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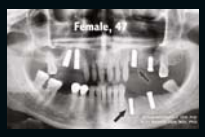

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Dr Georg Bach

President of the DGZI

Pioneering insights and innovations in implantology

Dear colleagues!

In today's rapidly evolving dental landscape, implantology is a dynamic field where innovation and precision converge. This issue not only highlights the latest technological advancements but also celebrates the passion driving these breakthroughs.

A key focus is the revolutionary application of Pulsed Electromagnetic Fields (PEMF) technology. This innovation opens new possibilities for accelerating healing after implant procedures and enhancing long-term stability. By improving bone quality and increasing implant stability in the early stages, PEMF represents a significant advancement that enhances patient outcomes while offering economic benefits for practices and laboratories.

In addition to these technological strides, we are excited to spotlight the upcoming DGZI congress, a key event for professionals in our field. This congress is a unique opportunity to engage with the latest research, connect with industry leaders, and explore innovative approaches that are shaping the future of implantology. The event promises a rich programme of lectures, workshops, and discussions that will provide invaluable insights and practical knowledge, helping us all to elevate our practice standards.

As we prepare for this important event, we also pause to recognise the individuals driving these innovations. An exclusive interview with a leading expert offers insights into the passion for customer care, innovation, and growth that propels our industry. These stories remind us that every technical achievement is the result of dedication, hard work, and a commitment to excellence.

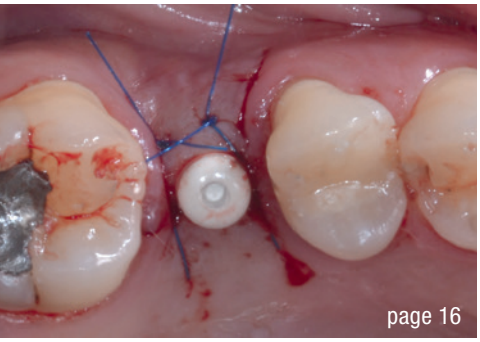
In closing, we extend our deepest gratitude to you, our devoted readers. Your unwavering support and dedication to advancing implantology are the forces that propel us forward. Together, let's embrace this exciting era, elevate the standards of dentistry, and provide our patients with the highest quality care.

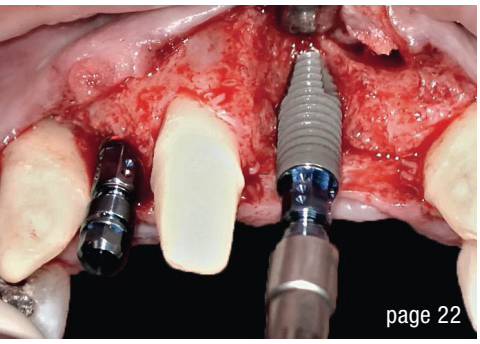
Sincerely,

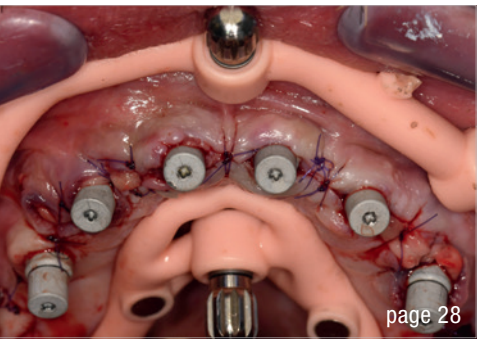
Dr Georg Bach

President of the German Association of Dental Implantology

Dr Georg Bach







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[1] Semper-Hogg, W, Kraft, S, Stiller, S et al. Analytical and experimental position stability of the abutment in different dental implant systems with a conical implant–abutment connection Clin Oral Invest (2013) 17: 1017.
[2] Semper Hogg W, Zulauf K, Mehrhof J, Nelson K. The influence of torque tightening on the position stability of the abutment in conical implant-abutment connections. Int J Prosthodont 2015;28:538-41.

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Redefining dental care standards with advanced proven PEMF technology

Prof. Shlomo Barak DMD, Israel

Pulsed Electromagnetic Fields (PEMFs) technology, known for its therapeutic benefits, has gained recognition for its non-invasive nature and ability to fully penetrate tissues. It has been extensively studied for its impact on biological processes, including DNA synthesis, gene expression, and cell migration.

PEMFs therapy has found applications in various medical and dental treatments, offering relief from postoperative pain, managing inflammation, and aiding in bone and wound healing. This review explores the historical development of PEMFs technology, detailing its *in vitro* and *in vivo* studies, and highlighting its diverse therapeutic applications in medical and dental fields. From its origins in the 19th century to modern-day applications, PEMFs have evolved into a promising therapy with significant potential in clinical settings.

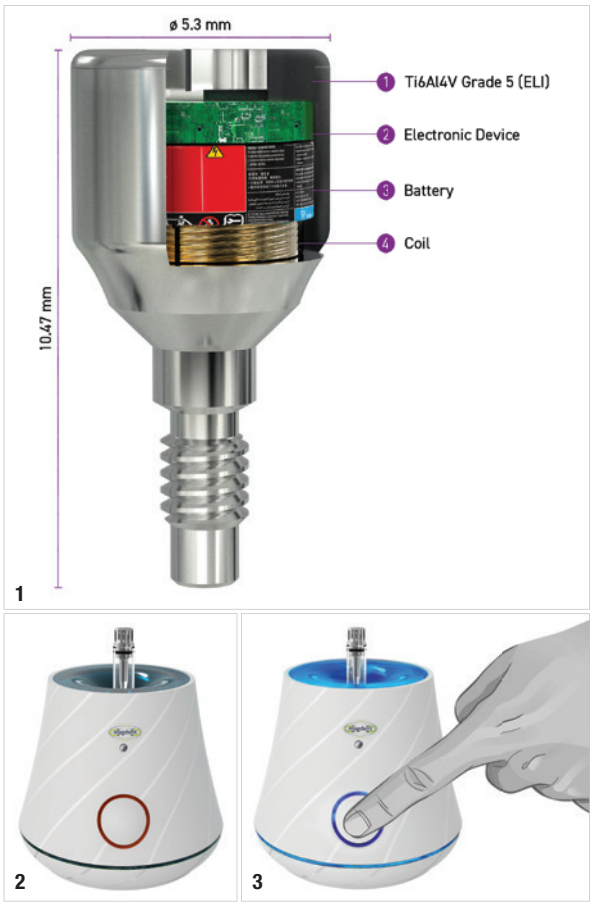
This innovation is not just a breakthrough in patient care; it represents a substantial growth opportunity in the dental tech market. Implementing Magdent's device in clinics has shown to increase income by offering efficient, premium treatments and helps implant companies to save millions on their R&D pipeline, offering its technology with their products.

In vitro studies demonstrate PEMFs' ability to influence cellular activities, such as apoptosis, proliferation, and differentiation, through modulation of ion channels and signal transduction pathways. *In vivo* studies further support these findings, showing effects on tissue hypoxia, capillary blood flow, and wound healing.

PEMFs in implantology

Pulsed Electromagnetic Fields (PEMFs) have made significant strides in dental applications, particularly in dental implantology. Dental implants, which rely on primary stability for successful osseointegration, often face challenges with poor bone quality. Studies have shown that PEMFs stimulate bone formation, induce osteoid formation, and promote neo-vascularisation, ultimately improving bone quality around dental implants.

Magdent with its exclusive proprietary patents has developed a Miniaturised Electromagnetic Device (MED) for PEMFs therapy in dental implants. This device, resembling traditional healing abutments, significantly improved implant stability, bone quality, and reduced pro-inflammatory cytokine levels compared to conventional healing abutments. It was found to enhance implant stability, particularly in the early healing phases, and contribute to improved bone development surrounding the implant.



Figs. 1–3: A cross-sectional view of the Miniaturised Electromagnetic Device (MED) healing abutment **(1)**; an activator device which triggers the battery in the MED **(2 & 3)**.

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1 Norton MR, Astrom M. The influence of implant surface on maintenance of marginal bone levels for three premium implant brands: A systematic review and meta-analysis. Int J Oral Maxillofac Implants 2020;35(6):1099-111

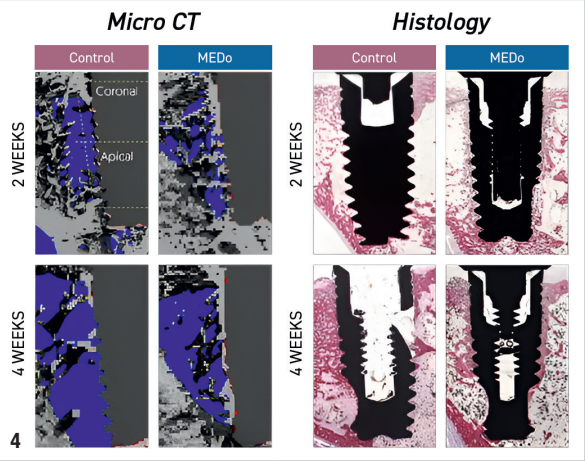

Fig. 4: Bone-to-implant contact higher in test implants after two weeks and stable after four weeks.

Furthermore, PEMFs therapy has shown promise in treating peri-implantitis, a common complication that can lead to implant loss if untreated. Studies have investigated the use of MED in implants affected by peri-implantitis, demonstrating significantly less crestal bone loss, lower levels of pro-inflammatory cytokines, and overall improvement in clinical parameters compared to conventional treatments.

The introduction of the Miniaturised Electromagnetic Device (MED) marks a significant advancement, particularly in dental implantology, by promoting implant stability, osseointegration, and antimicrobial effects, improve bone quality and address complications as peri-implantitis (Figs. 1–3).

Magdent has been working for the past few years with world-recognised researchers such as Prof. Jamil Shibli, Dr Yaniv Mayer and Dr Alberto Monje, supported by its founders, Prof. Shlomo Barak and Dr Moshe Neuman.

Based on Magdent's disrupting results, the company has been working with leading dental implant companies to distribute its products through their distribution channels, currently available in Europe, and targeting its launch in the US towards the end of 2025.

Increasing bone-to-implant contact & trabecular bone volume density: "A new device for improving dental implants anchorage: a histological and micro-computed tomography study in the rabbit". Barak et al. Clinical Oral Implants Research. 2016 Aug;27(8):935–42.

Dental implants typically require a two- to six-month healing period before loading, but shortening this time increases failure rates, particularly for unsplinted implants. Immediate loading necessitates primary stability and adequate bone tissue quantity and quality at the interface, affecting prognosis. Additional stimulants for enhanced osteogenesis are needed to overcome failures, especially in poor bone quality, and shorten loading times.

The study conducted on rabbits involved the insertion of implants in the proximal tibial metaphysis, with half receiving a healing cap containing an active PEMF and the other half receiving a traditional cap. At two and four weeks, samples underwent micro-computed tomography and histology. Results showed significant increases in trabecular bone fraction, trabecular number, and connectivity density in the coronal region of test implants compared to controls at both time points. Additionally, bone-to-implant contact was higher in test implants after two weeks and remained stable at four weeks (Fig. 4). The study concludes that the PEMF device accelerated early bone formation around dental implants resulting in higher peri-implant BIC and bone mass already after two weeks which suggests an acceleration of the osseointegration process by more than three times.

This marks a significant milestone for millions of chronic patients with poor bone quality, including those suffering from conditions like diabetes, osteoporosis, and heavy smokers, all of whom are at a high risk of failure.

Effect of PEMF on Dental Implants Stability—Accelerating Osseointegration: "Effect of the Pulsed Electromagnetic Field (PEMF) on Dental Implants Stability: A Randomized Controlled Clinical Trial". Bhukya P. Nayak et al. Materials. 2020 Apr 3;13(7):1667.

The waiting period for functional loading after osseointegration can be lengthy in dental implants procedures. Recent advancements allow for earlier loading, addressing patient discomfort and improving quality of life. Primary

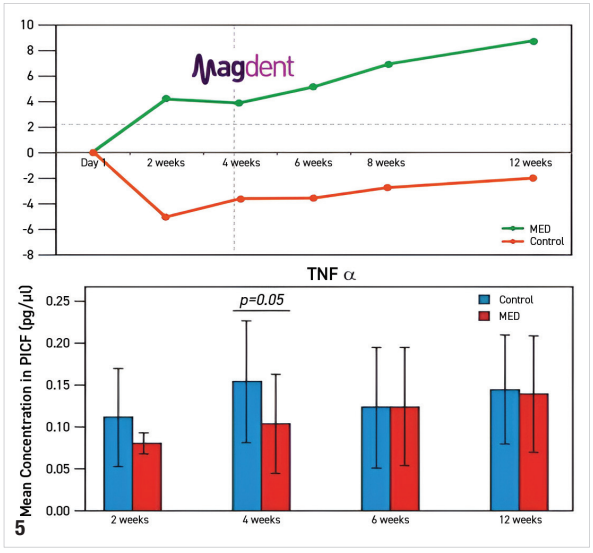

Fig. 5: Implant stability change from baseline in ISQ (Implant Stability Quotient).

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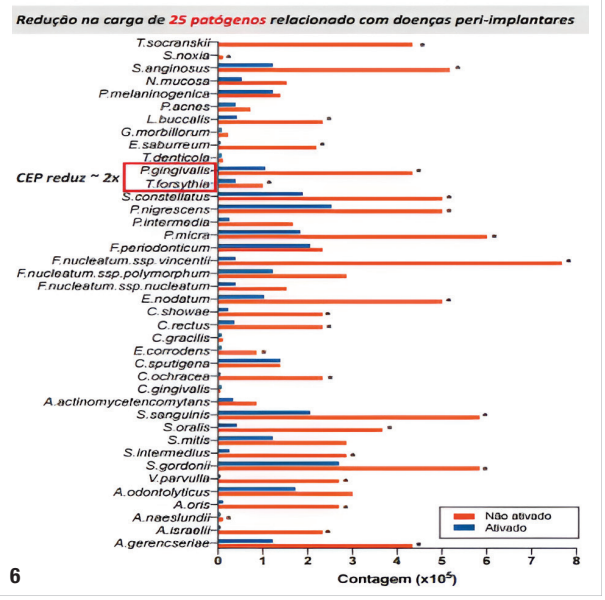


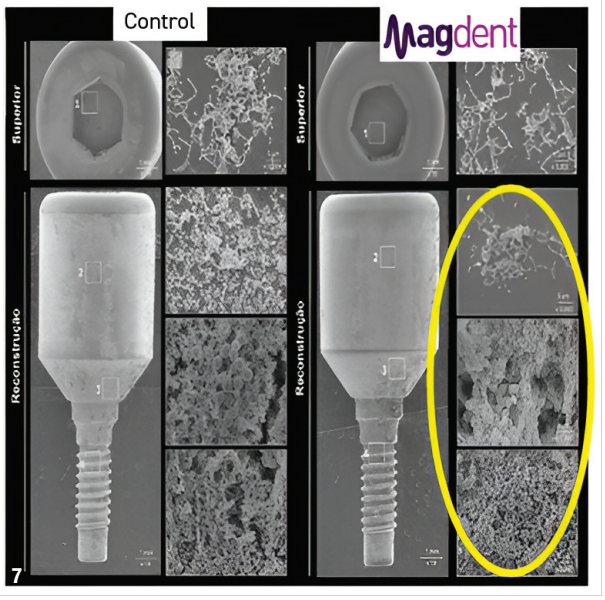


Fig. 6: Changes in bacterial biofilm around implant. **Fig. 7:** The Magdent MED generated PEMF may have an antimicrobial effect on bacterial species.

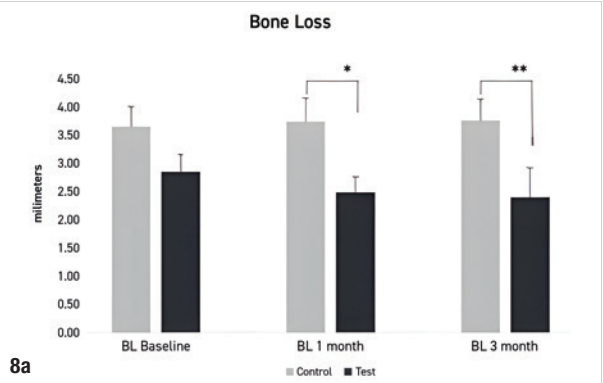
implant stability is crucial for successful osseointegration, influenced by tissue quantity and quality.

In this randomised clinical study, implants treated with the Miniaturised Electromagnetic Device (MED) showed a significant increase in stability by 13% compared to a 2% decrease in the control group. The MED-treated group also demonstrated a notable decrease in marginal bone loss at six and 12 weeks. Primary stability, crucial for long-term implant survival, remained consistently higher in the MED group throughout the study period, indicating superior total stability. This enhanced stability is attributed to PEMF's ability to promote osteoblast activity and proliferation, shifting the balance between bone resorption and formation in favour of the latter. Lower levels of proinflammatory cytokines (TNF-α and IL-1β) in the MED group further support the positive impact of PEMF treatment on implant stability by modulating the inflammatory response.

These results indicate that PEMF treatment may enhance implant stability and establish a new benchmark for care, shortening the healing period and achieving full osseointegration within four to eight weeks instead of the conventional three to six months (Fig. 5).

Impact of PEMF on bacterial biofilm colonisation around implants: "Antimicrobial effects of a pulsed electromagnetic field: an in vitro polymicrobial periodontal subgingival biofilm model". M. Faveri et al. Biofouling. 2020:1–8.

PEMF have been explored for their antimicrobial properties and potential in orthopaedics and wound healing showing that could affect bacterial membranes, altering cell metabolism and growth. The aim of this *in vitro* study was to assess the antimicrobial effects of PEMF on a polymicrobial subgingival periodontal biofilm model, potentially offering a novel approach to managing peri-implant diseases.



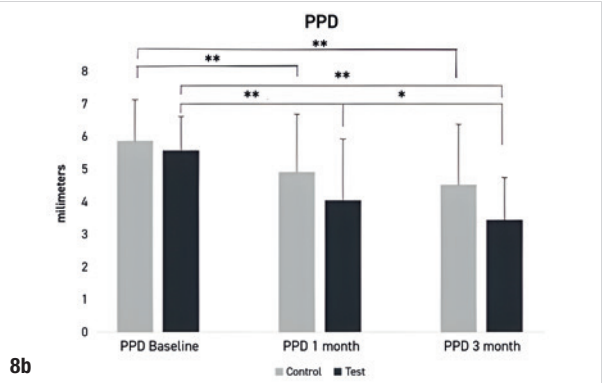
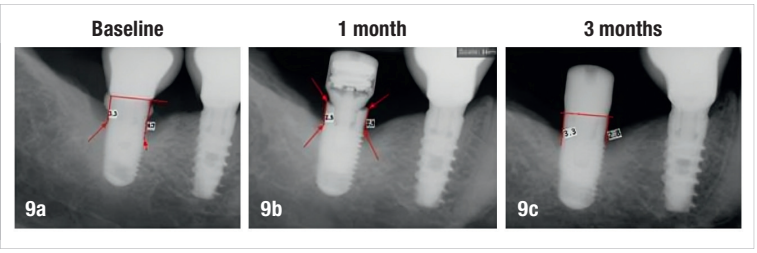
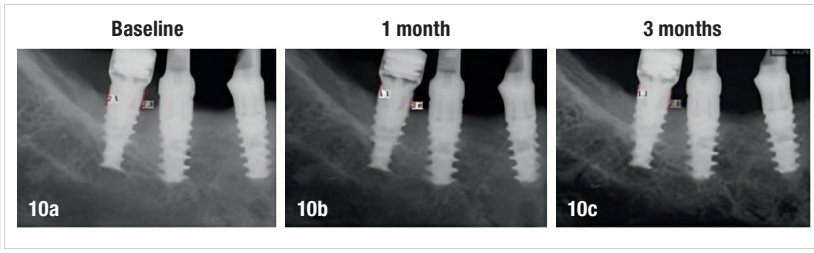


Fig. 8a: The distance from the implant shoulder to bone crest was measured on X-rays using the ImageJ software at baseline (T0), one month (T2) and three months (T3). *p < 0.05, **p < 0.01 **Fig. 8b:** Mean of pocket depth measurements at baseline, one and three months in control and test groups. *p < 0.05, **p < 0.01





Figs. 9a–c: The distance from the implant shoulder to bone crest in a patient from the test group: Measurements taken at baseline **(a)**; after one month **(b)**; and after three months **(c)**. **Figs. 10a–c:** The distance from the implant shoulder to bone crest in a patient from the test group: Measurements taken at baseline **(a)**; after one month **(b)**; and after three months **(c)**.

The results indicate significant differences in bacterial counts between the test and control groups. Total bacterial counts were lower in the test group compared to the control group, with a statistically significant difference ($p = 0.0492$). Analysis of specific bacterial species revealed that seven species were significantly elevated in the control group, including *E. nodatum*, *F. nucleatum ssp. nucleatum*, *S. intermedius*, *S. anginosus*, *S. mutans*, *F. nucleatum ssp. vicentii*, and *C. ochracea* ($p < 0.05$). The mean percentage of DNA probe counts revealed significantly higher proportions of two bacterial species in the test group (*G. morbillorum* and *A. gerencseriae*) compared to three bacterial species in the control group (*E. nodatum*, *F. nucleatum ssp. nucleatum*, and *S. mutans*; Fig. 6).

The Magdent MED generated PEMF may have an antimicrobial effect on bacterial species and can be considered as a new treatment modality to control bacterial colonisation around dental implants.
Recently, the company has undertaken a comparable clinical study, confirming identical results and presenting a significant new approach to managing peri-implant diseases (Fig. 7).

Influence of PEMFs on peri-implantitis: "A novel non-surgical therapy for peri-implantitis using focused pulsed electromagnetic field: A pilot randomized double-blind controlled clinical trial". Mayer et al. Bioelectromagnetics. 2023;44:144–55.

Peri-implantitis, characterised by inflammation and bone loss around dental implants, is a significant concern in dentistry. While various treatments exist, their effectiveness can be limited. This study aimed to evaluate the effectiveness of PEMF therapy as an adjunct to non-surgical treatment for peri-implantitis.

The study encompassed patients diagnosed with peri-implantitis, categorised into two groups: a test group undergoing PEMF therapy via an innovative healing abutment embedding active PEMF, and a control group receiving inactive PEMF. Following non-surgical mechanical debridement of the implant surface, assessments—clinical, radiographic, and immunological—were conducted at baseline, one month, and three months (Figs. 8–10). Among the 23 patients with 34 implants studied, the test group exhibited significantly lower mean crestal bone loss compared to the control group. Additionally, IL-1β levels were notably reduced in the test group at two weeks. Noteworthy improvements were observed in peri-implant pocket depth, plaque index, and bleeding on probing across both groups throughout the study duration.

The study findings underscore the potential of PEMF therapy as a complementary approach to non-surgical treatments for peri-implantitis, showcasing its ability to reduce inflammation and bone loss. Notably, PEMF therapy exhibits promise in fostering tissue repair and diminishing proinflammatory cytokines. Mayer et al. emphasise a new paradigm in dental implantology by using PEMF therapy receiving favourable outcomes with the test group displaying enhanced clinical parameters and decreased bone loss relative to the control group over a brief observation period.

about the author

Prof. Shlomo Barak DMD is an internationally recognised oral and maxillofacial surgeon who has published over 45 articles on oral surgery and dentistry. He is former director of Dental & Maxillofacial department—"Hillel Yafe" medical center. Prof. Barak founded and managed the "Maccabi-Dent" dental clinics chain for 18 years.

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Peri-implantitis prevention starts with the choice of a clean implant

Drs Dirk U. Duddeck & Dana Adyani-Fard, Germany

Two years ago, in *implants 4/2022*, we raised an important question: how clean must sterile-packaged implants be to meet the high expectations of dental professionals who entrust these medical devices to their patients? At that time, extensive quality assessments conducted by the CleanImplant Foundation revealed troubling impurities on the surfaces of new, sterile-packaged implants, identified through independent laboratory testing. It was reasonable to expect that the manufacturers involved would address these issues promptly and ensure that their medical devices meet the highest standards of cleanliness. Regrettably, even after two years, we cannot give the "all-clear". Here's an update to where things stand now.

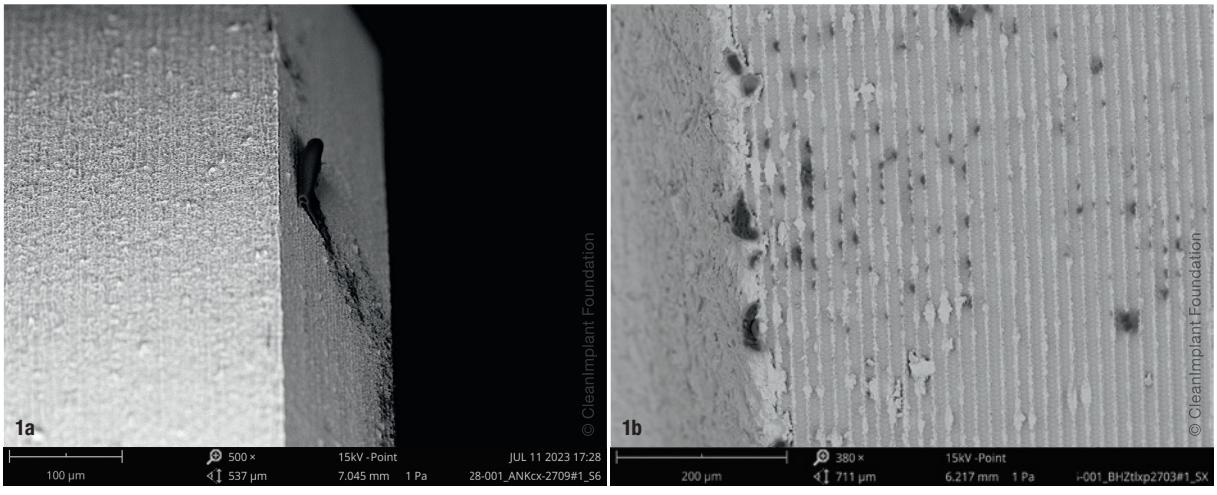
For decades, dental implants have been the gold standard for replacing missing teeth, whether it's a single tooth or an entire dental arch. However, alongside this success, experts have noted a rise in cases of peri-implantitis and the associated peri-implant bone loss.

Peri-implantitis is a pathological condition affecting the bone surrounding dental implants, characterised by inflammation of the adjacent soft and hard tissues, leading to progressive bone loss.[1,2] If not diagnosed and treated promptly, this condition can result in the loss of the implant. Unfortunately, the clinical and histological factors that contribute to the progression from peri-implant mucositis to peri-implantitis are still not completely understood.[3] Clinically, sites affected by peri-implantitis often exhibit more extensive inflammatory lesions compared to periodontal sites around natural teeth.

Sterile yet contaminated implants

A vastly underestimated risk factor that needs to be better understood has recently gained attention: the manufacturing and packaging processes of dental implants. These largely overlooked factors can significantly impact the short- and long-term success of implants placed intra-orally. The cleanliness of the implant surface is crucial, particularly because it directly affects the surrounding bone during placement and the early phases of osseointegration.[4]

It is imperative that every stage of the manufacturing process is meticulously controlled to ensure that the final product is not only sterile but also free from any surface contaminants that could provoke an immunological response. While the implant may be sterile when it is removed from its packaging, there is a possibility of thin film contaminants, as well as plastic or metallic particles, remaining on the surface—residuals of the complex and intricate manufacturing process.[5]



Figs. 1a & b: SEM 500x **(a)** and SEM 380x **(b)**. Significant impurities located at the shoulders of two sterile packaged titanium implants.

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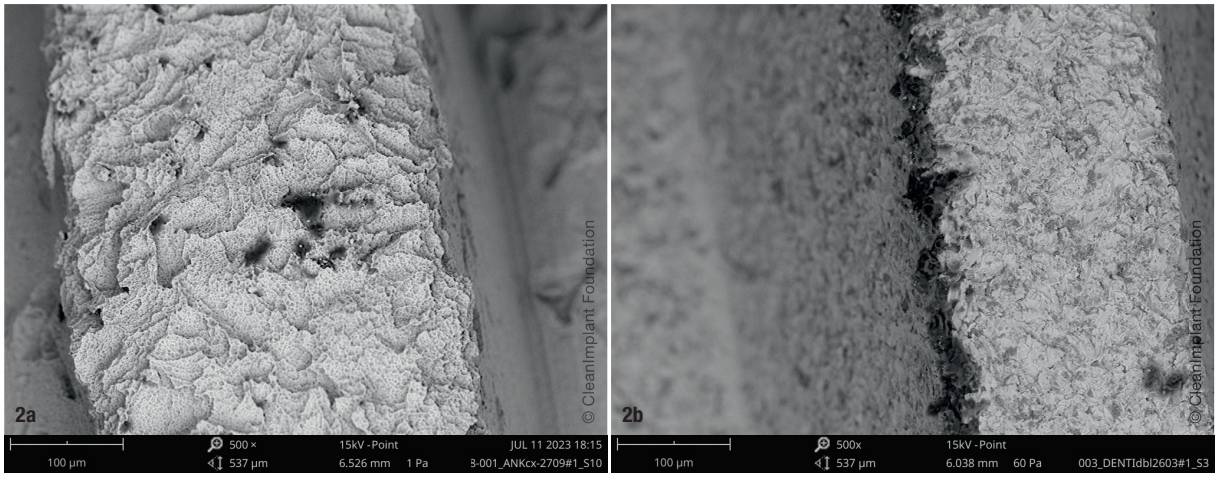

Figs. 2a & b: Major carbon-based contamination of titanium implant threads straight after unpacking, shown at SEM 500x.

Methods of analysis

Contaminants, whether in the form of particles or thin layers on the implant surface, can be accurately identified through a combination of advanced analysis techniques. In a particle-free clean room environment, the precise location of these impurities is determined using material contrast imaging in a scanning electron microscope (SEM). To further characterise the impurities, energy-dispersive X-ray spectroscopy (EDS) provides initial insights into their elemental composition. The exact chemical nature of these contaminants is then identified through time-of-flight secondary ion mass spectrometry (ToF-SIMS). The CleanImplant Foundation ensures that all these analyses are conducted exclusively in accredited testing laboratories, adhering to the stringent standards of DIN EN ISO/IEC 17025:2018, guaranteeing precision and objectivity in every analysis.

Results

In quality assessment studies conducted by the CleanImplant Foundation in collaboration with Charité–Universitätsmedizin Berlin and the Sahlgrenska Academy in Gothenburg, Sweden, significant impurities were discovered on new, sterile-packaged dental implants. These impurities affected both titanium and zirconia implants.[5,6] On average, one in three analysed implant systems exhibited notable factory-related contamination on the implant surface immediately after removal from the packaging. The contaminants identified included organic particles from the manufacturing process, metallic particles—such as iron-chromium compounds, nickel, or tungsten—resulting from milling or surface treatments, and plastic residues from handling and packaging. The areas most frequently contaminated were the shoulder region of the implant platform (Figs. 1a & b) and the implant threads (Figs. 2a & b). In some instances, analyses revealed not only isolated impurities but also larger areas of the implant surface that had either been inadequately cleaned during production or contaminated during packaging.

At high magnification, SEM images showed carbonaceous particles as black spots, alongside thermoplastic materials, synthetic polymers, and polysiloxanes on sterile implant surfaces. Both titanium implants (Figs. 1a–2b) and zirconia (ceramic) implants from various manufacturers were found to be affected by these contaminants.

Certain ceramic implants were found to have significant deposits of polysiloxane, which could be traced back to the packaging material (Fig. 3). Another potential threat to successful healing (osseointegration) after implantation comes from thin-layer residues of highly aggressive, cytotoxic cleaning agents, such as dodecylbenzene sulphonic acid (DBSA)[7] or the pesticide didecyldimethylammonium chloride (DDAC-C10)[8]. This quaternary ammonium compound was identified using ToF-SIMS

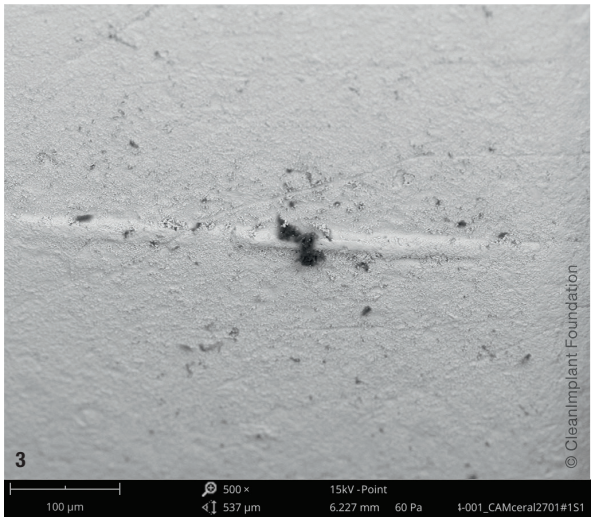

Fig. 3: SEM image at 1,000× revealing significant plastic material and thin-film contamination on a sterile-packaged ceramic implant.

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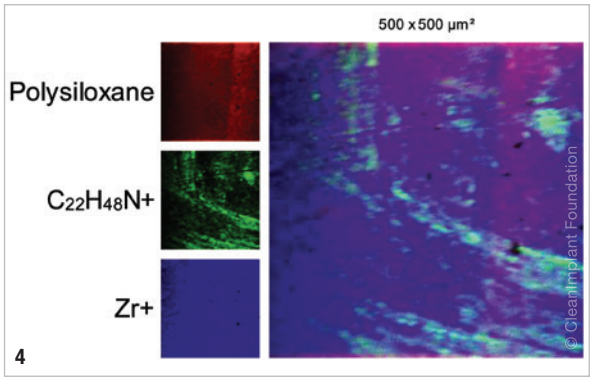

Fig. 4: ToF-SIMS visualisation of polysiloxane (red) and the quaternary ammonium compound DDAC ($C_{22}H_{48}N+$; green) on the surface of the ceramic implant shown in Figure 3 (with permission of Tascon GmbH, Münster, Germany).

on the surface of a sterile-packaged ceramic implant (Figs. 3 & 4).

Alarmingly, all implants analysed and found to contain contaminants carried the CE mark or had received clearance from the US Food and Drug Administration. This highlights a critical concern: even sterile-packaged medical devices can pose risks to patients if contaminated. Such contamination can lead to implant failure, often associated with peri-implantitis, as a result of inflammatory reactions triggered by these impurities.

However, it is important to note that many implants examined under SEM revealed flawless surfaces, completely free of inorganic, organic, and plastic particles (Fig. 5). This demonstrates that contamination is not only a significant concern but also one that is technically preventable.

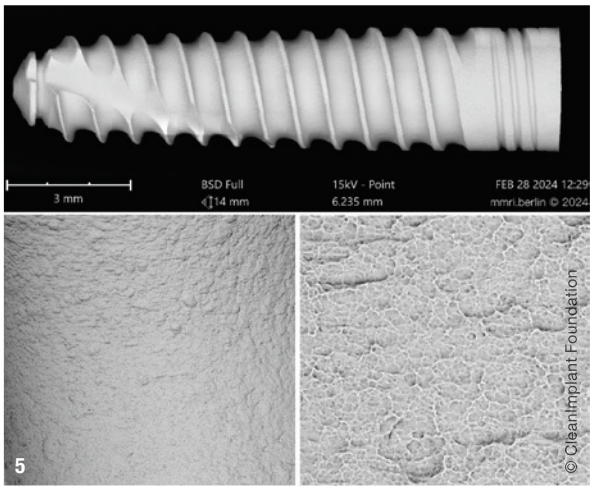

Fig. 5: SEM mapping image of the whole implant after removal from the manufacturer's packaging (top); SEM magnification 500x (left) and 2,500x (right), demonstrating a clean surface free of any organic or metallic particles or other debris.

Clinical effects

Even at low concentrations, thin-film contaminants—such as those containing DBSA or quaternary ammonium compounds—are cytotoxic to cells and impede rather than facilitate implant healing. DBSA, an aggressive surfactant, is categorised as a "hazardous substance" by the EPA. Similarly, the biocide/pesticide DDAC-C10 disrupts intermolecular interactions and destroys cell membranes.[9]

Carbon-containing organic particles that persist on the implant's surface during manufacturing or plastics from packaging can provoke an immune response in the form of a foreign body reaction (Fig. 6). During implant insertion, particles that detach from the surface are engulfed by macrophages through phagocytosis. This process triggers a cascade of proinflammatory cytokines, including TNF-α, interleukin(IL)-1β, and IL-6. These cytokines promote the differentiation of osteoclast precursors into mature osteoclasts, which can enhance osteoclastic activity and result in peri-implant bone resorption.[10]

Particularly, foreign particles ranging from 0.2 to 7.2 µm in size are known to be highly proinflammatory.[11–13] The increased expression of Matrix Metalloproteinase-8 (MMP-8) exacerbates soft-tissue damage and inflammation, which can progressively affect the adjacent bone.[10] Consequently, the rough implant threads become exposed to the oral environment, leading to bacterial colonisation, often described as the "beginning of a bad ending" and accelerating peri-implant disease. This progression often culminates in further crestal bone loss and, potentially, implant failure.

Discussion

The immunological response to contaminants varies among patients. While some may exhibit minimal or no reactions, others may experience severe responses. The growing recognition of peri-implant disease, facilitated by advances in clinical understanding, indicates that contaminants can provoke immunological reactions in a significant number of patients.

Contaminants on an implant's surface signify a compromised implant. Addressing this issue is not complex: manufacturers have the capability to prevent such contamination, and it is their responsibility to do so. There is no justification for failing in this regard; the well-being of patients and the integrity of scientific standards demand the highest quality control. As dental implants become more widely used, it is imperative to monitor patients closely throughout the lifespan of their restorations. Early detection and intervention for peri-implant mucositis are crucial for preserving the surrounding bone, halting the progression of peri-implantitis, and enhancing long-term clinical outcomes.

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However, preventing undesirable foreign body reactions and early-stage peri-implantitis begins with selecting an implant system that is rigorously proven to be clean. Sterility alone does not ensure safety, as contaminants—regardless of being labelled as "sterile dirt"—can still trigger immunological responses.

Conclusion

The quality of the implant surface and the cleanliness of the implant are crucial factors in peri-implant diseases, though they remain significantly underestimated. Whether the implants are made of titanium or ceramic, it is essential that the implant's surface is free from foreign particles after removal from sterile packaging. Particulate and thin-film contaminants are often invisible to the naked eye, even under magnification with magnifying glasses or microscopes.

In most cases of peri-implantitis or implant failure, clinicians may attribute the issue solely to patient factors. However, the results from quality assessments of sterile-packaged implants suggest that the medical device itself should also be considered a potential source of inflammatory reactions and a possible trigger for peri-implantitis during the placement process.[5]

For the past eight years, the CleanImplant Foundation has collaborated with an expanding network of industry partners to ensure particle-free implant production. It has established the "Trusted Quality" seal as a mark of assurance for implants that have been rigorously tested and deemed clean.

The foundation acts as an intermediary, bridging the legitimate expectations of patients and providers with the quality assurance processes of medical device manufacturers. Through its initiatives, the foundation has frequently identified previously unrecognised deficiencies in manufacturing and packaging, leading to significant and lasting improvements in production protocols. The shared commitment to the fundamental medical ethics principle of *primum non nocere* (first do no harm) highlights the collaborative nature of the Foundation's work with its partners and manufacturers. Moreover, understanding the implications of residual biocides, such as DDAC, and cytotoxic, surface-active agents like DBSA on sterile-packaged implants intended for patient use is critical to ensuring product safety and efficacy.

Dentists interested in supporting the CleanImplant Foundation can become members through the website. This non-profit organisation provides details on the benefits of membership and showcases numerous implants that have received the prestigious seal of quality, the "Trusted Quality" mark, after thorough testing. The criteria for ensuring that implants are largely free of particles were established in a consensus paper published in 2017.[14]

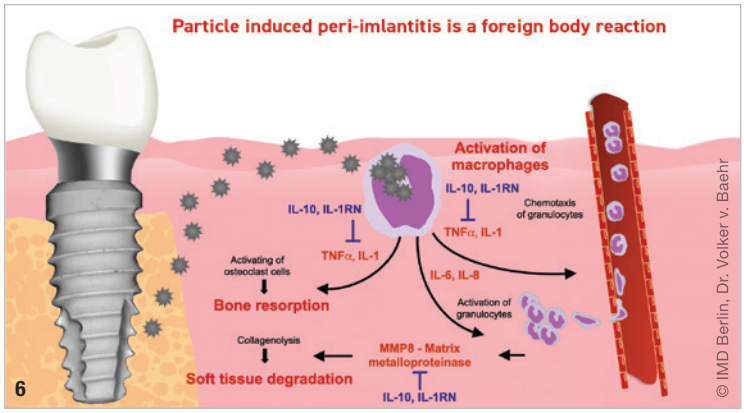


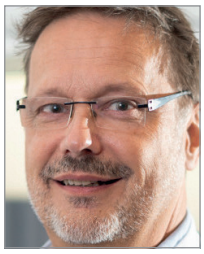
Fig. 6: Impurities detach during implant insertion from the surface and induce a storm of pro-inflammatory cytokines leading to bone resorption and soft-tissue degradation.

The decision to award this quality mark is made by the renowned scientists on the Foundation's Scientific Advisory Board through a rigorous peer review process. To uphold the Trusted Quality seal, a random sample of five implants from each system undergoes comprehensive, independent analysis every two years.

Literature

Read the previous article

contacts



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Late implant placement following bilateral sinus floor elevation

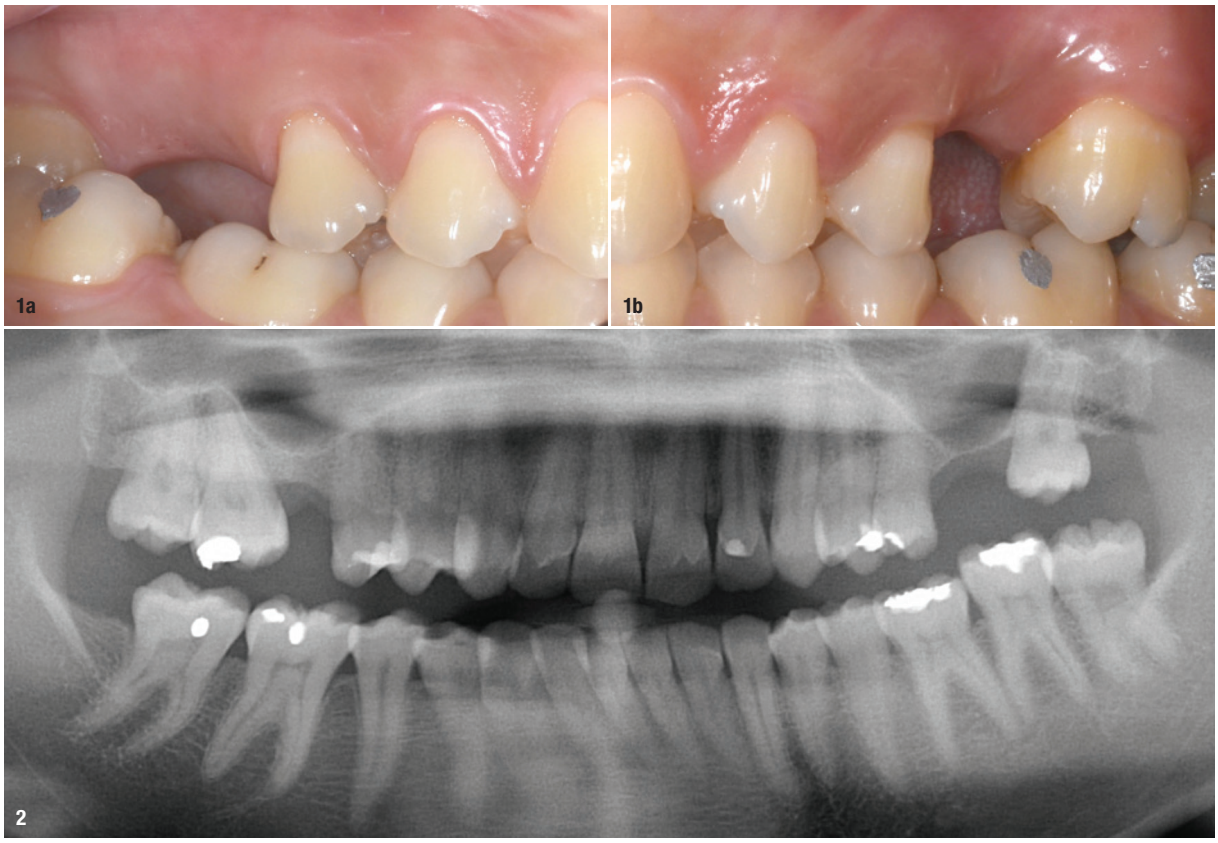
Prof. Dr Paolo Maturo & Dr Edoardo Magnanelli, Italy

Partial tooth loss in the posterior region can lead to significant functional deficits and, particularly in young patients, may also result in aesthetic concerns. If left untreated, the loss of vertical dimension and subsequent tooth migration can lead to temporomandibular joint (TMJ) disorders. Additionally, untreated partial malocclusion in the posterior region is a primary cause of maxillary sinus pneumatisation and vertical bone loss.

When the residual crestal bone volume is minimal, preserving the surrounding native bone is crucial for the long-term stability of implants after bone regeneration. Several factors, including implant geometry and prosthetic connection, play a role in crestal bone resorption. In this context, iSy implants offer features that support the long-term preservation of marginal bone. Notably, their macro-geometry, non-tapered implant neck, and conical prosthetic internal configuration with integrated platform switching are particularly advantageous.[1,2]

Diagnostics

A 28-year-old woman sought further treatment in our practice following the extraction of her posterior teeth #16, #26, and #27 alio loco over five years ago. She requested reconstruction of the edentulous regions with dental implants. Upon initial oral examination, it was noted that the absence of tooth #16 had caused a mesial inclination of tooth #17, resulting in a reduced interproximal space. The orthopantomograph (OPG) revealed a mesioangulation of tooth #28 and several minor fillings (Figs. 1a & b). Additionally, significant bone height reduction was observed



Figs. 1a & b: Clinical situation pre-op in the first and second quadrants. **Fig. 2:** The OPG reveals pneumatisation of the maxillary sinus and tooth inclination.

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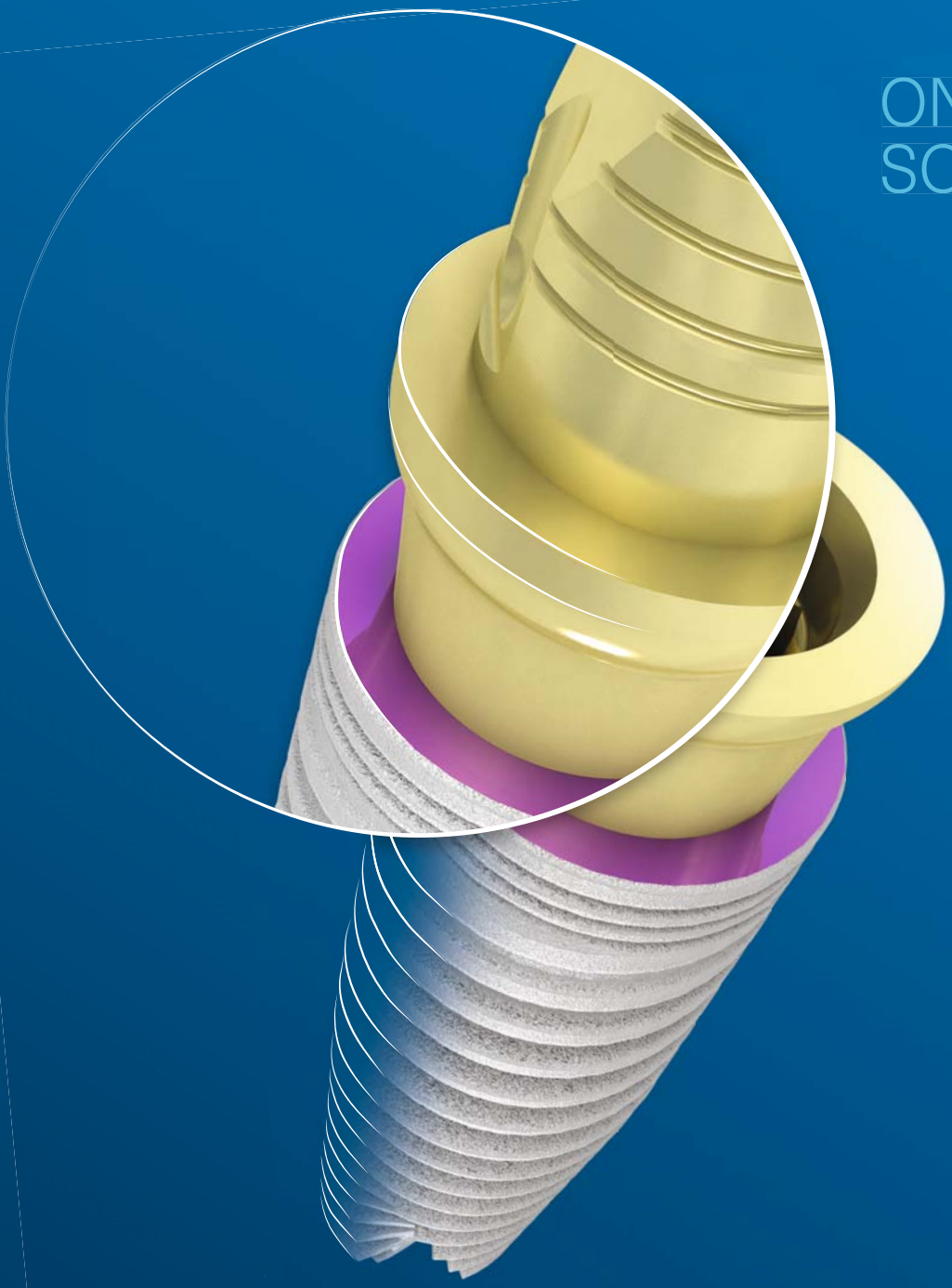

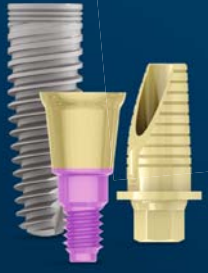

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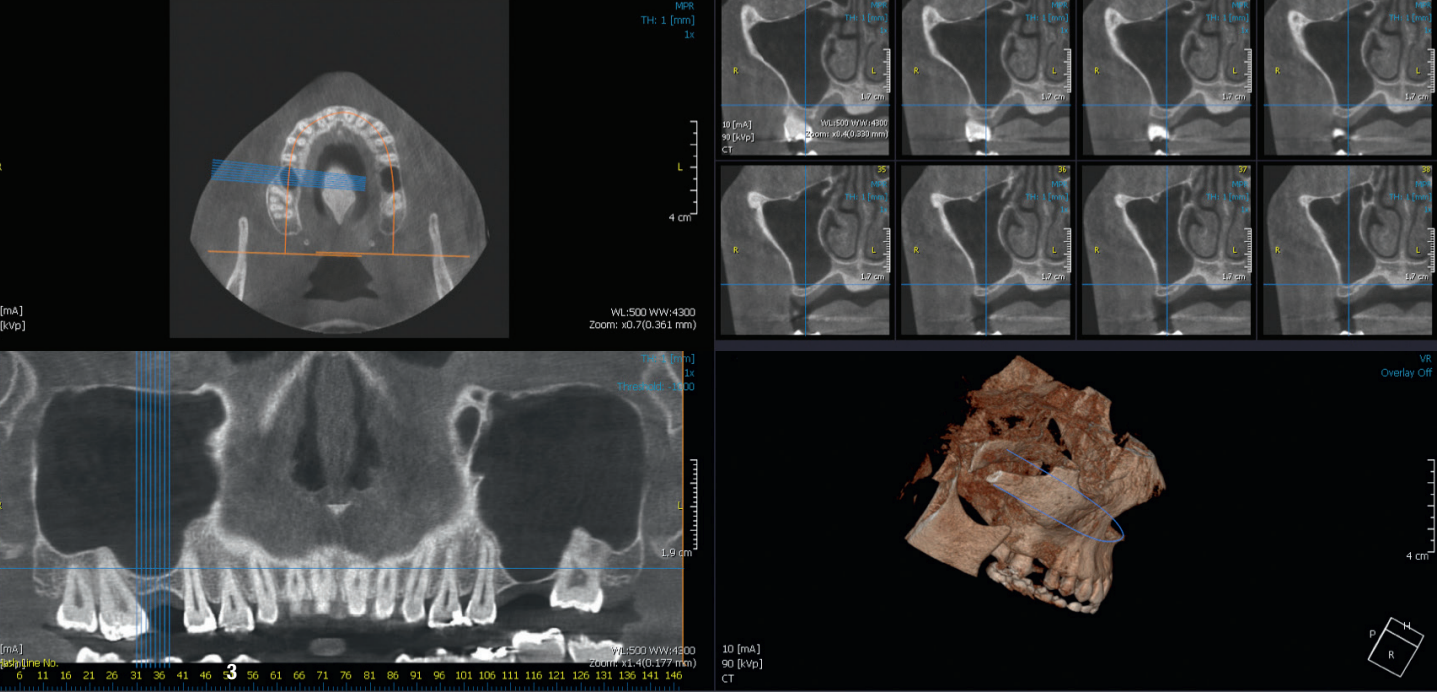
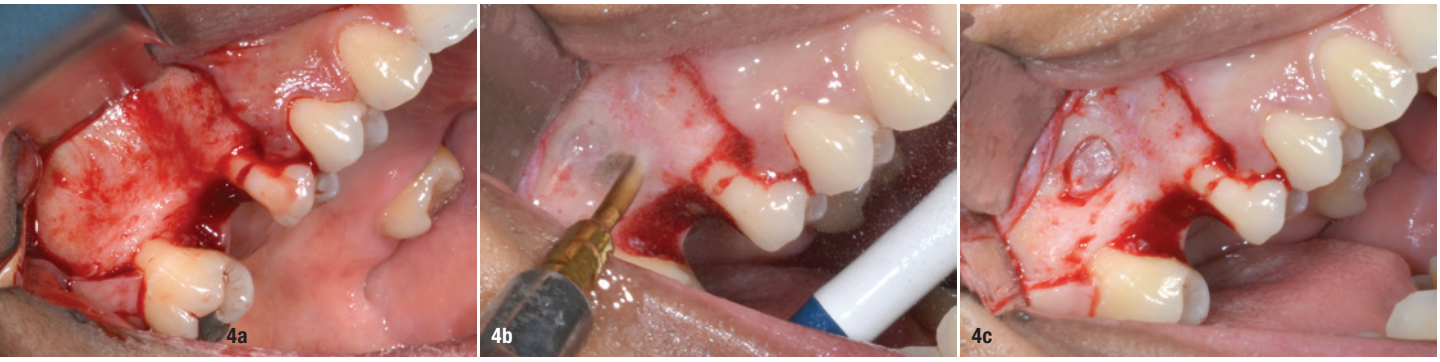
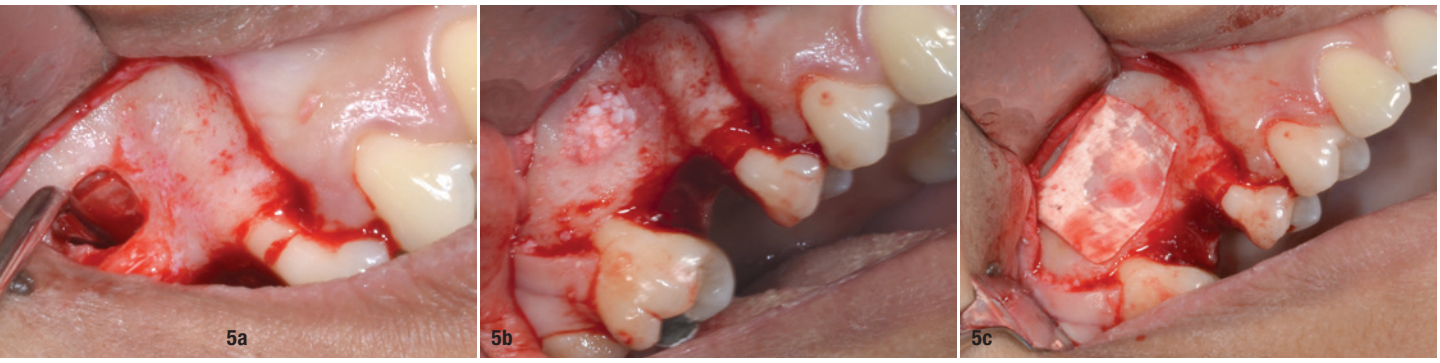


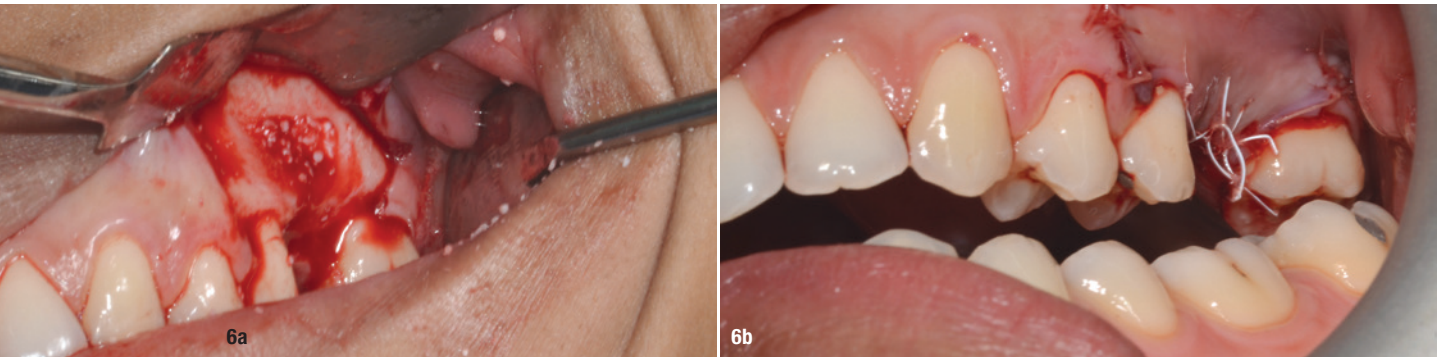
Fig. 3: A CBCT scan was deemed necessary to determine the appropriate therapeutic approach.



Figs. 4a–c: Following mucoperiosteal flap elevation, a lateral window was prepared using the piezo technique.



Figs. 5a–c: The caudal osteotomy line was positioned approximately 3 mm above the estimated sinus floor. The membrane was carefully detached using a specialised sinus instrument. A particulate xenograft was employed to augment the maxillary sinus, and the bone window was covered with a collagen membrane, which was stabilised by soft-tissue closure.



Figs. 6a & b: Successful augmentation of the maxillary sinus using a particulate xenograft, followed by secure wound closure.

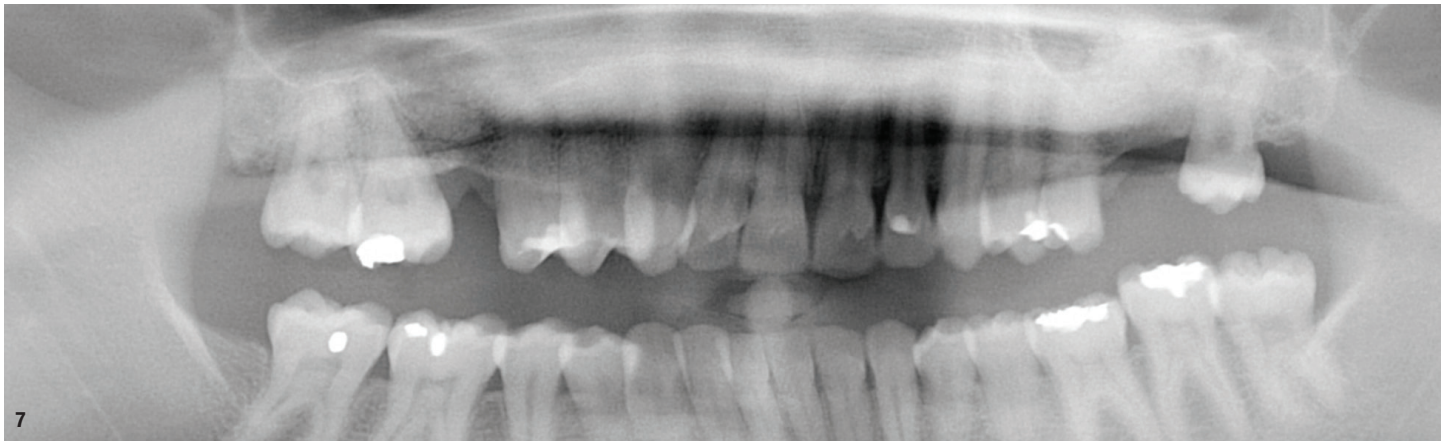


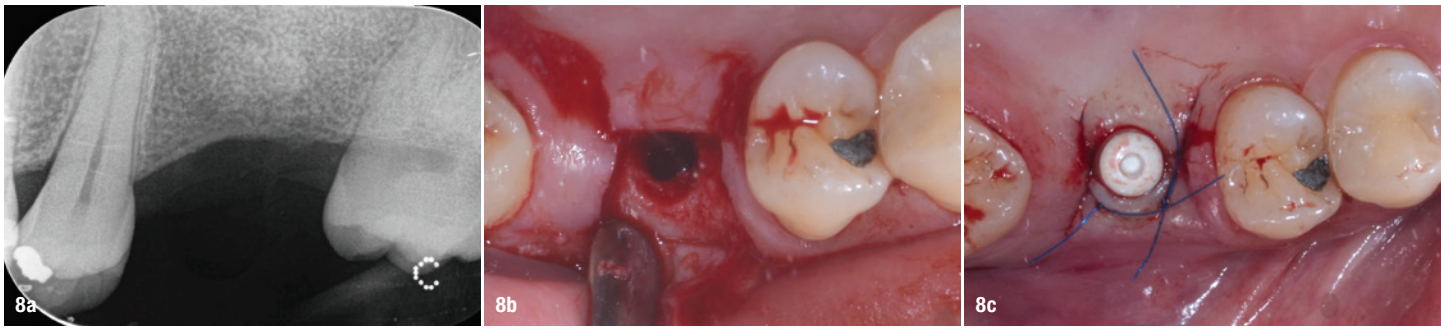
Fig. 7: Post-augmentation X-ray imaging to verify the efficacy of the procedure.

in the areas where teeth #16 and #26 had been extracted, due to vertical crestal bone resorption and sinus pneumatisation (Fig. 2).

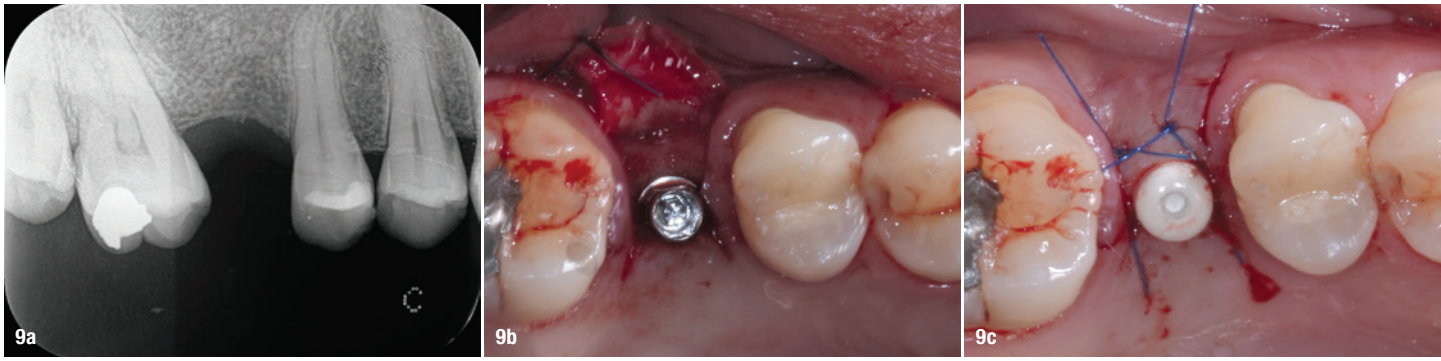
To ensure the stable placement of implants, bone augmentation in the maxillary sinus was necessary. The CBCT scan showed a residual bone height of less than four millimetres, leading us to opt for an external approach to the maxillary sinus (Fig. 3). The sinus floor needed to be elevated by more than three millimetres to counteract the pneumatisation and restore the bone height. Given the circumstances, we chose a two-stage approach,[3,4] as primary stability of the implants is significantly influenced by preoperative bone height and quality.

Surgery

Following comprehensive radiological diagnostics and a detailed consultation, the treatment was executed on the same day under local anaesthesia. A trapezoidal incision was made with a 15-c bistoury blade to prepare the mucoperiosteal flap. The lateral window was created on both sides using a piezoelectric device, which employs ultrasonic technology to ablate only hard tissues and bone



Figs. 8a–c: At the time of implantation, the augmented area exhibited sufficient height and stability to support implant anchorage. The implantation site was exposed using a modified mucosal flap technique and an iSy implant was placed according to the drilling protocol. The pre-assembled base remained in the implant, a gingiva former was attached, and the soft tissue was closed with a non-absorbable monofilament suture.



Figs. 9a–c: The implant was similarly inserted in the left quadrant, with incisions made 1.5 mm from the mesial and distal papilla.

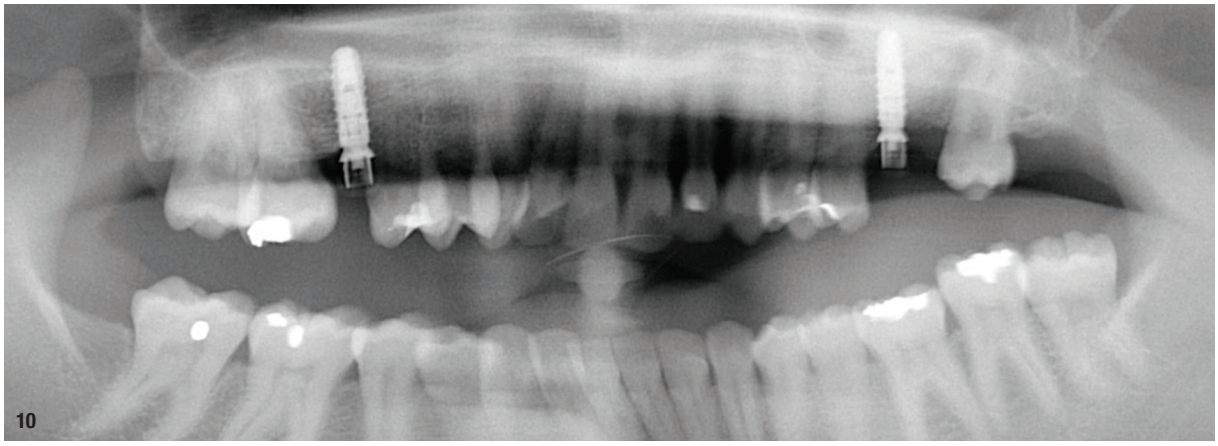


Fig. 10: The two implants (Ø 3.8 mm, L 11 mm) were inserted with primary stability in the augmented region.

while preserving surrounding soft tissue. Care was taken to position the caudal osteotomy line approximately three millimetres above the estimated maxillary sinus floor.

After fenestrating the vestibular bone wall, the bone flap was delicately separated from the membrane and immersed in saline. Schneider's membrane was carefully detached from the palatal side using specialised hand curettes, with constant bone contact maintained to minimise the risk of perforation (Figs. 4a–c). The cavity between the alveolar bone and the sinus membrane was filled with particulate xenograft. A collagen membrane was then placed over the window to prevent washout.

The mucoperiosteal flaps were repositioned to secure the collagen membrane in place without the need for pins. The flaps were precisely adapted to the wound margins and closed with individual button sutures, ensuring a saliva-proof seal (Figs. 5–7).

Implant insertion

After an eight-month healing period, an intra-oral X-ray and CBCT scan were performed, revealing sufficient bone regeneration at the grafted site. Nine months post-sinus floor augmentation, an iSy implant was placed in each edentulous area, following the open treatment protocol designed for the system.

The alveolar bone was exposed at the predetermined implant sites using a minimally invasive, modified mucosal flap technique. Incisions were made 1.5 mm away from the mesial and distal papillae to prevent their collapse or regression. The implant bed was prepared according to the efficient drilling protocol provided by the manufacturer. A round bur was used to punch-mark the implant position, and subsequent pilot drilling determined the depth and axis of the implant site. Final drilling was carried out using the single-patient form drill included in the package.

One iSy implant (Ø 3.8 mm, L 11 mm) was placed on each side, achieving the necessary primary stability for open healing (Figs. 8a–9c). Despite the parallel shape of the implant, which is not ideal for achieving high primary torque stability, the design of the implant base—with an abutment diameter slightly larger than the implant diameter—prevents sinus migration during the healing phase.

In cases like this, where primary stability of 20 Ncm torque or greater is achieved, transgingival healing can be selected as the treatment option (Fig. 10). PEEK healing caps were mounted on the implant base, and the flaps were sutured tightly around the healing caps with surgical knots, using 5/0 non absorbable monofilament. An intra-oral X-ray was taken as a baseline to verify the first bone–implant contact (BIC) at the implant shoulder (Fig. 11).

The prosthetic restoration

The prosthetic restoration began 16 weeks after the implant placement and regular follow-up appointments. The PEEK healing caps were removed, and multifunctional caps were clicked into place. An analogue impression of the two implant positions was taken intra-orally using an

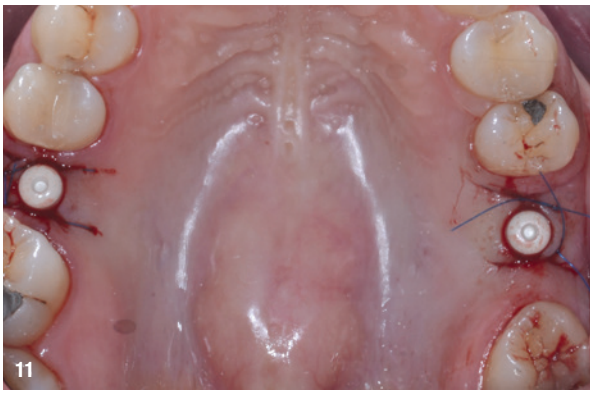
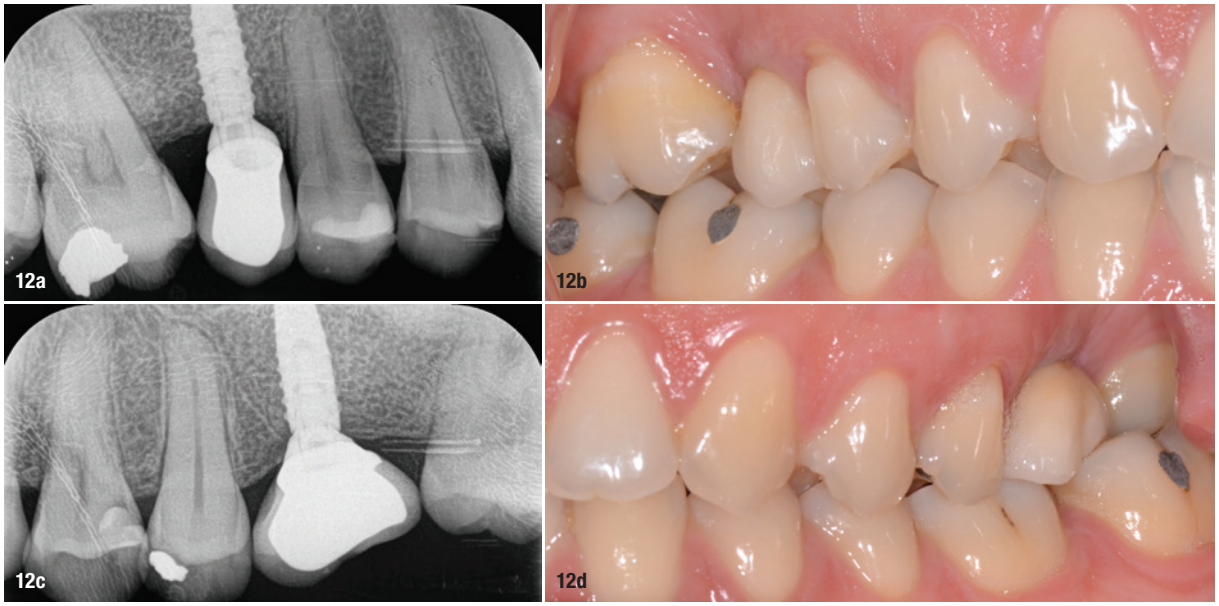


Fig. 11: The implant bases were fitted with healing caps for an open healing approach.



Figs. 12a–d: The final metal-ceramic crowns *in situ*, featuring aesthetically pleasing crowns #16 and #26. The Platform Switching concept of the system facilitates the stable attachment of peri-implant tissue.

impression key. In the laboratory, a model was fabricated to replicate the implant positions precisely. Custom-made iSy Universal abutments were then screwed onto the implant analogues and modified to accommodate the peri-implant soft tissues, implant angulation, and the insertion direction of the crowns. Metal-veneered porcelain crowns (PFM) were fabricated and subsequently cemented.

Given the clinical diagnosis and the patient's parafunctional habits, PFM crowns were selected over zirconia to minimise the risk of chipping or wear due to the reduced height of the TiBase and limited retention. For the final restoration, the pre-assembled iSy implant bases were removed from the implants for the first time using the abutment disconnector. A stable peri-implant mucosal tissue was observed, and the titanium abutments were inserted and screw-retained to the implants with an abutment screw (20 Ncm). After functional and shade verification, the two metal-ceramic crowns were cemented onto the roughened abutments (Figs. 12a–d).

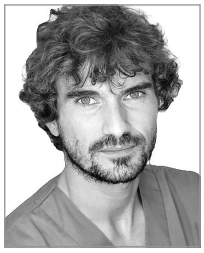
Conclusion

After six months of functional loading, the hard and soft tissues remained stable. A significant advantage of the iSy treatment concept is the minimal unscrewing and screwing required for prosthetic restoration, reducing the risk of bone remodeling at the implant shoulder caused by inflammatory connective tissue (ICT). The treatment successfully achieved aesthetics, patient satisfaction, and functional rehabilitation.

Literature

about the authors

Prof. Dr Paolo Maturo is employed in the Department of Surgical Sciences at the Faculty of Medicine and Surgery at the University of Rome Tor Vergata. He holds a PhD in Biochemistry and Molecular Biology and is engaged in clinical research in the fields of preventive and pediatric dentistry, the application of lasers in dentistry, and the simplification of protocols in oral implantology and bone regeneration. He completed his implant prosthetic training at Boston University in 2005 and at the Kirsch-Ackermann Clinic in Filderstadt in 2013. In recognition of his outstanding work, he was awarded the Axel Kirsch Prize by the former Italian Camlog Academy in 2012.



Dr Edoardo Magnanelli earned his DDS degree in Dentistry at the Universitat Internacional de Catalunya (UIC) in Barcelona and obtained a certificate in implant-based therapy from the EAO in 2019. In the same year, he also completed his International Master's degree in Oral Surgery at UIC in Barcelona.

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Long-term success of implant-supported rehabilitation in the aesthetic zone: A nine-year follow-up case report

Drs Léon Pariente & Karim Dada, France

Dental implants have revolutionised the field of restorative dentistry, offering reliable solutions for replacing missing teeth. The success of dental implant treatment relies on meticulous treatment planning, precise surgical techniques, and appropriate follow-up care. In the aesthetic zone, where patient satisfaction is closely tied to the appearance of the restoration, achieving optimal outcomes becomes even more critical.

A determinant of long-term implant success also lies in the selection of an appropriate implant system. Straumann® BLT implants, characterised by their proprietary Roxolid® material and SLActive® surface, have garnered considerable attention for their osseointegration potential and stability.[1,2] These implants mimic a dental root shape, as they have a smaller diameter at the apical part than at the neck of the implant. The claimed benefits of this design include enhancement of the primary stability by the pressure of the cortical bone on regions with poor bone quality, as well as the reduced risk of bone perforation due to its macrotopography.[3]

This case report presents the nine-year follow-up of two Straumann® BLT implants placed in the aesthetic zone, focusing on their clinical performance, peri-implant tissue health, and patient satisfaction. By examining the longevity and aesthetic outcomes, this report highlights the importance of careful treatment planning and execution in achieving predictable outcomes.

Initial situation

A 56-year-old female patient, non-smoker, classified as healthy (ASA I), with no current medications or known allergies, visited our clinic with a chief complaint centered around her persistent dissatisfaction with her smile. She

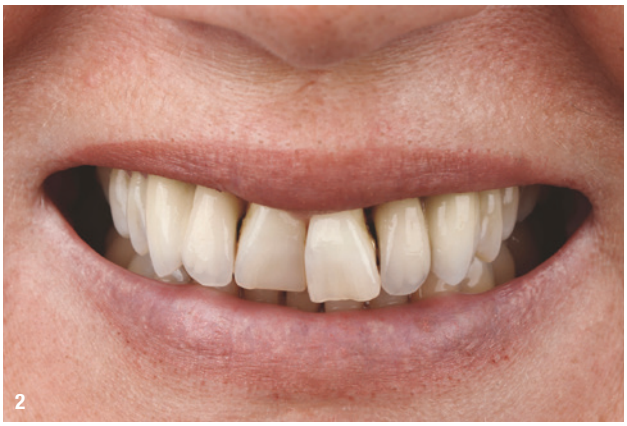
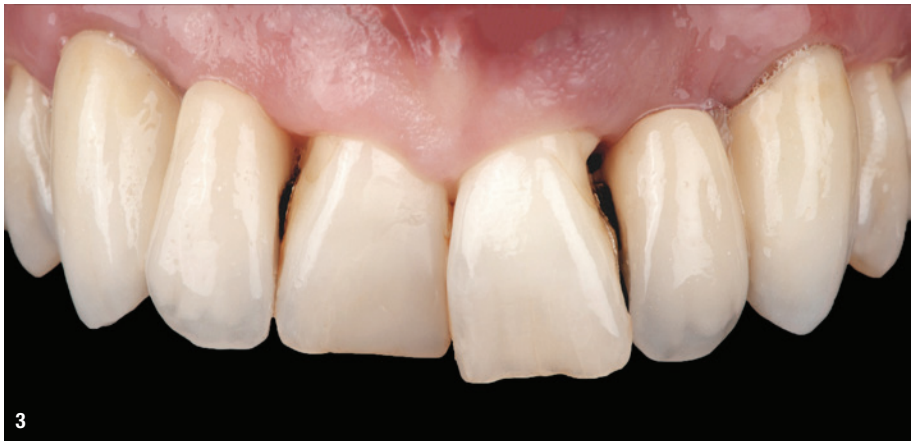


Fig. 1: The patient's extra-oral examination revealed a medium smile line. **Fig. 2:** Misalignment observed in the maxillary front teeth.



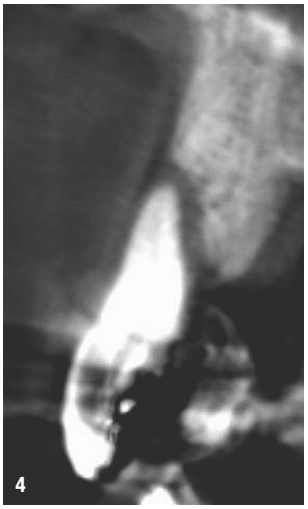


Fig. 3: Intra-oral examination shows periodontal attachment loss and mobility in the upper left central incisor and lateral incisors. **Fig. 4:** CBCT scan reveals the absence of buccal bone.

reported the development of a chronic infection in her front teeth over recent years, leading to noticeable mobility. This dental concern has significantly affected her ability to eat and speak with confidence. The patient was actively seeking a long-term solution but expressed concerns about potential pain during the treatment process.

The patient's extra-oral examination revealed a medium smile line and misalignment of the front teeth (Figs. 1 & 2). During the intra-oral examination, advanced periodontal attachment loss and mobility were noted in teeth #12, #21, and #22 (Fig. 3). Cone-beam computed tomography (CBCT) imaging indicated the absence of buccal bone on tooth #21 (Fig. 4).

According to the SAC classification, the patient was classified surgically as complex and prosthetically as straightforward (Fig. 5).

Treatment planning

Taking into consideration the patient's needs and desires, the following treatment plan was chosen:

1. Atraumatic extractions of teeth #12, #21 and #22 with alveolar curettage.
2. Dental preparations on teeth #13, #11 and #23.
3. Temporary resin-based bridge on teeth #13-23.
4. Placement of Straumann® Roxolid BLT ⌀3.3 mm implant on position #12 and Straumann® Roxolid® SLActive® BLT ⌀4.1 mm on position #21.
5. Simultaneous minor bone augmentation with Straumann® XenoGraft and a collagen membrane.
6. Immediate loading of implant #12 and delayed loading of implant #21.
7. Papilla conformation with a temporary ovate pontic on ridge position #22.
8. Final screw-retained crown delivery on implants #12 and #21-22.

Surgical procedure

Local anaesthesia with lidocaine 2% with epinephrine 1:100,000, was administered. This was followed by atraumatic extractions of teeth #12, #21, and #22, with alveolar curettage. Additionally, dental preparations on teeth #13, #11, and #23 were carried out (Fig. 6).

A temporary resin-based bridge was placed in the second sextant (Fig. 7). Following wound healing, horizontal and vertical deficiencies were observed at ridge position #21 (Fig. 8).

At the six-week follow-up post dental extractions, the patient presented with uneventful wound healing (Fig. 9). A mucoperiosteal flap, with a crestal incision, was raised to facilitate implant placement. The Straumann® Surgical Cassette was employed to prepare the implant bed. Subsequently, a Straumann® Roxolid® SLActive® BLT ⌀3.3 mm implant was positioned at site #12, and a Straumann® Roxolid® SLActive® BLT ⌀4.1 mm implant was placed at position #21 (Fig. 10). The implants were

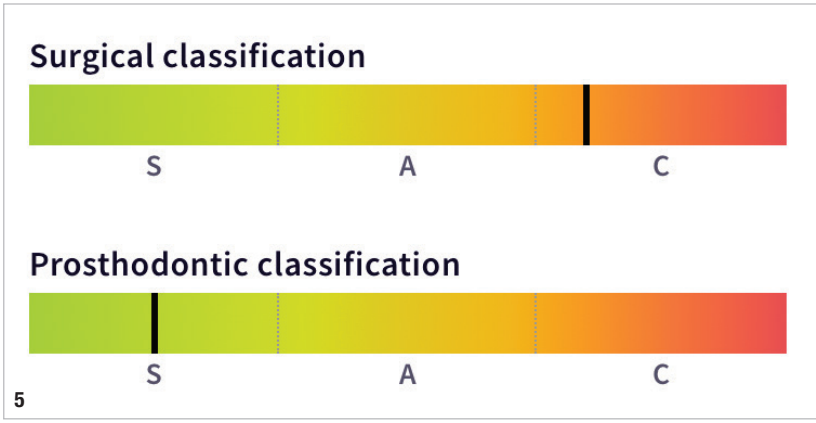
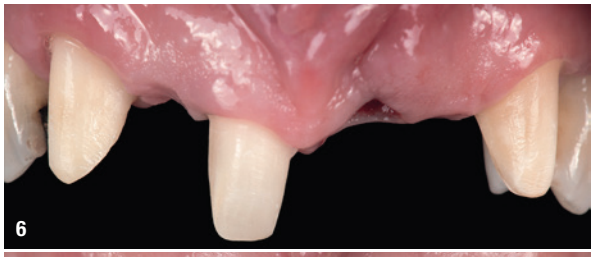
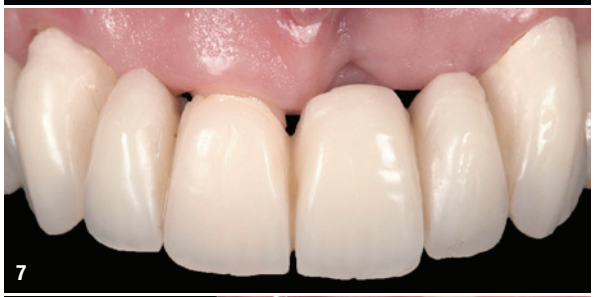
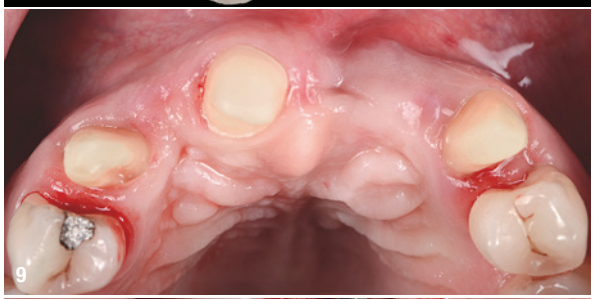
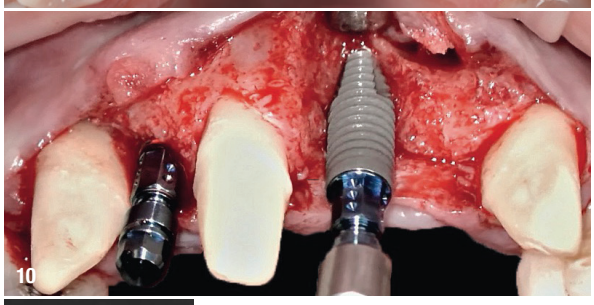


Fig. 5: Based on SAC classification, the patient was classified as surgically complex and prosthetically straightforward.









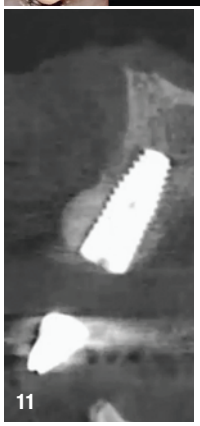


Fig. 6: Extraction of the upper left central incisor and lateral incisors, followed by the preparation of upper right central incisor and canines. **Fig. 7:** Placement of a temporary resin-based bridge. **Fig. 8:** Post-healing, horizontal and vertical ridge deficiencies observed at the site of #21. **Fig. 9:** Six weeks after dental extractions, the patient exhibited uneventful wound healing. **Fig. 10:** Placement of Straumann® Roxolid® SLActive® BLT 3.3 mm implant at site #12, and a BLT 4.1 mm implant at site #21. **Fig. 11:** At five months post-surgery, the radiographic control of implant #21 confirmed proper positioning and implant integrity.

positioned using the handpiece in a clockwise direction with a speed of 15 rpm and torqued to 35 Ncm. Simultaneously, bone augmentation was carried out at position #21 to enhance the structural integrity of the implant site.

A radiographic control was conducted on implant #21, five months post implant surgery, to assess the progress and ensure the integrity of the implant in its position (Fig. 11).

Prosthetic procedure

Soft-tissue conformation was evaluated seven months after the delayed loading of implant #21, with the aim to assess the maturation and adaptation of the surrounding soft tissues to the implant site (Fig. 12).

After the successful healing and osseointegration of both implants, the final restorations were placed on the implants, and the screws were tightened within the range of 15 to 35 Ncm revealing a natural and aesthetically pleasing appearance of the final crowns (Figs. 13 & 14).

Oral hygiene instructions were provided, and occlusion was checked. Recall appointments were efficiently scheduled to ensure ongoing monitoring and maintenance of the achieved oral health.

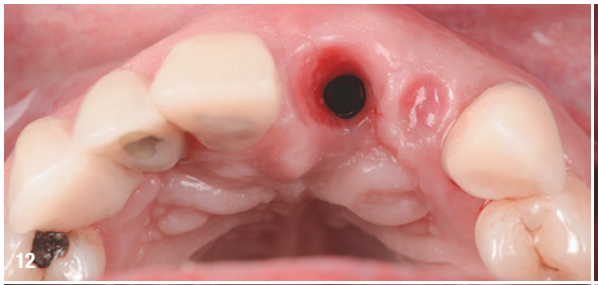
Treatment outcomes

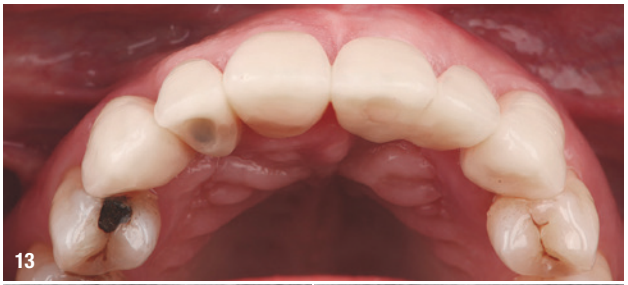
Radiographic control was conducted at the time of the final impression to ensure an accurate assessment of the implant placement and surrounding structures (Fig. 15). Additionally, a follow-up radiographic evaluation was performed six years after the completion of the treatment to monitor the long-term stability and health of the treated area (Fig. 16).

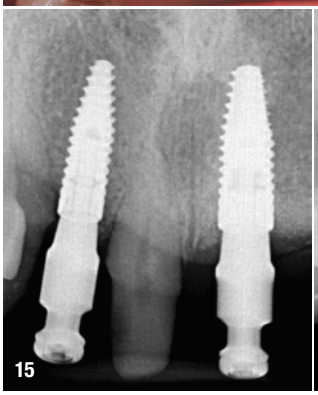
At the six-year (Figs. 17 & 18) and nine-year (Fig. 19) follow-ups, comprehensive clinical and radiographic assessments underscored favourable outcomes, including osseointegration, the maintenance of bone density around the implants, and pleasing aesthetics. These findings collectively indicated the success of the long-term treatment.

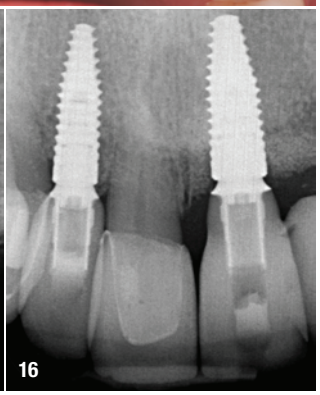
The treatment journey has resulted in exceptional health outcomes for both hard and soft tissues. The patient expressed her gratitude to the team, who meticulously managed each phase of the treatment.

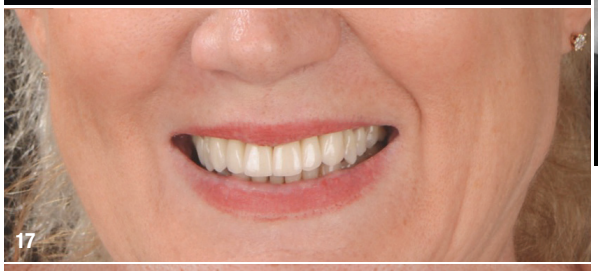
The effectiveness of the maintenance programme has been fundamental in preserving the achieved results over time. The patient reported enhanced functionality, enabling proper eating and confident speech. Furthermore, the realisation of the “dream smile” stands as a testimony to the comprehensive and successful nature of the provided care.

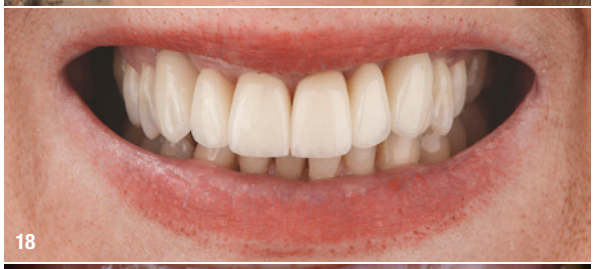












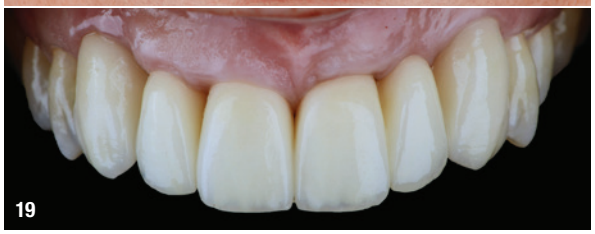


Fig. 12: Successful soft-tissue healing observed at the seven-month follow-up. **Fig. 13:** Placement of the final restorations. **Fig. 14:** The aesthetically pleasing appearance of the final crowns. **Fig. 15:** Radiographic assessment at the time of final impression confirmed precise implant placement and verified bone structure integrity. **Fig. 16:** A follow-up radiographic evaluation assessed the long-term stability and health of the implant sites. **Fig. 17:** Six-year follow-up showing favourable aesthetic results. **Fig. 18:** Six-year follow-up demonstrating a satisfactory clinical outcome. **Fig. 19:** Nine-year follow-up revealing successful results, with healthy soft and hard tissues maintained.

Authors' testimonial

In our daily practice, Straumann® BLT implants have consistently delivered predictable results, particularly in the aesthetic zone. We ensure seamless integration and long-term patient satisfaction through meticulous treatment planning and interdisciplinary collaboration.

about the authors

Dr Léon Pariente, DDS has a private practice specialised in Implantology and Periodontology in Paris. He graduated of the Paris Descartes University and absolved in 2012 an advanced programme in implant dentistry at the New York University College of Dentistry. He has several research projects at the Prosthetic and Implant Department of the Paris Descartes University.

Dr Karim Dada, DDS, MS graduated with a degree in dental surgery and postgraduate certificates in implant prosthodontics and implant surgery from the Paris Descartes University. He was recognised in 2005 by the Académie Nationale de Chirurgie Dentaire for his work in providing implant treatment to patients with head and neck cancer who are undergoing radiotherapy. Dr Dada maintains a private practice in Paris focusing on perio-plastic surgery and implant dentistry.

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Full maxillary rehabilitation with immediate implant placement of NEVO RC INICELL® implants in Type 3 bone

Dr Mathieu Rousset, France

The emergence of fully digital workflows in implant dentistry has revolutionised the way clinicians approach complex rehabilitative cases. Achieving high primary stability in low-quality bone, such as Type 3 or 4 bone (Lekholm & Zarb 1985), has traditionally posed significant challenges. However, advancements in implant design, surgical techniques, and digital imaging have enabled the successful placement and immediate loading of implants even in these challenging scenarios. The following case report presents a comprehensive approach to full maxillary rehabilitation using immediate implant placement in Type 3 bone, leveraging modern digital tools and the innovative and gentle NEVO implant design to achieve healthy and satisfying clinical outcomes.

Case presentation

A 64-year-old male patient with good general health presented with a long history of wearing a removable prosthesis, seeking a fixed solution to enhance both function and aesthetics. Upon clinical and radiological examination, it was clear that the patient had four remaining teeth in the maxilla not worth keeping that needed extraction (Figs. 1 & 2). Additionally, the bone quality was classified as Type 3, indicating low bone density and presenting challenges for implant placement, particularly in achieving primary stability. After thorough discussion of all the available options, the patient opted for an all-on-six approach with immediate implant loading.

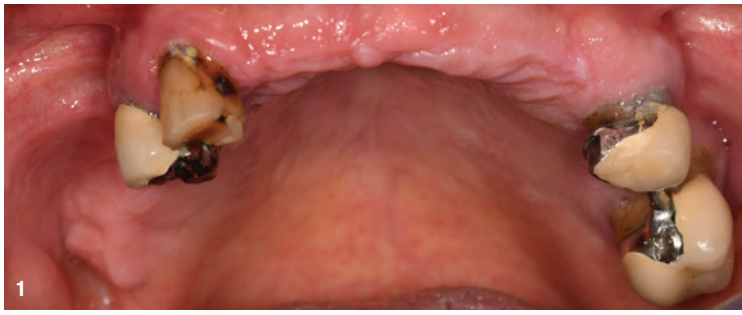
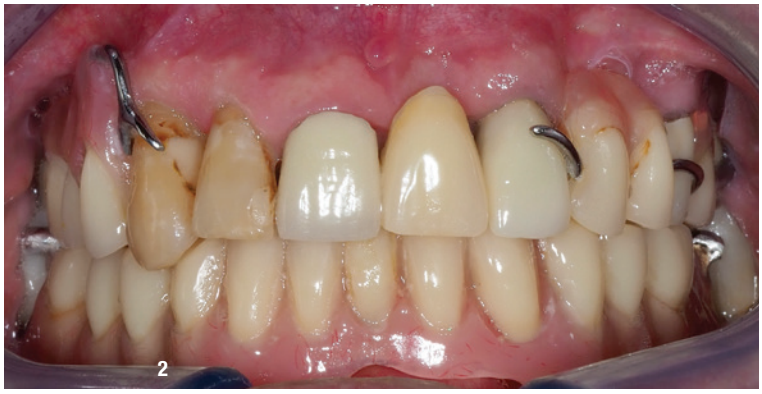


Fig. 1: Preoperative condition of the maxilla.

Preoperative planning

Detailed preoperative planning was critical for the success of this case. Using advanced 3D imaging technology and planning software (PDIP, Carestream Dental),



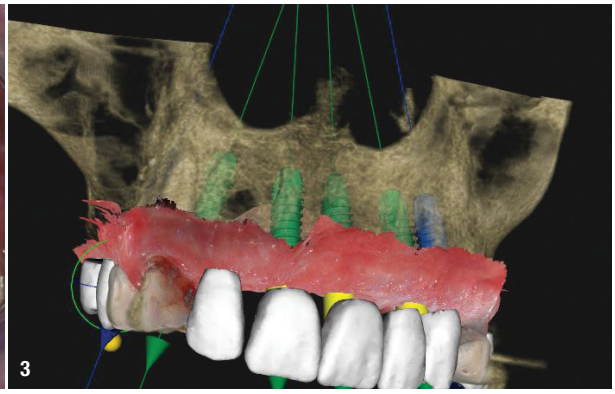


Fig. 2: Full-mouth image taken preoperatively. **Fig. 3:** 3D surgical planning.*

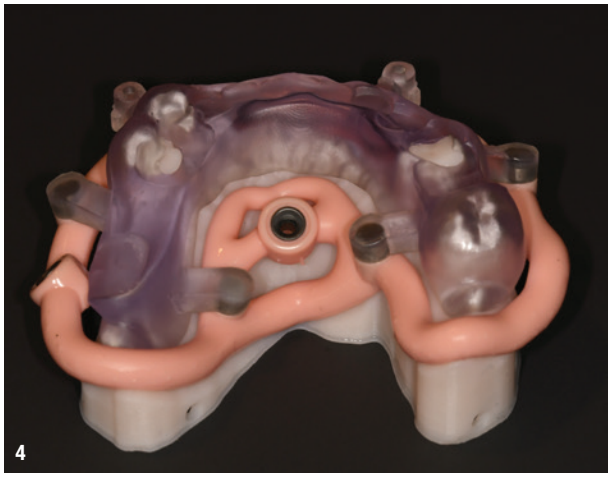
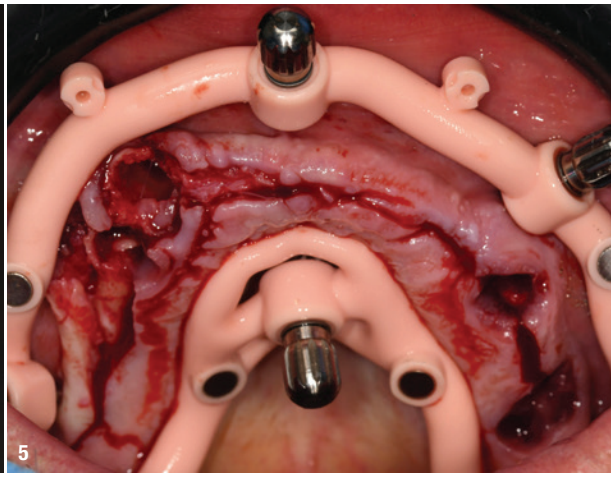



Fig. 4: Stackable surgical guide (designed using RealGUIDE™ by Genesis Dental Lab).* **Fig. 5:** Flap elevation following guide fixation.

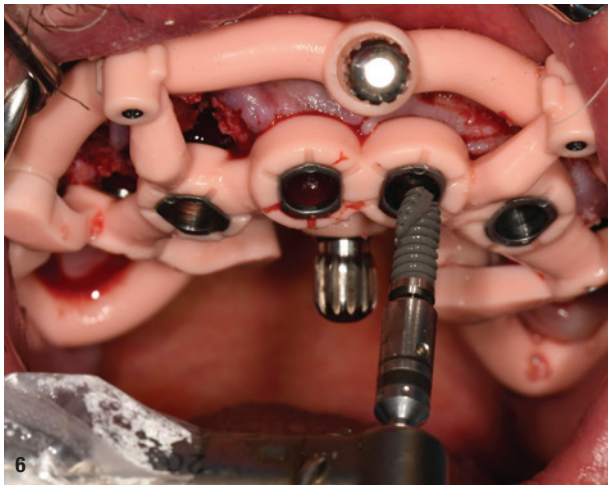
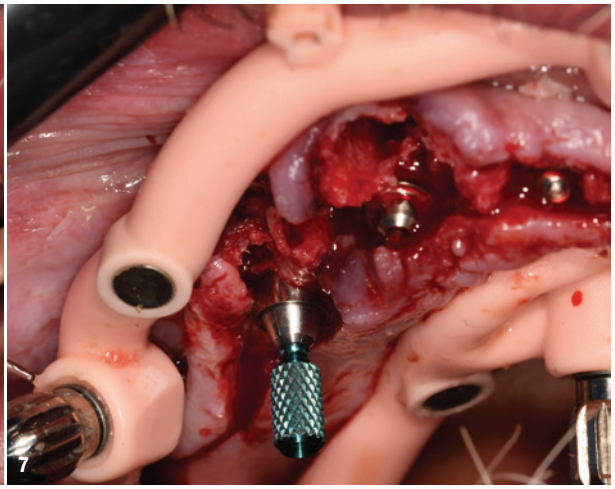



Fig. 6: NEVO RC INICELL® implant placement using the surgical guide. **Fig. 7:** Placement of VARIOmulti abutments.

a comprehensive virtual treatment plan was developed and showed to the patient (Fig. 3)*. The planning procedure included the design of a stackable surgical guide system comprising the position guide, base guide, and drilling guide (Fig. 4).* This guide would ensure precise implant placement, crucial for achieving optimal outcomes in a case with compromised bone quality.

Surgical procedure

The surgical procedure commenced with the stabilisation of the base guide using four anchor pins (MIS), providing a secure and accurate reference for subsequent steps. A flap was raised to expose the underlying bone, followed by the extraction of the four remaining teeth (Fig. 5).

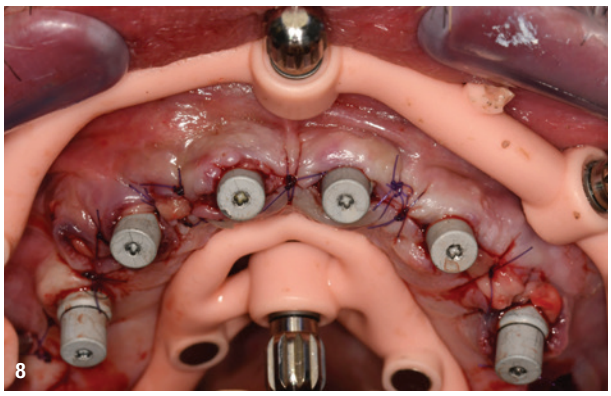
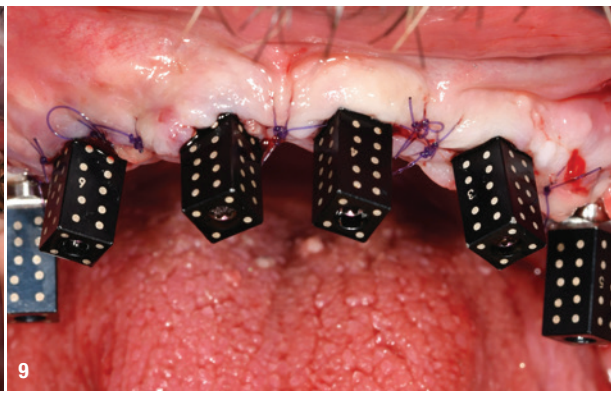
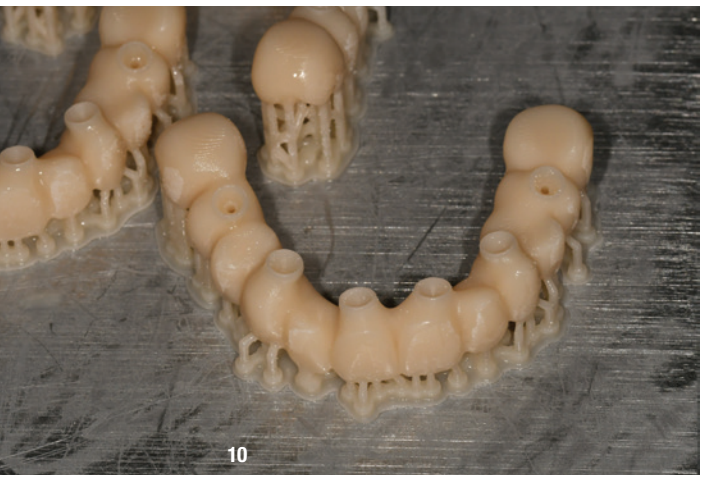



Fig. 8: Optical impression with scanbodies and sutured flap. **Fig. 9:** Additional photogrammetry to ensure maximum accuracy.



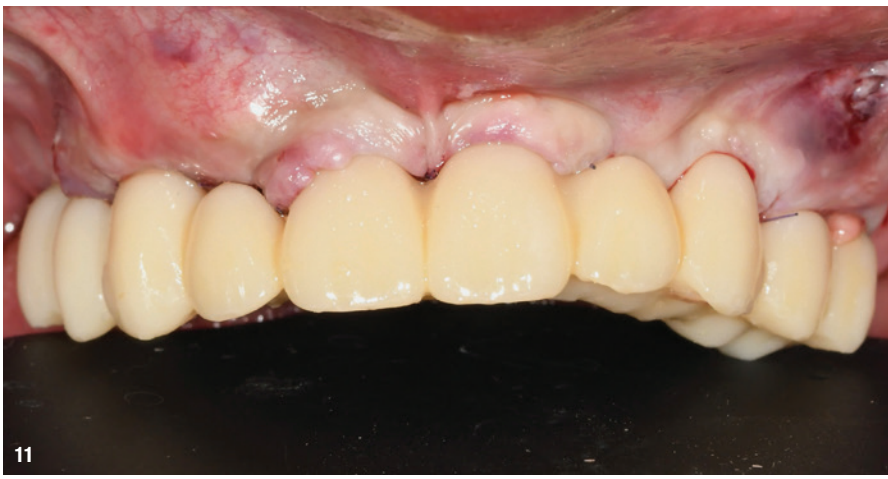


Fig. 10: Chairside fabrication of the temporary prosthesis. **Fig. 11:** Temporary prosthesis placement six hours postsurgery.

Following tooth extraction, six implant beds were prepared according to the manufacturer's guidelines. The implant beds in the four extraction sockets were only partially drilled to allow for high primary stability in the poor-quality bone. Six NEVO RC INICELL® implants (Thommen Medical) were then placed into the prepared implant beds through the drilling guide (Fig. 6). Despite the poor bone quality, the immediately placed implants in extraction sockets achieved an Implant Stability Quotient (ISQ) of 73, indicating sufficient initial stability for immediate loading.

Prosthetic procedure

VARIOmulti abutments (Thommen Medical) were placed on all implants, with two posterior abutments angled at 17 degrees to accommodate the anatomical structure and prosthetic requirements (Fig. 7).

To address the bone defects and enhance stability, grafting was performed using "sticky bone" (Porcin hydroxyapatite, REGEDENT).

With the implants and abutments in place, attention turned to the prosthetic phase (with kind support of Genesis dental lab, Bordeaux, France). Scanbodies were inserted, the flap was sutured, and an optical impression was taken (Fig. 8). The base guide remained *in situ* during the impression to ensure precise repositioning, facilitating accurate model creation by the dental technician. Given the size and complexity of the implant-supported

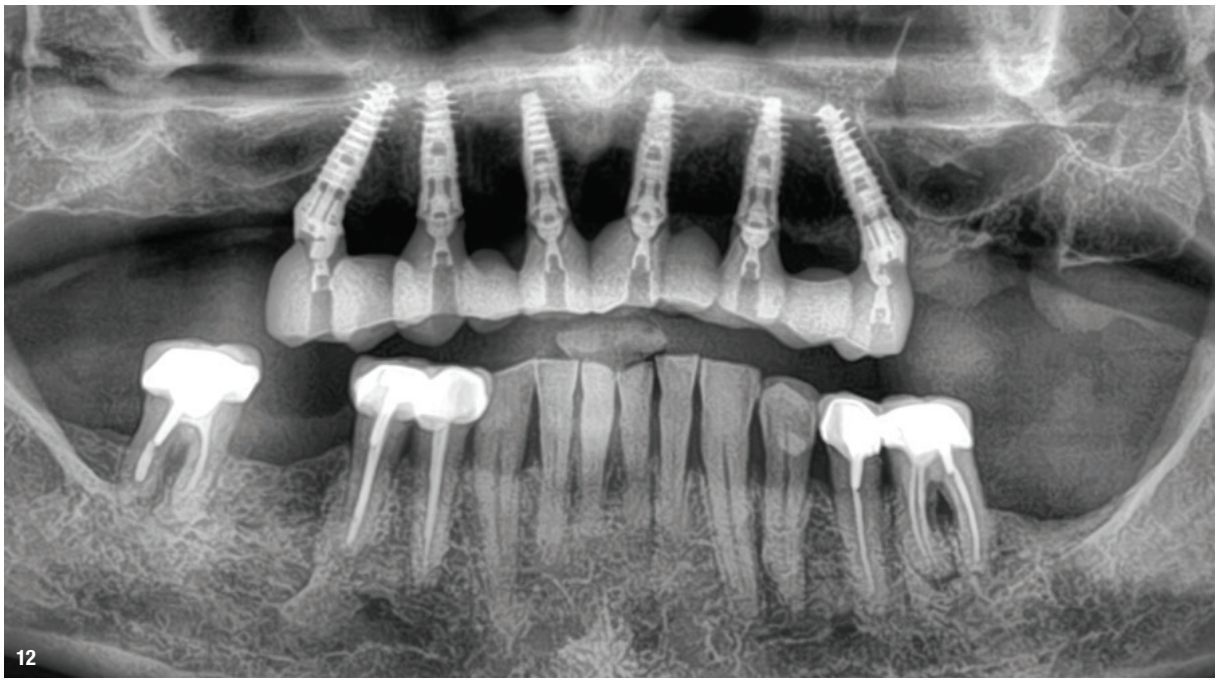
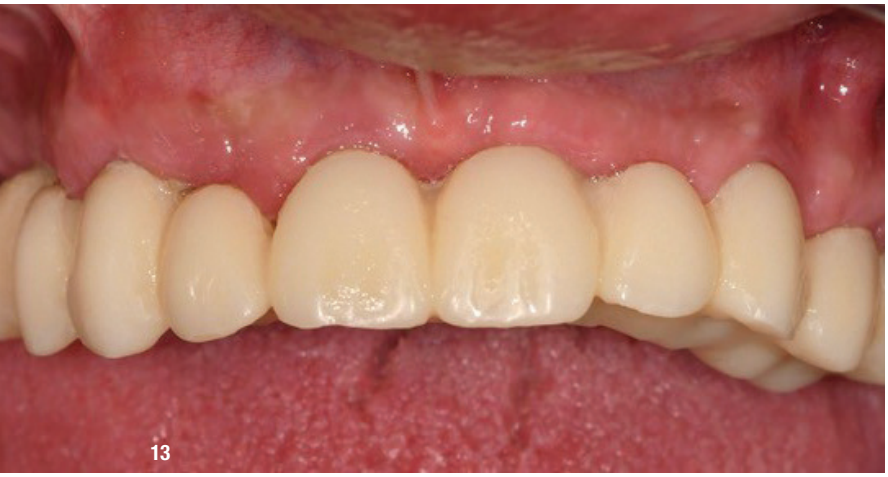


Fig. 12: Post-placement radiograph of the temporary prosthesis.



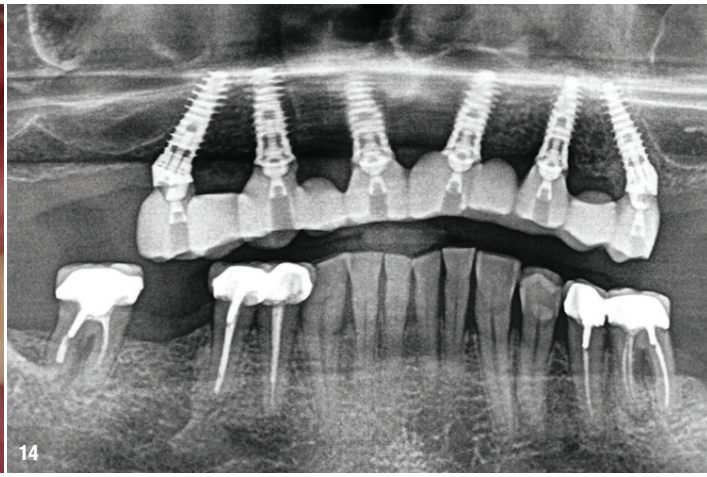


Fig. 13: Clinical image three months postsurgery, showing healthy soft tissue. **Fig. 14:** Radiograph three months postsurgery, demonstrating stable bone levels.

bridge, additional photogrammetry was employed to achieve the highest possible accuracy (Fig. 9). This technique provided a precision of less than 15 microns, essential for the passive adaptation of the prosthetic framework.

A temporary full arch bridge was designed and printed chairside within one hour (3D printer, SprintRay), leveraging modern digital dentistry technologies (Fig. 10). The temporary prosthesis was installed six hours after surgery, providing immediate functional and aesthetic benefits to the patient (Fig. 11). The radiograph image showed good bone levels after placement (Fig. 12).

Postoperative results

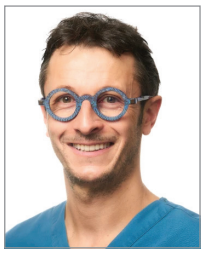
The postoperative period was uneventful, with the patient exhibiting excellent healing and adaptation to the temporary prosthesis. After three months, clinical and radiographic evaluations showed healthy soft tissues and stable bone levels around the implants (Figs. 13 & 14). The success of the immediate implant placement and the use of advanced surgical guides and photogrammetry underscored the effectiveness of the treatment protocol.

Conclusion

This case highlights the successful full maxillary rehabilitation achieved through immediate implant placement in Type 3 bone. The use of NEVO RC INICELL® implants, with their unique and gentle cylindrical-tapered shape, was pivotal in achieving high primary stability without compromising the bone, even in a compromised bone environment. This immediate loading protocol was further supported by the integration of 3D planning, precise surgical guides, advanced grafting techniques, and digital prosthetic workflows. Together, these modern techniques enabled the delivery of a high-quality, fixed solution in a single surgical session. The patient's satisfaction and the clinical outcomes underline the potential of modern implant dentistry to effectively address complex cases with compromised bone conditions.

* Planning was performed with ELEMENT implants (Thommen Medical) due to limited availability of NEVO in the planning software ahead of its full market release. ELEMENT and NEVO implants share the exact same outer implant body contour.

about the author



Dr Mathieu Rousset operates in his private practice in Brive la Gaillarde, France. With additional qualifications in biomaterials, oral surgery, and computer-assisted dentistry, he has refined his practice to specialise exclusively in implantology. Dr Rousset has established the training center Association Malemortoise de Parodontologie et Implantologie Orale (AMPIO) within his practice, in which he teaches implantology with a focus on guided surgery and digital dentistry. In addition, he holds a teaching position in digital dentistry at the Diplome Universitaire Européen (DIUE) d'Implantologie in Corsica, emphasising his passion for sharing knowledge and shaping the future of dental professionals.

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Immediate two-piece ceramic implants with immediate provisionalisation in the posterior region

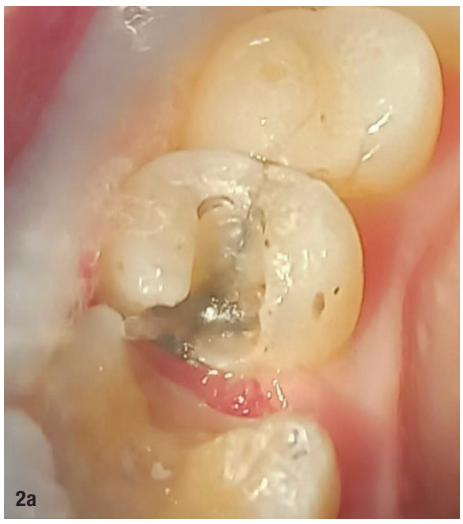
Drs Alexandre Marques Paes da Silva, Alice Maria de Oliveira Silva, Lissya Tomaz da Costa Gonçalves, Rodrigo Franco Motta, Daniel Moraes Telles, Mayla Kezy Silva Teixeira & Eduardo Veras Lourenço, Brazil

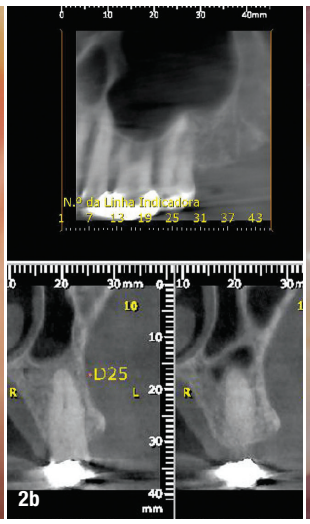
The present case report aims to describe the clinical and radiographic performance of ceramic implants placed in the posterior regions of two patients who visited the private SobreImplantes clinical study centre in Rio de Janeiro in Brazil. CBCT was used to carry out surgical planning, and periapical radiographs were used in the immediate postoperative period and in the follow-up consultations. The implants were placed into fresh sockets (immediate) and immediately provisionalised. After receiving the implants, the patients remained under follow-up for three months after surgery. The temporary prostheses were then removed and replaced with definitive crowns. The patients remained under follow-up for 18 months, over which time it was possible to observe clinical and radiographic success in relation to osseointegration, stability of the marginal bone level and peri-implant health of both implants. The patients were asked at the end of treatment and in follow-up consultations about their degree of satisfaction with the aesthetic result of the treatment using a visual analogue scale, and both patients were very satisfied. No mechanical or biological complications were observed during this period.

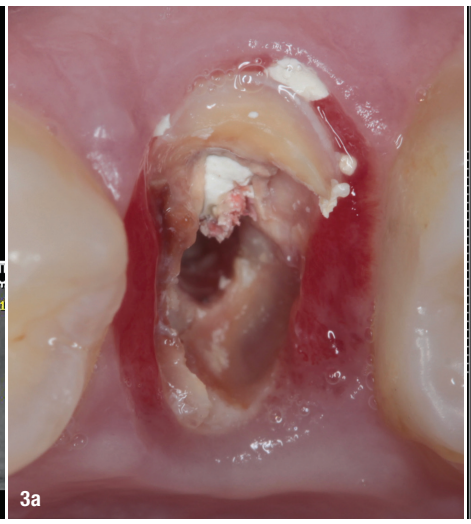
Fig. 1: Neodent Zi Ceramic Implant System.

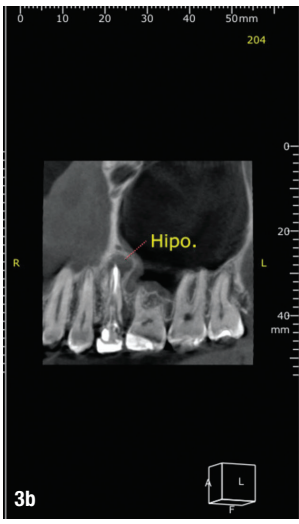
Introduction

The possibility of having a more aesthetic alternative capable of withstanding masticatory forces has expanded the use of zirconia implants in recent years.[1] Among its advantages, we highlight its aesthetics (colour similar to that of teeth), resistance (high flexural strength of 900–1,200 MPa, hardness of 1,200 Vickers, and Weibull modulus of 10–12), and biocompatibility (low affinity for bacterial plaque).[2]









Figs. 2a & 3a: Initial clinical situation. **Figs. 2b & 3b:** Initial tomographic imaging examination.

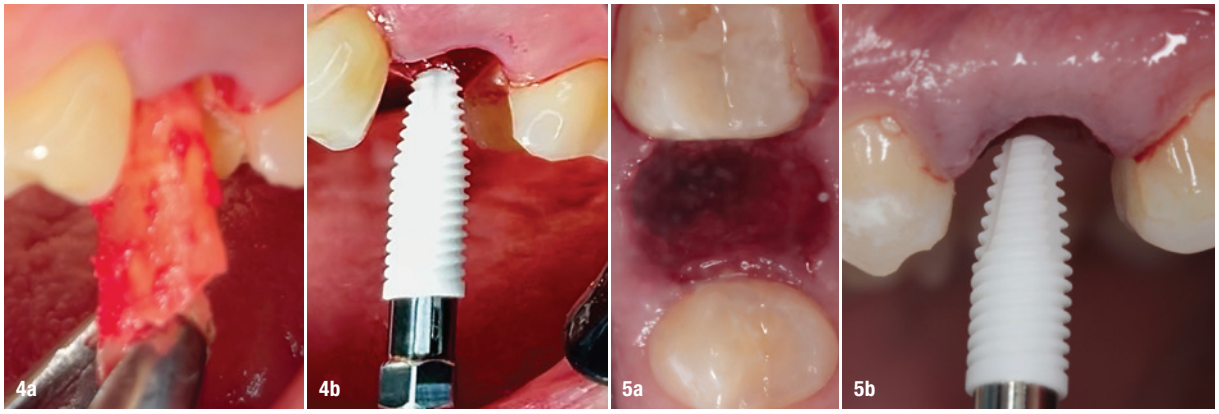


Fig. 4a: Minimally invasive extraction. **Fig. 4b:** Neodent Zi 4.3 × 11.5 mm. **Fig. 5a:** Fresh socket oclusal view. **Fig. 5b:** Neodent Zi 4.3 × 10.0 mm.

The first ceramic implants to be designed and manufactured were of the one-piece type;[3,4] however, this implant design presents surgical and prosthetic limitations: there may be wound healing complications and unintentional loading during the healing period, especially in cases where primary stability has not been achieved, and poor positioning of the implant may result in the need to refine the most coronal portion of the implant, thus reducing its mechanics.[5] With the aim of overcoming these limitations, several two-piece ceramic implant systems have emerged more recently, minimising these problems and providing prosthetic versatility, such as the possibility of angulation of the abutment and better positioning of the implant.[6,7]

The objective of this case report is to demonstrate the clinical and radiographic performance of a two-piece ceramic implant system (Neodent Zi, Straumann; Fig. 1) employed in two patients who visited the SobreImplantes private clinic located in the city of Rio de Janeiro in Brazil in order to undergo oral rehabilitation of posterior teeth with single implants and to report the degree of satisfaction of these patients in relation to the aesthetics of the treatment. Both patients were non-smokers and had good general health or controlled systemic conditions. For planning and diagnosis, the patients were asked to undergo CBCT (Figs. 2 & 3).

Surgical procedure

The same surgical protocol described by da Silva et al. was applied to both patients.[8] Antibiotic prophylaxis (four tablets of 500 mg amoxicillin) was performed one hour before, and the patients rinsed their mouths with 0.12% chlorhexidine for 30 seconds before receiving local anaesthesia with 4% articaine and 1:100,000 adrenaline.

Tooth extraction was performed according to a minimally invasive surgical approach, using delicate periotome to rupture the periodontal ligament and elevate the tooth. After extraction, the tooth socket was thoroughly debrided in order to ensure removal of any type of inflammatory lesion of endodontic and/or periodontal origin, and abundant irrigation with saline solution was employed. Once the instrumentation had been performed, the ceramic implant was inserted into the socket using a contra-angle handpiece previously adjusted to 24 rpm and 30 Ncm (Figs. 4 & 5), and the socket was subsequently filled with bone substitute material (0.5 cm^3 maxresorb, 0.5–1.0 mm, Straumann; Fig. 6). The dimensions of the implants were 4.3 × 11.5 mm and 4.3 × 10.0 mm, respectively. To receive the immediate temporary crowns, abutments were selected for prostheses cemented to zirconia: an abutment angled at 17° in one case and a straight component in the other (Figs. 7 & 8). Finally, the temporary crown was seated, and a periapical radiograph was performed in the immediate postoperative period (Figs. 9 & 10).

After three months, the patients were re-evaluated, and there had been no complications during the healing period. Following a conventional workflow, the definitive crowns were manufactured. It is important to highlight that the gingival emergence profile was carefully copied, using a light-polymerised flowable resin (Master Flow, Biodinamica; Fig. 11). One patient received a milled crown (IPS e.max, Ivoclar Vivadent; Fig. 12) and the other a milled monolithic zirconia crown (Fig. 13), and the pros-

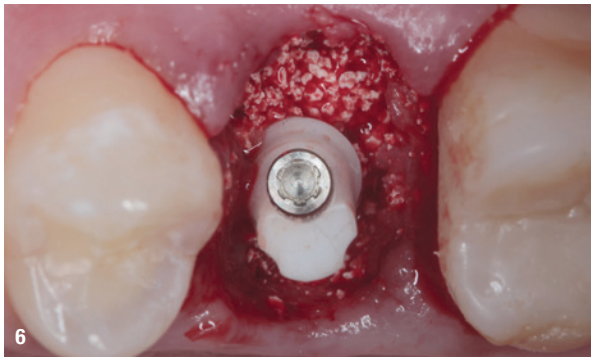
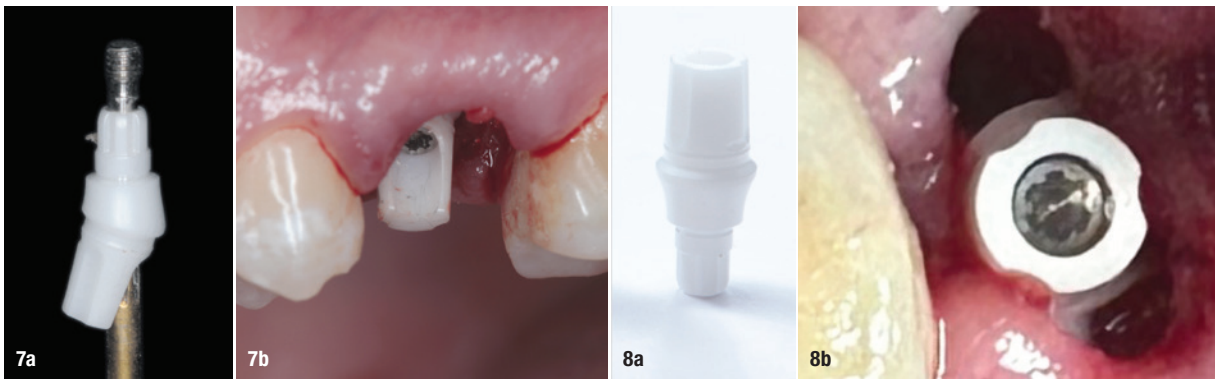
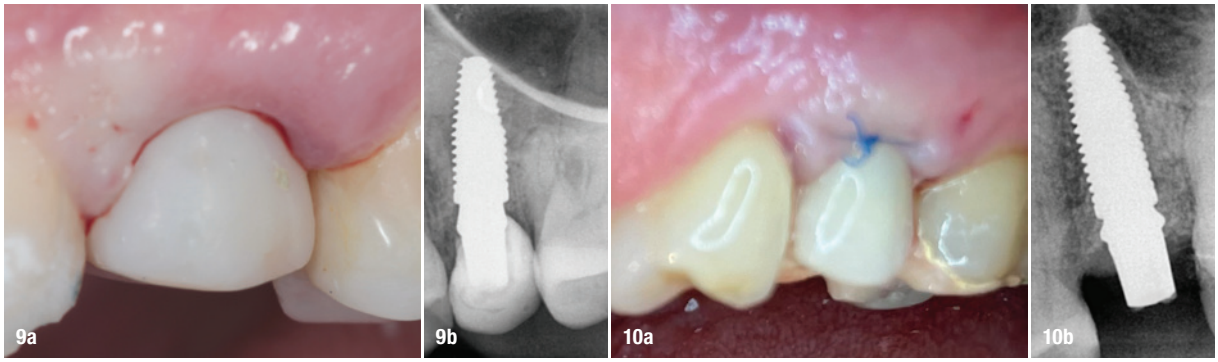


Fig. 6: Occlusal view annulled abutment and bone substitute (maxresorb).



Figs. 7a & b: Angled CR abutment. **Fig. 8a:** CR Straight Abutment. **Fig. 8b:** Oclusal view of CR Straight Abutment.



Figs. 9a & 10a: Provisional crown—immediate postoperative. **Figs. 9b & 10b:** Immediate postoperative radiograph.

thetic abutments were cemented to the implants with adhesive cement (Relyx U200, 3M).

Radiographic analysis

At the end of the prosthetic treatment, once the definitive crowns had been cemented to their respective implants, a periapical radiograph was taken to observe the stability of the marginal bone level (Fig. 14) in comparison with the immediate postoperative radiograph. To analyse changes in the marginal bone level, ImageJ software (National Institutes of Health) was used. The diameter of the implant was used as a reference point for calibrating the radiographic images, as it is a precise measurement and known by the operators. Bone changes after 18 months of follow-up were measured on radiographs using the implant–abutment interface (easily identified) as a reference up to the point of the first bone–implant contact in the mesial and distal regions of each implant, comparing them with the radiograph taken postoperatively. These measurements were carried out by two experts, who were first subjected to the inter-examiner kappa test (0.86—almost perfect agreement).

Level of patient satisfaction

The patients were followed up periodically for 18 months, and at the time of writing, there had been no complications. At the end of the treatment, both patients said they were very satisfied when asked about their level of satisfaction with the aesthetic result of the treatment according to a visual analogue scale (Fig. 15).

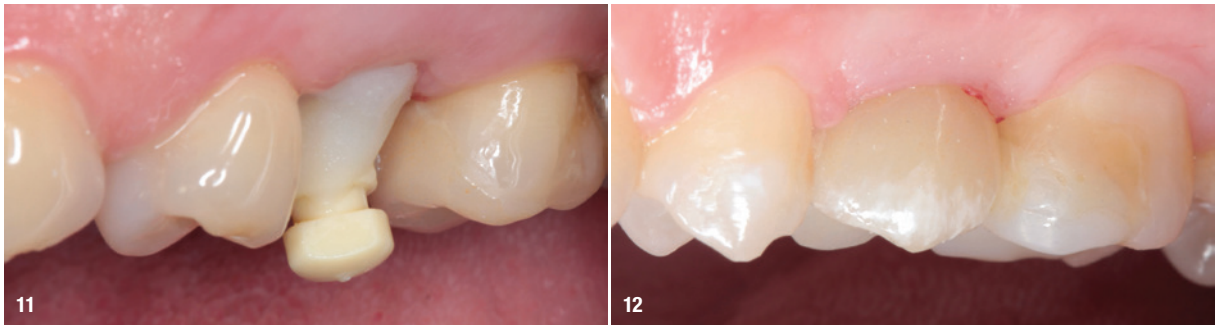
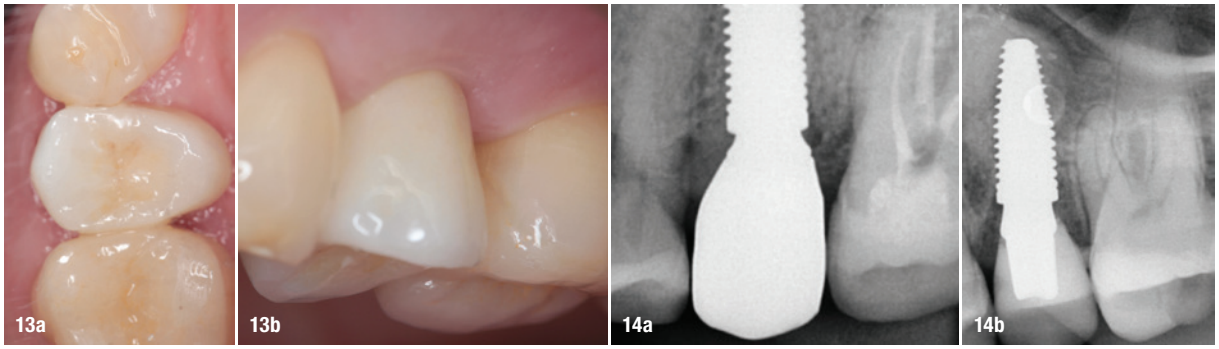


Fig. 11: Analog flow—emergency profile molding. **Fig. 12:** Cemented definitive crown (e.max).



Figs. 13a & b: Milled monolithic zirconia crown. **Fig. 14a:** X-ray of the last follow-up appointment (18 months)—milled monolithic zirconia crown. **Fig. 14b:** X-ray of the last follow-up appointment (18 months)—milled e.max crown.

Discussion

The objective of the present case report was to evaluate the clinical and radiographic performance of the Neodent Zi two-piece ceramic implant system in the posterior regions of two patients. After 18 months of follow-up, no technical or biological complications were observed, demonstrating clinical and radiographic success of the implants and satisfactory preservation of the shape of the soft and hard tissue. Other studies using this ceramic implant system have shown results like ours after 12 months.[7–10] Both patients presented with properly osseointegrated implants during the first three months, in agreement with animal studies that reported that the osseointegration of zirconia implants is similar to that of titanium implants under different loading conditions, and osseointegrated zirconia implants have increased removal torque values.[11, 12]

Another very important point observed in the present study was the health of the peri-implant tissue around the ceramic implants after 18 months. According to current literature, zirconia surfaces have a lower affinity for bacterial plaque compared with titanium surfaces.[13]

It is worth mentioning that, although an 18-month follow-up period is short, during this entire period, there were no clinical or biological complications in these cases, and the bone level around the implants was maintained. The implants showed no marginal bone loss, a result similar to that of other studies that evaluated the same implant system.[8–10]

Fig. 15: Visual analogue scale (VAS).

Conclusion

Despite the limitations of the present case report, after 18 months of follow-up, the two-piece zirconia implant system used appears to be a safe and reliable alternative in oral rehabilitation involving posterior teeth. Further studies must be carried out to confirm our findings, and the cases presented here will continue to be monitored.

Literature

about the author

Dr Alexandre Marques Paes da Silva is a lecturer in the department of prosthodontics of the faculty of dentistry at the Universidade do Estado do Rio de Janeiro in Brazil.

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Dr Alexandre Marques Paes da Silva

Passion for customers, innovation and growth

During the 2024 Implant Solutions World Summit, held in June in Miami in the US, Dental Tribune International had an opportunity to talk to Tony Susino, group vice president of global implant and prosthetic solutions at Dentsply Sirona. In this interview, he discusses this year's summit theme, "Passion delivered", which reflects Dentsply Sirona's commitment to customer success, innovation and growth. He also shares insights into the summit's focus on scientific innovations in implant dentistry, which enhance patient care through advanced technologies.

Mr Susino, could you elaborate on the primary goals you aim to achieve with the 2024 Implant Solutions World Summit, and could you explain how they align with Dentsply Sirona's long-term vision for implant dentistry?

Fig. 1: Since taking the reins of Dentsply Sirona's global implant and prosthetic business two years ago, Tony Susino has focused on customer acquisition and success, product development and digitally connected implant solutions.

The theme of our event, "Passion delivered", isn't just the slogan of the meeting; it's a summary of our implant and prosthetics solutions group strategy. Let me put it differently: our strategy is to have a passion for customers, a passion for innovation and a passion for growth. These pillars have been evident in our commitment to peer-to-peer education and community building, in our investment in our sales teams and in the harmonisation of our implant portfolio. Since I joined this business two years ago, our team has become laser-focused on three things: customer success and acquisition; new product development and the enhancement of our ability to be a digitally connected implant company; and growth through new market opportunities and the introduction of new therapies.

The goal of the meeting is to inspire clinicians, to have them learn from some of the best speakers in the world and for them to share their passion for implant dentistry with one another. We are committed to investing in our community and to sharing our solutions in order to build dental professionals' confidence so that they are able to provide the best care possible to their patients.

What are some of the latest scientific innovations and advancements in implant dentistry being showcased at the summit, and in what way do you expect these to transform patient care?

For more than four decades, Dentsply Sirona has collaborated with clinicians and scientists at the forefront of implant dentistry. Together, we have worked to pioneer innovations that deliver excellent outcomes across an array of fields. We instil clinician confidence through predictable and reliable results, natural aesthetics and lasting bone care. The technology breakthroughs that drive these solutions—including the EV Implant Family—are recognised worldwide and supported by more than 1,400 scientific publications. Our passion for discovery,

data and innovation is relentless, and our work always well documented. The EV Implant Family consists of three implant systems with different body shapes that share a common DNA. Each design is based on clinical preference and/or patient situation, but they are unified by key features such as OsseoSpeed and the EV connection. These features are supported by solid, documented preclinical and clinical evidence. Each implant system is designed to stimulate the healing process and help deliver long-term function and natural-looking aesthetics. The scientific evidence we have collected on the EV Implant Family is the topic of our new "A passion for progress" campaign and a science focus at the summit.

The advancements in implant dentistry in the scientific programme include the developments in digital dentistry involving our digital solutions—Simplant guided surgery, Atlantis, Primescan, CEREC and Primeprint—and what DS Core brings to the table, as well as our regenerative portfolio. We are also giving the most recent updates on newly published data on implant procedures, intra-oral health and peri-implantitis, as well as updates on practice building. The developments bring benefits to the patient through treatment outcomes that are more efficient and predictable and through reduced treatment time owing to more convenient and efficient procedures, including intra-oral scanning, information sharing by means of DS Core and guided surgery.

Education and collaboration are key themes for this summit. How is Dentsply Sirona fostering these elements through the event, and what unique opportunities can attendees expect in terms of learning and networking?

At Dentsply Sirona, we recognise that education and collaboration are foundational pillars for driving innovation and progress in implant solutions. Events such as the Implant Solutions World Summit play a crucial role in driving innovation, education and community development within the realm of implant dentistry.

Fig. 3: The meeting aimed to inspire clinicians by featuring top speakers and encouraging the exchange of passion for implant dentistry.

Fig. 2: Participants had the opportunity to attend masterclasses focusing on various aspects of implant dentistry.

At the summit, we have created a vibrant ecosystem through which ideas are exchanged and partnerships—and, indeed, friendships—are formed. Through interactive workshops, panel discussions and keynote presentations, participants can engage with experts in the field, exchange insights and explore cutting-edge advancements in technology.

As part of the congress, attendees could register for a series of masterclasses focusing on various aspects of implant dentistry. These hands-on workshops and lectures covered surgical techniques, digital workflows for single-tooth and full-arch treatment, and the integration of advanced dental technologies into everyday practice. Our dedication to encouraging continuous learning and collaboration extends beyond the summit. We strive to cultivate a supportive community where the sharing of knowledge will persist long after the event concludes.

We offer the technology, the service and, through our DS Academy, the clinical education to help our customers add implant treatment to their practice offering. We have 57 education centres in 35 countries, and it is clear that dental professionals are taking advantage of these clinical education opportunities: there have been 1.95 million course registrations since 2019, and 9,200 courses took place in 84 countries in 2023. Through the DS Academy, dental professionals can also access several clinical education course series, including a 23-course implant series that will assist in building and expanding clinicians' digital implant knowledge and skills.

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Dentsply Sirona

DDS.Berlin concludes its premiere with positive feedback

DDS.Berlin, the first edition of the Digital Dentistry Show, took place at Arena Berlin on 28 and 29 June 2024. Nearly 80 exhibitors and more than 1,000 attendees did not want to miss the premiere. About half of the attendees came from Germany. The event also attracted many dentists from other European countries and the rest of the world.

During the event, a total of 32 presentations were given by more than 50 speakers, including many experts from the Digital Dentistry Society itself. They presented a wide range of topics related to digital dentistry and its application in daily practice. Highlights included the presentations by Prof. Christos Angelopoulos, Dr Luis Bessa, Dr Leon Emdin, Dr Raquel Zita Gomes, Dr Anne Heinz, Dr Miloš Ljubičić and Dr Paul Schuh, who presented a broad range of clinical cases and demonstrated applications of digital technologies.

In addition to the presentations, more than 20 workshops were held, offering the 300 attendees hands-on learning experiences on topics such as intra-oral scanning, digital implant placement, chairside workflows, dynamic data acquisition, 3D printing and AI-supported treatment planning.

Holger Emmert, Head of Marketing at SprintRay Europe, commented: "We are pleasantly surprised by the audience and the highly specific questions that were asked. The overall level of expertise of the attendees is higher than what we normally encounter at trade fairs or conferences."

"DDS.Berlin is an important meeting of scientific and industrial groups [...]. Unlike larger conferences with a general focus, this event provides a unique opportunity to focus exclusively on the digital aspects", said Connie Peterse-van der Koppel, Principal Scientific Adviser at NextDent by 3D Systems.

Dr Henriette Lerner, Past President of the Digital Dentistry Society, who has been involved in planning the scientific programme, added: "Digital dentistry is the present and the future of our clinical practice. The value of this event lies in the convergence of the latest technological developments and the exchange on clinical applications through workshops and lectures."

DDS.Berlin also offered a live stream of the presentations, which will be available online shortly. The next DDS.Berlin event is scheduled for 26 and 27 June 2026.

More information about the event can be found on the DDS.Berlin website.

contact

Digital Dentistry Show
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DDS.Berlin

The first edition of DDS.Berlin offered a considerable number of educational opportunities. In his workshop, Dr Miloš Ljubičić demonstrated the transformative effect of 3D printing in dentistry (left). As part of the lecture programme, Dr Elisabeth Prause from Charité—Universitätsmedizin Berlin spoke about the use of advanced digital technologies in prosthetic rehabilitation (right).

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Fig. 1: The Implant Solutions World Summit 2024 brought together more than 600 implant professionals from 25 countries.

Engaging clinical education and meaningful networking at Implant Solutions World Summit 2024

Dentsply Sirona's commitment to advancing implant dentistry through high-quality clinical education and by delivering state-of-the-art science and innovative technologies was on full display at the Implant Solutions World Summit 2024 in Miami.

Fig. 2: Prof. Jan Eirik Ellingsen from the University of Oslo, Norway received the first Stig Hansson Award for Innovation.

More than 600 implant professionals from 25 countries attended the strong scientific programme, giving them the opportunity to gain knowledge through a series of master classes and lectures led by a renowned group of international speakers and moderators. The programme allowed for multiple opportunities for building networks, engaging in lively discussions, and finding inspiration and confidence for the dental team.

One of the standout sessions at the Implant Solutions World Summit was "The Monday morning patient" moderated by Malene Hallund and Dean Lyndon Cooper, the two scientific chairs of the Implant Solution World Summit. This session featured an expert panel that discussed various cases from initial assessment through planning and treatment, encouraging collaborative problem solving and peer-to-peer learning. Attendees, both on stage and in the audience, actively participated by voting on their preferred approaches to these challenging Monday morning cases.

In addition, a highly relevant selection of masterclasses offered participants in-depth knowledge and hands-on experience. These gave them the opportunity to engage with experts in smaller, interactive settings, enhancing their skills and understanding of advanced implant techniques.

Stig Hansson Award for Innovation

Dentsply Sirona also presented the first Stig Hansson Award, recognising pioneering innovation and research within implant dentistry. It honors the legacy of Stig Hansson († 2023), a former employee of Dentsply Sirona and a pioneer in the development of modern dental implants. He not only invented the Astra Tech Implant System but also brought the principles of biomechanics to implant design, resulting in TiOblast, the first moderately rough implant surface, and MicroThread, retention elements on the implant neck. His work created a new gold standard that holds to this day.

This year's award went to Prof. Jan Eirik Ellingsen from the University of Oslo for his creation of the OsseoSpeed implant surface, the first chemically modified implant surface. The award aims to inspire and recognise individuals who embody the spirit of innovation and drive positive change in the field of dental implantology.

Fig. 3: Experts guided the audience through implant dentistry topics in the scientific programme.

In celebration of the spirit of innovation and clinical excellence through the Stig Hansson Award, Dentsply Sirona proudly announced a $10,000 donation to its partner Smile Train, the world's largest cleft-focused organisation, in the name of Prof. Jan Eirik Ellingsen. This contribution, part of an ongoing partnership that began in 2021, underscores the company's commitment to advancing the future of left care and improving oral health globally.

contact

Dentsply Sirona
www.dentsplysirona.com

IMPLANTOLOGY 4.0
ON THE WAY TO PATIENT-SPECIFIC CONCEPTS

53RD INTERNATIONAL ANNUAL CONGRESS OF DGZI

DGZI
Deutsche Gesellschaft für Zahnärztliche Implantologie e.V.

8—9 NOVEMBER 2024
DUESSELDORF/GERMANY

REGISTRATION
www.dgzi-jahreskongress.de/en

Programme for dentists and dental technicians

FRIDAY, 8 NOVEMBER 2024

SCIENTIFIC PRESENTATIONS

09:30 – 09:45 Opening ceremony
Dr Georg Bach/GER—DGZI President

09:45 – 10:15 Dental sedation techniques: Nitrous oxide, oral sedatives and intravenous sedation—Quo vadis?
Dr Joel Nettey-Marbell/GER

10:15 – 11:15 Bone augmentation measures—possibilities and limitations
Priv.-Doz. Dr Dr Achim von Bomhard/GER
Priv.-Doz. Dr Dr Andreas Fichter/GER

11:15 – 11:30 **Speaker and podium discussion**
The speakers and the scientific leader/host discuss the relevance of the presented developments for the daily clinical practice of implantologists.
Participants have the opportunity to actively take part in the discussion.

11:30 – 12:15 **Break/Dental exhibition**

TUTORIALS

12:15 – 13:15 **Tutorial ❶** straumann
Update on digital impressions in implantology
Prof. Dr Benedikt Spies/GER

13:15 – 14:15 **Tutorial ❷** camlog
Immediate implant placement and immediate restoration
Prof. Dr Dr Peer Kämmerer, MA/GER
Prof. Dr Dr Eik Schiegnitz/GER

14:15 – 15:15 **Break/Dental exhibition**

TABLE CLINICS (TC)

15:15 – 16:00 **Session 1**
16:00 – 16:15 Change of table
16:15 – 17:00 **Session 2**
17:00 – 17:15 Change of table
17:15 – 18:00 **Session 3**

Information: Selected table clinics are held in English.
More information: www.dgzi-jahreskongress.de/en

18:00 – 20:00 **Get-together at the congress/exhibition area**

SATURDAY, 9 NOVEMBER 2024

SCIENTIFIC PRESENTATIONS

09:00 – 09:10 Welcome and introduction of the speakers and scientific programme
Dr Georg Bach—DGZI President

09:10 – 09:40 Vitamin D: Clinical relevance from implant prognosis to cancer prevention
Prof. Dr Dr Knut A. Grötz/GER

09:40 – 10:10 Lifetime augmentation concepts—Which factors are decisive?
Prof. Dr Dr Andres Stricker/GER

10:10 – 10:40 Enhanced osseointegration by osteoimmunology & Sticky bone protocols: clinical benefits
Dr Joseph Choukroun/FR

10:40 – 11:00 **Speaker and podium discussion**

11:00 – 11:45 **Break/Dental exhibition**

11:45 – 12:15 Implant-prosthetic concepts for the treatment of older patients
Prof. Dr Samir Abou-Ayash/CH

12:15 – 12:45 Use of PRP, PRGF, PRF, hyaluronic acid in oral surgery/implantology/dentistry—What makes sense? What should you „use" in daily practice?
Prof. Dr Dr Ralf Smeets/GER

12:45 – 13:15 30 years of laser and implantology: Where do we stand—has it made a difference?
Dr Georg Bach/GER

13:15 – 13:30 **Speaker and podium discussion**

13:30 – 14:15 **Break/Dental exhibition**

14:15 – 14:45 Soft-tissue management on implants—aesthetics or long-term functional success
Dr Jochen Tunkel/GER

14:45 – 15:15 From the universal solution to personalised dentistry—How individual is augmentation surgery today?
Dr Dr Diana Heimes/GER

15:15 – 15:45 Dynamic navigated implant placement—The new standard?
Priv.-Doz. Dr Dr Stefan Röhling/GER

15:45 – 16:00 **Speaker and final discussion**

Organisational matters

UP TO 16 CREDIT POINTS
16
HOURS VERIFIABLE CPD

CONGRESS FEES

Friday, 8 November and Saturday, 9 November 2024

Dentist/dental technician DGZI member	€295*
Dentist/dental technician non-member	€345*
Medical assistant (with proof) DGZI member	€120*
Medical assistant (with proof) non-member	€135*
Student (with proof)	only conference fee
Conference fee**	€128 excl. VAT

TEAM FEES

Friday, 8 November and Saturday, 9 November 2024

Dentist + dental technician DGZI member	€395*
Dentist + dental technician non-member	€475*
Dentist + assistant DGZI member	€375*
Dentist + assistant non-member	€400*
Conference fee** per person	€128 excl. VAT

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

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

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Registration form via fax to
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event@oemus-media.de

I would like to register the following persons bindingly for the 53rd International Annual Congress of DGZI on 8 and 9 November 2024 in Duesseldorf, Germany (Please mark accordingly):

❑ yes ❑ no	❑ Friday ❑ Saturday	❶___ ❷___ ❸___ (of chosen table clinics)
Academic title, last name, first name, profession	DGZI member	Participation

❑ yes ❑ no	❑ Friday ❑ Saturday	❶___ ❷___ ❸___ (of chosen table clinics)
Academic title, last name, first name, profession	DGZI member	Participation

Evening event on Friday, 8 November 2024 ____ (# of persons)

Stamp

I am hereby agreeing to the general terms and conditions of the 53rd International Annual Congress of DGZI.

Date, Signature

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

EuroPerio11 kicks off with virtual event and ambassador meet-up

The virtual kick-off for EuroPerio11 took place on 3 June 2024, marking the beginning of the countdown to the world's leading congress in periodontology and implant dentistry.

The virtual event featured three clinical masters of periodontal and implant surgery who dissected the outcomes of the live surgeries performed at EuroPerio10 in Copenhagen, Denmark, 2022. Attendees were thrilled to experience the excitement of the operating room from the front row as the masters unveiled the results of their first-class clinical procedures.

Kick-off event of the EuroPerio11.

1,050 participants followed the event live.

The results of EuroPerio10 in Copenhagen 2022 were analysed.

With over 2,000 registrations, the event drew significant attention. 1,050 people tuned in to watch it live, reflecting the high interest and anticipation for EuroPerio11. The kick-off also emphasised the importance of the upcoming congress, which will take place from 14 to 17 May 2025 in Vienna, Austria.

Anton Sculean, EuroPerio11 chair, encourages dental health professionals to attend EuroPerio11: "EuroPerio is the world's leading congress in periodontology and implant dentistry. The congress features a rich and varied scientific programme, including live surgeries, interactive sessions, and much more. With more than 150 top speakers from all over the world who are the most respected masters in their fields, it's the ideal place to meet friends and colleagues and exchange the latest information. The exhibition showcases the latest products and technologies, while the poster exhibition will present over 1,000 new publications in the field. To sum up, EuroPerio11 is the place to be."

EuroPerio11 ambassadors also met in Vienna to discuss their roles and strategies for promoting the congress within their respective member societies. The total number of ambassadors participating in this initiative is 30, including full and associate members. A group of eight international ambassadors will also help to promote the event in their regions. Ambassadors play a crucial role in ensuring widespread engagement and participation in EuroPerio11.

The chair of the ambassador group, Mia Rakić, highlighted their significance saying: "EuroPerio ambassadors are vital in promoting the event across Europe. Their dedication and efforts in each member society are key to the success of the congress. We are grateful for their commitment and enthusiasm."

EuroPerio11 promises to be a pivotal event in the field of periodontology, offering unparalleled opportunities for learning and networking. Registration and abstract submission for EuroPerio11 will open on 2 September 2024. Be sure to mark your calendars and prepare for an exceptional event that will shape the future of periodontology and implant dentistry.

contact

European Federation of Periodontology (EFP)
www.efp.org

The National Osteology Symposium is set to convene in the vibrant city of Paris from 26 to 28 September 2024, offering three days of unrivaled learning and networking opportunities. Hosted at the historic Maison de la Chimie, the event will bring together world leaders and experts in oral tissue regeneration, led by scientific chairs Emmanuelle Ettedgui, Hélène Arnal, and Anton Sculean. All sessions will be in English or with English translation.

The symposium will begin on Thursday morning with hands-on workshops designed to enhance surgical skills and introduce participants to innovative materials. In the afternoon, attendees will have the unique opportunity to engage with renowned speakers Franck Renouard, Giovanni Salvi and Brenda Mertens as they explore strategies for preventing errors and complications in periodontal and implant surgery, with a focus on predictable procedures and reliability.

Friday's agenda is dedicated to exploring the latest advances in hard- and soft-tissue regeneration. Attendees will be treated to a phenomenal session on guided bone regeneration, featuring the pioneer Christer Dahlin as well as Istvan Urban and Georges Khoury who will share their expertise in vertical and horizontal bone regeneration. The afternoon will continue with presentations from masters of soft-tissue regeneration, including Mario Roccuzzo, Stavros Pelekanos, and Oscar González Martín.

Saturday's sessions promise to maintain the high standard set by previous days, with discussions led by experts Giulio Rasperini, Nikos Donos, Martina Stefanini, and Sofia Aroca. Topics will include intrabony and furcation lesions, severe recession cases, and connective tissue substitutes.

Don't miss this unparalleled opportunity to meet the cream of the crop in oral tissue regeneration in the heart of Europe.

For more information and registration details, visit osteology.org.

Osteology Foundation

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Osteology Foundation

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Details make perfection: EAO congress 2024

The European Association for Osseointegration is delighted to announce that its 2024 annual congress will be held in Milan, Italy from 24 to 26 October 2024.

The scientific committee has put together an inspiring programme structured around three daily themes. These will focus on “The fundamentals”, “State of the art—certainties” and “Beyond the limits”.

As always, the congress will bring together experts to debate the latest evidence-based practice, with a strong focus on take-home techniques for daily use in your clinic.

The meeting will continue the EAO’s tradition of partnering with respected local associations, and will share the stage with the Italian Academy for Osseointegration (IAO) and the Italian Society of Periodontology (SIdP). Their well-respected scientific and professional perspectives will form an important additional element of the meeting.

This will be the EAO’s second visit to Italy in a decade following its 2014 congress in Rome. We are looking forward to welcoming you to modern and lively Milan, which offers unique opportunities both socially and culturally.

There are so many reasons to attend this meeting. It will combine a unique mixture of cutting-edge presentations and opportunities to network with distinguished colleagues, while spending time in a beautiful European city. Most importantly, the programme is top-notch, and the speaker line-up represents the best professionals in the field of implant dentistry and related specialities.

On behalf of the EAO, the IAO and the SIdP, we look forward to seeing you in Milan!

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OEMUS MEDIA AG celebrates three decades of influence in the dental market. To mark this milestone, the upcoming issues of *implants* 2024 will feature short background stories on our team.

WE PUBLISH DENTAL
Introducing the implants team

WE LOVE WHAT WE DO. ORG

Timo Krause
Sales & Product Manager

For nearly 12 years, Timo has been a great force in the dental world. From the very beginning, he immersed himself in international business, seizing every opportunity to learn directly from the source. His presence is a familiar sight at numerous dental congresses and exhibitions. Over time, Timo developed a deep affection for oral implantology, eagerly staying abreast of the latest developments and treatment procedures. Although Timo is not a dentist, his growing understanding of the field speaks volumes.

In the dental community, Timo is well-known for always having his camera at the ready. It's not just a tool for him—it's a passion. What else is there to know about Timo? He enjoys restoring vintage bicycles and is a dedicated gardener.

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Patient-customised concepts: “Implantology 4.0” in Düsseldorf this November

On 8 and 9 November 2024, the 53rd International Annual Congress of the German Association of Dental Implantology (DGZI) will be held in Düsseldorf, centered on the theme “Implantology 4.0—on the way to patient-specific concepts.” This congress promises to be an enlightening event, guiding the future of dental implantology, fostering insightful discussions, and unveiling innovative approaches through the dynamic interaction between participants, speakers, and the industry.

For decades, dental practitioners have relied on standardised, evidence-based implantological treatments applicable to all patients. However, recent studies indicate a pressing need to reassess this one-size-fits-all methodology. What ensures success in one patient might not yield the same result in another. Hence, the focus is shifting towards patient-individualised concepts.

At the forefront of this transformation, the congress will showcase the latest scientific and practical findings. Renowned speakers will engage with participants to explore the full spectrum of dental implantology, fostering a collaborative environment where future advancements can take root. Traditionally, the congress kicks off with a forward-looking perspective, featuring presentations from the emerging generation of DGZI professionals who will share their current research and projects in a dedicated forum.

This year’s DGZI Annual Congress will also include two in-depth tutorials: one on digital impressions in implantology and the other on immediate implantation and immediate loading. These sessions are designed to provide practical insights and hands-on experience. Additionally, the ever-popular table clinics return, offering participants the chance to discuss specialised topics with distinguished experts, thereby expanding their knowledge beyond their usual practice.

Complementing the scientific sessions, a separate congress for implantological assistants will take place, ensuring that the entire practice team benefits from comprehensive training and education.

Set against the backdrop of Düsseldorf, a city renowned for its vibrant culture and dynamic atmosphere, the congress offers more than just professional development. It promises an enriching and holistic experience that combines cutting-edge knowledge with the charm of one of Germany’s most fascinating cities. The DGZI Annual Congress is a must-attend event for anyone involved in dental implantology, offering unparalleled opportunities for learning, networking, and professional growth.

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Geistlich Pharma

Geistlich collagen portfolio receives EU MDR certification

Geistlich is one of the first companies in the field of regenerative dentistry to receive MDR certification for its collagen product range. This includes the entire product lines of Geistlich Bio-Gide®, Geistlich Fibro-Gide® and Geistlich Mucograft®. The Swiss company is taking a pioneering role in their field with the approval of these products for bone- and soft-tissue regeneration.
Geistlich has received MDR (Medical Device Regulation) certification from TÜV SÜD Product Service GmbH for its established product lines of Geistlich Bio-Gide®, Geistlich Fibro-Gide® and Geistlich Mucograft®, fulfilling the new EU regulations.
Despite the increased and more demanding quality and evidence requirements of the MDR, all indications for these products, which include a variety of regenerative procedures, have been confirmed. Doctors can therefore rely on a complete range of collagen products that meet their high standards of quality and therapeutic safety.

Pioneer in medical regeneration, extended range of indications
Geistlich Fibro-Gide® is the first non-active class III medical device of animal origin to be certified according to MDR by TÜV SÜD Product Service GmbH. The MDR certification for Geistlich Mucograft®, which is now also approved for indications outside the mouth in the facial area, is particularly pleasing.

Commitment to the highest quality standards and patient safety
Diego Gabathuler, CEO, says: "With the MDR certification, long before the official transition period ends, we underline our commitment to the highest quality standards and patient safety, which we share together with doctors." With its four subsidiaries and numerous sales partners in Europe, Geistlich has been committed to the well-being of patients on the continent for decades and is driving medical regeneration forward.

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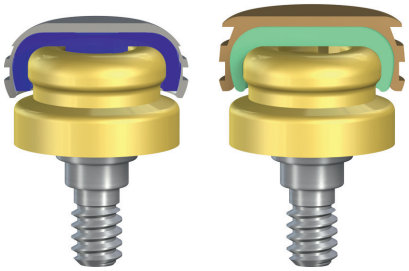

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12–15 September 2024
Istanbul, Turkey
www.fdiworlddental.org

National Osteology Symposium

26–28 September 2024
Paris, France
osteology.org

IAO-EAO-SIdP Joint Meeting

24–26 October 2024
Milan, Italy
congress.eao.org/milan/en/

53rd International Annual Congress of DGZI

8–9 November 2024
Düsseldorf, Germany
www.dgzi.de

French Dental Association Annual Meeting

26–30 November 2024
Paris, France
adfcongres.com/en/homepage/

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