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case report

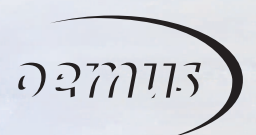
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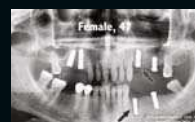
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Dear colleagues,

This year, the 48th DGZI International Annual Congress, being held on 28 and 29 September in Düsseldorf, Germany, will also be the 1st Future Congress in Dental Implantology. In cooperation with the congress organiser and publisher OEMUS MEDIA AG, we have developed a diverse and future-oriented further training programme.

On Friday morning, the Future Podium “Visions in Implantology” will kick off the event followed by two live-streamed and moderated surgeries (CAMLOG, Straumann). Table clinics will take place in the afternoon. Participants can attend up to three subsequent table demonstrations, having a choice between 24 table clinics covering diverse, practice-oriented topics. As the number of participants is limited to eight per table, we would like to ask you to inform us about your preferences as soon as possible.

Hard work deserves time off too—after the table sessions, you are thus invited to a casual and relaxed get-together on Friday evening in the exhibition area, where the industry sponsors have put special effort into

their stand designs. Chat with colleagues, expand your network and enjoy the evening, after the day’s events.

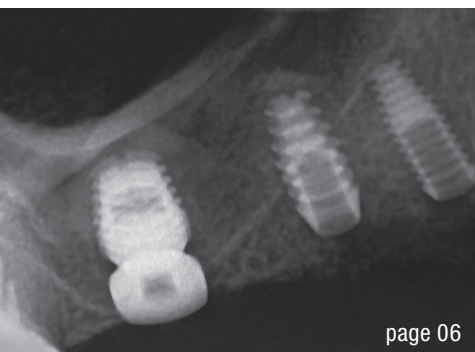
Saturday will be dedicated to scientific presentations of renowned national and international experts. All presentations will be simultaneously interpreted into English or German.

As you can see, we have organised a diversified and informative educational event on modern and future-oriented dental implantology. In addition, a two-day programme (hygiene in dental practices, QMC) will run in parallel for your practice team and is being offered at a special team rate. Detailed programme information can be found in the congress programme on pp. 41–43 and at www.dgzi-jahreskongress.de.

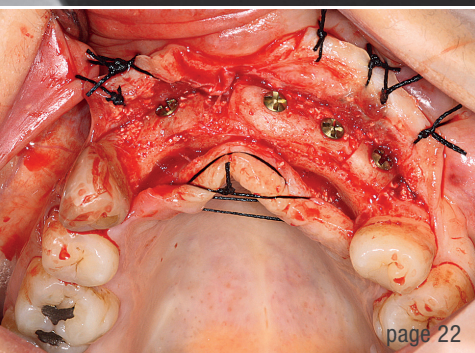
Be part of it! We are looking forward to seeing you in Düsseldorf!

Yours,

Dr Rolf Vollmer



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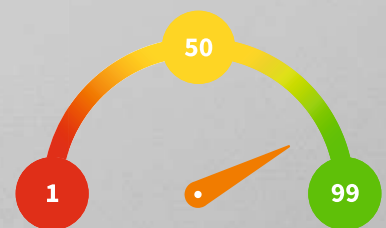


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Minimally invasive implant dentistry with short or narrow implants

Ridge splitting and crestal and internal sinus lift

Prof. Mauro Maricola¹, Dr Daniel Hernández-González¹, Dr Jaime Guzmán-De Ávila¹ & Dr Miguel Simancas-Pallares¹, Colombia

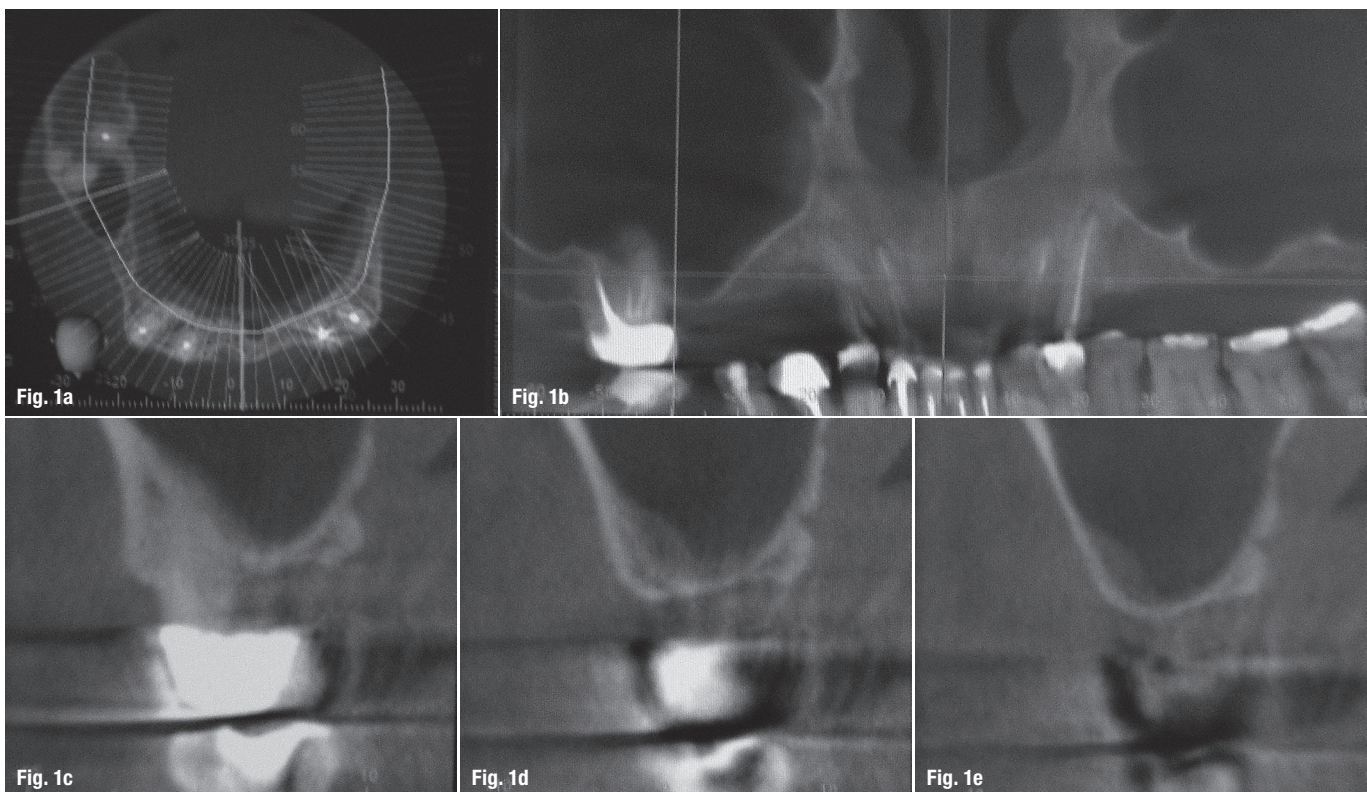
¹Dental Implant Unit, Faculty of Dentistry, University of Cartagena, Colombia

Introduction

Dental implants have been advocated as the treatment of choice for missing teeth and tooth replacements. Scientific evidence demonstrates their high success rates and therefore their clinical applicability. However, in some circumstances due to premature posterior tooth loss leading to severe sinus pneumatisation or a congenitally missed tooth causing alveolar bone collapse, implant placement can still remain challenging for clinicians. These circumstances could be present in one surgical

target area at the same time, thus increasing treatment complexity. In such cases, available options such as short implants, ridge splitting, and internal and crestal sinus lifts have been proposed to minimise treatment cost and time, as well as co-morbidities but preserve treatment success rates.

In order to address clinical-related sinus pneumatisation issues, two main surgical approaches have been suggested: internal and lateral sinus lift techniques. The internal sinus lift approach is indicated whenever the re-



Figs. 1a–e: CT scan analysis of the targeted surgical area: **a)** Coronal view of the maxilla showing the limited width and **b)** panoramic view of the maxilla depicting the reduced vertical bone height in the right quadrant. **c–e)** Sagittal views of the molar area with the diminished residual bone height as little as 1 mm.

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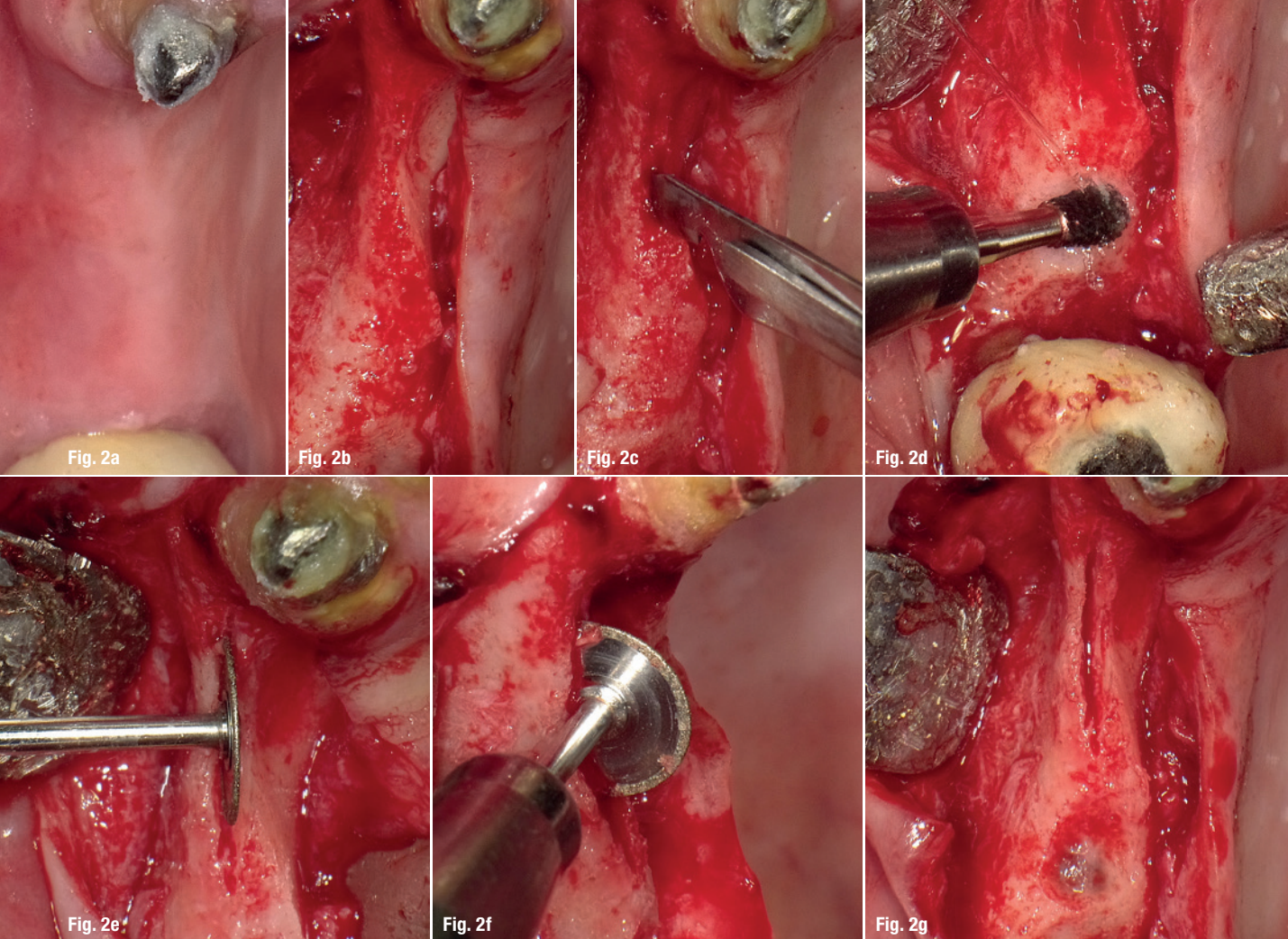


Fig. 2a: Pre-op view of the targeted surgical area. **Fig. 2b:** Targeted surgical area once the full-thickness flap was obtained. **Fig. 2c:** Cortical perforations to generate initial split. **Fig. 2d:** Crestal perforation in order to expose the sinus cortical bone and perform a sinus lift. **Figs. 2e & f:** Cortical deepening by use of a diamond-covered disc under continuous irrigation. **Fig. 2g:** Surgical view of the split area in the premolar zone and the crestal perforation in the molar area.

residual bone height (RBH) is 4 to 7 mm. First proposed by Summers, it entails performing a cortical greenstick fracture using osteotomes, allowing the Schneiderian membrane to be easily lifted.¹ This technique has the advantage of allowing immediate implant insertion. The lateral sinus lift approach is suggested when the RBH is less than 4 mm. With this skill-dependent technique, a bony lateral window has to be created, exposing the cortical bone. Once this has been achieved, membrane detachment with the use of curettes is performed, and an alloplastic material is injected as a bone graft. After a graft healing period of five to six months, the implants can be inserted. In order to address alveolar collapse issues, ridge splitting was proposed as a surgical approach, wherein the cortical plates are separated to allow the insertion of implants into the artificially created space.

All these options are of high clinical value when facing such scenarios. However, implant length is considered one of the most important predictors in treatment efficacy when performing these techniques. Likewise, short implants have been proposed, since they have marked clinical advantages, such as minimising the amount of sinus membrane to be lifted and grafting material to be injected, thus introducing the concept of minimally invasive implant dentistry. Short implants are widely dis-

cussed because of their increased use in recent years. Historically, long implants (> 13 mm) in combination with sinus lift procedures were recommended to restore function and aesthetics. Nowadays, improvement on implant design and scientific evidence have shown high success/survival rates of short implants, thus indicating them to be among the most valuable approaches in modern dentistry.

Having all these concepts in mind, the objective of this case report was to demonstrate the use of short implants in combination with ridge splitting and internal and crestal sinus lift in the same surgical area, thus applying a minimally invasive dentistry approach.

Case presentation

A 52-year-old male patient consulted our practice owing to his desire for functional and aesthetic restoration. The patient did not report any medical background of dental interest. He also signed informed consent prior to the start of treatment and was classified as ASA I physical status. After radiographic (Figs. 1a–e) and clinical (Fig. 2a) examination, it was found that the patient required dental implantation in the right posterior maxilla owing to the missing first and second premolars and first molar.



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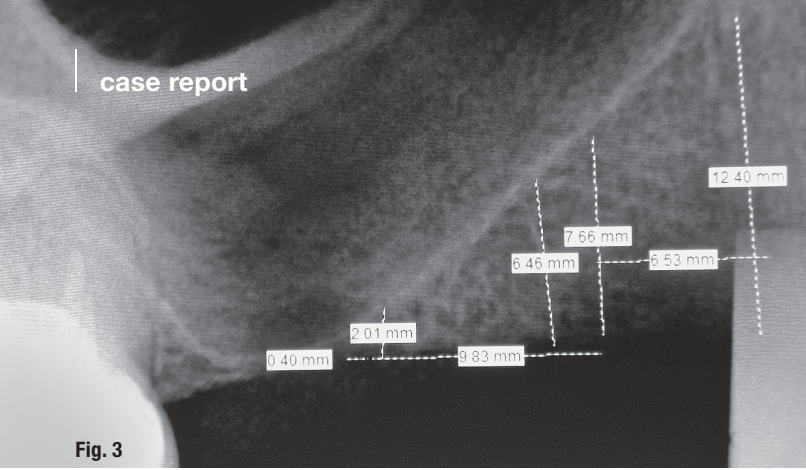


Fig. 3

Fig. 3: Residual bone height analysis in the targeted surgical area showed 12.40 mm in the first premolar area, 6.46 mm in the second premolar area and 0.40 mm in the molar area.

Amoxicillin (500 mg every 8 hours) was prescribed two days before the surgical procedure in order to avoid infections. An experienced clinician then performed the surgical treatment as follows:

1. First premolar: ridge splitting with simultaneous insertion of a narrow implant.
2. Second premolar: ridge splitting, internal sinus lift with simultaneous insertion of a narrow implant.
3. First molar: crestal sinus lift with simultaneous insertion of a short implant.

Surgical technique

Infiltrative anaesthesia was performed during the entire procedure. Initially, a non-adrenaline anaesthetic was used (PRICANEST 4%, Ropsohn Therapeutics) in order to collect blood to mix with a grafting material (50–500 µm SynthoGraft, Bicon Dental Implants). Then, 2 % Xylocaine (Dentsply Pharmaceutical) was used to complete the surgical treatment.

Using a #15 blade in a Bard-Parker scalpel, we performed an intrasulcular incision. A full-thickness flap was obtained in the area and then using the blade edges and surgical mallet, cortical perforations were performed covering the premolar area (Figs. 2b & c). Using a carbide round-edge bur (Sinus Lift Bur, Bicon Dental Implants) on a low-speed handpiece, we created a crestal—but not lateral—window until the sinus cortical bone was clearly exposed (Fig. 2d). Then, using a diamond-covered disc (Frios MicroSaw Diamond Discs, Dentsply Sirona) on a low-speed handpiece, we achieved a deeper cortical split in the premolar area (Figs. 2e–g).

A digital radiograph (Dr Suni, Suni Medical Imaging) with a surgical chisel inserted was performed to control

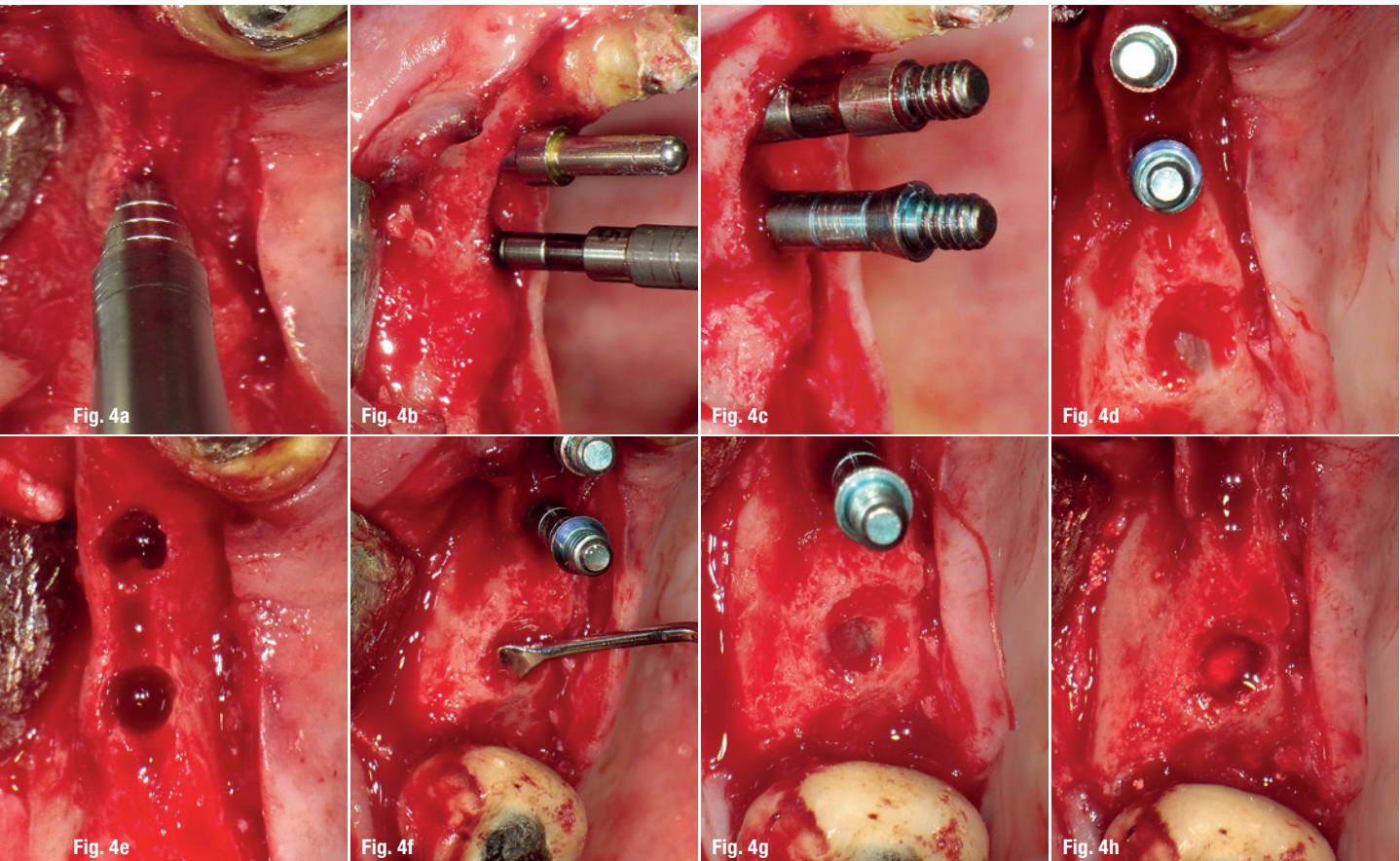


Fig. 4a: Use of surgical chisels to create the artificial space (split) for implant insertion. **Fig. 4b:** Split area with hand reamers and paralleling pin. **Figs. 4c & d:** Split area with hand reamers. **Fig. 4e:** Prepared space to receive implant insertion. **Fig. 4f:** Schneiderian membrane lift using surgical curettes. **Figs. 4g & h:** Lifted membrane and grafted space.



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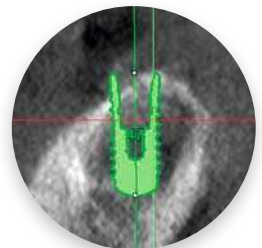
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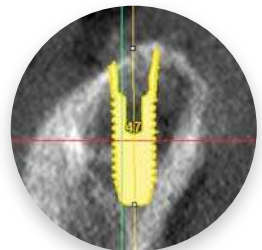
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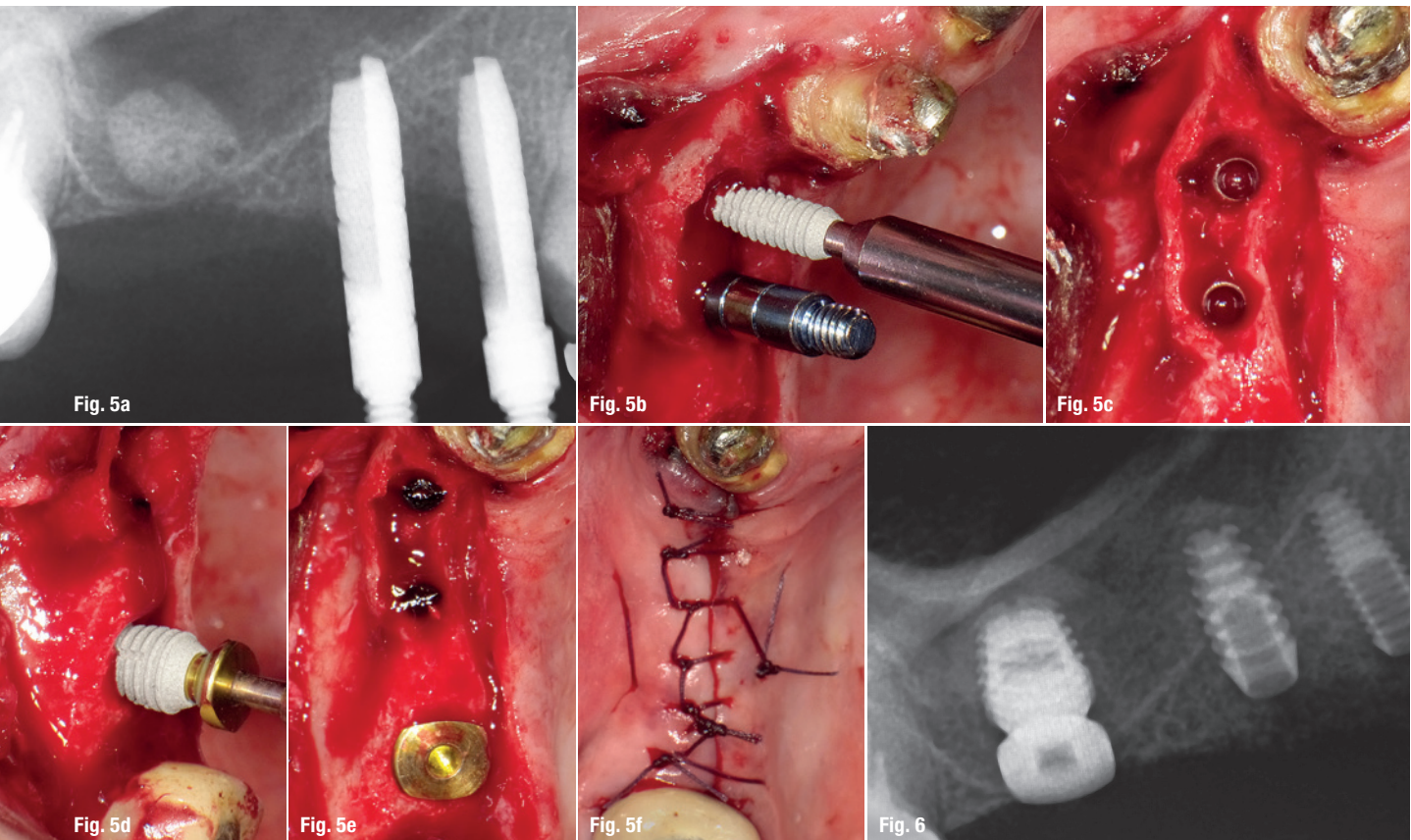


Fig. 5a: Periapical radiograph showing the hand reamers in the premolar area and the grafting material in the molar area. **Fig. 5b:** Insertion of narrow implant in the first premolar space. **Fig. 5c:** Inserted narrow implants in the split premolar area. **Fig. 5d:** Insertion of a short implant with a sinus lift abutment in the molar area. **Fig. 5e:** Two narrow implants (premolar area) and the short implant (molar area) inserted in the targeted surgical area. **Fig. 5f:** Sutured wound using the continuous technique. **Fig. 6:** Immediate post-op radiograph.

RBH (Fig. 3). Surgical chisels were employed to increase length and width in the split area (Fig. 4a). Figures 4b–e show the subsequent use of hand reamers to create the implant space. Besides the ridge split procedure, in the area of the second premolar, a previously published protocol was followed in order to simultaneously perform the sinus lift.²

For the molar area, surgical curettes were used to carefully lift the Schneiderian membrane (Fig. 4f). A synthetic and bacteriostatic grafting material (SynthoGraft; beta-tricalcium phosphate, size 50–500µm) was mixed with the collected blood to a putty consistency—no liquid was evident in the mixture. Then, a 4mm bone graft syringe was used to place a bone graft material into the apical portion of the osteotomy. Once resistance against the Schneiderian membrane was detected, the syringe was slowly retracted while continuously injecting (Figs. 4g & h). A new digital periapical radiograph was taken to control the grafted space and premolar osteotomies (Fig. 5a). In the first and second premolar areas, one 3.0x8.0mm implant and one 3.5x8.0mm implant (Bicon Dental Implants) were inserted, respectively, with the use of seating tips (Figs. 5b & c).

After bone grafting material had been injected, a 4.5x6.0mm implant (Bicon Dental Implants) was inserted into the lifted sinus using an implant inserter-retriever mounted in a straight handle at first and then gently tapping with a seating tip. Owing to the limited RBH in the area (Fig. 3), a sinus lift abutment (Bicon Dental Implants) was used in conjunction with the implant in order to avoid implant displacement into the lifted grafted space (Figs. 5d & e).

Finally, a continuous suture with polyglycolic acid was used to close the incisions (ACE Surgical Supply, Fig. 5f). After implant insertion, an immediate postoperative radiograph was taken (Fig. 6). The patient received postoperative and home care instructions. An antibiotic (amoxicillin) and analgesic (ibuprofen) were prescribed in order to avoid infection, pain or swelling.

Discussion

Several research results have shown the successful outcomes of using surgical procedures such as ridge splitting and sinus lifts in combination with or without dental implants. Brizuela et al. evaluated 36 threaded im-

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plants in 36 patients placed using internal sinus lift without grafting material and showed after 24 months that the implant success rate was 91.6 per cent.³ Further, Nedir et al. showed that atrophic posterior maxillae could be predictably rehabilitated using osteotomes with simultaneous implant placement.⁴ The new bone formed around implants after one year was stable after five years, irrespective of the presence or the absence of a graft.⁴ Grafting was unnecessary to achieve an average bone augmentation of 3.8mm, but more bone was gained with grafting.⁴ Deliberador et al. successfully demonstrated the use of the ridge split technique with simultaneous implant insertion.⁵

Despite all of these results, there is little in the scientific literature on a combination of procedures, for example sinus lift and ridge splitting, and implant insertion, as shown in this case report. In this patient, the second premolar area was effectively regained using the ridge split and internal sinus lift techniques in the same surgery.

The literature is conclusive that internal sinus lift should be performed when the available RBH is between 4 mm and 7 mm and lateral sinus lift whenever an RBH of less than 4 mm is present. This case report successfully describes the use of an innovative surgical approach (crestal sinus lift) too via the bone crest lift of the maxillary sinus when the available RBH was less than 1 mm. This approach represents less morbidity and greater time saving and allows implant placement in the same surgery thus decreasing overall treatment time.

Schiegnitz et al. found that evaluation of oral health-related quality of life after sinus augmentation showed significant improvement, indicating a remarkable benefit of this procedure for patients.⁶ Nevertheless, we need additional studies, such as randomised controlled trials, to properly demonstrate effectiveness of these innovative techniques. Tallarico et al. described a crestal approach to sinus lift, showing that sinus floor augmentation can be successfully accomplished with a transcristal ap-

proach using a dedicated implant system.⁷ However, in this study, the mean initial RBH was 4.64 ± 0.86 mm, which is more consistent with the internal sinus lift and not the crestal sinus lift surgical indications.

Performing ridge splitting, combined ridge splitting and internal sinus lift, and crestal sinus lift with simultaneous insertion of a short or narrow implant in the same patient constitutes a minimally invasive implant dentistry approach, since they are less time-consuming procedures and produce a minimum rate of complications that represents a less traumatic surgical approach.

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Periapical implant lesion and retrograde peri-implantitis

Two conditions supported by little research

Dr Nikolaos Papagiannoulis, Germany

Introduction

Dental implants are established as a standard treatment in dentistry. More implants are placed every year and dentists are encountering new findings, often pathological, that are little described and researched in the literature. The more implants placed, the greater the variety of novel clinical and radiographic findings for which no treatment protocols exist. The association of peri-implantitis, implant failure and other pathologies with numerous unknown factors is steadily increasing.

Definition of terms

In general, the term “periapical implant lesion” (PIL) describes radiographic findings around the apex of an implant. It refers to a variety of occurrences with no association with the rest of peri-implant tissue or adjacent teeth. Clinical examination or patient complaints may not always indicate pathological findings, and if they do, the definition of the term overlaps with that of “retrograde peri-implantitis” (RPI). RPI has a similar definition, but is accompanied by complaints and usually clinical findings (Figs. 1–3).

Diagnosis

RPI is manifested through radiographic findings and various clinical ones. In the case of RPI there is retrograde

infiltration of pathological microorganisms that nest at the apex of the implant. Often this infiltration comes from an adjacent tooth; it is, however, not the only reason for RPI. Other reasons relate to the operation protocol, prostheses and implant planning. In most cases, a combination of more than one factor leads to this diagnosis. Lateral defects, implant mobility or postoperative inflammation regarding the rest of the implant body or peri-implant tissue are excluded from this definition.

Both PIL and RPI are often incidental radiographic findings made, after implant placement until years after prosthetic restoration. If accompanied by clinical findings like positive percussion, occlusion complaints or pain syndromes, we distinguish two points of time: (a) during the first six weeks after insertion; and (b) four to eight weeks after loading. Pain complaints long after loading are in most cases an indication of cross-contamination from the adjacent teeth.

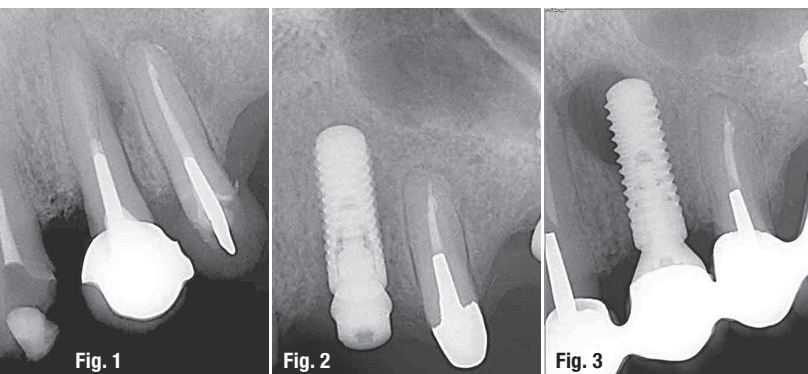
The reasons for RPI can easily be established. The reasons for PIL are various and a combination of more than one, and often no clear reason can be determined. In cases of PIL we search for the reason through the exclusion principle. The differential diagnosis is in both cases difficult and often lacks evidence. Since there is no protocol for diagnosis, we rely on empirical observation.

Reasons for periapical implant lesion and retrograde peri-implantitis

We can distinguish between established and potential reasons for such lesions.

Established reasons are the following:

1. Contamination of the implant surface;
2. overheating of the bone during operation;
3. apical perforation of the buccal plate;
4. existing apical perforation of the buccal plate;
5. apical fracture of the bone (after external sinus, block augmentation, two stages of guided bone regeneration);
6. endodontic pathology of the adjacent teeth (distance to adjacent tooth less than 1 mm);



Figs. 1–3: Radiographs depicting cases of retrograde peri-implantitis.



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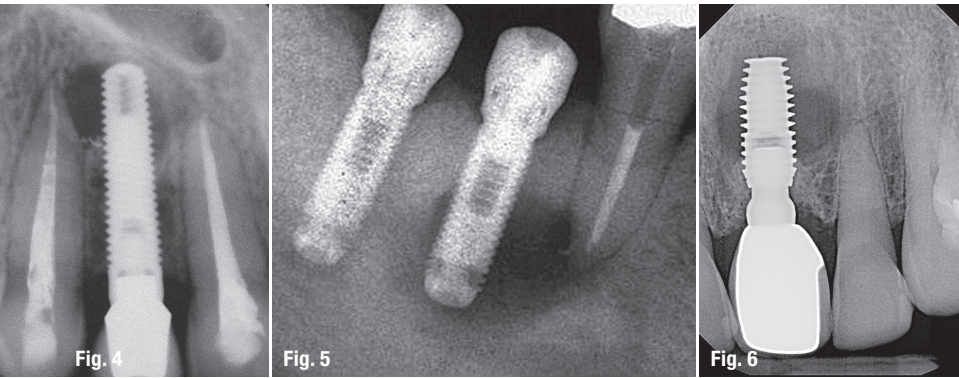


Fig. 4: Mild lesion: less than 25 % of the implant length. **Fig. 5:** Moderate lesion: 25–50 % of the implant length. **Fig. 6:** Advanced lesion: more than 50 % of the implant length.

Radiographic classification of retrograde peri-implantitis

In this classification, the lesion is evaluated in relation to the implant length (coronoapical direction). The spread of the lesion beyond the implant apex is not measured. The lesion is classified as follows:

- Class 1: lesion less than 25 % of the implant length (mild lesion; Fig. 4).
- Class 2: lesion 25–50 % of the implant length (moderate lesion; Fig. 5).
- Class 3: lesion longer than 50 % of the implant length (advanced lesion; Fig. 6).

7. immediate implant placement after tooth loss due to endodontic pathology; and
8. inadequate blood perfusion at the implant site.

Potential reasons may be the following:

1. Insufficient bone quality;
2. prosthetic overload;
3. endodontic pathology of the adjacent teeth (distance of 2–4 mm);
4. late implant placement with a pathology caused by perforation due to tooth extraction;
5. endodontically treated adjacent teeth showing a newly developed pathology (distance to implant of more than 2 mm);
6. residual or granulation tissue at an edentulous site; and
7. pseudo-lesion (caused by drilling deeper than actual implant length).

Classification of periapical implant lesion/retrograde peri-implantitis according to lesion activity

Active retrograde peri-implantitis/periapical implant lesion

The radiographic findings correlate with the patient symptoms and the clinical findings. The patient has a pain syndrome, there is inflammatory reaction at the tissue (like swelling), apical pressure point, positive percussion, etc. Often the translucent area around the implant apex is not round and seems to spread apically to the bone.

Inactive retrograde peri-implantitis/periapical implant lesion

The radiographic findings do not correlate with the clinical findings and the patient has no symptoms. Radiographically, a translucent region at the implant apex is observed which can even be exceeding 50 % of the implant length.

RPI or PIL should not be misinterpreted in cases lacking osseointegration or with implant mobility during the healing phase or after loading.

This classification considers only two diameters of the lesion. Further information about 3-D defects, adjacent teeth, distance to adjacent teeth or implants, as well as implantation time, clinical findings, symptoms and prostheses, is interesting and these are important factors for the evaluation of such lesions.¹

Prevalence

The information provided in the literature is inconsistent. The prevalence of implants affected by PIL and RPI is 2.7 % in the lower jaw and 1.6 % in the upper in some studies.² Others give 8.2 to 13.6 % when implants are placed next to teeth that have undergone difficult endodontic therapy or in sites where teeth were extracted after endodontic complications.²

In our practice, we studied the last 650 implants that were inserted. There were three true cases of RPI or PIL lesions (two of these cases are presented in this article), resulting in a prevalence of 0.46 %. The three implants affected represented 10 % of all failed implants.

Treatment

Experience has shown that the sooner such lesions are treated, the higher the possibility for healing. Since there is no treatment protocol, our efforts are empirical and often based on oral surgery. An inactive RPI should not necessarily be treated, but controlled through periods of regular recall. For active lesions, we suggest the following four-stage methodology.

Stage 1

In the case of Class 1 and 2 lesions, antibiotic therapy should be administered. Some clinicians regard amoxicillin with clavulanic acid as appropriate.³ We believe the initial antibiotic could also be clindamycin if there is no perforation of the lesion buccally owing to the established higher bone penetration of this antibiotic. If adjacent teeth show endodontic inflammation or other pathologies

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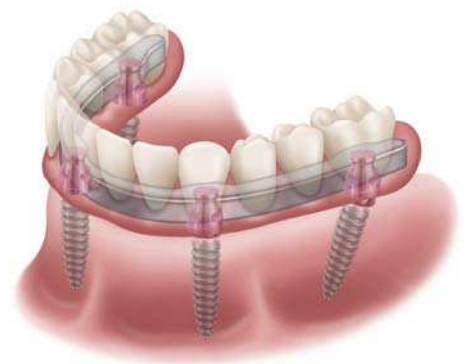


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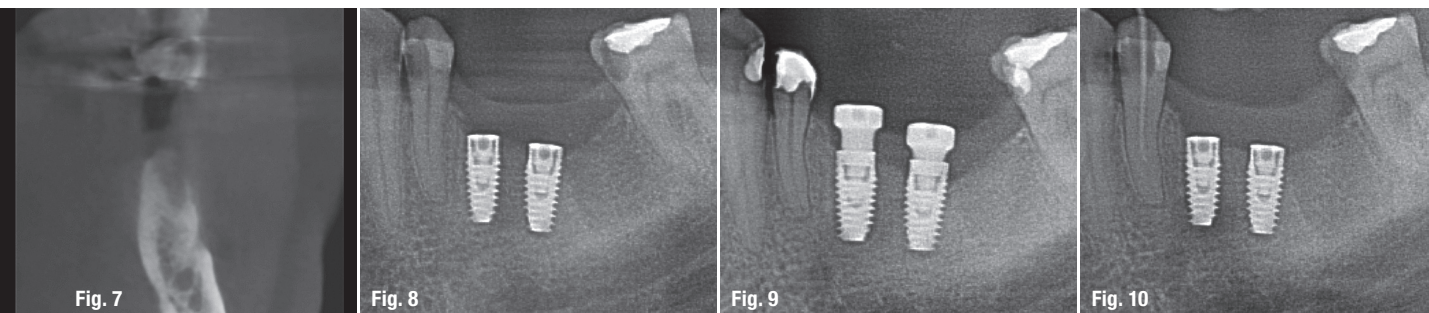


Fig. 7: Pre-operative situation. **Figs. 8 & 9:** Control radiographs of two implants placed in regions #35 and 36 on the day of implantation. **Fig. 10:** Situation in regions #34 to 36: seven days after endodontic treatment. The patient was free of complaints.

(iatrogenic reasons, poor planning), they should be treated immediately. Thus, some studies have reported cases in which no bacteria were found on the surface of the explanted implant after occurrence of RPI.^{2,4}

Stage 2

If the lesion persists, established empirically from the oral surgery, the apex should be exposed. If the lesion is of Class 1 or 2 and the implant is stable, loaded or not, it should not be removed immediately. Surgical intervention from the lateral side should be performed if osseointegration has already occurred. Resection of the implant apex, depending on the extent of the lesion, can reduce the survival rate of the implant. The surgical procedure can be standard, rinsing with an antibacterial solution, application of local anaesthetic, curettage, administration of anti-inflammatory medicaments, drainage, etc. At the same time, we provide the patient with systemic antibiotic treatment accompanied by low-dose glycocorticosteroids or mefenamic acid. Some authors advise augmentation of the defect and flap closure; we believe this decision is not mandatory, but depends on the findings at the implant apex.

Stage 3

If clinical symptoms and patient complaints disappear, we advise augmentation of the surgical access and coverage with a membrane. At this point, Mohamed et al. report expecting a higher success rate when resection of the implant apex is performed; however, in their study, they evaluated only loaded implants and the augmentation was performed with xenografts.⁵ Resection of the implant apex can be an assistive step for Class 3 lesions to reduce the lesion when the thread design is not favourable for decontamination. Nevertheless, this procedure is of high risk for implant stability and removal of debris from the cavity. If at this stage of the therapy, the patient still has complaints, the implant should be removed.

Stage 4

As long as the apical translucency is no longer evident and the patient has no complaints, implantation can be

performed. If primary stability cannot be achieved, guided bone regeneration should be performed. If symptoms or complaints cannot be controlled or the risk is high, one should wait for full bone healing, approximately six months, and plan for late implant placement. Delayed immediate implant placement seems to make no sense at this stage. A treatment protocol is provided by Kishnani et al.⁶

In general, the treatment of RPI or PIL relies on our experience and depends on the radiographic and clinical findings. Evident perforation of the buccal plate, compromised blood perfusion at the implant site and reduced primary stability describe a totally different situation with a different treatment protocol. Also, an association with the Epstein-Barr virus is a matter of current discussion.

Treatment success rate

Studies report success rates of 46 per cent over four years.⁷ Resection of the apex in cases of high primary stability and a lack of complaints seems to improve the success rate. The existing data is not sufficient to draw specific conclusions or evaluate treatment therapies. The reported success rates have also not been confirmed and do not differentiate between classification, symptoms or findings for the treatment applied. All data at this time is very limited.

Case presentation

The cases in this article concern both PIL and RPI lesions. In the first case, the diagnosis was RPI due to inflammation of the adjacent tooth. The second case was diagnosed as PIL without evident cause, but contamination via the adjacent tooth was suspected. Both cases were late implantations without the need for bone augmentation, had entailed submerged healing, re-entry after four months and fixed prostheses. Both sites had been edentulous for nine to 15 months. At the time of implant placement, no pathological findings were made. Both cases were guided; the planning was assisted with cone beam computed tomography (CBCT). All preliminary and intraoperative planning and control aim at pre-

venting bone perforation (buccally or lingually).

Both patients reported no complaints directly after surgery. The RPI patient reported the first complaints six weeks postoperatively, while the PIL patient showed the first symptoms five and a half months after implantation and one and a half months after loading of the implant. Both patients underwent endodontic treatment of one adjacent tooth, since they showed symptoms also at these teeth. For the RPI patient, conservative treatment of the adjacent tooth was planned some days after implant placement (poor planning), but complaints had occurred earlier.

Case 1 (retrograde peri-implantitis)

This patient received two implants, in regions #35 and 36 (Figs. 7–9). The implant in region #35 was placed 2 mm from the adjacent tooth and 2 mm from the alveolar nerve loop. The insertion torque was 55 Ncm. Tooth #34 had been conservatively insufficiently treated and the treatment was planned to be performed by the referring dentist after implant placement.

One week after implant placement, the patient complained about pain at regions #34 to 36. The clinical examination found positive percussion of tooth #34, no apical pressure point and no pathological findings in the region of the implants. The radiographic examination showed a translucency at the apex of the implant in region #35 and this evoked suspicion regarding the adjacent tooth #34. Endodontic treatment was performed immediately and the patient additionally received systemic antibiotic therapy. Seven days after the complaints had resolved, percussion was slightly positive. After two weeks, no clinical findings were evident, either at the tooth or at the surgical site (Fig. 10).

At the time of re-entry, four months postoperatively, the implants showed osseointegration and the implant stability quotient (ISQ) was 72 mesiodistally and 75 buccolingually. Further treatment was performed as planned. The endodontic treatment was finalised af-

ter loading of the implant. After loading, at the time of obturation of tooth #34, the superstructure was removed and implant stability checked again. The ISQ value showed 74 mesiodistally and 76 buccolingually.

Case 2 (periapical implant lesion)

This patient received a single implant in region #36. The adjacent teeth, #35 and #37, showed no pathological findings. Tooth #37 had a sufficient resin filling placed occlusally and buccally. Primary stability was very good, the insertion torque was 50 Ncm and the bone density D2–D3. The ISQ value at insertion was 70. Re-entry and prosthetic treatment were performed as planned. The patient received a screw-retained crown.

Six weeks after loading, the patient reported mild pain upon biting. Clinically and radiographically, no pathological findings were made. The occlusion and approximal contact were checked again. The crown was removed for control of the peri-implant soft tissue. The implant was then loaded again (Fig. 11).

Eight weeks after initial loading, the patient reported classic pulpitis complaints at the implant site: positive percussion and apical pressure point. The radiographic control now showed a lesion at the implant apex, diagnosed as PIL. The implant underwent surgical treatment, with a lateral approach at the implant apex and local antibacterial rinsing. The patient received systemic antibiotic treatment with amoxicillin and clavulanic acid, and the wound was drained. The crown was removed and a healing abutment inserted. The ISQ was 72 mesiodistally and 74 buccolingually at this point (Figs. 12 & 13).

Ten weeks after initial loading, the patient reported occlusal complaints at tooth #37 and the clinical finding was irreversible pulpitis. Tooth #37 received an endodontic treatment. Additionally, antibiotic therapy with clindamycin was administered (Fig. 14).

Twelve weeks after initial loading, the patient reported no complaints at tooth



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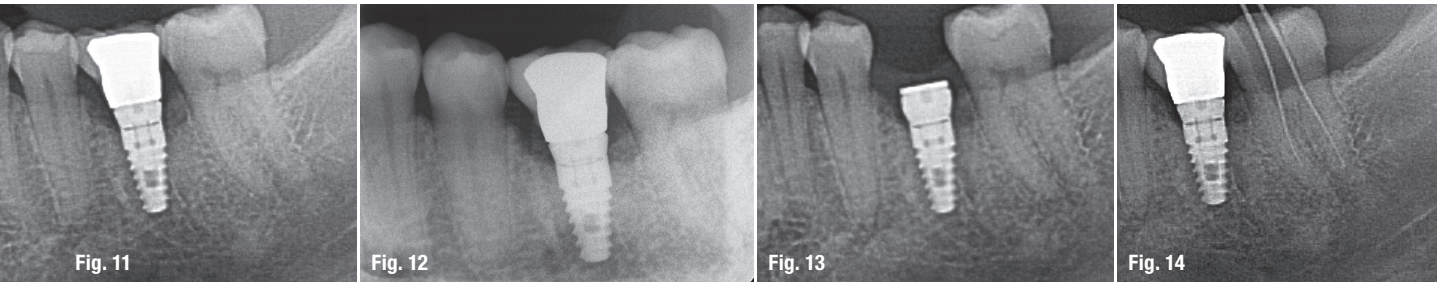


Fig. 11: Radiographic control six weeks after loading. **Figs. 12 & 13:** Radiographic findings eight weeks after loading. The prosthesis was removed and a surgical procedure performed at the implant apex. **Fig. 14:** Ten weeks after initial loading, endodontic treatment of the adjacent tooth was performed owing to clinical findings.

#37. There were, however, ongoing complaints regarding the implant region and this led to the removal of the implant 16 weeks after initial loading. The reverse torque for implant removal was over 200 Ncm, a trephine bur was not needed. Probing the implant osteotomy showed no soft-tissue infiltration whatsoever nor a bony defect. After explantation, the complaints were resolved within the first week. The symptoms at the implant had appeared many months after implant placement, thus excluding intraoperative cross-contamination, overheating of the bone, bone perforation or trauma of anatomical structures.

Discussion

The most common reasons for RPI are cross-contamination by the adjacent teeth, and scar or granulation tissue at the implant site. The first main reason for RPI can easily be avoided. As shown in the first case, poor planning or insufficient clinical and radiographic examination can lead to such iatrogenically induced lesions. The second main reason is often preoperatively or intraoperatively difficult to determine. Especially old defects, with extraction of more than six months prior, show no conspicuities during the drilling protocol and probing before implant placement.

Both cases are not easy to treat. Adjacent teeth must be controlled critically before proceeding to surgery. Osteotomies should be probed for perforations, soft-tissue infiltration or other pathological findings that may increase operative risk. Another issue that has to be considered, for which we still have very poor data, is the host response after tooth extraction due to periodontal problems, even in late implantation cases.

Possible causes of RPI should be eliminated preoperatively or taken care of intraoperatively. These may be the following:

1. Overheating due to a faulty drilling protocol or its application;
2. bone necrosis through excess pressure from the implant due to a poor osteotomy, insertion torque, bone expansion technique, etc.;

3. contamination of the implant surface during insertion or of the osteotomy through saliva or surgical instruments; and
4. apical perforation buccally or lingually.

Furthermore, a detailed patient medical record and clinical examination should be undertaken to determine a differential diagnosis to avoid complications (viral infection, human pathogenic viruses, etc.).

The diagnosis of such lesions results in higher implant survival rates if made early and the extent of the lesion is small. Clinical cases are poorly documented so far and there is no consensus regarding treatment protocol. It is important to incorporate the possibility of RPI and PIL in the patient consent form and to discuss the necessity of conservative and periodontal treatment before adopting a surgical approach.

The survival rate of implants is continuously improving and their indication increasing. The interaction with other biological body systems and diseases forces us to face new challenges with very limited understanding of the processes taking place.



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Implant **retreatment**

Dr Philippe Leclercq, France; Jean-François Martinez, France & Michael Brüh, Germany

When working with dental implants, a number of specific rules must be followed regarding both the implant surgery and the prosthesis itself (fixed prostheses tending to have a more favourable prognosis than overdentures). If these rules are not adhered to, the results are often unsatisfactory, requiring retreatment.

In such cases, and despite the patient's desire to quickly forget the previous treatment, a very strict protocol must be followed, specifically concerning the length of healing periods. Despite an increase in the overall treatment duration, this will ensure success of each stage of treatment. The implant retreatment case outlined in this article will emphasise these different stages in this type of clinical situation.

Initial case

At the age of 28, the patient was involved in a traffic accident, which resulted in significant trauma to her maxilla, including the loss of her central and lateral incisors and left canine. The shock also led to the loss of alveolar bone in the same area. The first premolars were absent, probably owing to previous orthodontic treatment.

The original treatment consisted of placing two implants in the residual bone and an anchorage reinforcement screw-retained bridge to maintain a removable prosthesis, which included five teeth and a large false gingiva (Fig. 1).



Fig. 1



Fig. 2



Fig. 3



Fig. 4

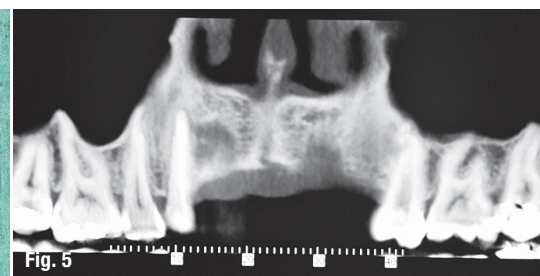


Fig. 5

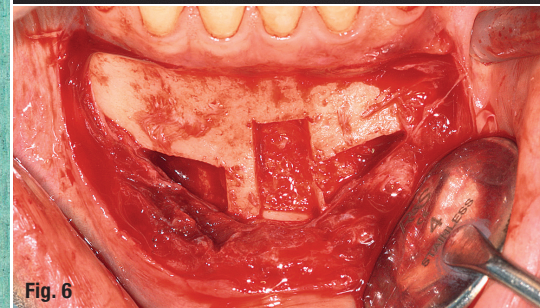


Fig. 6

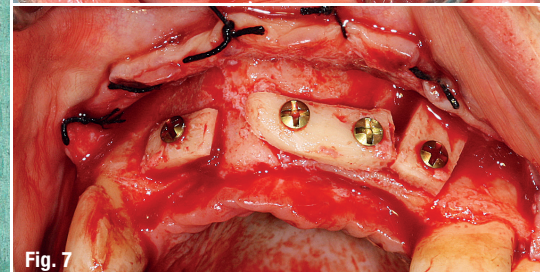


Fig. 7

Figs. 1 & 2: Initial prostheses: Lip support was ensured by a large false gingiva, and fractured cosmetic material at the right maxillary canine was evident. The patient's smile showed the prosthetic teeth placed off-centre and an infiltration at the right lateral incisal level. **Fig. 3:** Examination after three years revealed a negative short-term prognosis for the implants owing to significant recession at the right implant and hyperplastic tissue. **Fig. 4:** The framework was unscrewed, abutments removed and implants easily removed. **Fig. 5:** Implant removal site showing even greater deterioration in bone volume. **Figs. 6 & 7:** The grafts were harvested from the chin symphysis and firmly attached by surgical screws in the recipient site.

It's pretty obvious Great impressions matter



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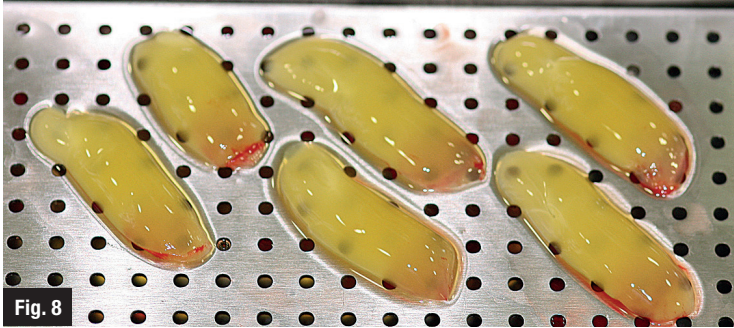


Fig. 8

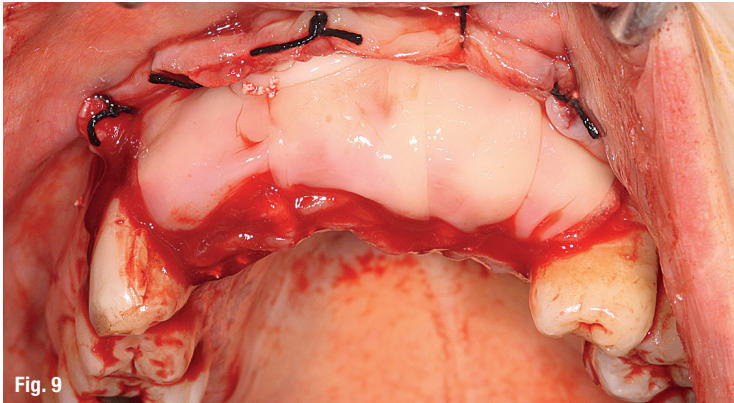


Fig. 9

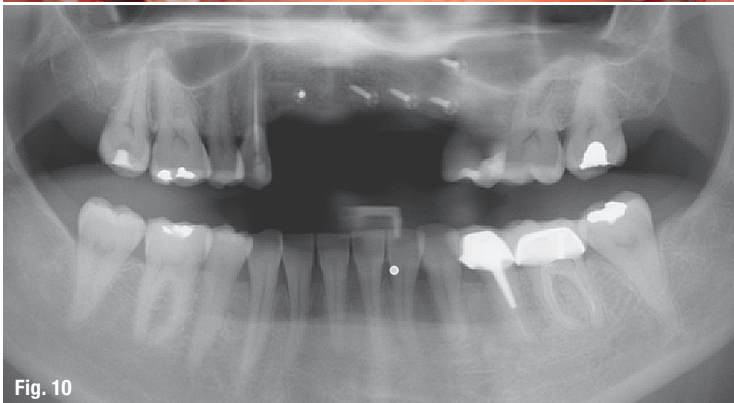


Fig. 10



Fig. 11

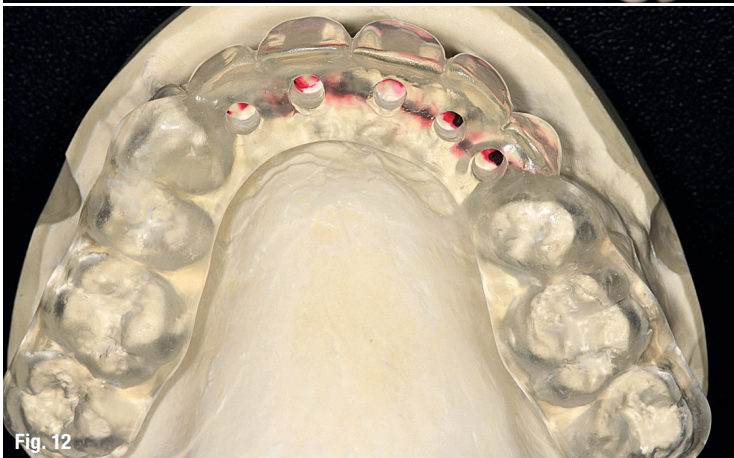


Fig. 12

Figs. 8 & 9: The properly compressed PRF membranes permitted complete coverage of the surgical site, in this instance on the maxilla. **Fig. 10:** Panoramic radiograph showing the grafts to be correctly healed and satisfactorily adhered to the recipient bone sites. **Fig. 11:** Increased vestibular bone volume allowed positioning of the teeth at the crestal bone level and reduction of the false gingiva. **Fig. 12:** A key of the added wax was taken and fabricated in clear casting resin.

Dissatisfied with the treatment, the patient was re-examined three years after the initial treatment. The patient's smile showed an infiltration at the right lateral incisal level and that the prosthetic teeth were placed off-centre. The lip support, ensured by a large false gingiva, was correct. The cosmetic material of the right maxillary canine was fractured (Figs. 1 & 2).

Once the patient's prosthesis had been removed and an examination of the site conducted, an extremely negative prognosis was determined for the implants (Fig. 3), which is often the case with maxillary overdentures. The right implant showed a loss of the majority of its vestibular bone, causing significant recession. The tissue was hyperplastic, making hygiene difficult. The framework was off-centre presumably because of the implants, which explained the off-centre axis of the prosthetic teeth.

Over the past several years, many authors have observed recurrent gingival inflammation as a reaction to using implants for this indication. Engquist noted a gingival increase in 25 per cent of the cases¹; Naert et al. showed that out of 86 overdentures (6 maxillary, 80 mandibular), 8 observed gingival hyperplasia, primarily in the maxilla (9.3 per cent)²; and Jemt et al. observed that after one year out of 92 maxillary overdentures, 19 patients showed gingival hyperplasia (20.9 per cent), 13 patients had one gingival correction and five had two corrections.³ In a 1993 study on maxillary overdentures, Smedberg et al. observed: "The results show that the prevalence ($p < 0.05$) for *Lactobacillus*, *Prevotella* (subspecies) and yeasts in the subjects with removable prostheses was significantly higher than in subjects with fixed prostheses. Removable prosthetics were accompanied by a more aggressive peri-implant plaque."⁴ In view of our patient's unsatisfactory treatment results, it was thus decided to restart treatment completely.

Retreatment

The retreatment followed an extremely precise protocol, especially regarding the length of the healing periods. To begin, dental impressions were taken to create a resin-based temporary removable prosthesis. The prosthesis included palatal support to relieve the vestibular gingival tissue as much as possible. An aesthetic fitting of the appliance was conducted to straighten the axis of the incisors.

Implant removal

Owing to insufficient osseointegration, the removal of the implants was fairly easy (Fig. 4). Removal was accomplished with the aid of an implant removal tool.

Immediately after implant removal, the temporary removable resin prosthesis with palatal support was inserted. To permit the rapid elimination of inflammatory residue, it was contra-indicated to suture the recipient implant site.

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Assessment after implant removal

Three months after implant removal, a clinical and radiographic assessment was conducted. The assessment showed further significant vertical bone loss and loss in bone volume (Fig. 5). Significant vertical bone loss is difficult to correct owing to random gingival recovery. It was thus decided to augment the bone volume by performing a chin bone graft.

Bone graft

Anaesthetic was administered in the maxillary and mandibular anterior region. For the mandible, the sample was taken from the cortical bone and a section of the cancellous bone by piezoelectric surgery. The grafts were harvested from the chin symphysis, as close as possible to the mandibular inferior ridge to avoid disturbing the incisor's sensitive innervation, which can be a frequent complication of the procedure. The vestibular cortical bone scar was perforated with a small round bur, allowing for rapid revascularisation of the grafts. The

grafts were then positioned and secured in place with mini-screws (Figs. 6 & 7).

To increase success, a blood sample was taken and centrifuged according to the Choukroun platelet-rich fibrin (PRF) technique⁵ in order to recuperate the fibrin clots. The clots were compressed between two compresses to evacuate the serum and to form the membranes which were then applied to the surgical site and in the mandibular harvesting sites (Figs. 8 & 9).

Pre-implant prosthetic study

After four months, according to radiographic examination, the tissue had healed and the bone mass appeared stable (Fig. 10). New impressions were taken to prepare for the next step in treatment: the implant drilling guide. After four months of healing, the increased vestibular bone volume allowed positioning the teeth at the crestal bone and reduction of the false gingiva using additional wax (Fig. 11). A key of the added wax was taken and fabricated in clear

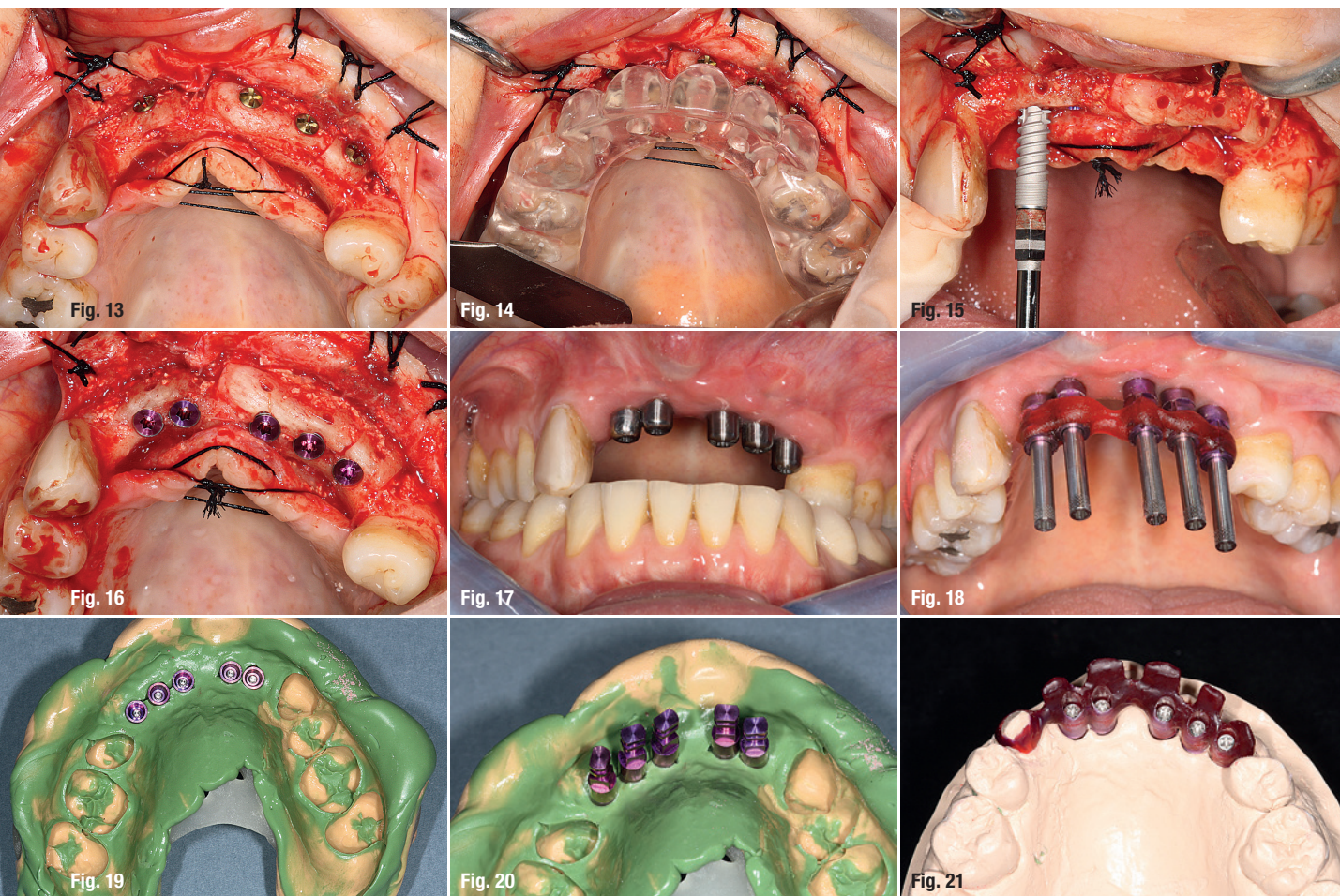


Fig. 13: The reopened site showing correct graft integration, a notable increase in cortical bone and excellent vascularity. **Fig. 14:** Testing of the sterilised surgical drilling guide proved drilling would be at the centre of the reconstructed bone ridge. **Fig. 15:** Aadv self-tapping implants were placed. **Fig. 16:** All five implants equipped with threaded cover screws and the surrounding tissue sutured. **Fig. 17:** Loaded implants, healing abutments *in situ*. **Fig. 18:** The healing abutments were removed and replaced with pick-up impression copings secured with self-curing resin. **Figs. 19 & 20:** Removal of the impression and fitting of the impression copings with their laboratory equivalent. **Fig. 21:** Model of the framework, temporarily including the canine, cast in pattern resin.

casting resin. The implant positions were decided on and finalised by drilling placement holes, determining the exact position of the implants (Fig. 12). The correct positioning of implants in relation to the future prosthesis is an important prerequisite for aesthetic and functional success.

Implant placement

Local anaesthesia was administered and the bone site reopened. The site showed correct integration of the grafts, a notable increase in cortical bone and excellent vascularity throughout the site (Fig. 13). The sterilised surgical drilling guide was tested and showed that drilling would in fact be at the centre of the reconstructed bone ridge (Fig. 14).

After removal of the screws stabilising the grafts, the guide was placed and drilling (using physiological saline solution) completed. Five Aadva (GC Tech.Europe) self-tapping Grade 5 titanium microstructure implants were inserted by slow drilling (Fig. 15). Aspiration with physiological saline solution was not used at this time so that the first contact with the titanium oxide would be the patient's blood, thus promoting the implants'

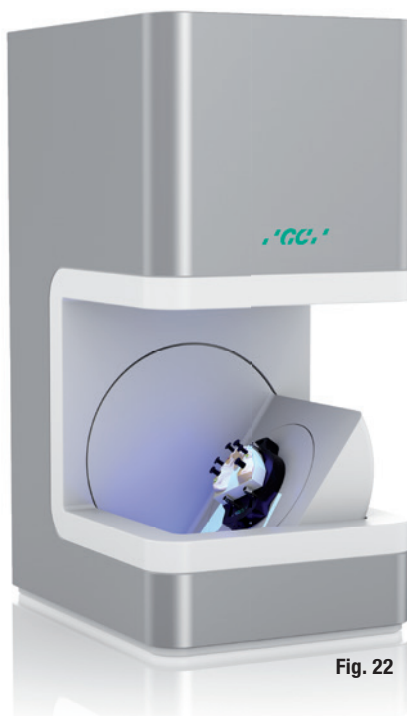


Fig. 22

osseointegration. This specific implantation technique was validated by Brun et al.⁶ All of the implants were equipped with threaded cover screws and the surrounding tissue was sutured (Fig. 16).

To minimise risks, the implants were left unloaded for four months, as immediate loading of a site such as this one could have proven to be problematic.

Implant loading and impressions

After four months, the implants were loaded using an apically positioned flap. The healing abutments were placed and the flap sutured around them (Fig. 17). Radiographic analysis and especially a percussion test showed the implants' perfect osseointegration. After 15 days of gingival healing around the abutments, they were removed and the impression copings were placed and secured with a self-curing resin (Fig. 18). Impressions were taken and the healing screws were reinserted (Figs. 19 & 20).

Validation prosthesis

Rather than calling the appliance at this stage a "temporary prosthesis" or "provisional prosthesis", it is more



Fig. 23



Fig. 24



Fig. 25



Fig. 26

Figs. 22 & 23: The model was scanned before being transferred to a machining centre. **Fig. 24:** After scanning, the computer prefiguration of the framework was validated. **Figs. 25 & 26:** Testing of the titanium framework on the working model and verification of stability.

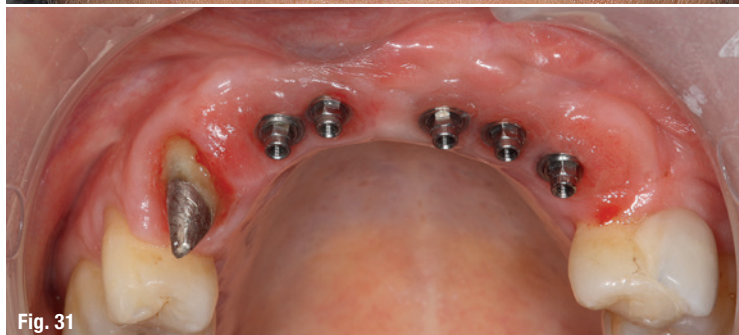
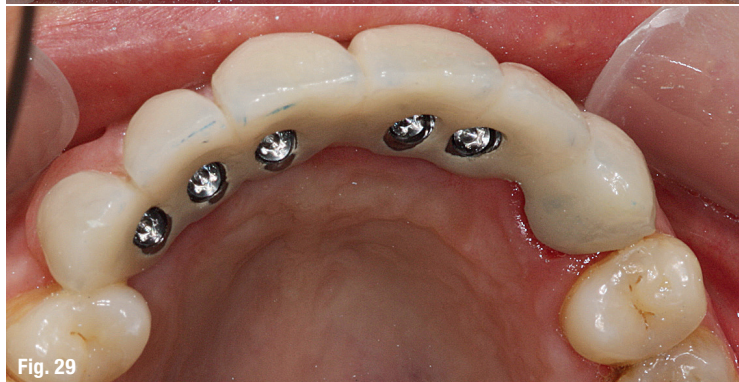


Fig. 27: The cosmetic material placed onto the framework. **Figs. 28 & 29:** The prosthesis was attached with screws and the necessary occlusal verification was conducted. **Fig. 30:** The patient's smile showing now well-balanced incisors in line with the face's sagittal plane, lip support appearing to be correct. **Fig. 31:** Removal of the validation prosthesis and examination of the areas of compressed mucosa and difficult for dental hygiene. Reinstallation of validation prosthesis after correction.

appropriate to call this temporarily placed prosthesis, a "validation prosthesis of the implanto-occluso-prosthetic concept recommended to the patient"⁷. Over the course of several months, this prosthesis validates

- the osseointegration of the implants;
- the aesthetic aspect, especially for the anterior teeth;
- phonation, which is also important for the maxillary anterior region;⁸
- the patient's ability to correctly clean the prosthesis; and occlusion and, in this case, the ability of the anterior to guide the disclusion of the canine groups in protrusion.

This prosthesis serves as a model for the final prosthesis. It is made with easily modifiable material like resin, but with a metal framework to guarantee a certain level of rigidity. In the first step, a model of the framework, which temporarily included the canine to increase stability, was cast in pattern resin (Fig. 21). The model was then scanned (Aadva, GC Tech.Europe; two cameras, 2 MP, precision: 10 µm) before being transferred to a machining centre (GM 1000, GC Tech.Europe; Figs. 22–24). Once back from the machining, the titanium framework was tested on the working model and its stability was verified (Figs. 25 & 26).

The cosmetic material (UNIFAST III resin; surface rendering: OPTIGLAZE color, GC Tech.Europe) was then placed on the framework (Fig. 27). The bone graft permitted a maximum reduction of the vestibular false gingiva.

In the following step, the prosthesis was attached in the mouth with screws and the necessary occlusal verification was conducted, including maximum intercuspation, protrusion and lateral excursion. The natural canine on the right was also equipped with a verification tooth. It should be noted, that in lateral excursion on the left, with the antagonist being the original tooth equipped with its periodontal ligament receptors, the canine function was retained; however the group function, which is usually preferred, was neurophysiologically inept (Figs. 28 & 29).

The patient's smile showed that the incisors were now well balanced and in line with the face's sagittal plane. Lip support appeared to be correct and, as often is the case, this would all be validated by the patient's surrounding friends and family (Fig. 30).

After three months, the validation prosthesis was removed in order to examine the areas where mucosa had been compressed and dental hygiene difficult. These areas were corrected and the validation prosthesis reinstalled (Fig. 31).

Final prosthesis

After six months, all of the parameters were validated. The final prosthesis was then fabricated as an exact copy



Figs. 32 & 33: Final prosthesis framework and the coping for the right canine tested on the working model. **Figs. 34 & 35:** After fitting of the zirconia framework, the ceramic was cast using the exact parameters validated by the resin prosthesis. **Figs. 36 & 37:** Installation of the final prosthesis and verification of correct occlusion. Screw channels filled with composite. **Figs. 38 & 39:** Final cosmetic check-up showing correct lip support with the new extremely reduced false gingiva. **Fig. 40:** Radiographic check-up after seven years.

of the validation prosthesis, but in a more durable material: zirconia for the framework and ceramic for the aesthetic material.

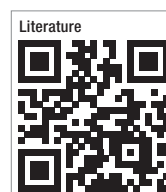
As with the titanium validation prosthesis, the framework and the coping for the right canine were scanned and transmitted to the machining centre. They were then tested on the working model (Figs. 32 & 33). After fitting of the zirconia framework, the ceramic was cast using the exact parameters validated by the resin prosthesis (MB Dentaltechnik, Figs. 34 & 35).

In the following step, the final prosthesis was installed and the correct occlusion verified: maximum intercuspation, protrusion and lateral excursion. The screw channels were filled with composite (Figs. 36 & 37).

The final cosmetic check-up, validated by the resin prosthesis, showed the lip support with the new extremely reduced false gingiva to be correct (Figs. 38 & 39). This was achieved owing to the bone graft.

Regular check-ups

Retreatment was regularly monitored with patient check-ups (Fig. 40). All implant treatments, no matter of what type, must be rigorously monitored in all treatment phases, but a retreatment requires even more diligence. A patient affected by the failure of a previous treatment will not accept even the smallest problem. To this end, the role of healing periods is thus essential to retreatment success.



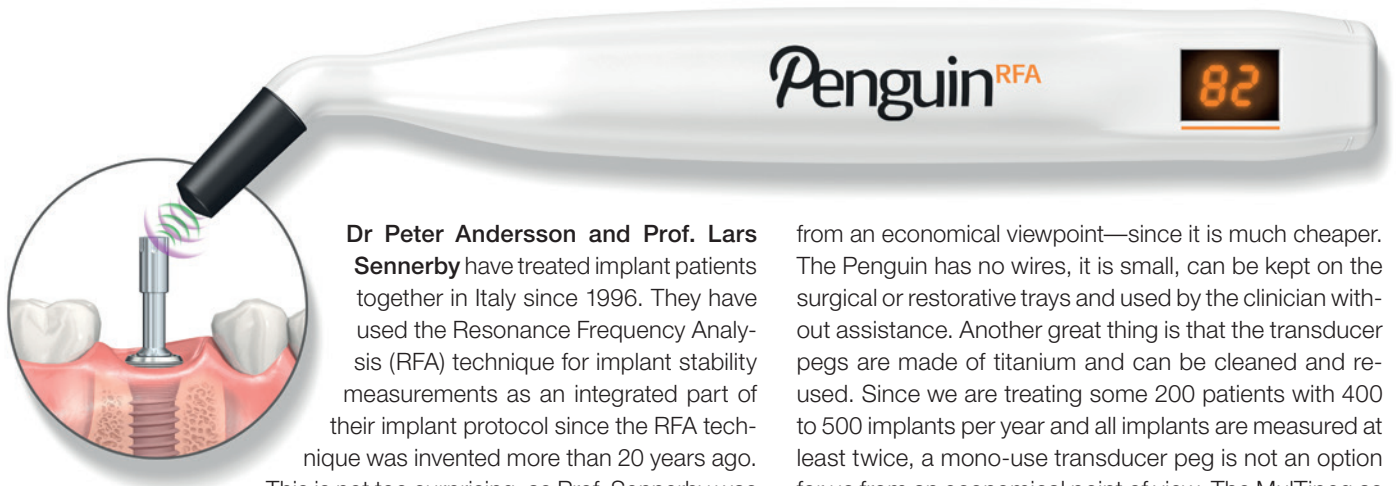
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Measuring **implant stability**



Dr Peter Andersson and Prof. Lars Sennerby have treated implant patients together in Italy since 1996. They have used the Resonance Frequency Analysis (RFA) technique for implant stability measurements as an integrated part of their implant protocol since the RFA technique was invented more than 20 years ago.

This is not too surprising, as Prof. Sennerby was one of the developers of the RFA technique. In this interview, however, Dr Andersson (Fig. 1) took the time to present his experience with the RFA technique and described how it is used in his clinic on a daily basis.

Dr Andersson, what type of RFA instrument are you using today? And which are the advantages?

We are using the PenguinRFA system, which has many advantages in comparison to the old system, not only

from an economical viewpoint—since it is much cheaper. The Penguin has no wires, it is small, can be kept on the surgical or restorative trays and used by the clinician without assistance. Another great thing is that the transducer pegs are made of titanium and can be cleaned and reused. Since we are treating some 200 patients with 400 to 500 implants per year and all implants are measured at least twice, a mono-use transducer peg is not an option for us from an economical point of view. The Multipeg as used with the Penguin has a long lifespan because it can resist at least 20 autoclavings. You can really tell that the PenguinRFA system is made for clinicians by clinicians.

How is the technique used in your clinic?

For us, the use of RFA is part of the routine documentation of our implant cases and we find it more useful than taking a radiograph of the implant site. Through the years we have learned that the risk for implant failure increases with low ISQ readings. As a general rule, all implants are



Fig. 1
Fig. 1: Dr Peter Andersson, Clinica Feltre, Feltre, Italy.

“You can really tell that the PenguinRFA system is made for clinicians by clinicians.”

measured after surgical placement and then again when commencing the restorative phase, which used to be after three months of healing.

We are now, however, using a different loading protocol based on RFA measurements. We always make measurements in mesiodistal and buccolingual directions and use the highest ISQ value. The readings are kept in the patient charts. In addition, we keep a simple computerised register of all implant patients, which are given a unique consecutive number. This is very handy, since we publish follow-up studies as part of our quality assurance work from time to time. In this way it is easy to find the documentation for different patient groups and different indications for implant treatment.

If we get readings below an ISQ of 65 at implant surgery, we try to improve the stability by either replacing the

implant with a wider and/or longer one or by making a new osteotomy. A low reading is, however, often depending on soft bone density, which is difficult to manage. Prof. Sennerby prefers a tapered implant design in this bone situation and if the ISQ value is still low, the healing period is extended to four to six months, instead of three months. Moreover, if implants show low stability at the time of impression taking, I prefer to prolong the healing period until the ISQ value is above 70.

What is your new loading protocol?

Our experience is that the majority of implants reach high primary stability (>70 ISQ) and could actually be loaded immediately or at least early after placement (Figs. 2 & 3). This means that the treatment time can be reduced dramatically. However, in a busy practice immediate loading is a logistic nightmare, so we decided to apply immediate/early loading only on specific indications and to allow the majority of implants to heal for six to twelve weeks depending on the ISQ value.

In order to rationalise the restorative part of implant treatment, all impressions are taken digitally in conjunction with surgery. This way the dental technicians have sufficient time to plan and manufacture a framework or even a readymade prosthesis. Depending on the primary sta-

bility, the implants are allowed to heal with a healing abutment for six weeks (> 70 ISQ), eight weeks (65–70 ISQ) or twelve weeks (> 65 ISQ) before the first prosthetic appointment. In this way we can save a lot of appointments and time, which is good for both the patients and the practice.

What are indications for immediate and early loading?

In our clinic, immediate loading is mainly made in aesthetic cases, where the patient presents with a fractured or lost incisor, canine or premolar—provided that

“In this respect, the Penguin is our best friend.”

we reach an ISQ value of at least 70. Otherwise we follow the protocol as described above. With the digital impression technique, we can give these patients a laboratory made temporary crown the same day, which is very much appreciated.

In addition, we have developed an early loading protocol for partially edentulous patients where the best treatment option is extraction of the remaining teeth and simultaneous placement of four to five implants in the

AD

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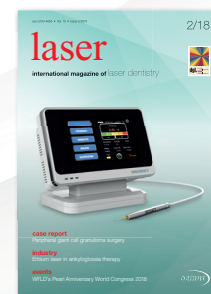
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Fig. 2



Fig. 3a

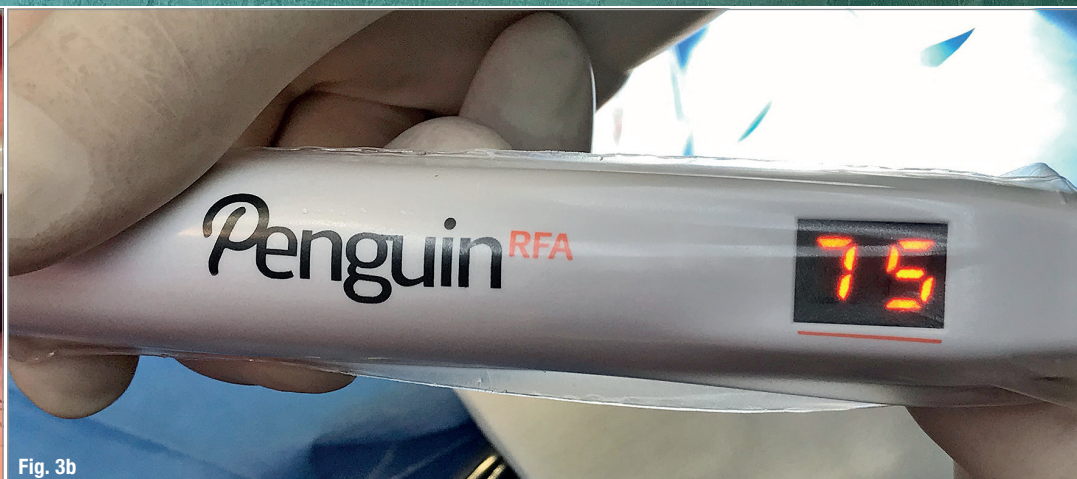


Fig. 3b

Fig. 2: Surgical tray with PenguinRFA in a sterile pouch. **Figs. 3a & b:** Measurement after implant surgery shows an ISQ value of 75.

mandible and five to seven in the maxilla for a full provisional bridge. In these cases, the patients receive a provisional bridge after three days if the majority of implants have shown an ISQ of 70 and above.

Dr Andersson, what are the results with your new RFA-based protocol?

In a retrospective analysis the overall survival rate was 98.7 per cent after one to five years of loading. The majority of implants, 75 per cent, could be restored within six weeks after implant surgery with excellent clinical outcomes. The remaining 25 per cent of implants were placed in soft bone or in bone augmentation procedures and required a longer healing period or even a two-stage procedure. With our protocol and the use of the Penguin instrument we can minimise the number of surgical interventions and appointments without compromises

regarding outcomes. In this respect, the Penguin is our best friend.

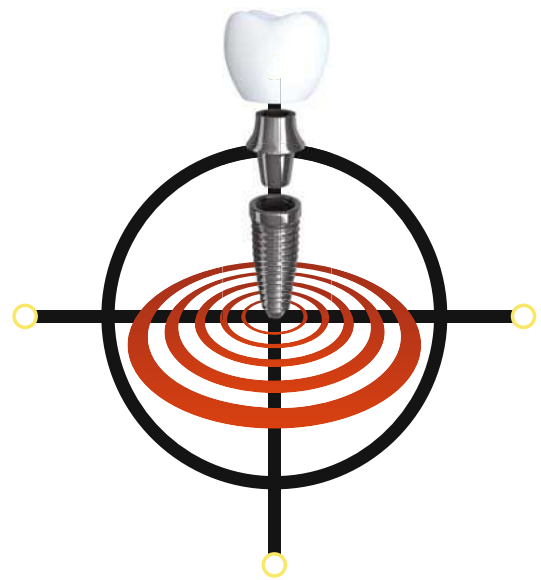
More information can be obtained by visiting the Integration Diagnostics Sweden booth (B44) at EAO in Vienna in October.

contact

Integration Diagnostics Sweden AB

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Bringing a turnkey **restoration solution** to dentists

At the 2017 Greater New York Dental Meeting, 3DISC launched its Heron IOS intraoral scanner to the world. Three months later, in February 2018, the US-based imaging company presented an improved device to attendees of the Chicago Dental Society Midwinter Meeting (Fig. 1). In an interview, Thomas Weldingh, 3DISC Deputy Group CEO, took the time to present the key benefits of the Heron IOS for dental professionals.

Mr Weldingh, what can you tell us about the new scanner?

We seek to cater to the segment of solo and midsize practices with an easy-to-use and affordable solution. With the Heron IOS, we have aimed to solve three major challenges that we know of from the existing scanners on the market: dimensions, ergonomics and affordability. We have succeeded in bringing a scanner to the market that is extremely easy to use, featuring a small, lightweight hand- and mouthpiece with a rotatable tip for providing the best possible ergonomic grip (Fig. 2).

The Heron intraoral scanner is one of the lightest weight colour scanners in the market, weighing only 145gramme, which is considerably below the average

weight of other colour scanners. The ability to use scanners comfortably is important for dentists and, with its light weight, combined with the rotatable tip, the Heron provides one of the best ergonomic solutions in the industry.

“With the Heron IOS, we have aimed to solve three major challenges: dimensions, ergonomics and affordability.”

What are the key benefits of the 3DISC intraoral digital impression solution?

Our digital scanning product is a uniquely simple hardware and software solution. The dentist simply connects the Heron to his or her laptop or PC in the clinic, using the accompanying practical base for desktop use. The scanner comes with our QuantorClinic software, built on



Fig. 1: Thomas Weldingh presenting the Heron IOS intraoral scanner in Chicago. Photo: © Matthias Diessner, DTI

“The Heron intraoral scanner is one of the lightest weight colour scanners in the market.”



Fig. 2: The lightweight hand- and mouthpiece with a rotatable tip provides the best possible ergonomic grip.

exocad's software platform, which is one of the most widely used CAD/CAM software platforms in the dental industry. The Heron IOS was developed and produced at our facilities in Virginia, USA.

What is planned in terms of clinical testing of the product?

The Heron IOS has been tested by dentists in the USA and Europe since spring 2018. We want to ensure that the product works as intended in the clinical environment while looking for improvements we can add to the workflow of the clinic and integration with dental laboratories.

Why did you decide to enter the intraoral scanner market?

The market is dominated by a few larger manufacturers. We believe there is room for an alternative intraoral system in the marketplace, a system that brings immediate value into the dental practice, making impression taking simple, hassle-free and cost-effective. Device and maintenance costs are among the challenges restraining the adoption of current intraoral scanners, as well as demand for an open and license-free software architecture. We believe in the need and opportunity to bring a product to market that meets these challenges.

Why does 3DISC aim to cater for solo to midsize practices, and what are the benefits such practices can expect from your products?

Solo and midsize practices are the segment that is currently hesitant to incorporate digital dentistry. Among the

reasons are complexity in the existing solutions and high prices and maintenance costs. We see a gap and a need for a product in this segment with first and foremost a noncomplex and simple price model, and a technology that is easy to adopt and get started with, without compromising on the performance and quality of the final fit. Dental practices can expect both high-quality intraoral imaging and an affordable price point \$25,990 without any annual licensing fees for the Heron intraoral scanner. For the solo or midsize practice wanting to enter into digital dentistry, we believe that 3DISC is bringing the best solution to dentists with our Heron IOS.

When and where is the launch and when will the product be available?

Product shipping will start in the third quarter of 2018 in the Americas, Europe, the Middle East, Africa, Korea, Southeast Asia, Australia and New Zealand.

Mr. Weldingh, thank you very much.

contact

3DISC Europe ApS

Gydevang 39-41
3450 Alleroed, Denmark
Phone: +45 88 276650
sales@3disc.com
www.3disc.com



Planmeca

Successful digital implant workflow

Planmeca's software-driven solution for implant dentistry provides a kind of freedom and flexibility that is hard to match. Users can efficiently manage their entire implant workflow with the Planmeca Romexis® software: from CBCT imaging to intraoral scanning and from implant planning to guide design. As it is a truly open software, it allows users to utilise data from Planmeca or other equipment. There are no hidden or extra fees for importing and exporting files. Taking an implant plan to actual surgery is now easier than ever, as the software's new Planmeca Romexis® Implant Guide module lets users design their own surgical implant guides. This elevates implant planning to another level, as virtual plans can accurately be brought to reality. Creating implant guides with the software requires few simple steps. Users can also flexibly



select their preferred workflow, as completed guide designs can either be 3-D printed in-office or exported as STL files to a partner lab for 3-D printing.

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www.planmeca.com

MEDENCY

State-of-the-art diode laser technology

The Italian company MEDENCY has been built upon profound global expertise in the dental market and dental lasers in particular. "Our flagship product PRIMO combines state-of-the-art diode laser technology with innovation and the experience of MEDENCY in the dental industry. PRIMO provides a variety of applications and is thus a viable alternative to conventional surgical methods like electrocautery and the scalpel. Owing to its intuitive interface, the device is easy to use," stated the company's general manager, Alessandro Boschi. All products are designed, engineered and manufactured in Italy—with passion and commitment. "Our overall mission is to deliver a combination of cutting-edge products, services and interaction with customers drawing on a wide network of academic partners," said Boschi. The company supports its partners with tailor-made educational courses in different countries in

order to gain practical experience in the use of the system in daily practice. Using dental laser technology has never been so easy.

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Prof. Dr Dr Frank Palm

Long-term behaviour of β -TCP grafted bone
PD Dr Dr Arwed Ludwig

Synthetic vs. bovine hydroxyapatite
Prof. Dr Neil Wood

Now online!

curasan CME lectures



curasan

Now online: “Frankfurt Implantology Days” CME lectures

At the end of April, the “Frankfurt Implantology Days” took place under the scientific chairmanship of Prof. Dr Dr Frank Palm from Constance, Germany, supported by curasan AG.

Interested parties now have the exclusive opportunity to experience three selected lectures of this international event online.

Participants will receive 1 CME credit if they have watched the complete lecture consisting of three particular presentations and have answered the control questions correctly afterwards.

Please also visit the social media pages of curasan AG on Facebook, LinkedIn and



XING, where the technological leader in bone regeneration is regularly publishing news. Here, the main focus is on scientific publications about successful applications of curasan products, information on international events, as well as specific case presentations. Moreover, the company has its own YouTube channel. Fans and followers are welcome on all social media channels of curasan AG.

curasan AG
Lindigstraße 4
63801 Kleinostheim, Germany
www.curasan.de

MIS

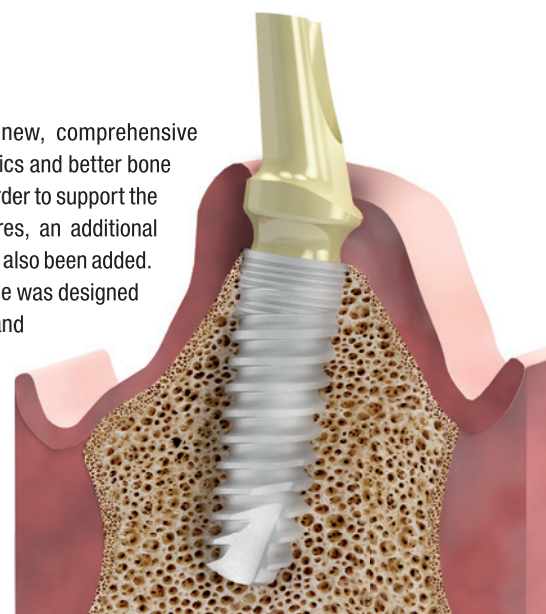
Newly enhanced implant system

This past June, at the EuroPerio9 congress in Amsterdam, Netherlands, MIS launched the enhanced SEVEN implant system. Several key features have been added, that make the internal hex implant even better. Its biological stability and predictable aesthetics combined with the extensive R&D process which has led to these new improvements, have given the SEVEN a potential advantage in soft-tissue preservation and growth, as well as an array of restorative benefits. The combination of its unique features may provide the dentist with higher predictability, better aesthetic results and bone preservation.

The implant incorporates the platform-switching design concept. Implants with a platform-switched configuration have been shown to exhibit less bone loss when compared to non-platform-switched implants, which may lead to soft-tissue preservation and growth. The SEVEN's root-shaped geometry and unique thread design enable excellent primary stability, allowing for a simpler and faster

implant placement. With a new, comprehensive concept for enhanced aesthetics and better bone preservation in mind, and in order to support the advanced new implant features, an additional line of concave abutments has also been added. The concave emergence profile was designed for a larger gingival volume, and along with its gold shading, offers a better aesthetic result.

MIS Implants
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Simeonscarré 2
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www.mis-implants.com





Zest Dental Solutions

Newly improved attachment system

The LOCATOR R-Tx removable attachment system is the fourth generation of award-winning patient-removable attachment systems from Zest Dental Solutions. The new abutment coating is 30 per cent harder with over 25 per cent greater wear resistance, and nearly 65 per cent reduction in surface roughness.



The narrower coronal geometry of the abutment and the dual engagement of the retention inserts on the outside of the abutment allow patients to easily align and properly seat their overdenture, decreasing potential deformation of inserts, which could lead to premature wear.

The system utilises the standard 0.050 in/1.25 mm hex drive mechanism and treats up to 30° of angle correction using a single set of redesigned retention inserts with straightforward retention values: zero, low, medium, high. In addition, all of the necessary components for each individual case are shipped in one convenient vial.

LOCATOR R-Tx is a better, simpler, stronger attachment system and comes with a 100% Satisfaction Guarantee to prove it!

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Integration Diagnostics Sweden

Customer-oriented product design

Integration Diagnostics Sweden is rapidly growing by adding distributors to its global network, closely cooperating with most major implant companies and constantly adding more implant systems to its MultiTiegs assortment. PenguinRFA is now available in more than 60 countries by 28 distributors, whereof 7 are industrial partners; thus covering more than 70 implant systems with MultiTiegs.

MultiTiegs are made from durable, tissue-friendly titanium and have sealed magnets, which makes it possible to autoclave them at least 20 times. They are also laser marked with type numbers to avoid mix-ups or using the wrong MultiTiegs. The PenguinRFA concept is affordable, uncomplicated and with the re-usable MultiTiegs just what clinicians are asking for. The instrument is handheld and very user friendly, which makes the learning curve very short, fulfilling the customers' demands. Strong business partners add to the market success.

In addition, the RFA technique has become even more accurate by creating an ISQ standard calibration system, which means minimised variance between different MultiTiegs. Due to the reference system, physical misfit between components can be detected and eliminated. In the future, Integration Diagnostics Sweden will continue to expand its distributor network globally and intensify the research around implant diagnostics.



Integration Diagnostics Sweden AB
 Nedergårdsgatan 5
 416 54 Göteborg, Sweden
www.penguinrfa.com

Dentsply Sirona

International Congress on Ankylos: Focus on implant dentistry

More than 1,000 visitors from almost 50 countries participated in the International Congress on Ankylos in Berlin, Germany, which took place on 29 and 30 June 2018. They experienced how implant dentistry and a dedicated dental community with focus on the digital future can create optimal results for patients. The congress programme featured lectures highlighting the importance of trusting experience and emphasised the topics excellence and the digital future. Additionally, current news and trends, as well as scientific documentation and clinical evidence were at the focus of the congress.

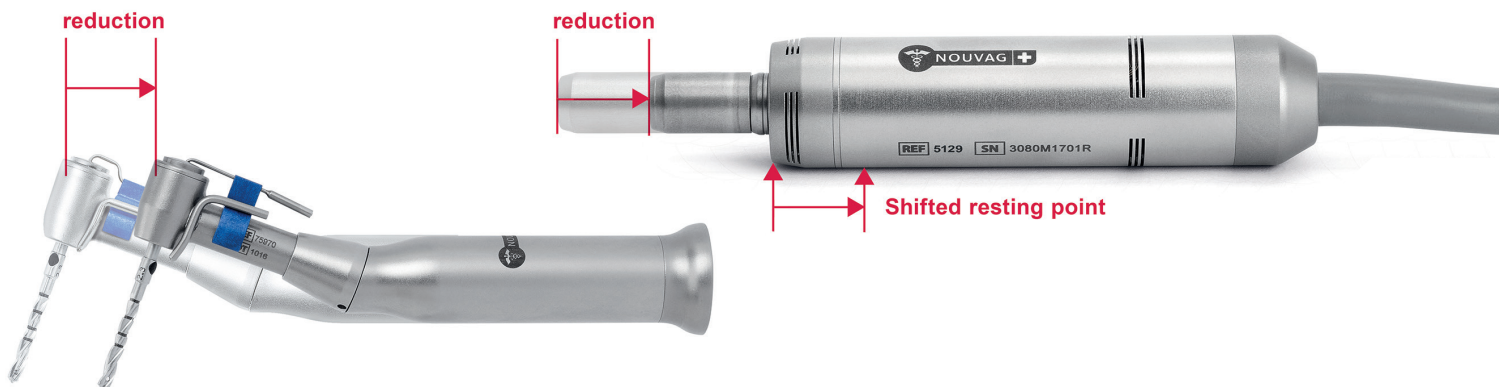


Furthermore, delegates at the congress got an exclusive look at Acuris, the new conometric concept that uses friction instead of a screw or cement to secure the crown and cap to the abutment in the final prosthetic part of implant treatment. This new solution saves time, improves predictability, and ensures high-quality end results. Acuris will include abutments with different angulations and will be available for all three implant systems of Dentsply Sirona Implants.

Dentsply Sirona – The Dental Solutions Company™
 Aminogatan 1
 431 21 Mölndal, Sweden
www.dentsplysirona.com/implants

Nouvag

Introducing motor management 2.0



Nouvag's latest development in the field of implantology is the motor system MD 11 which is now available in version 2.0. The company has newly implemented the function of thread cutting and made the device handling even easier than it already was. During its development, much attention has been given to a quiet, low-vibration motor running, which is the feature most likely perceived by patient and surgeon alike. The insertion of the tubing set is done with very little effort due to the great visibility of the mounting bracket and easy to reach notches in the bracket.

To make the set of the MD 11 complete, Nouvag offers all required contra angles such as the 1:1, 16:1, 20:1, 32:1 and a 70:1. The 20:1 contra angle, also available with LED spotlight, covers

the largest field of the implantologist's tasks, owing to the sophisticated motor control of the MD 11, which provides sufficient torque from the lowest possible speed of 15 rpm to the highest speed of 1,700 rpm.

With the new 20:1 mini E-type contra angle, in conjunction with the new electronic motor having a shorter handpiece carrier, the resting point lies between the surgeon's thumb and index finger allowing for better balance and force delivery to the drill.

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Fotona

Making implantology treatments more effective

Fotona's LightWalker dental laser is an ideal tool for hard- and soft-tissue treatments, including applications in implantology. LightWalker's Er:YAG and Nd:YAG wavelengths are highly effective for the removal of granulation tissue, the disinfection of the surgical area after extraction, as well as for the preparation of the implant bed to achieve longer stability. The beneficial uses of its high-precision Er:YAG laser for bone ablation are further complemented by using its Nd:YAG laser for efficient deep disinfection and bio-modulation.

Uncovering the implant during the second stage of implant placement is more patient friendly with Er:YAG laser treatments. Favourable formation of new bone has been observed on Er:YAG and Nd:YAG laser-treated peri-implant areas. In laser-treated patients, greater bone-to-implant integration was observed compared to curette-treated patients.

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By using the CBCT image as a kind of map, ClaroNav's Navident guides clinicians much like a GPS guides drivers, offering them an easy-to-use, accurate, highly portable and affordable method for the planning of desired restorations and implant placements. With Navident 2.0, the clinician will no longer be required to do a special extra scan. Instead, he or she will be able to use the diagnostic scan already available for the patient. The step of making a stent is not part of the workflow as it is no longer required, saving clinicians valuable time. The usual working steps including stent, scan, plan and place have thus changed to scan, trace and place—known as Trace and Place which is a game-changing development for dynamic navigation. With Trace and Place, the Navident 2.0 workflow is efficient and user-friendly and can be seamlessly integrated into daily clinical practice.

"Trace and Place is a real tipping point for dynamic navigation guidance," said user Dr George Mandelaris, a periodontist from Chicago, USA. "It has streamlined and simplified the workflow in both the diagnostic and surgical phases to allow state-of-the-art technology to be an everyday component of my surgical implant practice. I can't imagine going back!"

Clinicians are encouraged to make use of the opportunity to learn from masters and interact with peers at ClaroNav's EAO booth (S21) in Vienna, Austria.

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Programme for dentists and dental technicians

FRIDAY, 28 SEPTEMBER 2018

FUTURE PODIUM – Visions in Implantology

- 09:00 – 09:15 **Opening ceremony**
Dr Georg Bach/DE
- 09:15 – 09:45 **Assoc. Prof. Dr Christian R. Gernhardt/DE**
Tooth preservation and implantology—A future model—
Structural, professional and demographic challenges
- 09:45 – 10:15 **MDT Ralph Riquier/DE**
Digital competence 4.0—Future prognosis for digital patients:
How much know how does a complete digital dental technology require?
- 10:15 – 10:45 **Prof. Dr Wolfgang Henseler/DE**
Dentist 4.0—How one should be thinking in the age of digitalisation
- 10:45 – 11:00 **Speaker and podium discussion**
The future podium speakers and clinician Dr Kay Vietor are discussing the importance of the presented developments for the daily work of implantologically working dentists with the scientific director/moderator. Participants have the option to actively participate in the discussion via the interactive chat feature.
- 11:00 – 11:30 **Coffee break/Dental exhibition**

LIVE SURGERIES

- 11:30 – 12:30 **Transmission of live surgery 1**
Dr Thomas Barth/DE, Dr Stefan Ulrici/DE
Christian Barth, DDS/DE
The iSy solution—One click, one scan, one shift. With minimalisation to success
- 12:30 – 13:30 **Transmission of live surgery 2**
Dr Michael Back/DE
Dr Dr Dr Oliver Blume/DE
maxgraft® bonebuilder—Safe application of patient individual bone blocks



TABLE CLINICS (TC) – Visions in Implantology

- 15:00 – 15:45 **Session 1, TC table 1–24**
- 15:45 – 16:00 **Change of table**
- 16:00 – 16:45 **Session 2, TC table 1–24**
- 16:45 – 17:00 **Change of table**
- 17:00 – 17:45 **Session 3, TC table 1–24**

Note: Please specify the numbers of your chosen table clinics (total of three) on the application form below.

- TC 1** **Dr Arpad Alexander Toth/DE**
From clinician to clinician: Fully digital prosthetic workflow with ultra-short implants
- TC 2** **Dr Kai Zwanzig/DE**
Guided surgery in implantology—The digital has to merge with the analog
- TC 3** **Dr Kay Vietor/DE**
Intraoral scanning in implantology—Temporary trend or new standard?
- TC 4** **Prof. Dr Marcel Wainwright/SE**
The intra lift—A proven method for the internal sinus lift
- TC 5** **Dipl.-Ing. Dipl.-Inf. Frank Hornung/DE**
CranoPlan® 3-D procedure for determining the occlusal plane. Milled interim restoration
- TC 6** **Dr Marc Hansen/DE**
The external sinus lift—Update and long-term results
- TC 7** **Axel Reimann/DE**
Update on local anaesthesia—Interesting facts for the dental practice
- TC 8** **Prof. Dr Georg-H. Nentwig/DE**
Augmentation without membrane: When is it a sensible alternative?
- TC 9** **Dr Sebastian Schmidt/DE, Co-speaker DT Bernhard Zierer/DE**
3-D bone milling with fully guided simultaneous implantation

Programme for dentists and dental technicians

FRIDAY, 28 SEPTEMBER 2018

TABLE CLINICS (TC) – Visions in Implantology

<p>TC 10</p>	<p>Dr Bergen Pak/DE 3-D navigated implantology— From implant to crown</p>	
<p>TC 11</p>	<p>Priv.-Doz. Dr Friedhelm Heinemann/DE Implantological and implant-prosthetic planning with reduced-diameter implants</p>	
<p>TC 12</p>	<p>Dirk-Rolf Gieselmann/DE aMMP-8 chairside immuno diagnostics as basis for the successful peri-implantitis prevention</p>	<p>dentognostics</p>
<p>TC 13</p>	<p>Dr Elisabeth Jacobi-Gresser/DE Co-speaker Prof. Dr Daniel Olmedo/AR Successful, aesthetic, sustainable and more biologically compatible implantation with zirconium dioxide implants</p>	
<p>TC 14</p>	<p>Dr Umut Baysal/DE Function and aesthetics in implant prosthetics</p>	
<p>TC 15</p>	<p>Dr Ralph Griesbach/DE Everything my patients desire: Aesthetics— longevity—economic efficiency</p>	
<p>TC 16</p>	<p>Dr Manuel Bras da Silva/DE Newest techniques in implantology: GBR, GTR, plastic occlusion without periosteal slicing and biological dentistry</p>	
<p>TC 17</p>	<p>Dr Theodor Thiele, M.Sc., M.Sc./DE Sinus lift and bone regeneration at the sinus floor: Comfortable and safe with sinus and GBR kits</p>	
<p>TC 18</p>	<p>Dr Stefan Helka/DE Augmentation in practical application—What does actually work and what is really necessary?</p>	
<p>TC 19</p>	<p>Dr Ingmar Schau/DE Larger number of cases and more success in implantology</p>	
<p>TC 20</p>	<p>Achim Kettler/DE Co-speaker Thomas Borrmann/DE Getting to know the coDiagnostiX implant planning software with an easy case example</p>	
<p>TC 21</p>	<p>Dipl.-Volksw. Christian Wunsch/DE Nitrous oxide sedation—The concept of this well-known dental sedation method</p>	
<p>TC 22</p>	<p>Prof. Dr Mauro Marincola/IT 360-degree application options of SHORT implants</p>	
<p>TC 23</p>	<p>Dr Endre Varga, DMD, DDS, PhD/HU Navigated surgery is the future— but it also has to fit</p>	
<p>TC 24</p>	<p>Dr Jan Erik Janson/DE New paths in navigated surgery with BoneTrust® guide</p>	

18:00 – 21:00 GET-TOGETHER AT THE CONGRESS/EXHIBITION AREA

Evening event at the Hilton Hotel Düsseldorf, Germany

Free for congress participants and exhibitors.

Price per accompanying person (incl. drinks and snack)

€ 35 excl. VAT

SATURDAY, 29 SEPTEMBER 2018

SCIENTIFIC PRESENTATIONS – Visions in Implantology

<p>08:45 – 09:00</p>	<p>Dr Georg Bach – Scientific director Prof. Dr Herbert Deppe – DGZI president Welcome and introduction of the speakers and scientific programme</p>
<p>PODIUM 1</p>	
<p>09:00 – 09:30</p>	<p>Elika Madani, DDS/DE Univ.-Prof. Dr Dr Ralf Smeets/DE GTR/GBR techniques—Where do we stand? What is new? Where will this journey take us?</p>
<p>09:30 – 10:00</p>	<p>Prof. Dr Dr Florian Draenert/DE Bone management in dental implantology: Biology and materials instead of biomaterials</p>
<p>10:00 – 10:30</p>	<p>Prof. Dr Thorsten M. Ausschill/DE Innovative concepts in the therapy of peri- implant diseases</p>
<p>10:30 – 11:00</p>	<p>Prof. Dr Werner Götz/DE Bioengineering in regenerative dentistry— Where will the journey take us?</p>
<p>11:00 – 11:15</p>	<p>Speaker and podium discussion</p>
<p>11:15 – 12:00</p>	<p>Break/Dental exhibition</p>
<p>PODIUM 2</p>	
<p>12:00 – 12:30</p>	<p>Prof. Dr Martin Lorenzoni/AT Digital planning, diagnostics and navigation in implant prosthetics</p>
<p>12:30 – 13:00</p>	<p>Prof. Dr Dr habil. Andree Piwowarczyk/DE CAD/CAM in implantology—From the planning stage up until the final restoration</p>
<p>13:00 – 13:30</p>	<p>Prof. Dr Dr Ralf Smeets/DE Implantology news—Increasingly thinner, shorter, whiter?</p>
<p>13:30 – 13:45</p>	<p>Speaker and podium discussion</p>
<p>13:45 – 14:40</p>	<p>Break/Dental exhibition</p>
<p>PODIUM 3</p>	
<p>14:40 – 15:00</p>	<p>Prof. Dr Daniel Olmedo/AR Biological effects of titanium particles: Factors to consider in implantology</p>
<p>15:00 – 15:20</p>	<p>Dr Elisabeth Jacobi-Gresser/DE Evidence of patient specific risk factors in implantology</p>
<p>15:20 – 15:50</p>	<p>Prof. Dr Andrea Mombelli/CH Ceramic vs titanium: Where will the journey take us?</p>
<p>15:50 – 16:20</p>	<p>Prof. Dr Dr Knut A. Grötz/DE Extending the implant indication (systemic diseases, risk patients et al.)</p>
<p>16:20 – 17:00</p>	<p>Speaker and final discussion</p>

Programme for dental assistants

FRIDAY & SATURDAY, 28 AND 29 SEPTEMBER 2018

HYGIENE SEMINAR

Further education and qualification as Office Hygiene Commissioner for the dental practice

Friday, 28/09/2018 12:00 – 19:00
Saturday, 29/09/2018 09:00 – 19:00

QMC SEMINAR

Training as Quality Management Commissioner QMC

Friday, 28/09/2018 09:00 – 18:00

SCIENTIFIC PRESENTATIONS

Saturday, 29/09/2018

09:10 – 09:50	Prof. Dr Stefan Zimmer/DE Electric or manual: What is the better cleaning method?
09:50 – 10:30	Prof. Dr Stefan Zimmer/DE Tooth paste—Balm for the teeth
10:30 – 11:15	Break/Dental exhibition
11:15 – 12:00	Prof. Dr Mozghan Bizhang/DE Interdental space and tounge—What is still part of good oral hygiene?
12:00 – 12:45	Prof. Dr Nicole B. Arweiler/DE When normal oral hygiene is not enough—What do I recommend for patients with increased risk of disease?
12:45 – 13:15	Priv.-Doz. Dr Gregor Petersilka/DE Brushed properly and still periodontitis? Why oral hygiene is often not enough?
13:15 – 14:30	Break/Dental exhibition
14:30 – 15:15	Prof. Dr Thorsten M. Auschill/DE Systematic periodontal follow-up care
15:15 – 16:00	Priv.-Doz. Dr Gregor Petersilka/DE What are the benefits of oral irrigators and Co.?
16:00 – 16:15	Final discussion

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Organisational matters

Visions in Implantology

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CONGRESS FEES

Friday, 28 September and Saturday, 29 September 2018

Dentist/dental technician DGZI-member	€ 275*
Dentist/dental technician non-member	€ 325*
Medical Assistant (with Proof) DGZI-member	€ 120*
Medical Assistant (with Proof) non-member	€ 135*
Students (with Proof)	only conference fee
Conference fee**	€ 118 excl. VAT

TEAM FEES

Friday, 28 September and Saturday, 29 September 2018

Dentist + dental technician DGZI-member	€ 375*
Dentist + dental technician non-member	€ 450*
Dentist + Assistant DGZI-member	€ 350*
Dentist + Assistant non-member	€ 380*
Conference fee** per person	€ 118 excl. VAT

* The reservation is made on behalf of and on the account of DGZI e.V. incl. 7 % VAT

Early bird discount for all reservations made before 30 June 2018: 5 % of the congress fee.
For daily tickets the congress fee and conference fee are reduced by half.

DENTAL ASSISTANTS

Hygiene seminar (Friday and Saturday)

Dentist	€ 275 excl. VAT
Dental Assistant	€ 224 excl. VAT
Team fee (Dentist + Dental Assistant)	€ 448 excl. VAT
Conference fee** for both days/per person	€ 118 excl. VAT

QMC seminar (Friday)

Conference fee** per person	€ 109 excl. VAT
	€ 59 excl. VAT

Presentations (Saturday)

Dentist	€ 185 excl. VAT
Medical/Dental Assistant (with Proof)	€ 109 excl. VAT
Conference fee** per person	€ 59 excl. VAT

** Incl. coffee breaks, drinks and lunch. The conference fee has to be paid by every participant.

48TH DGZI International Annual Congress

Registration form via Fax to
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I would like to register the following persons bindingly for the 48th DGZI International Annual Congress/1st Future Congress in Dental Implantology on 28 and 29 September 2018 in Düsseldorf, Germany (Please mark accordingly):

Online registration: www.dgzi-jahreskongress.de

<input type="checkbox"/> yes <input type="checkbox"/> no	<input type="checkbox"/> Friday <input type="checkbox"/> Saturday (of chosen table clinics)	① ___ ② ___ ③ ___	<input type="checkbox"/> Hygiene seminar (Fr./Sa.) <input type="checkbox"/> QMB seminar (Sa.) <input type="checkbox"/> Presentations (Sa.)
Academic titel, last name, first name, profession	DGZI-member	Participation	Programme Dental Assistant
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Academic titel, last name, first name, profession	DGZI-member	Participation	Programme Dental Assistant
Evening event on Friday, 28 September 2018 ____ (# of persons)			

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I am hereby agreeing to the general terms and conditions of the 48th DGZI International Annual Congress.

Date, Signature

E-mail address (Please declare, you will receive the invoice and certificate via e-mail)



Photo: © EFP

Best of EuroPerio9

10,232 periodontists and other oral health professionals from all over the world travelled to Amsterdam, Netherlands from 20 to 23 June to learn about the latest research on periodontal disease and implants at EuroPerio9—one of the leading congresses in periodontology and implant dentistry.

EuroPerio9 participants came from 111 countries, with the Netherlands, Germany and France bringing the largest delegations from within Europe. Japan, Brazil and Mexico were the biggest groups from overseas. 25 per cent of delegates were non-European.

The scientific programme included over 1,720 abstracts that were presented in research sessions, setting another record for EuroPerio9. Additionally, 134 speakers made invited presentations in 42 lectures and special sessions. The new formats including PerioTalks, nightmare sessions, live surgery, debates, treatment planning interactive sessions, the perio contest and 3-D sessions were very popular with delegates. 308 moderated abstract and poster presentations also took place.

Congress chair, Michèle Reners, said that she would remember “the PedTalks, the Master Clinician Session on ‘Saving teeth’ and the nightmare sessions” among the memorable EuroPerio9 sessions. Søren Jepsen, chair of the scientific programme highlighted the video “Cell-to-Cell Communication—Peri-implantitis and its Prevention” as one of the sessions he enjoyed the most. He further stated: “Also the session on live surgery was quite amazing: 4,500 people sitting together quietly and concentrating on what was going on is something I had never experienced before. I think the session on the new classification of periodontal diseases is also a landmark event.” Visit www.efp.org/europerio9/programme/scientific for more details.

The session about the new classification of periodontal and peri-implant diseases, a consensus from the recent World Workshop in Chicago, drew large crowds. Significant differences with the previous 1999 classification were announced, such as the replacement of the “chronic” and “aggressive” distinctions by a model with stages and grades (see p. 48).

Intense social media interactions also played an important role at EuroPerio9. The social media team made up of volunteers from various countries, reported on every single session at the congress. For the first time, a social media wall allowed attendants to see what was trending at the meeting through the #EuroPerio9 hashtag. The newly launched EFP Instagram account now has over 1,100 followers and the EuroPerio9 playlist on the EFP YouTube channel had over 10,400 views. Facebook engagement was up 200 per cent and Twitter impressions were up 30 per cent. Regarding the EFP website, on Wednesday a record peak of 13,000 individuals looked at 54,000 pages. All three press conferences were live-streamed on Facebook.

Such record-breaking attention and attendance, as well as the presentation of leading research in periodontal science confirmed EuroPerio as the place to be for the latest news about periodontal health. EuroPerio10 will take place from 2 to 5 June 2021 at the Bella Center in Copenhagen, Denmark.

contact

European Federation of Periodontology

Antonio Lopez Aguado 4
28029 Madrid, Spain
www.efp.org

Nobel Biocare announces new products and partnerships

A new ceramic implant, as well as an innovative device for long-term implant care and maintenance were among the highlights Nobel Biocare presented during a press conference at EuroPerio9 in Amsterdam in June (Fig. 1). There, the company also invited to its Global Symposium in 2019, which will take place from 27 to 29 June at the Mandalay Bay hotel and convention centre in Las Vegas, USA.

With the 100 per cent metal-free NobelPearl implant system, dental professionals have everything they need for a successful start in ceramic implantology (Fig. 2). Developed as an alternative to titanium implants and for an increasing number of patients who prefer metal-free solutions for the look and feel of natural teeth, this new two-piece ceramic implant was designed for excellent soft-tissue attachment and low inflammatory response. Its cement-free internal connection boasting a screw made of carbon fibre reinforced PEEK supports a natural soft-tissue appearance and helps to avoid the risks often associated with excess cement during intraoral cementation.

NobelPearl is available for a broad range of indications, from single to multiple unit, and follows established workflows for two-piece implants. It will also be integrated into the digital workflow that includes treatment planning with the NobelClinician Software and guided implant surgery with NobelGuide pilot drilling. Additionally, clinicians will be able to offer patients the NobelPearl Ceramic Base

CAD/CAM solution using DTX Studio design software later this year.

In partnership with GalvoSurge Dental AG, a Swiss-based manufacturer of dental devices, Nobel Biocare further intends to bring to market an innovative cleaning system for long-term implant maintenance on all major implant brands. The GalvoSurge Dental Implant Cleaning System provides a unique protocol for decontamination of dental implants by removing the bacterial biofilm attachment directly from the implant surface. The technology is based on an electrolytic process that activates the production of hydrogen, which lifts off the bacterial film. The ground-breaking process aims to be atraumatic and pain free, only takes 2–3 minutes per implant and maintains the implant surface integrity. Available in 2019, the implant cleaning system will exclusively be distributed worldwide by Nobel Biocare.

For more information about the new products and the Global Symposium please visit www.nobelbiocare.com.

contact

Nobel Biocare Services AG

P.O. Box
8058 Zurich-Airport, Switzerland
www.nobelbiocare.com

Fig. 1: Vice President Global Research, Products & Marketing Stefan Holst, President Hans Geiselhöringer, and Vice President Multi-brand Strategy Sandro Matter (from left). **Fig. 2:** The NobelPearl two-piece ceramic implant solution. Photos: © Nobel Biocare



3–4 May 2019
Verona/Valpolicella, Italy

Giornate Veronesi



Implantology & Modern Dentistry



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Implantology & Modern Dentistry

Verona, Italy, May 2019

In close cooperation with the University of Verona, the Giornate Veronesi—the Days of Verona—will be held from 3 to 4 May 2019. It will be the fourth time that OEMUS MEDIA AG will hold a dental event with special Italian flair. Locations of the congress are the University of Verona, as well as the congress resort VILLA QUARANTA on the outskirts of Verona. The scientific hosts of the congress are Prof. Dr Pier Francesco Nocini/IT and Prof. Mauro Marincola/IT.

The event series started back in 2013 with great success in cooperation with the Sapienza University of Rome, Italy. Now the “Giornate Romane” will turn into “Giornate Veronesi”—the event will be the same but the location another. In 2019, the high-class event will thus be hosted in Verona, Italy, in close cooperation with the University of Verona. The credo of the event will be to combine high-quality scientific lectures and Italian lifestyle. On that occasion, the content of the programme has been extended enormously. Beyond the main podium concerning dental implantology, OEMUS MEDIA AG now also provides a programme for general dentistry as well as a programme for dental assistants. An innovative concept regarding both the content and the organisation has been applied to make this educational congress a one-of-a-kind experience for all participants.

The event will start on Friday morning with a scientific session at the University of Verona. Bus shuttles will

ensure the transfer for all participants. In the afternoon, a live-surgery broadcasted at the congress hall of VILLA QUARANTA and table clinics will round up the day. On Saturday, more scientific lectures will be held at the congress resort VILLA QUARANTA.

The Giornate Veronesi promise many opportunities for direct discussions with all lecturers, colleagues and the industry partners. The programme, the get-together on Friday and the typical Italian dinner with wine and music on Saturday will leave much space for conversation and dental exchange.

All registrations completed before 31 October 2018 will receive an early bird discount of 10 per cent of the conference fee.

contact

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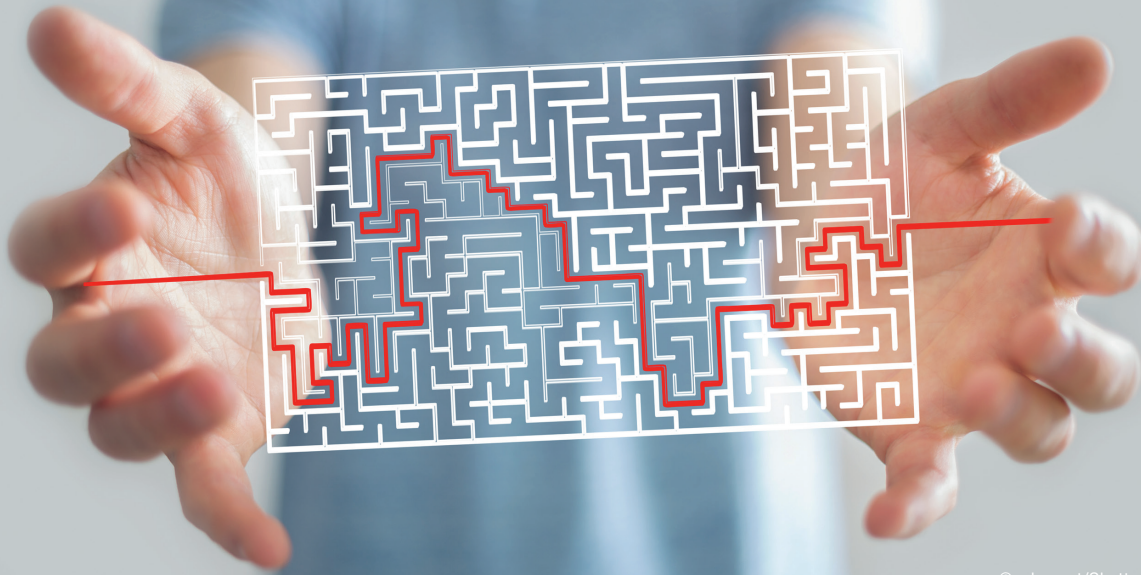
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Helping clinicians in determining

Dental implant complications

Implants are a preferable substitute to dentures as they are more comfortable, stable and functional. They can, however, create problems like peri-implantitis that can cause extensive bone loss. A recent study, titled “Peri-implantitis: A Comprehensive Overview of Systematic Reviews”, examined current scientific literature to gain a better understanding of peri-implantitis and help clinicians detect and treat the condition more quickly.

The research team from Temple University, USA, collected data regarding risk factors and microorganisms associated with peri-implantitis aiming at identifying the best diagnostics and treatment options available. A higher occurrence of peri-implantitis was found among implant patients who were smokers and who had periodontitis, uncontrolled diabetes and cardiovascular disease. Additionally, it was found that implants serve as a surface where microorganisms can settle and grow. Several bacte-

rial species and viruses such as the Epstein-Barr virus were prevalent in patients with implants who had peri-implantitis. These microorganisms can cause plaque formation and inflammation characteristic of peri-implantitis. Thus, clinicians now have a concise list of factors that predispose patients with implants to peri-implantitis.

“It is important to realise that dental implants require the same care and maintenance as natural teeth, especially in patients with a high risk for peri-implantitis,” said author Miriam Ting. Up to date no standard treatment for peri-implantitis exists. Future work is required to standardise the definition of peri-implantitis, and larger clinical experiments are needed to determine the most effective treatment.

Source: Journal of Oral Implantology

New classification of periodontal and

Peri-implant diseases and conditions

A new global classification system for periodontal health, diseases and conditions, as well as peri-implant diseases and conditions, has been announced at the EuroPerio9 congress in June 2018.



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The comprehensive classification was based upon the most contemporary evidence and includes a staging and grading system for periodontitis, indicating severity and extent of disease, accounting for lifetime disease experience and taking into account the patient's overall health status.

The new classification is the outcome of a joint workshop held by the European Federation of Periodontology (EFP) and the American Academy of Periodontology (AAP) in Chicago, USA, in 2017. The workshop included over 100 experts from Europe, America, Australia and Asia who reviewed existing literature to create a global consensus that enables care to be standardised for patients around the world. In the new classification, clinical health is defined for the first time and periodontitis is described in four stages, ranging from “least severe” (Stage 1) to “most severe” (Stage 4). The risk and rate of disease progression has been categorised into three grades. The grading considers risk factors like smoking and the presence of concomitant diseases, such as diabetes.

“The new classification should provide a globally consistent approach to diagnosis and management and ultimately improve outcomes for our patients,” said Prof Iain Chapple, EFP Secretary General.

Source: EFP

Acupuncture could reduce Dental anxiety

Fear of the dentist has multiple reasons and effects, there is, however, limited research on the impact and possible treatment methods for dental anxiety. To look deeper into the topic, researchers from the University of York, UK, have recently reviewed a number of studies on treating dental anxiety with acupuncture. For the systematic review and meta-analysis, six trials with a total of 800 patients were chosen. The researchers used a points scale to measure anxiety, which was shown to be reduced by eight points when dental patients were given acupuncture as a treatment. According to the researchers, this level of reduction is indicating that acupuncture could be a possibility for treating dental anxiety. Co-author of the study, titled "Acupuncture for anxiety in dental patients", Dr Hugh MacPherson, Professor of Acupuncture Research at the University of York's Department of Health Sciences, expressed

that the scientific interest in the effectiveness of acupuncture both as standalone and as accompanying treatment was increasing. "If acupuncture is to be integrated into dental practices, [...], then there needs to be more high-quality research that demonstrates that it can have a lasting impact on the patient. Early indications look positive, but there is still more work to be done," summarised MacPherson.

Source: DTI

Oral Reconstruction Foundation is

Welcoming new chairman and new board members

The Oral Reconstruction Foundation first announced its new chairman at the Oral Reconstruction Global Symposium 2018 in Rotterdam, the Netherlands. The foundation welcomed Prof. Dr Dr Dr Robert Sader, Director and Chair of Oral, Cranio-Maxillofacial and Facial Plastic Surgery at Goethe-University Frankfurt, Dean for clinical student affairs and Medical Director of the University Dental Institute Carolinum as its new chairman. Additionally, Oscar Battegay, Partner at Battegay Dürr AG attorney-at-law and civil law Notary Public in Basel, Switzerland, also joined the board of directors. Prof. Dr Irena Sailer, Head Division of Fixed Prosthodontics and Biomaterials at the University of Geneva completes the scientific board. The new board will discuss progressive ideas in regards to the creation and dissemination of knowledge by funding research proj-

ects and advanced education, as well as sponsoring young scientific talents and will remain faithful to its commitment to "Teaming up science and education to serve the patient". Prof. Sader and Prof. Sailer will support the foundation with ideas in regards to education and scientific aspects, whereas Oscar Battegay supplies his knowledge as specialist in national and international corporate law in addition to legal and strategic support. All new board members are selected for a four-year term. The new members will join the existing board of Prof. Dr F. Guerra (PT), Prof. Dr T. Taylor (US), Dr A. Schär (CH), Prof. Dr M. Sanz (ES) and Prof. Dr W. Wagner (DE; Fig. 1).

Source: Oral Reconstruction Foundation

Fig. 1: F. Guerra (PT), O. Battegay (CH), Chairman R. Sader (DE), I. Sailer (CH), T. Taylor (US), A. Schär (CH), M. Sanz (ES), missing in the picture: W. Wagner (DE).



Congresses, courses and symposia



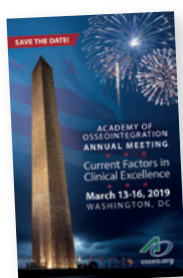
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11–13 October 2018
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www.eao.org



AO Annual Meeting

13–16 March 2019
Venue: Washington DC, USA
www.osseo.org/annual-meetings/



IDS 2019

12–16 March 2019
Venue: Cologne, Germany
www.ids-cologne.de



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3–4 May 2019
Venue: Verona, Italy
www.giornate-veronesi.info

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