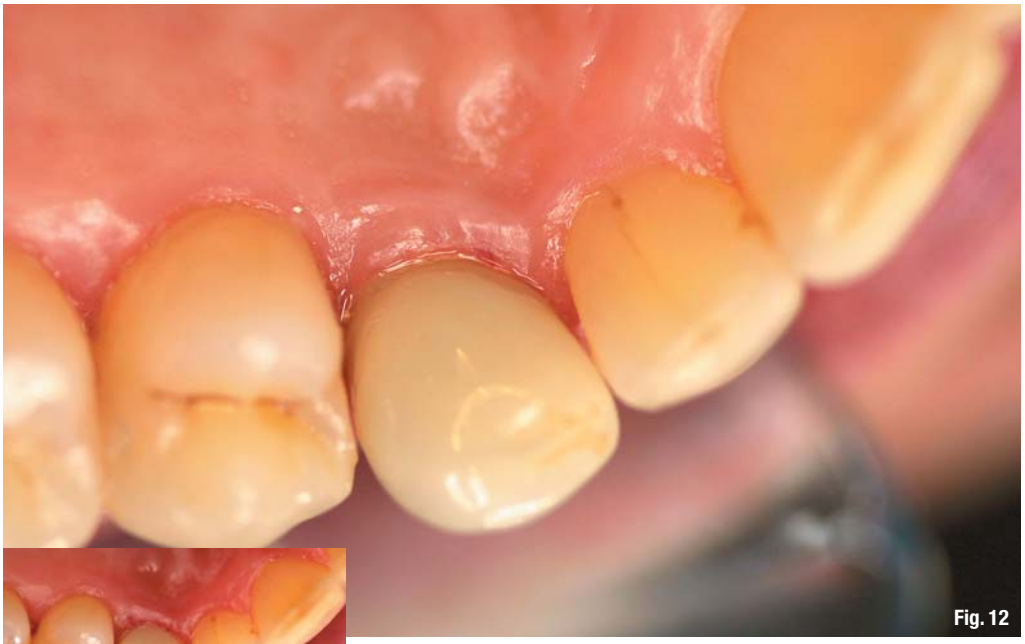


Fig. 12

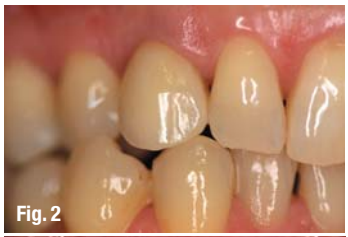


Fig. 2


Fig. 7

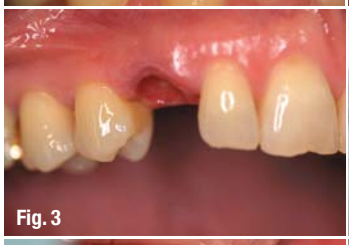


Fig. 3

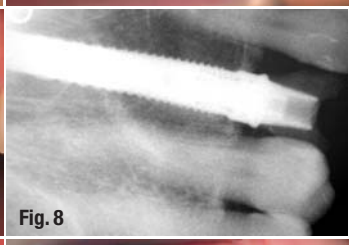


Fig. 8

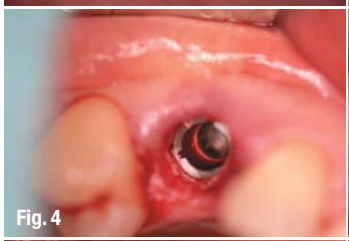


Fig. 4


Fig. 9

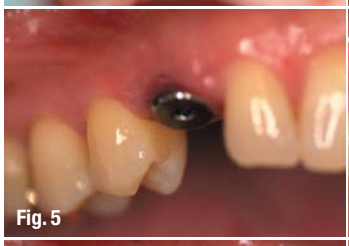


Fig. 5


Fig. 10


Fig. 6


Fig. 11

With delayed immediate implant placement, some soft and hard tissue loss is inevitable despite the short interval of 6 to 8 weeks. The severity of ostitis or periodontitis following tooth extractions is one of the determinations of tissue loss. Various options are available for successfully replacing the upper anterior teeth:

1. Single-stage immediate implants with
   a. customized tissue contouring abutments
   b. definitive crowns
2. Delayed immediate implants placed 6 to 8 weeks post extraction with
   a. immediate impression taking and insertion of the definitive crown after implant exposure
   b. soft tissue contouring with provisional crowns/abutments followed by later definite crown insertion

The following case report basing on the first option (single-stage immediate implants with customized tissue contouring abutments) represents a procedure which has been used widely and whenever possible in our unit. The customization of the surrounding soft tissue structure was decisive in most cases.

A female patient aged 56 years was referred with a history of a persisting deciduous upper canine and suffering from periodontitis and apical root resorption. Subsequently to radiological evaluation (Fig. 1 and 2), probing revealed only a minimal circumferential pocket depth of 3 mm and no exudation of pus. Vitality of the tooth on testing was

negative and the tooth was slidly movable. An abnormal lateral position with a slight movability had been recognized.

A decision was made for an immediate implant protocol assuming bone structure to be unaffected. Under local anaesthetics the tooth was extracted atraumatically, buccal and palatal plate were intact with sufficient bone thickness (Fig. 3). Subsequently, the extraction socket with a little amount of apical inflammatory tissue had been curetted followed by irrigation using 3% Hydroperoxide. Next, our operative protocol a Camlog® Screw-line (Promote plus surface) implant (CAMLOG Biotechnologies AG, Margarethenstrasse 38, CH-4053 Basel, Switzerland) was placed using a 10° palatal angulation during insertion thus providing enough primary stability. Implant diameter was 5.0 mm, length was 16 mm throughout (Fig. 4 and 8). However, the implant-socket gap was closed using bone material that was collected with an ASTRA TECH Bone TRAP® bone collector. A provisional crown (plastic-coated, highly polished, composite) with screw retention was fabricated and integrated at the same day (Fig. 6 and 7). During the fabrication period a healing abutment was attached for 3–4 hours to maintain stable mucosal condition and prevent mucosal collapse (Fig. 5). When integrated, contacts of the crown were carefully removed during maximal intercuspidation, protrusion and lateral shift. A strict weekly recall of the patient followed, instructions were given to ensure perfect oral hygiene and a stringent protocol was set up to avoid bite contacts and chewing with contact to the provisional crown.

X-rays were taken directly after surgery and prior to definitive restoration (Fig. 8) and stability of the implant-crown system was checked clinically throughout the healing time.

Three month later the provisional crown was removed. At this time the surrounding soft tissue structures appeared to be within normal limits and unaffected (Fig. 9). Impressions were taken to fabricate a definitive crown (Fig. 10). By the time of definitive management, the mucogingival junction was on the same level than round the natural contralateral tooth. Papilla contour and surrounding tissue structure were preserved as predicted before (Fig. 11–13). During follow up (½ yearly/yearly) no signs of inflammatory lesion, loss of stability or soft tissue attachment were noted, papillae remained stable.

_Discussion

Various options are available for functional and esthetic restoration of anterior teeth. Their choice is dictated by factors like severity of infection of the teeth to be extracted, the pocket depth and related bone defects. Immediate single-stage implant placement proved to be the least traumatic option, which best preserved both the soft tissue and post extraction socket. A different use of surgical and prosthodontic techniques is indispensable to account for conditions in the individual case. Given an adequate amount of hard tissue, soft tissue contours can be expected to return to normal as presented in this case report. It was demonstrated that implants inserted immediately into fresh extraction sockets will heal predictably with clinically significant quantities of bone and preserving the surrounding soft tissue structures. Defective alveolar bone structures especially a defective vestibular wall that become visible during extraction require additional measures that will have to be discussed soon._

References

[1] Gomez-Roman G, Schulte W, d'Hoedt B, Axman-Krcmar D: The Frialit-2 implant System: five-year clinical experience in single-tooth and immediately postextraction applications. Int J Oral Maxillofac Implants 1997; 12:299–309.

[2] Wohrle PS: Single-tooth replacement in the aesthetic zone with immediate provisionalization: fourteen consecutive Case reports. Pract Periodontics Aesthet Dent 1998;10: 1107–1114.

[3] Romanos G: Sofortbelastung von enossalen Implantaten im Seitenzahnbereich des Unterkiefers, Tierexperimentelle und klinische Studien, Quintessenz Verlags GmbH 2005.

[4] Tarnow DP, Magnet AW, Fletcher P: The effect of the distance from the contact point to the crest of bone on the presence or absence of the interproximal dental papilla. J Periodontol 1992; 63:995–996.

[5] Saadoun AP, Le Gall MG: Periodontal implications in implant treatment planning for aesthetic results. Pract Periodontics Aesthet Dent 1998; 10: 655–664.

[6] Tarnow DP, Cho SC, Wallace SS: The effect of inter-implant distance on the height of inter-implant bone crest. J Periodontol 2000; 71:546–549.

[7] Hartmann H-J: Sofortimplantation mit Sofortbelastung, Identity 2004; 5:14–16.

[8] Hartmann H-J: Asthetische Frontversorgung mit sofortbelasteten Implantaten, DZW, Orale Implantologie, 1/04, 47–51.

[9] Lazzara RJ: Immediate implant placement into extraction sites: surgical and restorative advantages. Int J Periodontics Restorative Dent 1989; 9: 332–343.

[10] Hugo O: Prothetische Sofortversorgung nach einzeitiger Chirurgie – Experiment oder etabliertes Verfahren. Oralchirurgie Journal, 5. J, März 2005, Heft 1:20–24.

[11] Bragger U, Pasquali L, Kornuran KS: Remodelling of interdental alveolar bone after periodontal flap procedures assessed by means of computer-assisted densitometric Image analysis (CADIA). J Clin Periodontol 1988; 15: 558–564.

_contact implants

MedicaDenta Partnerschaftsgesellschaft

Dr med
Frank Christian Lazar,
Dr med dent
Alexandra Steup
Graf-Vieregg-Str. 2
82327 Tutzing, Germany
Phone: +49-81 58/9 96 30
Fax: +49-81 58/99 63 24
E-mail:
info@medicadenta.de
Web: www.medicadenta.de

Bone Tissue Engineering with BMPs

Are there any advantages of using rhBMP-2 instead of DBM (demineralized bone graft) and the transplantation of autogenous bone?

author_ Karl-Heinz Schuckert, Stefan Jopp, Germany

_**For a long time** all bone surgery fields have been working on bone reconstruction. The techniques of augmentation as well as the necessary materials have been subject to big change lately. At present, quite a number of bony defects are still reconstructed by transplantation of autogenous bone. Furthermore, synthetic materials as well as allogene and xenogene substances and, just recently, growth factors like bone morphogenetic proteins, were used.[1–11] For oral and cranio-maxillofacial surgery, diverse articles on these various materials were published for appraisal. Please refer to the latest paper of Horch and Pautke.[12]

For tissue engineering, a suitable augmentation material must show the following qualities,

_ The material should be synthetically producible and completely absorbable or biodegradable.
_ The proteins used for growth stimulation should be produced genetically and not be allogene or xenogene.
_ In addition, cellular and acellular components from the patient, such as PRP (platelet rich plasma, mesenchymal stem cells) are accepted.[13]

The transplantation of autogenous bone is known worldwide as the "golden standard". All surgeons have a lot of experience with this method. The disadvantages of autogenous bone transplantation, however, must not be ignored due to the following,

– Usually two surgical operations are necessary, the first for harvesting the bone removal, the second for implantation. In this context it must be mentioned that for the oral surgery, as well the augmentation of large bony defects, bone removal from iliac crest or lower leg—ie, far away from the actual surgery area—is usually required. However, it is sufficiently known that these areas cause patients symptomatic diseases.
_ The risk of infection and necrosis after transplantation of vital cells is considerable and must be applied for vital bone transplantation as well as for mesenchymal stem cell transplantation.
_ The resorption of transplanted autogenous bone of up to 30% should be kept clearly in mind while planning the surgery.[13]

Compared to the transplantation of autogenous bone, the augmentation with demineralised bone matrix (DBM) needs no bone removal but allografts obtained from dead bodies that are prepared accordingly. When offered commercially, it is acellular and also contains small quantities of growth factors. DBM will be resorbed completely by the recipient organism.

However, the danger of allergic reactions, especially against gentamicin, used during DBM extraction, has to be pointed out. There might also be a risk of immune reactions against allogene proteins. The fact that the allogene material does not fulfill the

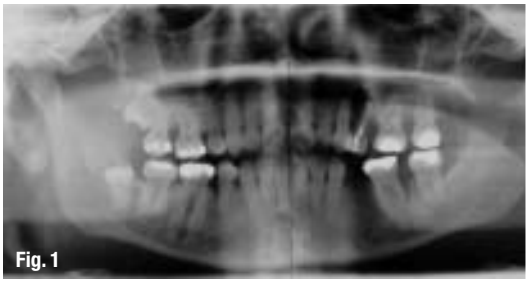


Fig. 1

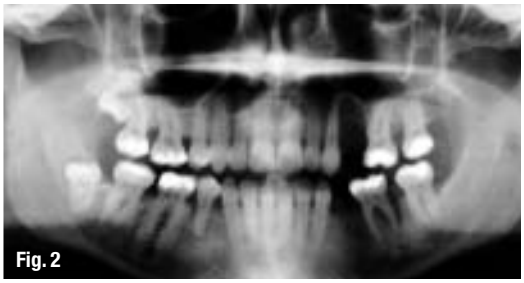


Fig. 2

Fig. 1_Preoperative OPG.
Fig. 2_OPG directly postoperative.

scaffold function sufficiently is the important disadvantage of augmentating large bony defects with DBM. And finally, the risk of prion transmission must be mentioned even if considered only marginal.[13]

The possibilities and barriers for the augmentation with DBM within the oral cavity shall be demonstrated by the following single clinical case.

_Case Report I

A 35-year-old female patient presented with large periodontal bone defects in maxilla and mandible. As visible on the orthopantomography (Fig. 1), one premolar of the left mandible was already lost and the still existing premolar in the left maxilla was dislocated due to connective tissue diseases. The repair of these periodontal defects as well as the augmentation of the bony defects in the premolar area in the left maxilla and the left mandible was effected via DBM with PRP. Figure 2 presents the orthopantomography, directly postoperative.

The following image (Fig. 3)—three-months postoperative—clearly demonstrates bone regeneration within the formerly bony periodontal pockets and as well within the left and right maxilla defects. However, it was supposed that the bone regeneration within the left maxilla was not sufficient.

During a second perforation 3-months later, it was realised that in the area of the first premolar in left maxilla there was still granulation tissue and in depth laminar bone was found. Figure 4 shows the left maxilla after implantation and reaugmentation with DBM.

_Review

This case clearly demonstrates that DBM is very well able to grow bone in large periodontal bone pockets. For extremely large bony defects with no more existing bony walls, the osteoinductive potential and the scaffold function of DBM is not sufficient to assure a complete reconstruction.[14]

Bone tissue engineering with BMPs requires,
_ an optimal carrier material and scaffold,
_ suitable surgical procedure,
_ perioperative management, and
_ intraoperative monitoring.

All bone morphogenetic proteins available as medicaments contain bovine collagen (ACS, absorbable collagen sponge) as carrier material. For BMP-7 the protein is mixed with bovine collagen particles, and for BMP-2 both fractions are separated. In this case the bovine collagen, as part of the kit, is soaked with the growth protein dissolved in sterile water. The bovine collagen as carrier material itself shows clear disadvantages,
_ First of all, considerable swelling due to absorption of serous liquid and blood occasionally leads to problems in wound closure.
_ Due to the low form stability there is not enough scaffold material for bone to be regenerated. Therefore, bovine collagen is not suitable as a carrier and scaffold substance if vertical bone growth is necessary.[9]

For the following clinical case the aforementioned disadvantages of bovine collagen led to an endoscopically assisted surgery with DBM (human collagen type I) as carrier and scaffold material. BMP-2 (only the protein, not the absorbable collagen sponge) has been added as growth factor. Compared to conventional flap surgery, this technique shows the following advantages,
_ Papillae don't have to be cut, which gives the possibility of a good perfusion within this sensible area.
_ Incisions are made away from the augmentation area. This leads to a drastic reduction of wound healing problems and, finally, to a considerable amelioration of clinical results.

Perioperative management including antibiosis, antiphlogistic and pain therapy are all a given here. In addition, an intraoperative monitoring is required as the used substances may cause allergic and immune reactions as well.

_Case Report II

At a 51-year-old male patient suspected of having myelodysplastic syndrome (MDS), both central incisor teeth of the maxilla had to be extracted and to be replaced by two single implants. As former surgeries already caused considerable wound healing problems due to haematopoisesis

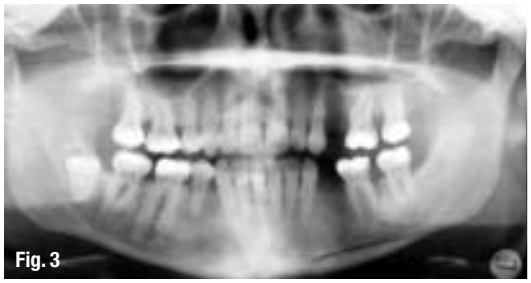


Fig. 3

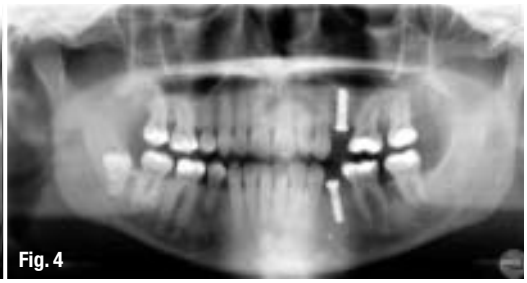


Fig. 4

Fig. 3_OPG 3-months postoperative.
Fig. 4_OPG after implantation and reaugmentation with DBM.

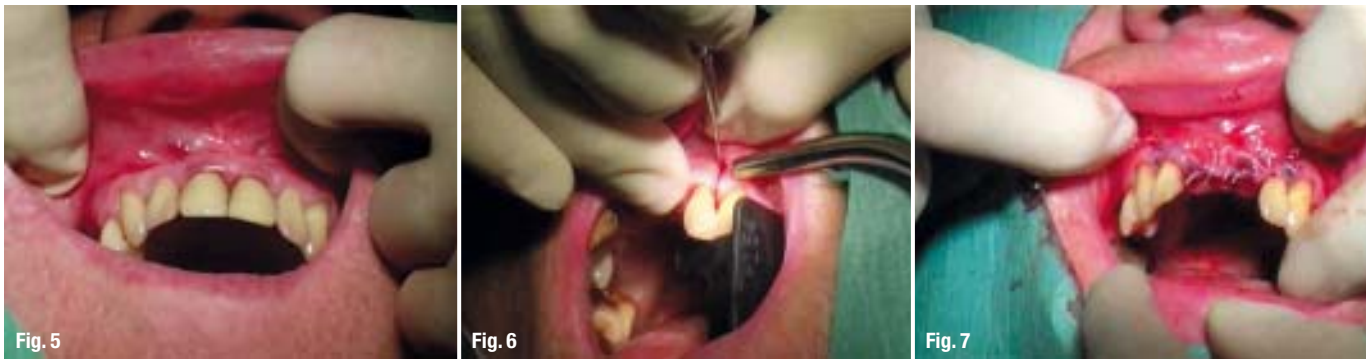


Fig. 5_Maxilla front, initial situation.
Fig. 6_Situation after placed implants and vertical incision.
Fig. 7_Wound situation at the end of surgery.

difficulties, the augmentation was endoscopically assisted.

Figure 5 represents the initial situation of the maxilla front, and Figure 6 the situation after placed implants and vertical incision. The granulation tissue was removed under endoscopical view. DBM, soaked with BMP-2, is augmentated from lateral. Figure 7 shows the wound situation at the end of the surgery.

Comparing the preoperative radiograph (Fig. 8) to the radiograph obtained 3-months postoperative (Fig. 9), one can see in evidence two well osteointegrated implants in situ instead of the inflamed teeth. A vertical bone growth between 4 and 5 mm was created.

With this new technology no foreign material is in situ.

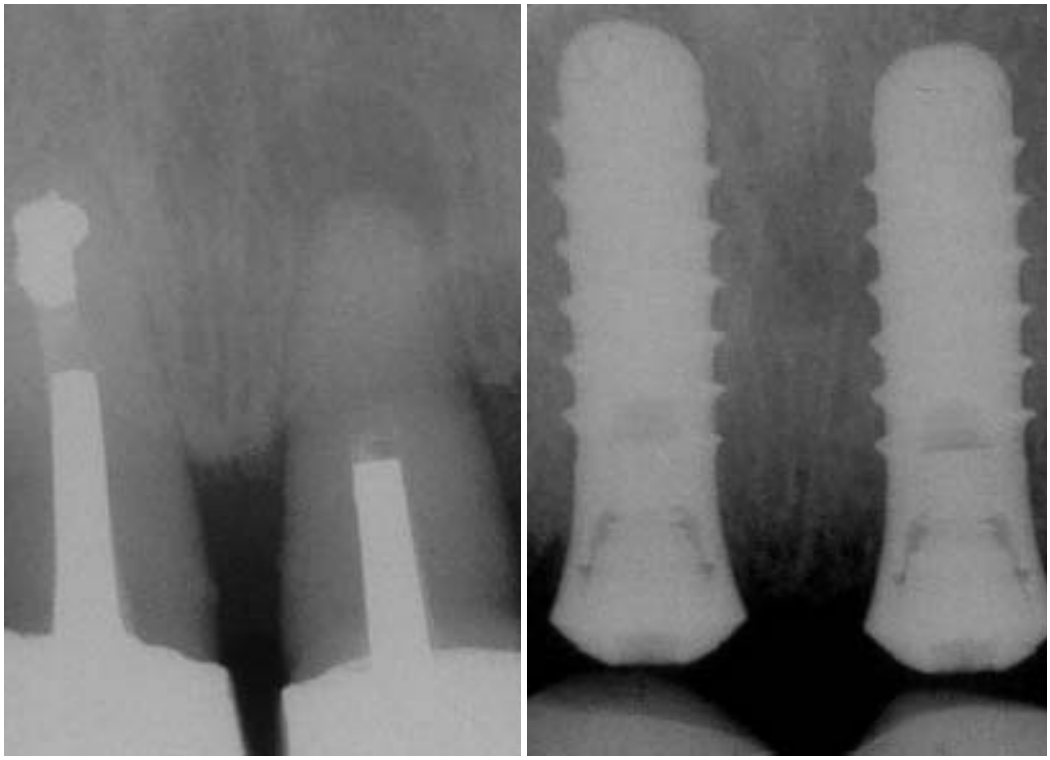
_Conclusion

Although the shown clinical examples are single cases, publications in the field of oral and maxillofacial surgery, as well as in the field of orthopaedic and accident surgery, have proven that bone tissue engineering often achieves at least the same results as the transplantation of autogenous bone and necessitates no bone removal, including its secondary diseases._

_contact implants

Dr Karl-Heinz Schuckert and
Dr Stefan Jopp
INDENTE
Institute of Innovative Oral Surgery & Medicine
Centre for Tissue Engineering
Ellernstr. 23
30175 Hannover, Germany
Tel.: +49-5 11/8 50 62 32
Fax: +49-5 11/28 17 57
E-mail: info@indente.de
Web site: www.indente.de

Fig. 8_Preoperative x-ray.
Fig. 9_X-ray 3-months postoperative.



A Predictable Procedure for Managing the Resorbed Posterior Maxilla with Short, Sintered Porous-Surfaced Dental Implants

Sintered porous-surfaced implants achieve integration by bone ingrowth into the porous outer surface zone.

author_ Douglas Deporter, Canada

Many patients with minimal subantral bone height can be more easily and less expensively managed with the indirect sinus elevation approach.

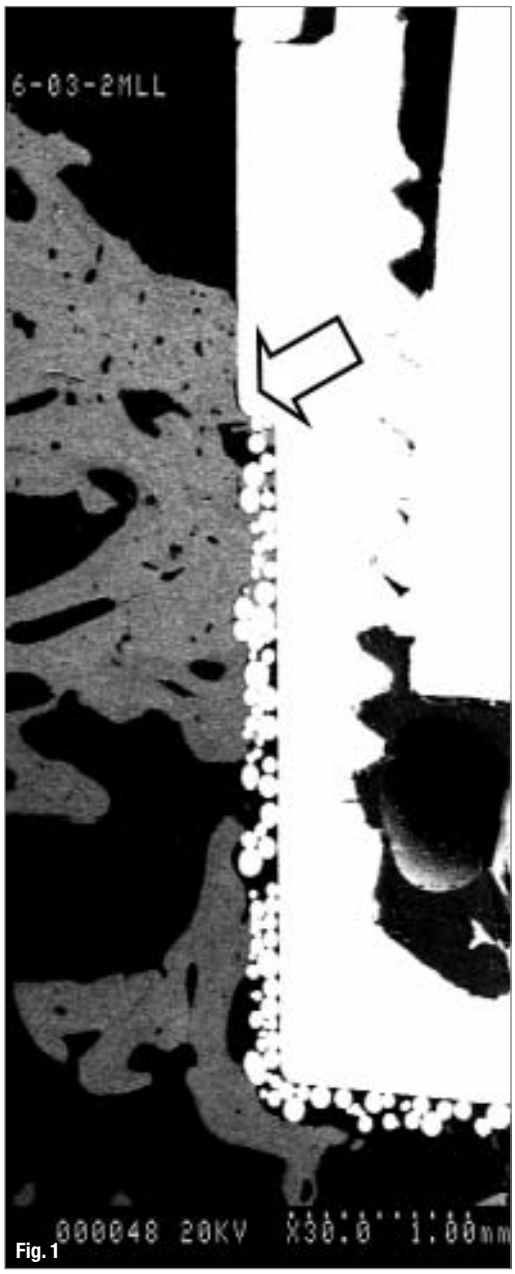


Fig. 1

Fig. 1_Backscatter scanning electron microscopic image of the proximal surface of a sintered porous-surfaced implant that had been in function in a dog mandible for 14 months. The crestal bone stabilized slightly coronal to the machined collar-to-sintered surface junction (arrow).

_Recent advances in technique have led to the simplification of the restoration of the resorbed posterior maxilla with dental implant-supported prostheses. While direct open window sinus elevations to access the sinus cavity continue to be used[1] (particularly when multiple implant sites in a single sextant require sinus augmentation), many patients with minimal subantral bone height can be more easily and less expensively managed with the indirect sinus elevation approach. As originally described by Summers[2] and confirmed by others[3-5], an indirect, minimally invasive, low-risk sinus elevation procedure can be performed using hand-held, end-cutting osteotomes and a surgical mallet to elevate the sinus floor in an area localized to the apex of the implant osteotomy. The height of subantral bone existing at the intended implant site is first determined using a panoramic, tomographic, or, ideally, a computed tomography radiographic image. Knowing this height and assuming that the bone is primarily types III or IV[6], a series of osteotome tips of gradually increasing diameter driven by tapping with a surgical mallet is used to develop the osteotomy to a depth short by ~1 mm of the sinus floor. If the bone quality is denser (eg, type II)[6], a pilot bur may be needed to create the initial site depth (again staying ~1 mm short of the sinus floor) thereby avoiding excessive force with the osteotomes that could produce vertigo as an untoward effect.[7] The bone through which the osteotome advances becomes compacted and acts as a "ceiling" for the osteotomy socket. This autogenous plug of bone will remain attached to the Schneiderian membrane of the sinus cavity and act as a buffer to protect this membrane from damage when the sinus floor is ultimately breached. Nevertheless, Summers[2] has advocated that an exogenous particulate graft material be added to augment this autogenous plug before proceeding to advance the largest diameter osteotome tip through the remaining ~1 mm of subantral bone,

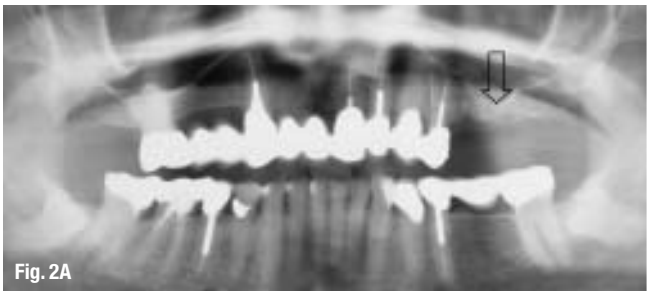


Fig. 2A

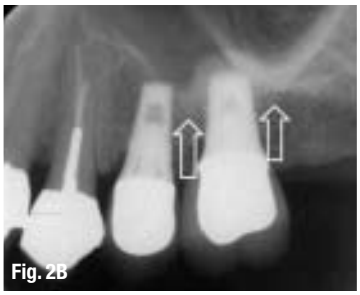


Fig. 2B

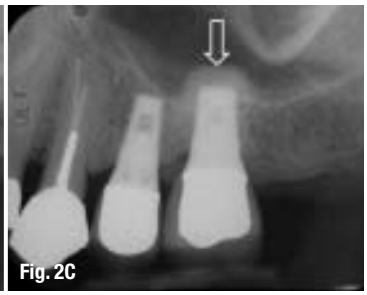


Fig. 2C

Fig. 2A_A preoperative panoramic radiograph showing ~3 mm subantral bone height in the location of the former upper left first molar (arrow).

Fig. 2B_Baseline radiograph at 1 month after the insertion of the non-splinted crowns on the implants replacing the maxillary left second bicuspid and first molar teeth. The original sinus floor can be seen partially discerned (arrows).

Fig. 2C_Follow-up radiograph after 3 years in clinical function. The grafted Bio-Oss® site (arrow) at the implant apex can be seen to be denser (ie, more infiltrated with new bone) than in the baseline image (B). (Prosthetic restoration by Dr. Richard Cameron.)

Fig. 3A_Preoperative panoramic radiograph showing 2 mm to 4 mm of subantral bone height in the location of the former maxillary right first molar (arrow).

Fig.3B_A periapical radiograph taken immediately after implant placement. Graft particles can be seen localized to the apex of the implant replacing the first molar (arrows). No graft was used for the other two implants.

Fig.3C_A periapical radiograph taken after 1 year in function with three individual nonsplinted crowns. New bone has formed on both the mesial and distal aspects (arrows) of the segment of implant root placed into the sinus domain. (Prosthetic restoration by Dr. Richard Cameron.)

thereby up-fracturing the sinus floor. The limitation in using this technique with most threaded implants is that when the existing subantral bone height is ≤4 mm, failure rates are appreciably higher than when the original bone heights are ≥6 mm. Depending on the design of the threaded implant used (eg, machined, acid-treated, particle-blasted, or titanium plasma-sprayed), failure rates in bone heights of ≤4 mm may range from 14% to 27%.[4,8] These less than favorable outcomes likely relate to the need to use these implants in lengths of at least 13 mm in the maxilla to ensure long-term implant success under loading.[2] It is known that the more the sinus membrane needs to be elevated, the greater the risk of sinus membrane damage[9] and potential loss of the graft material into the sinus cavity proper. More favorable results in ≤4 mm of subantral bone have been reported when the indirect sinus elevation approach is combined with short sintered porous-surfaced dental implants.[5] In a series of 70 patients with 104 Endopore® (Innova Life Sciences Corporation, Toronto, Ontario, Canada) sintered porous-surfaced implants (primarily 7 mm in length) the failure rate was reported at 1.9% after a mean functional time of >3 years[10] (2 of the 104 implants failed under unusual patient circumstances unrelated to the initial subantral bone height). Sintered porous-surfaced implants achieve integration by bone ingrowth into the porous outer surface zone[11] rather than by linear bone-to-implant contact as generally occurs with threaded implant designs.[12] The resulting 3-dimensional mechanical interlocking between this truly porous (pore size range 50 µm to 200 µm) implant surface zone and the bone tissue that has developed within it during the initial integration process (Figure 1) allows for optimal stress transfer at the bone-to-implant interface[13,14] and no need to use implants longer than 7 mm.[15,16] A slightly modified osteotome sinus elevation procedure has been described for use with sintered implants.[5] Criteria for successful case selection are listed in Table 1. Patients should be non-smokers without a history of chronic sinus infection. The selected sites should have an initial subantral bone height of ≥3 mm and adequate alveolar ridge width to preserve a minimum of 1.8 mm of original bone both buccally and palatally after implant placement to minimize crestal bone loss in the immediate postoperative period.[17] Patients should be placed on amoxicillin (or an appropriate alternative antibiotic) starting 24 hrs *before surgery* (and continued for a total of 5 days [author's preference]) and a strictly sterile surgical technique should be used throughout. Only 7-mm-long (with a diameter of 4.1 mm or 5 mm depending on implant location and alveolar ridge width available) Endopore implants should be used so that the greatest sinus membrane elevation will not significantly exceed 4 mm (eg, in a site with initial subantral bone height of 3 mm) with little risk of membrane damage.[9] The healing interval required for initial implant integration (generally between 3 and 6 months) will depend upon the amount and type of graft material used [the author has routinely used Bio-Oss® cancellous bone particles (Osteohealth Corporation, Shirley, NY)] and the resultant time required for this material to become consolidated with new bone. Once integrated, the implants may be restored as either implant-to-implant splinted fixed bridges or single crowns,[15,16] the latter being preferred to ensure full loading of the bone-to-implant interface (Figures 2 through 4).

_Surgical steps

The surgical steps[5] are listed in Table 2. With the aid of a surgical implant placement guide, the intended implant sites are marked with a small (#4 or

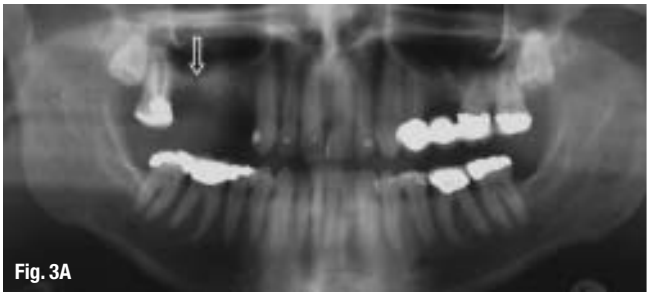


Fig. 3A

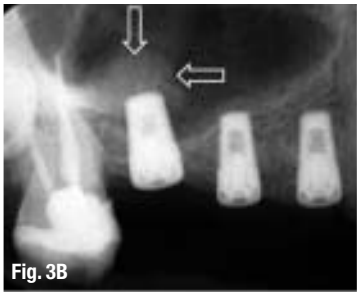


Fig. 3B

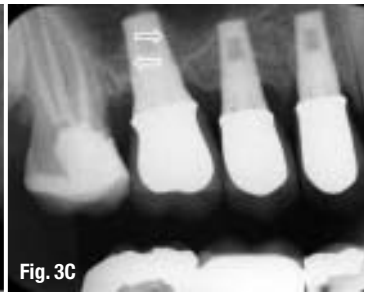


Fig. 3C

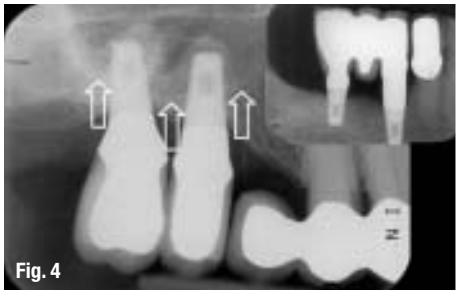


Fig. 4

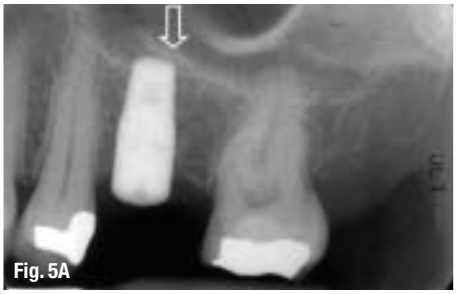


Fig. 5A

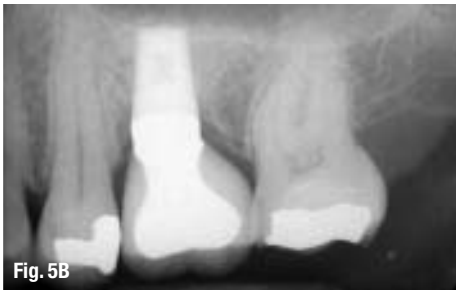


Fig. 5B

Fig. 4_A periapical radiograph of two maxillary molar sites restored with 7-mm-long Endopore® implants at sites with slightly < 3 mm of original subantral bone after 2 years in function with single, nonsplinted crowns. The original sinus floor is marked with arrows while the grafted areas are seen localized to the implant apices. The smaller radiographic image in the upper right corner shows that the opposing arch was restored with two 7-mm Endopore® implants and a three-unit fixed implant-supported bridge. (Prosthetic work performed by Dr. Reynaldo Todescan.)

Fig. 5A_An immediate postoperative periapical radiograph of an implant placed in a site that had approximately 6 mm of original subantral bone height. A small segment of sinus floor has been up-fractured as a "trapdoor" opening towards the distal (arrow).

Fig. 5B_The same implant after 2 years in function with a single implant crown. Bone has formed at the implant apex with the formation of a new sinus floor. (Prosthetic restoration by Dr. Reynaldo Todescan)

Table 1: Keys to Success

1. Patient selection to avoid smokers and sinusitis.
2. Adequate alveolar ridge width and subantral bone height ≥3 mm.
3. Strictly sterile technique.
4. Initial implant stability.
5. Implant fully submerged in bone.
6. Adequate healing time to allow graft consolidation with new bone.

#6) round bur before proceeding to the osteotomes provided by the manufacturer (Innova LifeSciences). There are three tapered osteotomes available for use with the Endopore implant. The smallest diameter (1.6-mm cutting tip diameter) osteotome tip and a surgical mallet are next used to initiate site development, remembering to stop short of the sinus floor by ~ 1 mm. At this point, a periapical radiograph can be taken with the osteotome tip in situ to verify the depth of instrument penetration. The second (2.2-mm diameter at the cutting tip) and third (largest diameter, 2.8-mm diameter) osteotome tips are then used to the same depth. The osteotomy "ceiling" should be viewed frequently to ensure that the plug of autogenous bone compacted by the osteotome tips is clearly visible. At this point, a mineralized particulate xenograft or alloplastic material suitable for sinus grafting is added to the partially developed osteotomy. With this added buffer layer, the largest diameter osteotome tip and mallet are used to up-fracture the sinus floor. A sudden change in resistance to the advancing osteotome tip will indicate that the sinus floor has been breached. Thereafter, more graft is added and the osteotome advanced an additional 1 mm into the sinus domain, and this sequence of adding graft and advancing 1 mm at a time repeated until the full depth of 7 mm is achieved. The final instrument used is the Endopore-specific trial-fit gauge.[5] This instrument has the shape and dimensions of the implant being used (7-mm-long x either 4.1-mm or 5-mm diameter at its widest and coronal dimension), and is connected to an osteotome handle and tapped to its fully seated position (ie, to a depth of 7 mm). If a 7-mm-long x 5-mm-diameter implant is planned, both the 7-mm x 4.1-mm and the 7-mm x 5-mm trial-fit gauges should be used in sequence to expand more gently and avoid fracturing the cortical plates of bone. When the entire conical gauge tip is submerged in bone, the operator is assured that the corresponding implant also will be fully submerged. Next, the implant is inserted (taking care not to contaminate the sintered implant surface) and fully seated with the mallet and an implant-seating driver tip. As a final step, a hand-held hex driver tip should be used to ensure that the healing cap is tight and the implant immobile.

_Discussion

To date, the technique has been used by the author as described in sites with ≥3 mm of original bone height, although some further modifications are be-

Table 2: Endopore®
Osteotome Sinus Elevation Technique – Summary of Steps

1. Round bur to mark entry point.
2. Develop osteotomy with the three osteotome tips staying ~1 mm short of the sinus floor.
3. Gently pack the partially developed osteotomy site with graft particles.
4. Advance the osteotome tip #3 (largest diameter) to up-fracture the sinus floor.
5. Repeat steps 3 and 4, adding more graft particles and advancing an additional 1 mm apically with osteotome #3.
6. The site development should stop at 7 mm in depth.
7. Use the appropriate 7-mm trial-fit gauge as the final instrument, ensuring that the conical end is fully submerged in bone.
8. Seat a 7-mm-long Endopore implant.
9. Check the implant for stability and tightness of the healing cap with the implant hex driver.

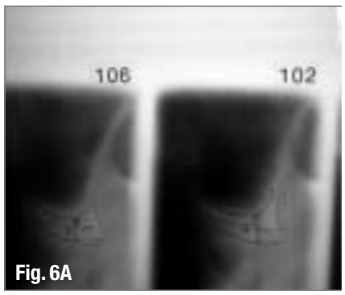


Fig. 6A

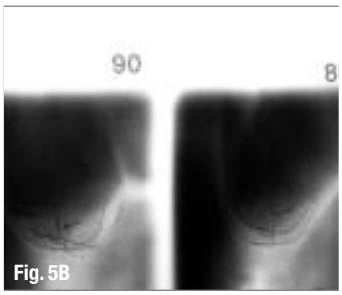


Fig. 5B

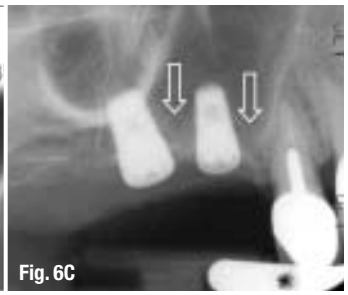


Fig. 6C

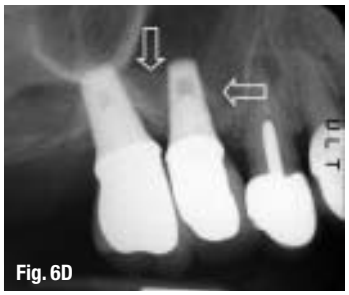


Fig. 6D

ing tested regarding whether or not an exogenous graft is really needed, and whether sites with <3 mm of subantral bone can be managed with predictable success. At this time in the author's experience, the described technique should be followed in sites with 3 mm to 5 mm of subantral bone. However, since some authors have suggested that the Schneiderian membrane can be elevated without adding exogenous graft particles in either a direct open window[18] or indirect osteotome approach[19], in sites with >5 mm of subantral bone height the author now generally does not add graft particles but rather only the compacted and apically displaced autogenous bone plug is used for the sinus floor elevation (Fig. 5). Additional support for this approach is provided by a recent animal investigation[20] in which small sintered porous-surfaced implants were placed into rabbit maxillary sinuses using osteotomes. On the test side, Bio-Oss particles were used as a graft while on the control side of each animal no graft was used before placing the implant. Histomorphometric assessment of bone-to-implant contact of test vs control implants indicated similar levels of bone ingrowth, suggesting that the sintered surface layer was adequately osteoconductive by itself when the periosteal layer of the Schneiderian membrane was perturbed by localized sinus floor elevation using osteotomes. In sites with <3 mm of original subantral bone height, the author has used a small rotary trephine to free up a circular plug of bone similar to the approach used by Summers[21] in his "future site development" osteotome procedure and by Fugazzotto[22] in his single-step implant placement technique with textured threaded implants in sites with ≥4 mm of subantral bone. Therefore, in sites with <3 mm of bone, once the trephined plug is movable, it is gently displaced into the sinus domain with an osteotome tip to the depth of 7 mm either with or without the addition of exogenous graft particles and the Endopore implant inserted using a submerged technique (Fig. 6). Because of the larger degree of sinus membrane elevation required and the minimal original bone available to integrate with the implant, longer initial submerged healing intervals (ie, ≥8 months) are used with this modified method. It should be noted, however, that there are no prospective study data available as yet to support this application of the approach in <3 mm of subantral bone with simultaneous placement of a sintered porous-surfaced implant.

_Conclusion

Ongoing data collection for the implant placement technique described in this article confirms that the combination of short, sintered porous-surfaced dental implants and the indirect, osteotome-mediated, localized sinus elevation procedure is a highly predictable, minimally invasive mode to address the restoration of the resorbed posterior maxilla with implant-supported fixed partial prostheses. The procedure can be performed with predictable success in sites with ≥3 mm of original subantral bone and appropriate alveolar ridge width.

_Acknowledgments

The author wishes to thank Nancy Valiquette and Lynda Woodstock for administrative assistance in preparing this manuscript.

_Disclosure

The author receives grant/research support from Innova LifeSciences.

The literature list can be requested from the author.

_contact implants

Douglas Deporter, DDS, PhD
Professor
Discipline of Periodontology & Oral Reconstruction Center
Faculty of Dentistry
University of Toronto
Toronto, Ontario, Canada

Fig. 6A_Preoperative tomographic tracing of the site of the former maxillary right first molar tooth. The ridge dimensions are estimated at 3.5 mm to 4.5 mm subantral bone height and an adequate width for a 5-mm-diameter implant.
Fig. 6B_Preoperative tomographic tracing of the site of the former maxillary right second bicuspid. The ridge width is good but the subantral bone height is estimated at 1 mm to 1.5 mm.
Fig. 6C_An immediate postoperative radiograph of the implants placed in the sites shown in (A) and (B).
A 3-mm trephine was used to free up the 1-mm to 1.5-mm plug of bone in the bicuspid site before adding graft particles and a 7-mm x 4.1-mm Endopore® implant. The straightforward osteotome technique was used with the molar site followed by placement of a 7-mm x 5-mm Endopore®. The Schneiderian membrane between the two implants and mesial to the bicuspid implant can be seen to have been elevated by the added graft particles, which in this case are barely radiopaque (arrows).
Fig. 6D_A periapical radiograph taken after the two individual non-splinted crowns have been in function for 1 year. New bone has formed around a major portion of both implant roots (arrows). The contiguous first premolar tooth has a failing endodontic treatment and will be extracted and replaced with a third implant. (Prosthetic restoration by Dr. Richard Cameron.)

Predictable 3-D-face-reconstruction using facial and dental implants

author_Manfred Nilius, Germany


Fig. 1a


Fig. 1b

Fig. 1a–b_Front and semilateral view before surgery. Maxillary prognathism, retrogeny, gothic maxillary arch, labial protrusion of the incisors.
Fig. 2a–b_Plaster analysis.
Fig. 3_Nobel Speedy RP 12 mm.
Fig. 4a–b_Implant guided palatinal distractor (IGPD) for transverse distraction of the palate. The IGPD was adjusted beforehand and intraoperatively fixed on four implants using guided temporary abutments. Anterior gap for oral feeding.
Fig. 5_Lateral x-ray before operation.
Fig. 6a–b_Exact planning for LeFort I osteotomy, palatinal split and volumetry of the chin was performed by CMF®-Software (Simplant Pro10.01; Platform V10.0.1.6).

_Abstract

Surgery of craniofacial deformities is a complex task that requires careful preoperative planning. In this field Nobel-Guide®-System made a great impact of predictable implantology. Using these for computer-aided surgery (CAS) the patient outcome of extreme dental and facial makeovers can be anticipated. The following case report shows new indications for dental implants by using Nobel-Guide®-System for fixation of a prefabricated "Implant Guided Palatinal Distractor" (IGPD) and for an implant bridge. Thus, embedding dental implantation in maxillofacial procedures like LeFort osteotomy, forced guided palatinal distraction, chin augmentation and septorhinoplasty can be performed in a single-step operation. Operation time and costs can be reduced.

_Introduction

With traditional two-dimensional preoperative work-up, the prediction of the postoperative appearance of the patient's face is limited. Today's surgery simulation systems do not anticipate soft tissue changes resulting from the alteration of underlying bones. Implant simulation programs do not realistically predict exact implant positions. Nobel-Guide®-System made a great impact on the field of predictable implantology and was used for exact implant positioning. Facial performance was planned by CMF®-module to visualize three-dimensional operation procedures and soft tissue movement in maxillofacial surgery.


Fig. 2a

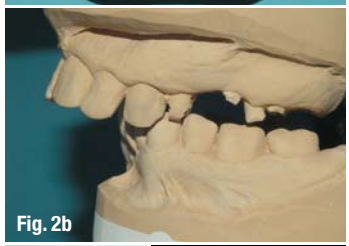


Fig. 2b

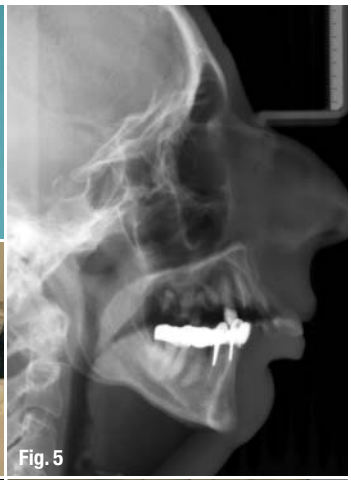


Fig. 5


Fig. 3


Fig.. 4a

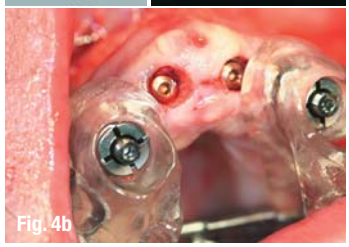


Fig. 4b

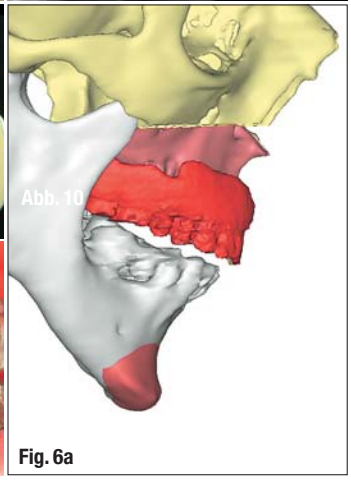


Abb. 10
Fig. 6a

_Material and Methods/Case Report

Clinical situation before extreme facial makeover:

A 52 year old woman was referred to our clinic for treatment of temporomandibulary joint disorders (TMJ) and for orthognathic surgery (Fig. 1a–b, 2a–b). The clinical investigation showed a large facial asymmetry including prognathism, mandibulary retrogeny, lateral right deviated hook-long-nose including deviated nasal septum, naevus-cell-naevi on the right cheek, a missing chin and thus a reduced horizontal high of the lower facial third. The intraoral view demonstrated a gummy-smile and every maxillary tooth decayed, labial protruded front teeth (overjet: 30 mm, overbite: 4 mm), deminuished transversal extension of the palate and a gothic arch. Habits: Mandibulary protrusion of 4 mm.

_Treatment planning

After analyzing dental and facial deficits teeth extraction of the maxillary teeth was performed. Dental implantation was planned using Nobel-Guide®. Eight implants (NB Speedy Groovy RP 12 mm) were planned in position 016, 015, 013, 012, 022, 023, 025, 026. Properties of the soft tissue between the skin and bone were simulated by an anatomy-based virtual model CMF®-module.

_Procedures

Surgical procedures were simulated by using a 3-D Scan of the patient's head including Nobel-Guide®-System to fabricate an "Implant Guided Palatinal Distractor" (IGPD) and the CMF®-module for skull surgery (Fig. 3–6). A physical model of the skull was created through computergenerated reconstruction using stereolithography on which planned surgery was simulated. Properties of the soft tissue between the skin and bone were simulated by an anatomy-based physical model (CMF®). The impact of the bone realignment formed by the surgery simulation then transferred to the tissue by photomapping (Figs. 1a, 1b, 2a, 2b).

_Results

Clinical situation after dental and facial implantation:

Due to CT-analysis, computer based planning and the use of templates the dental implants were brought in very safe and quick. The implementation of the "Implant Guided Palatinal Distractor" (IGPD) based on 8 implants was very simple, immediate functions on the implants without complications. The precise fixation of the prefabricated chin was uncomplicated. The functional oral rehabilitation, mastication and esthetic restoration—thus the oral and facial result two weeks later highly appreciated by the patient (Figs. 10a, 10b).


Fig. 10a

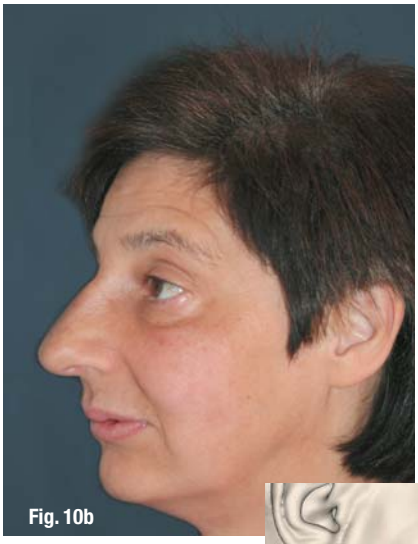


Fig. 10b

Fig. 7_Surgery was divided into the following seven steps.
7a_Minimalinvasive implantation of 8 implants (NB Speedy Groovy RP 12 mm, punch technique) using the Nobel-Guide®-Template.
7b_LeFort I osteotomy.
7c_Sagittal split of the palate, palatinal distraction (7 mm), immediate loading of the implants, temporary intermaxillary fixation using "IGPD".
7d_Chin augmentation using a prefabricated chin (MEDPOR® Surgical Implants).
7e_Transmaxillary and endonasal septorhinoplasty.
7f_Dental rehabilitation with an implant bridge (2 weeks later).

Fig. 10a–b_Front and semilateral view after surgery.

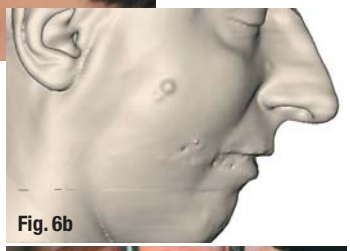


Fig. 6b

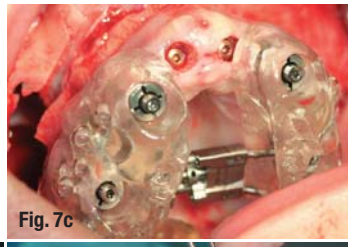


Fig. 7c

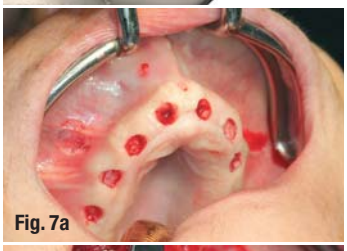


Fig. 7a

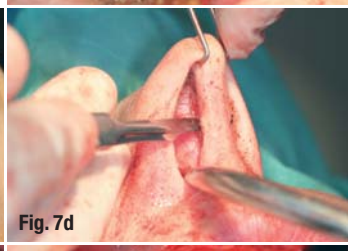


Fig. 7d

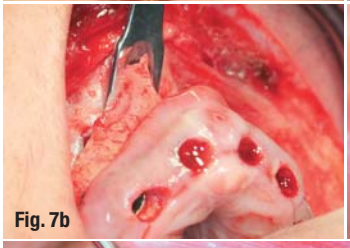


Fig. 7b

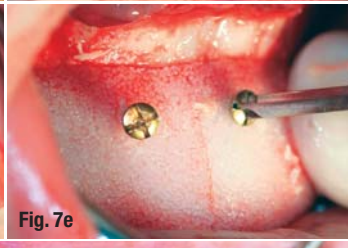


Fig. 7e

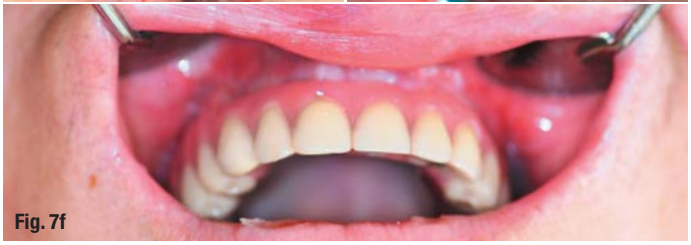


Fig. 7f

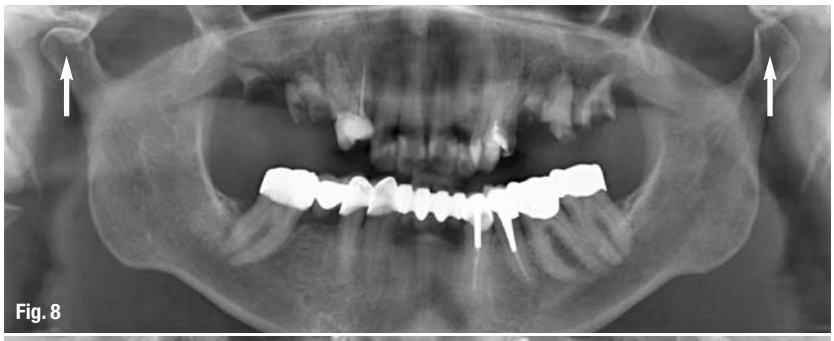


Fig. 8

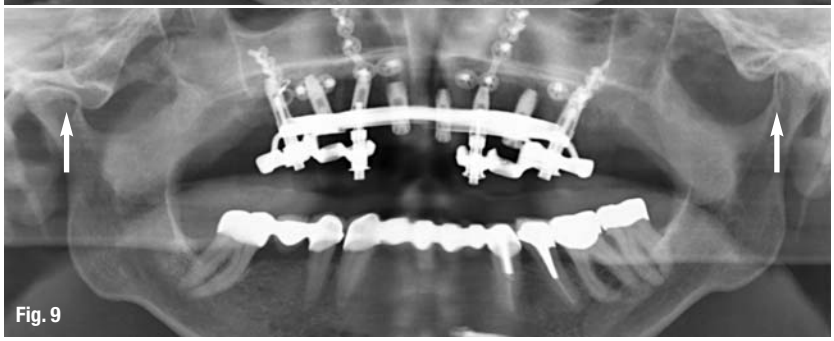


Fig. 9

Fig. 8_Preoperative orthopantomography (OPT). Decayed maxillary teeth and noncentric anterior position of the mandibulary processus due to protrusion.
Fig. 9_Postoperative OPT after implantation, immediate loading (IGPD), LeFort I osteotomy and chin augmentation. Centric position of the mandibulary processus.

_Discussion

Because of their wide-ranging surgical impact, craniofacial operations require careful preoperative planning. The goal is not only to improve the functionality, but also to restore an esthetically pleasing face for patients with large facial deformities. Combining Nobel-Guide®-Systems for dental implantation with other modern CAS systems like CMF®-module for simulation of complex surgical procedures allows prediction of the patient's postoperative appearance. Prefabricated distractors (IGPD) or other orthodontic templates can be implemented like common prosthodontic fixtures or teeth in the "Teeth-in-an-hour-Concept®". Comprising skin, tissue and skull data, CMF®-module allows a precise preoperative three-dimensional visualization of the patient's appearance after craniofacial surgery. The demonstrated case shows methods to give the surgeon the ability to work interactively with the patient skin and skull data and to simulate different surgical procedures to improve the planning process. For 15 years, facial implants have been used in plastic surgery for graftless defect restoration.

Especially in the field of facial renewals ready-made replacements can be planned with 3-D-Software and used easily to improve the esthetic look. The presented case report demonstrates the efficiency and strengths of this new approach. While many patients desire facial and not only dental solutions every dentist should know about the opportunities contemporary treatments can do for everyone of these patients._

_contact | implants

Dr Dr Manfred Nilius

Niliusklinik, Londoner Bogen 6
44269 Dortmund, Germany
E-mail: info@niliusklinik.de
Web: www.niliusklinik.de

Annual Congress of DGZI in Düsseldorf was again a great success

On October 5–6, 2007, the 37th International Annual Congress of DGZI was held in the congress center of the Düsseldorf Hilton Hotel. The general theme was "Implantology ? biological principles and technical possibilities". Experts from Germany and abroad discussed the questions of the future of implant dentistry with 600 participants.

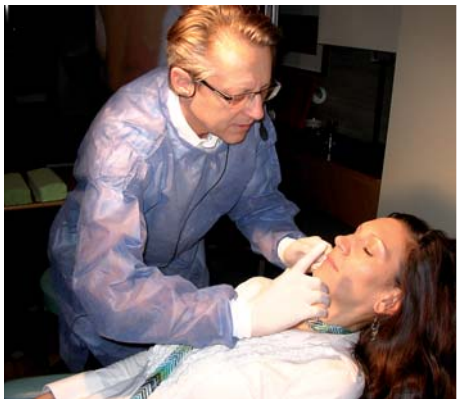
_In the afternoon of October 6 an exciting congress ended with a panel discussion dealing with the subject of "Healing periods between technical possibilities and biological limits" which was moderated by Priv.-Doz. Dr Dr Steffen G. Köhler, Berlin. Some six hundred participants—dentists, dental technicians and dental practice team members from Germany and other countries—met at the congress center of the Düsseldorf Hilton Hotel. For two days and in 20 expert panels and more than 30 workshops, hands-on courses and seminars they had the opportunity to inform themselves about current standards and trends in the field of implant dentistry as well as about practice hygiene, practice management, periodontics and facial subcutaneous injection techniques. This large variety of subjects was one of several reasons why the International DGZI Congress again was able to set standards. With participants and speakers from 16 countries DGZI could demonstrate that it has been most successful in the past few years in intensifying and strengthening international commitment. Based on its cooperation with implantological expert societies in the USA, Asia, the Arab region and Europe, DGZI today is part of a worldwide network of more than 11,000 implantologists, as its President Dr Friedhelm Heinemann emphasized in his opening speech.

In the subsequent scientific program the focus was on "Technical possibilities and biological limits". It was pointed out that the fast technical development in the field of implant dentistry, the continu-

ous introduction of new implant designs, surfaces and materials including computer-aided diagnostic and planning methods may occasionally give rise to the impression that the constant technical improvement of implant systems and auxiliary materials will invalidate even basic biological principles. As innovative as the technical advancements may be—they cannot overrule the basic biological principles of osseo- and periointegration of implants nor can they abolish the basic functional laws of implant-supported restorations. Nevertheless, the experience made over decades can be used to constantly improve our understanding of these processes and optimize the implantologist's surgical/prosthodontic procedures, also by benefiting from modern technical possibilities, and to find solutions that are still closer to nature. And yet—mother nature will only let us outwit her to a certain limit, and many problems which we thought had been solved turned out to be much more persistent in the long-term prognosis than we had assumed.

In the main podium lectures on Friday afternoon, first Prof Dr Jürgen Becker, Germany, presented research results with ultrahydrophilic or BMP coated implant surfaces. Dr Ophir Fromovich, SR, discussed cases for the use of the Nobel Active implant system, whereas Prof Dr Reiner Biffar, Germany, focused on implants with cantilever restorations as a compulsory or voluntary exercise. In the ensuing special panels dealing with implant prosthodontics, surgery, laser treatment, etc. some 40 speakers from the fields of science and practice presented their cases and the results of their research.

On Saturday the congress first concentrated on computer-aided diagnostics and case planning (Dr Stefan Hümmeke, Germany), once more on the use of ultrahydrophilic surfaces (Dr Steve Barker, UK) and the myth of immediate implantation (Dr Achim Schmidt, Germany). Then the next series of presentations dealt with surgical and prosthetic subjects. Dr Eric van Dooren, Belgium, discussed all-ceramic restorations and Esthetic Dentistry, Prof Dr Werner



Götz, Germany, spoke about the effect of inflammation on bone loss in cases of periimplantitis. Prof Dr Thomas Weischer, Germany, discussed complications in implantology and the respective crisis management.

The afternoon series of lectures with contributions by Dr Raphael Serfaty, France, Prof Dr German Gomez-Roman, Dr Friedhelm Heineman and Priv.-Doz. Dr Rainer Buchmann (all three Germany) again dealt with the full band width of implant dentistry.

The highlight and worthy conclusion of the congress was the panel discussion mentioned above with German experts Prof Dr Heiner Weber, Prof Dr Christoph Bouraul, Prof Dr Werner Götz and Dr Dr Martin Bonsmann, which was not very controversial but rather covered the congress theme in its full breadth.

With the theme of its 37th International Annual Congress "Implantology? biological principles and technical possibilities" DGZI very successfully took up crucial questions relating to the future of implant dentistry and pointed out the development trends in the discussion between science and practice.

The evening event in Roncalli's Apollo Varieté was completely booked out and great fun._







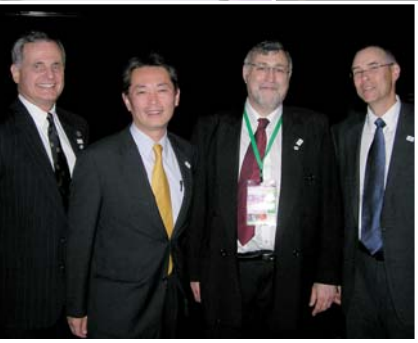
6th Biennial Conference of the Australasian Osseointegration Society

October 18–20, 2007,
Grand Hyatt Hotel, Melbourne

_From October 18 to 20, 2007, our affiliate society AOS (Australasian Osseointegration Society) held its 6th Annual Conference at the Grand Hyatt Hotel in Melbourne. The DGZI executive board was represented by Dr. Rolf Vollmer, its Vice-President. In his opening speech Dr. Victor Kiven, acting President, welcomed the attending affiliate societies AO (Academy of Osseointegration) and DGZI (Deutsche Gesellschaft für Zahnärztliche Implantologie e.V.). He emphasized the significance of the scientific exchange that has meanwhile become firmly established across the continents. The importance of intercontinental cooperation was also expressed at the working dinner that was held for the third time this year. The attending societies from Australia, America, Germany, Japan and Brazil meet regularly not only to issue joint statements but also to set standards with regard to the qualifications required in the education of implantologists. Melbourne in springtime was the ideal environment for this conference. The scientific

program started on Wednesday with workshops, and the official opening ceremony took place on Thursday morning. The series of scientific lectures started with the subject of esthetics and osseointegrated implants. Dr. Dennis Tarnow described the indications of immediate implantation and delayed implantation and showed how to ensure good esthetics. He recommended to first prepare the implant bed in an adequate way and then place the implant later, especially in cases where the buccal bone plate has been lost in the esthetic zone. Dr. Daniel Buser dealt with the subject of implant loading in partially edentulous patients. Later in the program, the conference discussed the question whether esthetically demanding restorations can also be obtained with very thin or excessively angulated implants. Discussion groups dealt with recently developed technologies in connection with implant surfaces, mini-implants, or the "all on four" principle. At the close of the conference, Dr. Steven Eckert, acting AO President, reported about problems and complications in conjunction with dental implants. He especially complained about the lack of development work of some implant manufacturers marketing implants and materials without any prior research. He demonstrated very impressively how computer-aided design can help place esthetically satisfactory restorations on implants appearing almost hopeless at first because they were inserted with an excessive angulation. Summing up: An international conference at a high scientific level, successful from every aspect. The participants decided to meet again at the Australian Gold Coast from November 4 to 7, 2009.

Dr. Vollmer warmly thanked the organizers and the attending affiliate societies for the good cooperation and exchange that has shown once more that even long distances are no barrier to close ties of friendship._



The Thommen Medical Satellite Symposium was complete successful

_Thommen Medical AG, the recently incorporated Swiss company which operates in the area of oral implantology, held another innovative and attractive advanced training day for dental surgeons and dental technicians in the Stage One Event & Convention Hall in Zurich. Following the two successful "Focus on Oral Implantology I and II" symposia held in the years 2003 and 2005, Thommen Medical is back with another first class advanced training event. At 2.15 pm, CEO Andreas Stutz declared the 1st satellite symposium open for the 400 guests present in Zurich and the 160 guests in Cleveland, USA, linked up via satellite. Satellite-based transmissions gave all the participants a unique opportunity to ask questions and take part in live discussion rounds simultaneously with prominent international speakers. Various approaches on the subject of "Replacing two to three adjacent teeth for aesthetic reasons—a challenge to implantology" were presented at the symposium. The presentations and live procedures were based on the finest clinical applications in Europe and the USA. The symposium presenters, Prof Urs Belser, CH, Dr Ueli Grunder, CH, Prof Markus Hürzeler, D, Dr Mark Hutten, USA, Dr Mauro Merli, I, Dr Konrad Meyenberg, CH, Dr Anthony Sclar, USA, and Prof Maurizio Tonetti, I, provided outstanding live contributions of the highest standard.

The Zurich discussion leader, Prof Markus Hürzeler and his counterpart in Cleveland, Prof Maurizio Tonetti, guided the audience through the live procedures and plenary discussions with a masterly hand. They made careful analyses of the similarities and differences between the two continents in terms of surgical approach and the choice of implant components. With this satellite symposium, Thommen Medical successfully provided an advanced training platform, off the beaten track of conventional congress routine. The presentations were given simultaneously round the world and brought together instructive contributions from scientific circles and clinical practice. The symposium ended both in Zurich and in Cleveland with a dinner for all the participants and an enjoyable party. A top DJ and live music provided entertainment until the early hours._

Selected Events 2008

FEBRUARY 2008

February 22–23	*Unnaer Days of Implantology*	Unna, Germany	Phone: +49-3 41/4 84 74-3 08 Fax: +49-3 41/4 84 74-3 90 Web: www.oemus.com
February 28–March 1	*Academy of Osseointegration 23rd Annual Meeting*	Boston, USA	E-mail: academy@osseo.org

MARCH 2008

March 4–6	*UAE International Dental Conference & Arab Dental Exhibition – AEEDC® Dubai*	Dubai, UAE	Web: www.aeedc.com
March 7–8	*4th Arab-German Implantology Meeting*	Dubai, UAE	E-Mail: office@dgzi-info.de

MAY 2008

May 23–24	*15th Starters Congress in Implantology / 9th Spring Meeting of DGZI*	Ulm, Germany	Phone: +49-3 41/4 84 74-3 08 Fax: +49-3 41/4 84 74-3 90 Web: www.oemus.com

JUNE 2008

June 19–21	*International Congress of Aesthetic Surgery and Cosmetic Dentistry*	Lindau, Germany	Phone: +49-3 41/4 84 74-3 08 Fax: +49-3 41/4 84 74-3 90 Web: www.oemus.com

OCTOBER 2008

October 10–11	*38th International Congress of DGZI*	Bremen, Germany	Phone: +49-3 41/4 84 74-3 08 Fax: +49-3 41/4 84 74-3 90 Web: www.oemus.com
October 29–November 2	*AAID 57th Annual Meeting*	San Diego, California	Web: www.aaid.com

DGZI Implant Dentistry Award

author_Roland P. H. Hille, Germany

The famous "Apollo Theater" in Düsseldorf was the setting for this year's DGZI Implant Dentistry Awards, a distinction conferred for only the second time in DGZI history. The DGZI's scientific advisory board awarded €20,000 in prize money in conjunction with the awards. For the first time ever, the DGZI Award was held in honor of the 35-year anniversary of the DGZI 2005 in Berlin.

**A jury comprised** of experts from private practices and universities alike judged submissions from both industry and academia. Jury members included Prof Dr Heiner Weber/Tübingen, Prof Dr Jürgen Becker/Düsseldorf, Prof Dr Gisbert Krekeler/Freiburg im Breisgau, Dr Georg Bach/Freiburg im Breisgau, Dr Steve Eckert/USA and Dr Roland Hille/Viersen. The main goal of the DGZI Implant Dentistry Awards is to foster research in implantology and in related dental treatment fields; contributions from the fields of prosthetics and laser therapy, for example, were also submitted this year. As a general criterion, sumbissions were not allowed to have been previously published in any form. DGZI directors asked world-renowned cosmetic surgeon Prof Dr Werner Mang, chief physician at the Bodenseeklinik in Lindau, Germany, to confer the award. Prof Mang has maintained a close relationship to the DGZI for several years and is considered one of the first in his field to have recognized that a beautiful face isn't simply a matter of attractive eyes, a striking nose, full lips and smooth skin, all standard fields of aesthetic facial surgery. Perhaps more so than many others, Prof Mang understands that a radiant smile with beautiful teeth greatly contributes to an overall sense of well being and accordingly integrated dentistry and oral surgery into his aesthetic treatment plan at an early stage. Dr Roland Hille, vice president of the DGZI and chairman of the scientific advisory board, moderated this year's DGZI Implant Dentistry Awards. Although the jury evaluated submissions based on 21 different criteria, there was still a close outcome. The team of Prof Dr Bourauel/Rahimi from the University of Bonn took third place with the topic "Experimental and numerical analysis of the biomechanical behaviour of immediately loaded dental implants in a pig model". Assistant medical director Dr Arne Boeckler from the Department of Prosthetics at the University of Halle (Saale) submitted "Marginal acuracy of combined tooth implant supported fixed dental prostheses". Dr Bormann, Department of Dentistry, Oral and Maxillofacial Surgery at Hannover Medical School, presented "Recontouring the alveolar crest by a combination of an outer convex cortical bone transplant and filling with autogenous bone". In the end, Dr Boeckler and Dr Bormann each received an identical number of points from the jury and were thus jointly conferred the 2007 DGZI Implant Dentistry Award. The two winners will have the opportunity to present their work at the fourth annual International Arab Meeting in Dubai at the beginning of March 2008. In an ongoing effort to encourage international scientific exchange, the DGZI will defray all costs for the two winners. The ceremony concluded with a performance featuring several international artists for the 400 award ceremony attendees. The legendary DGZI party overlooking the Rhine and the lights of downtown Düsseldorf provided a perfect backdrop to the conclusion of yet another incredibly successful DGZI Implant Dentisty Awards ceremony.

Information
Dr Roland Hille
2nd Vice President of the DGZI
Königsallee 49c
41747 Viersen, Germany
E-Mail: dr-hille@t-online.de

Manufacturer News

ORALTRONICS

Oraltronics relocates to new premises

The Bremen implant manufacturer Oraltronics Dental Implant Technology GmbH has relocated and can be reached at the new address effective immediately: Julius-Bamberger-Str. 8a, 28279 Bremen. Managing Director Gerald Hellmers: "With this move, the interoffice communication has become more efficient, and the operations of our company are practically concentrated under one roof. This enables us to operate more rationally and service oriented." In the past, the company had been operating from two different sites in Bremen, at Herrlichkeit and at Osterdeich. The contemporary building within an aspiring industrial park was modernized and redesigned according to corporate specific parameters in an optimal way. The air-conditioned rooms with the large windows offer an open view to the near-by park. The building contains offices, a comprehensive storage capacity, a clean-room and laboratory, as well as conference and training areas. "Now we can conduct implant seminars on premises, but also hands-on training for a large number of participants", explains Co-Managing Director Dr Gregg Cox. Meetings with international representatives and consultants are scheduled to take place several times a year. The new location is convenient for transportation/traffic as well: Quickly accessible are highway A1 and the Bremen airport. All contact persons continue to be reached at the same phone and fax numbers as well as e-mail addresses as before.

ORALTRONICS
Dental Implant Technology GmbH
Julius-Bamberger-Str. 8a
28279 Bremen, Germany
E-mail: info@oraltronics.com
Web: www.oraltronics.com

NOBEL BIOCARE

NobelActive™— the implant of the future

Nobel Biocare announces NobelActive™ – a radical, new implant system developed by Prof Nitzan Bichacho, Dr Ophir Fromovich, Dr Yuval Jacoby and Dr Benny Karmon, and backed by sound scientific evidence.[1–3] The innovative implant design features a self-drilling capability for a more controllable insertion process; minimum preparation requirements prior to implant placement; and bone condensing due to its unique thread design, resulting in greater initial stability and shortened procedure times. NobelActive™ implants are available in two configurations: internal and external—in lengths of 10, 11.5, 13, and 15 mm and diameters of 3.5, 4.3, and 5.0 mm. Both feature the proven TiUnite™ surface for Immediate Function™, sharp horizontal threads, a narrow core, apical drilling blades and two long spiral taps. Both implant configurations feature a unique conical abutment connection, which eliminates a potential micro gap. Additionally, on the external version, abutments are attached by a screw-less friction fit; this allows for extra-oral cementation of crowns, thus eliminating the possibility of excess cement around the implant site. Before using NobelActive™, Nobel Biocare strongly recommends all users to enroll in and complete a training program.

Scientific evidence

[1] Karmon, B. Survival rate around SPI and SFB dental implants in single tooth replacement and immediate (within 24h) functional loading. Multicenter retrospective clinical study with SPI/SFB implants of Alpha Bio, Inc. 2003–5.
[2] Clinical evaluation of Nobel Biocare SFB and CFB Implants. Multicenter study in 13 centers. Clinical Research Department, Nobel Biocare Services AG, 2006–7.
[3] Evaluation of Nobel Biocare CFB Implants in Extraction Sites. Multicenter study in 7 centers, Clinical Research Department, Nobel Biocare Services AG, 2007–8).

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

Friadent

ExpertEase by DENTSPLY Friadent for more accurate and simpler treatment

The new planning software from DENTSPLY Friadent has been developed with Materialise Dental based on the world leading SimPlant system. The ExpertEase system supports the experienced dentist (expert user) with template-guided implant placement and makes implant placement more accurate and easier (ease of use). ExpertEase with its easily accessible side template accesses and a drilling system that makes it unnecessary to use your "third hand" offers superior accuracy, safety and comfort compared to conventional systems. The system templates were developed together with Materialise Dental. The open, ie, implant-linked, template system makes drilling very accurate and safe, even where space is limited.

Satisfied users, accurate planning and successful treatment

Top dental results are the basis of and the key to a successful implantology practice. ExpertEase, the new Guided Surgery System, with 3-D planning software, has been developed by DENTSPLY Friadent in cooperation with Materialise Dental based on the SimPlant system, a leader on the world market. It simplifies treatment and offers an uncomplicated protocol. The new planning software is ideal for experienced dentists and meets all their requirements, confirms Dr Daniel Grubeanu, a dentist practicing in Trier: "As a user of ExpertEase for the first time I can now place implants accurately using prosthetically based virtual planning for the best possible safety and predictability from an anatomical and prosthetic point of view. Operating times are reduced—access is minimally invasive with the aid of a perfectly fitted template with lateral access—a great advantage for patients and for practitioners".

More safety and accuracy

ExpertEase offers safe, accurate and patient-friendly planning of the implant position in the jaw. The lateral accesses in the template make accurate depth drilling easy even where space is restricted and access is difficult. The specially developed drills with guide sleeve fixed to the drill and the drill-stop system (sleeve-on-drill) can be operated with two hands, in contrast to conventional systems. The minimally invasive protocol guarantees top results and minimizes grafting and pain for the patient. Uncovery procedures can be reduced to a minimum by the accurate measurement of the bone volume and specification of the ideal implant position at the computer. Users of DENTSPLY Friadent systems have direct access to their own implant system. If necessary, the implant-linked software also automatically specifies the ideal abutment for a functional and esthetically optimum restoration. The accurate planning of all stages of treatment makes the time required and the costs for the patient more accurately predictable. ExpertEase, presented at the IDS as EXCELLDENT, will be available on the market at the beginning of 2008.

Friadent GmbH
Steinzeugstraße 50
68229 Mannheim, Germany
E-mail: info@friadent.de
Web: www.friadent.de

CAMLOG

Increasing Internationality of the CAMLOG Group

In the first six months of 2007, three congresses were successfully run by the CAMLOG distributors in Austria and the Netherlands and the subsidiary company in Spain.

Salzburg Implantology Conference

On June 8th and 9th, the booked-up Austrian CAMLOG conference was held near Salzburg. Presentations, followed by lively discussions, were given on topical subjects, ie, immediate implantation, immediate restoration and loading, and how to achieve positive long-term results despite tissue limitations. Due to the success of this event, a follow-up meeting has already been announced for 2009.

1st Dutch CAMLOG Implant Festival

Covering a broad spectrum of themes like bone regeneration, prosthodontic strategies, and specific treatment approaches for anterior maxillary teeth, the 1st Dutch CAMLOG Congress on April 20th in Amstelveen will be remembered for its scientific content and its opportunities of sharing experience with specialists. The 2nd Dutch CAMLOG Implant Festival will take place in 2009.

1st Iberian CAMLOG Congress

In Madrid on June 22nd and 23rd, internationally renowned lecturers presented a scientific program comprising a wide range of topics, eg, teamwork concepts, surgical and prosthodontic factors decisive for impeccable esthetics. In her closing remarks, Alicia Jiménez, General Manager of CAMLOG Med, S.A., expressed her total satisfaction with the congress and her intention of repeating this event every two years.

CAMLOG Biotechnologies AG
Margarethenstr. 38
4053 Basel, Switzerland
E-mail: info@camlog.com
Web: www.camlog.com

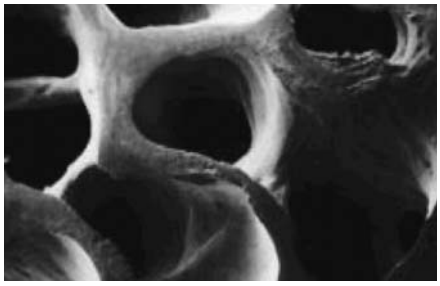
Geistlich

Tissue regeneration— A concept with a future

There is a wide range of materials and dental medical techniques in the bone regeneration area. The results of the recently published meta analysis by Professor Aghaloo document the important role of bone regeneration. The most interesting data concerning the question as to which bone regeneration techniques show the best longterm results are available for sinus augmentation and the osteogenesis of the alveolar ridge by means of controlled bone regeneration (GBR). Professor Aghaloo et al. estimate from the results that the long-term survival rate of implants placed into augmented bone compares favourably to protocols with no regeneration procedure.

Geistlich AG specializes in the production of biomaterials that optimize the natural regeneration of bone and soft tissues. The future-oriented Swiss family company was founded more than 150 years ago. The company has revolutionized the regeneration of bone and soft tissue defects in cooperation with leading dental surgeons.

The dental surgeons have succeeded in cooperation with Geistlich's own researchers in developing a unique concept for the natural regeneration of bone and soft tissues with the biological materials of Geistlich Bio-Oss® and Geistlich Bio-Gide®. The safety and effectiveness of the two products have been verified in a wide indication spectrum by more than 500 studies. The outstanding tissue reaction after 7 years was documented by Dr Orsini in 2007. In addition to implantology, Geistlich makes an important contribution to public health care. The materials manufactured according to patented bio-



technological methods are exported to more than 60 countries.

Geistlich Biomaterials Vertriebsgesellschaft mbH
Schneidweg 5
76534 Baden-Baden, Germany
E-mail: info@geistlich.de
Web: www.geistlich.de

BEGO Implant Systems

BEGO Implant Systems expands international distribution

The first half of 2007 saw Bremen-based BEGO Implant Systems virtually double its international sales in comparison with the previous year. This level of growth significantly exceeded the company's plans and is due not least to successful expansion of the sales and distribution systems. In the current financial year, new distribution partners have already been recruited in, amongst others, all of the following countries: Greece, the Czech Republic, Egypt, Sweden, Denmark, Tunisia, Algeria, Iran, Albania, Switzerland and Austria. This means that BEGO's implantology products are now available in more than 30 countries. In the near future, it is planned to penetrate further new and attractive markets.

Uwe Jöstingmeier, International Sales Manager at BEGO, stated that when choosing target markets, current market attractiveness and medium—to long-term development potential are equally important criteria. This year, BEGO Implant Systems is making its first appearance at EAO 2007 (25.–27.10.2007) in Barcelona. We warmly invite you to visit our stand S8 and discover the entire world of BEGO Implantology.

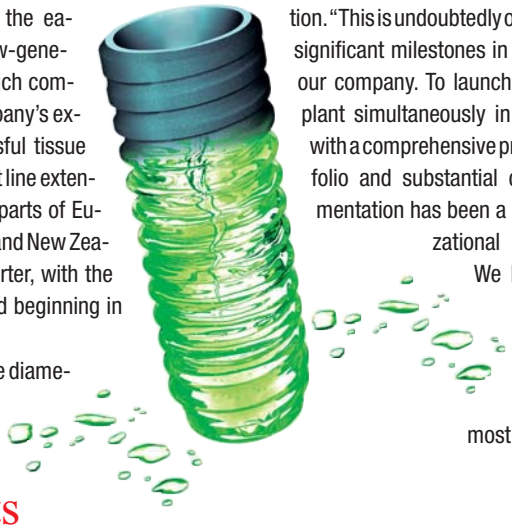
BEGO Implant Systems GmbH & Co. KG
Technologiepark Universität
Wilhelm-Herbst-Straße 1
28359 Bremen, Germany
E-mail: wachendorf@bego.com
Web: www.bego-implantology.com

Straumann

Straumann launches new generation Bone Level Implant in Europe and North America

Straumann today announced the eagerly awaited launch of its new-generation Bone Level Implant, which complements and adds to the company's existing range of highly successful tissue level implants. The new implant line extension will be available in most parts of Europe, North America, Australia and New Zealand starting in the fourth quarter, with the roll-out to the rest of the world beginning in 2008.

The new implant comes in three diameters and four lengths and is suitable for all dental implant indications. There is a full matching prosthetic portfolio comprising 125 components, each carefully designed for simplicity, reliability and esthetic performance. There is also a CAD/CAM custom abutment service in titanium and ceramic. In true Straumann tradition, these have all undergone extensive testing prior to market introduction. "This is undoubtedly one of the most significant milestones in the history of our company. To launch the new implant simultaneously in key markets with a comprehensive prosthetic portfolio and substantial clinical documentation has been a major organizational undertaking. We have focused our innovation skills on making this the most flexible and simple implant line of its kind. 130 clinical teams around the world as well as the ITI have helped us prove its reliability – to give dental professionals the peace of mind that they are offering the best individual standard of care to their patients", said Gilbert Achermann, President and CEO.



Impressive scientific backing

Straumann is making use of two major dental congresses—the 16th Annual Scientific Meeting of the European Association for Osseointegration in Barcelona and the 93rd Annual Meeting of the American Association of Periodontology in Washington, DC – to present data from the extensive research program supporting the new implant line.

Institut Straumann AG
Peter-Merian-Weg 12
4052 Basel, Switzerland
E-mail: info@straumann.com
Web: www.straumann.com

J.Morita

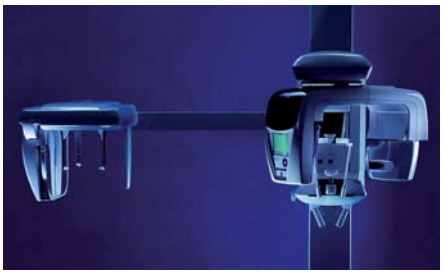
Veraviewepocs 3D: From panoramic to 3D images in just one click

With the new Veraviewepocs 3D X-ray unit, J. Morita Europe promises dentists several benefits at once. Where they previously had to transfer their patients to radiologists to take 3D X-rays, according to the manufacturer's instructions they can now provide this service in their own practice. This improves their diagnostic options and saves the patient time and unnecessary travel. With Veraviewepocs 3D both very high resolution 3D images and real panoramic and cephalometric exposures can be created without having to change the sensor in-between. As a functional unit, the device delivers precise results with the lowest doses of radiation with very few steps. The user creates an OPG exposure which is available immediately on the screen. He can instantly assess whether an additional 3D exposure is indicated and selects the region to be examined by clicking on it with the mouse. The 3D exposure is generated without having to reposition the patient and change the settings.

You can select 3D exposures in 40 x 40 mm or 80 x 80 mm formats. In both sizes the details have an equally high resolution and are presented with high image dynamics and without image distortion.

Using the accompanying i-Dixel software, the user can, after a short scanning time, study the image data in axial, coronal and sagittal views simultaneously. Taking the exposure is just as user-friendly as with 3D Accuitomo, for example. If you also install the i-Dixel software on other computers in the practice, the three-dimensional exposures can be displayed and edited on each of these computers. If you do not want to use the i-Dixel software, the images can also be viewed with the free software One Data Viewer. Due to the integrated DICOM standard, the exposures can also be exchanged between different information systems.

According to J. Morita Europe, Veraviewepocs 3D with its three-dimensional exposures enables structures to be displayed which cannot be recognised using conventional X-ray procedures. Dentists can thus diagnose and treat patients with more confidence and at the same time combine their diagnostics, treatment planning and implementation in one work step.



Veraviewepocs 3D: 3D images, panoramic and cephalometric exposures with one unit

For further information, please contact:

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

curasan

All-in-one implant system from curasan

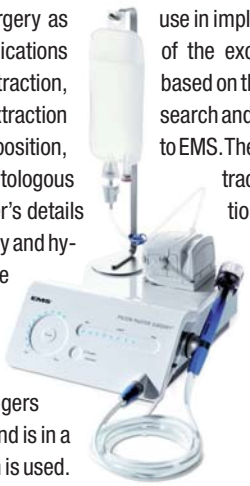
The REVOIS "REVOlutionary-Implant system" supplied by the German company curasan AG provides optimum time and cost management thanks to easy handling, high initial stability and top aesthetics for the patient. According to the company, a high degree of precision can be achieved with a minimum number 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, 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

EMS

Piezon Master Surgery: Precise and gentle

Piezon Master Surgery by EMS means that the Piezon method is now available in dental, oral and maxillofacial surgery. The method is based on piezoceramic ultrasound waves which produce high-frequency, linear oscillations forwards and back. According to EMS, these vibrations increase the precision and security of surgical applications. The ultrasound operation enables a micrometric section cut in an area of 60 to 200 micrometers with only a slight loss in bone mass. The ultrasound ray only selectively cuts hard tissue; soft tissue remains untouched. The high-frequency vibrations with permanent cooling also mean that there is little blood in the operating area and thermal alterations are avoided. Piezon Master Surgery can be used in parodontal, oral and maxillary surgery as well as in implantology. Specific indications are osteotomy and osteoplastics, extraction, apical root resection, cystectomy, extraction of bone blocks, sinus lift, nerve transposition, jaw ridge division and extraction of autologous bones. According to the manufacturer's details operation using the touch board is easy and hygienic. By moving your fingers over the notches of the operating elements, the power as well as the flow rate of the isotonic solution can be regulated. The LED reacts to the moving fingers by emitting a quiet signal, even if a hand is in a glove or if an additional protective film is used. For reasons of hygiene, corners, joints and chinks have been avoided in the design. Piezon Master Surgery is offered as a basic system with five instruments for use in implantation preparation. The development of the exclusive Swiss Instruments Surgery is based on the experience of 25 years' continual research and covers various applications, according to EMS. The user has optional systems for tooth extraction, retrograde root channel preparation and procedures on bones at his disposal. All systems contain autoclavable Combitorques and a Steribox.



For dental, oral and maxillofacial surgery: Piezon Master Surgery.

EMS Electro Medical Systems-Vertriebs GmbH
Schatzbogen 86
81829 München, Germany
E-mail: info@ems-dent.de
Web: www.ems-dent.de

implants

international magazine of oral implantology

an DGZI publication published by Dental Tribune International