issn 1868-3207 • Vol. 27 • Issue 4/2026

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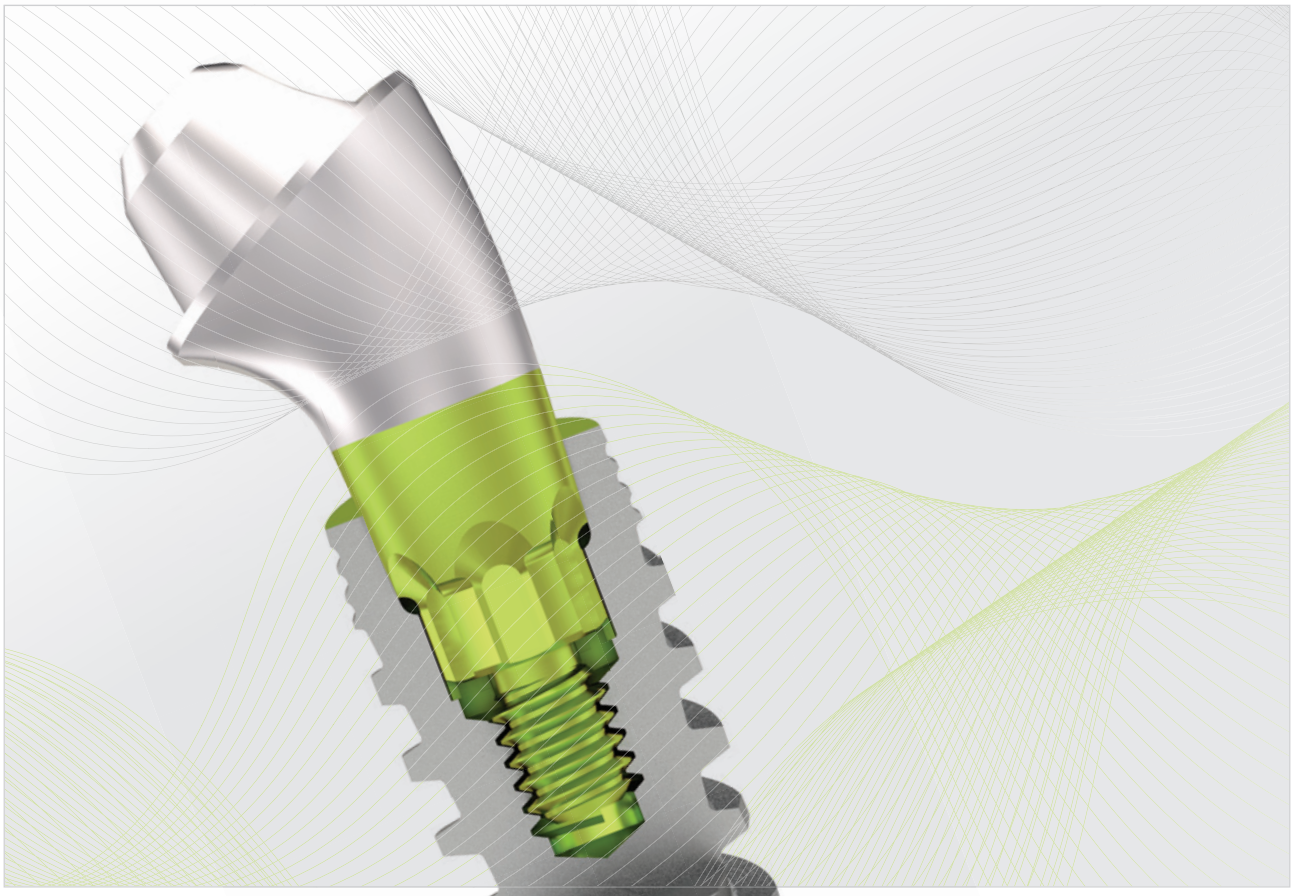
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Progress through evidence and exchange

Dear colleagues

Progress in dentistry depends on more than the arrival of new technologies. It also requires sound clinical evidence, practical education and opportunities to exchange experience. The articles in this issue bring these priorities into focus—from the consequences of peri-implant disease to the professional gatherings shaping discussion across the dental community.

The research feature on quality assurance provides an important clinical perspective. Peri-implant complications can lead to prolonged treatment, repeated interventions, compromised prosthetic outcomes and potential implant failure. For practices, they can also mean greater complexity, additional chair time and higher costs. These consequences underline why predictability and quality deserve a central place in conversations about progress.

Education is equally essential. The EAO congress coverage illustrates how scientific exchange can be comple-

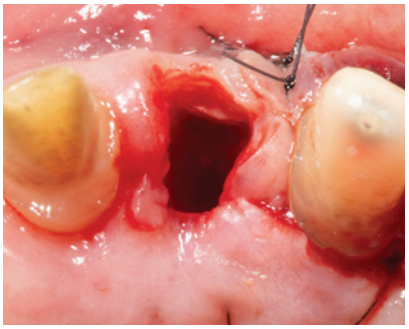
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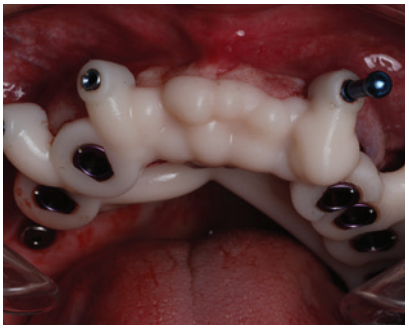
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mented by practical learning. Its workshop introduced less-experienced clinicians to biological principles, evidence-based surgical protocols and contemporary prosthetic strategies, with supervised opportunities to work with implant systems. Recognition of research and postgraduate achievement further highlights the connection between professional development and clinical practice.

Collaboration also extends beyond individual meetings. The Global Consensus for Clinical Guidelines initiative is preparing its next phase while developing a governance framework intended to protect sustainability, independence and scientific integrity. Its expanding partnership network reflects the international scope of efforts to advance evidence-based, patient-centred guidance.

Looking ahead, IDS 2027 and the AEEDC Dubai 2027 coverage point to further opportunities for scientific exchange, education and discussion of new products and workflows.

Together, this issue suggests a clear editorial priority: innovation should be considered alongside evidence, education and clinical need. The value of professional exchange lies not simply in discovering what is new, but in examining how it can support better-informed treatment decisions.

I wish you an informative and inspiring read.

Yours sincerely
Dr Georg Bach
President of the German Association of
Dental Implantology—DGZI



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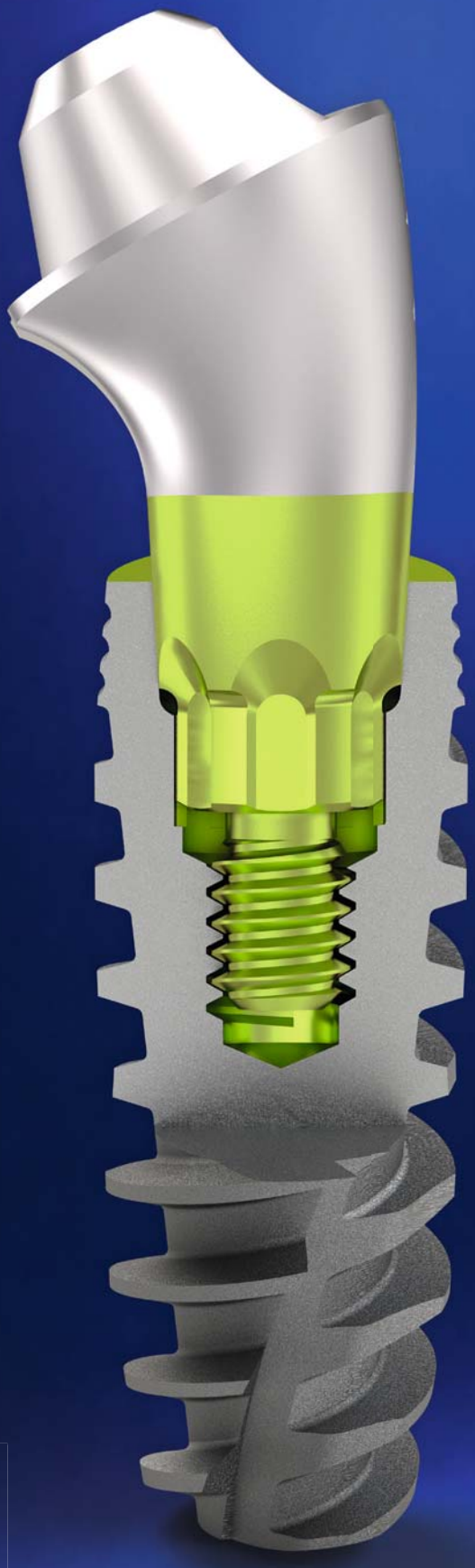
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Beyond sterility: A white paper puts implant surface cleanliness in focus

Dr Alina Ion

A sterile dental implant is not necessarily a clean one. This distinction is the central message of The Missing Variable in Peri-implantitis, a CleanImplant Foundation white paper examining the clinical, reputational and economic implications of implant surface contamination.

An overlooked factor in early healing

According to the white paper, the equilibrium between an implant surface and surrounding tissue is particularly vulnerable during early healing. Factors that disturb this balance at placement—before osseointegration has established sufficient stability—can initiate an inflammatory cascade with lasting consequences. The condition of the implant surface is presented as one potential contributing factor.

The paper does not frame surface cleanliness as the only consideration in peri-implant disease. It also identifies systemic health, medications, hygiene adherence, genetic inflammatory predisposition and long-term maintenance compliance as factors outside practitioners' direct control.

Implant selection, however, is a decision clinicians can influence. Procurement procedures, inventory controls, quality-assurance documentation, team education and patient communication are likewise presented as areas within a practice's control.



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What does "clean" mean?

The white paper describes a measurable approach to assessing surface cleanliness rather than relying on sterility alone.

Under the cited CleanImplant guideline, a clinically acceptable implant surface should show:

- Fewer than ten particles, each no larger than 50 µm.
- Assessment within a 120-degree viewing angle, from shoulder to apex.
- Examination using scanning electron microscopy and energy-dispersive X-ray spectroscopy (SEM/EDS) under ISO Class 5 cleanroom conditions, in independent, officially accredited laboratories.

The document links these thresholds to a publication by Duddeck and colleagues in the *Journal of Clinical Medicine* in 2019. It also reports that a fully revised, peer-reviewed guideline was released in October 2025, incorporating updated evidence and refined criteria.

These are the assessment criteria described by the white paper; the supplied material does not establish that meeting them eliminates the risk of peri-implantitis.

Clinical complications have practice-wide consequences

The paper places its quality-assurance argument within the broader burden of peri-implant disease. It lists prolonged treatment cycles, repeated surgical and non-surgical interventions, compromised prosthetic outcomes and potential implant failure among the clinical consequences.

For practices and healthcare organisations, these complications can also mean increased chair time, greater treatment complexity, higher costs and

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additional resource demands. Patient dissatisfaction, loss of patients and reputational exposure add further pressure.

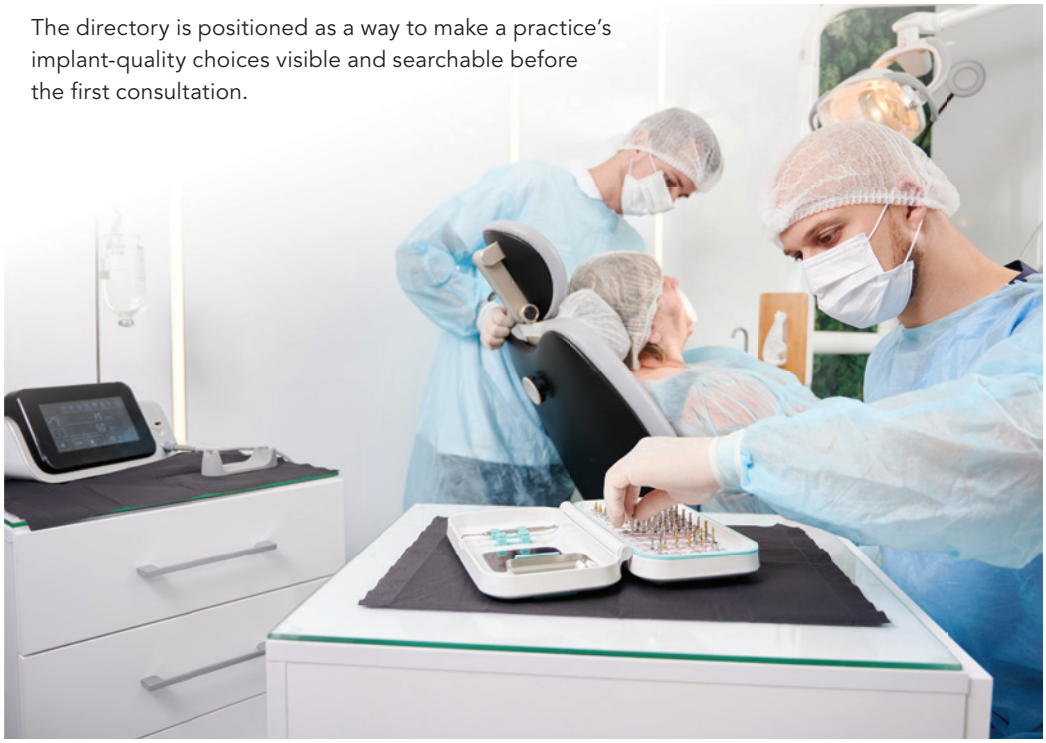
Against this background, the paper advocates implant selection based on independently verified cleanliness across batches and clinically documented survival rates, rather than sole reliance on marketing claims or price categories.

From verification to patient communication

The CleanImplant Foundation presents independent testing and certification as a structured pathway for quality assurance. The white paper also connects this approach with patient-facing communication through mycleandent.com, a directory linking patients with CleanImplant certified practices and clinics.

According to the document, every listed dentist or clinic uses an implant system carrying the Trusted Quality Seal, independently verified by the foundation as sterile and free of detectable surface contamination.

The directory is positioned as a way to make a practice's implant-quality choices visible and searchable before the first consultation.



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A quality-assurance argument, not a clinical guarantee

The white paper's practical message is that surface cleanliness deserves explicit consideration in implant procurement and treatment protocols. Its distinction between sterility and detectable surface contamination encourages clinicians to ask what has been independently tested—and how.

The document also states its limits: it is educational and does not replace clinical judgement, manufacturer instructions or local regulatory requirements. For practitioners, its contribution is therefore a framework for scrutinising implant quality, not a guarantee against peri-implant disease.

Read the white paper

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Full-arch maxillary implant rehabilitation in a periodontally compromised patient

Rehabilitation of patients with advanced periodontitis presents a complex clinical challenge, particularly when extensive tooth loss, compromised alveolar bone, and deficiencies in the peri-implant soft tissues coexist.

Drs Giovanni Ghirlanda & Michele Bianchi, Italy

The staging and grading framework for periodontitis provides clinicians with a structured basis for assessing disease severity, complexity, and progression risk, thereby informing comprehensive treatment planning.[1]

For patients seeking fixed full-arch rehabilitation, treatment planning must integrate the condition and distribution of the remaining teeth with the anatomical limitations of the residual alveolar ridge. A staged surgical approach can facilitate the coordination of implant placement, tissue augmentation, and prosthetic rehabilitation while accommodating the patient's functional and aesthetic requirements. When a removable interim prosthesis is unacceptable, a tooth-supported provisional restoration may provide continuity of function and aesthetics during treatment.

Preservation of the facial alveolar tissues is particularly important in the aesthetic zone, where post-extraction remodelling can compromise the buccal contour and emergence profile of the definitive restoration. Partial extraction therapy (PET) encompasses techniques designed to retain selected portions of tooth roots to help preserve the tissues surrounding an extraction site.[2] The socket-shield technique (SST), one of the approaches within PET, was initially described as a proof-of-principle method involving retention of the facial root fragment during immediate implant placement.[3] Its use, however, requires careful case selection and meticulous surgical execution, given the still-evolving long-term evidence base.

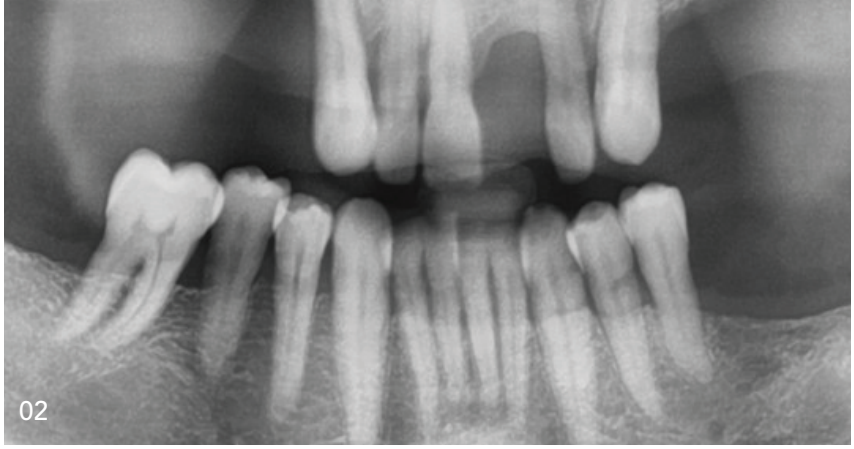
Tissue preservation alone may not address pre-existing deficiencies in alveolar bone volume that limit prosthetically driven implant placement. Guided bone regeneration (GBR) is an established approach for reconstructing deficient alveolar ridges, with outcomes dependent on appropriate graft and membrane management, flap stability, and tension-free closure.[4] The choice of grafting materials and the surgical approach must therefore be tailored to the anatomical defect and restorative objectives. Alongside hard-tissue reconstruction, adequate peri-implant soft-tissue dimensions are important considerations in maintaining implant-supported restorations. Free gingival grafting is an established option for augmenting keratinised mucosa around dental implants, and comparative evidence has evaluated its outcomes against those of xenogeneic collagen matrices.[5] These procedures are best considered as components of an integrated surgical and prosthetic plan.

This case report describes the staged rehabilitation of a patient with advanced maxillary periodontitis using implant placement, GBR, peri-implant soft-tissue augmentation, PET, and progressive provisional conditioning, followed by definitive screw-retained full-arch prosthetic rehabilitation and long-term clinical and radiographic follow-up.



01
Initial situation: Generalised periodontitis.

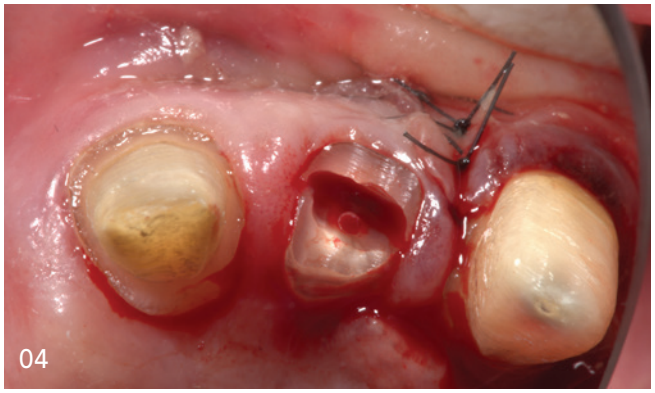
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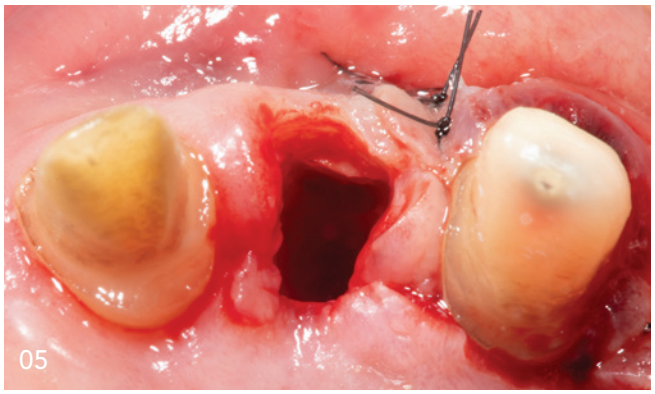
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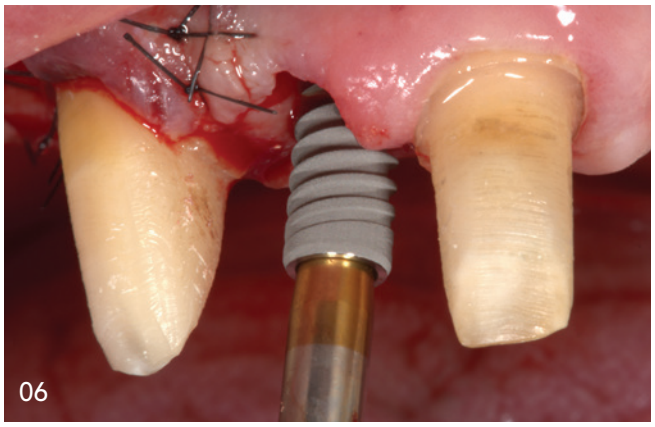
03



04



05



06

Case report

A 66-year-old patient presented with advanced periodontal disease predominantly affecting the maxillary dentition, classified as Stage IV, Grade C periodontitis (Figs. 1+2).[1] The patient reported compromised masticatory function and requested fixed rehabilitation of the maxillary arch. The patient requested a treatment plan that avoided the use of removable partial or complete provisional prostheses at any stage.

The treatment plan was designed to address the compromised dentition and localised hard- and soft-tissue deficiencies while maintaining a fixed provisional restoration. A tooth-supported provisional restoration reinforced with polymethyl methacrylate (PMMA) was fabricated before surgery (Fig. 3).

During the initial surgical phase, local infiltration anaesthesia was administered using articaine with epinephrine 1:100,000. A crestal incision extending from sites 17 to 13 was followed by elevation of a full-thickness mucoperiosteal flap. The maxillary right lateral incisor was extracted according to a PET protocol (Figs. 4+5).

Three copaSKY implants were placed freehand at sites 12 (3.5 × 12 mm), 14 (4 × 12 mm), and 16 (6 × 5.2 mm) according to the prosthetically driven treatment plan (Figs. 6+7). At site 14, implant

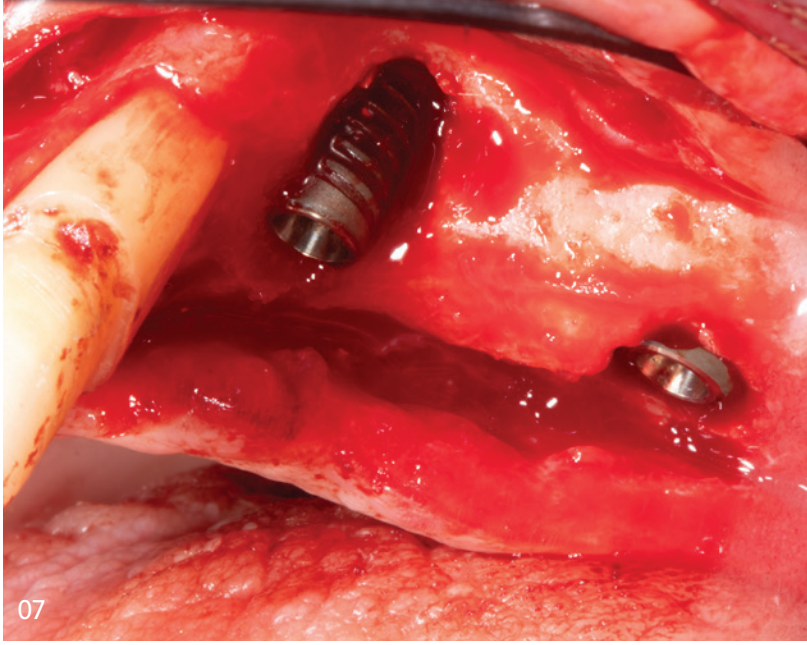
02
Preoperative orthopantomogram (OPG) showing generalised bone loss.

03
Tooth-supported provisional restoration in the maxillary arch.

04
Extraction of tooth 12 according to the partial extraction therapy (PET) protocol.

05
Buccal shield preparation according to the PET protocol.

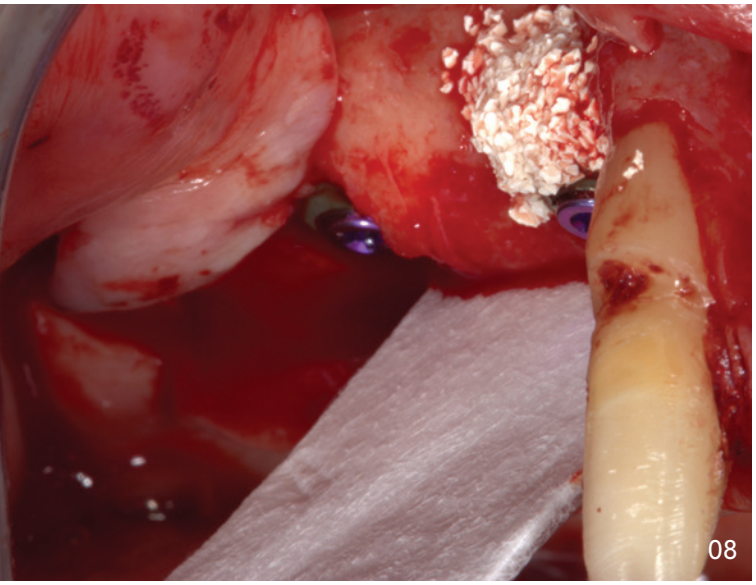
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Implant placement at site 12.

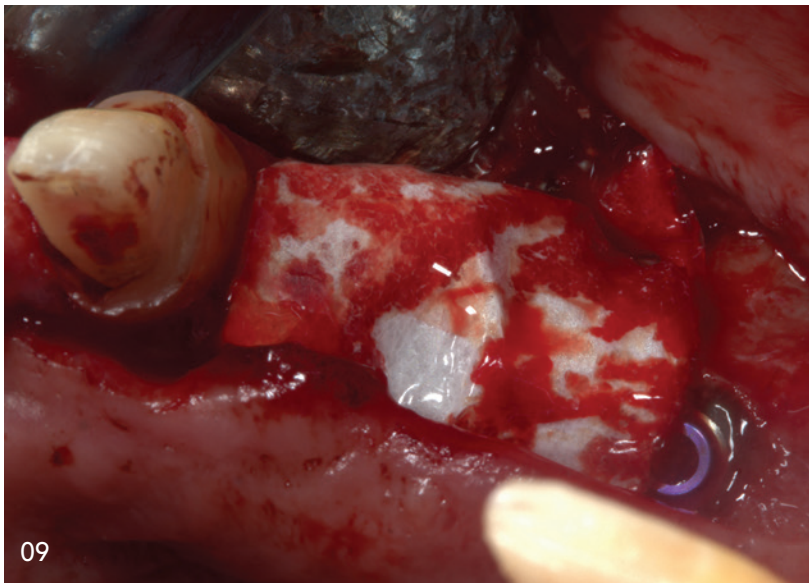


07
Implant placement at sites 14 and 16.

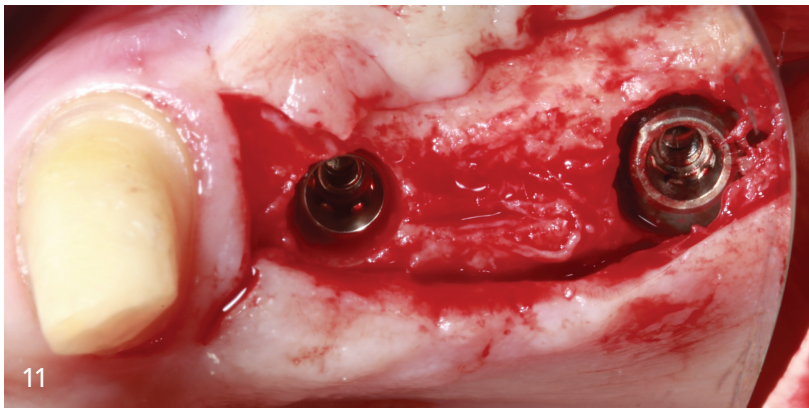
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Bone graft placement at the buccal dehiscence defect at site 14.

09
Completed guided bone regeneration (GBR) at site 14.





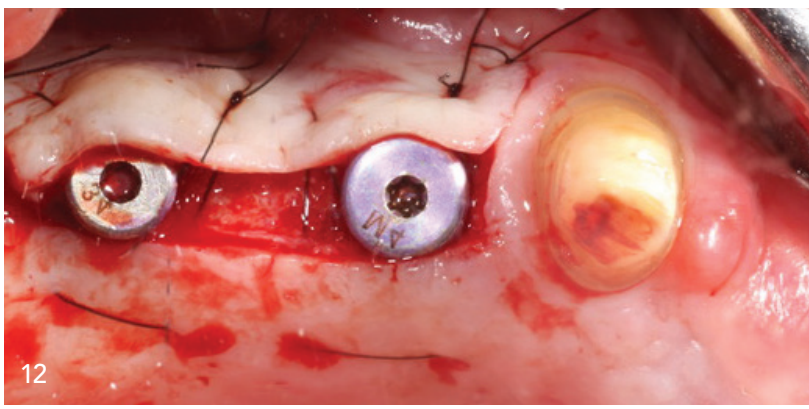




10
Placement of a tooth-supported polymethyl methacrylate (PMMA) provisional restoration.

11
Implant placement in the maxillary left quadrant.

12
Apically repositioned flap to increase the width of keratinised gingiva.



13
Implant placement at site 21.

14
GBR in the anterior maxilla.

15
Membrane stabilised with fixation pins.

16
Primary wound closure.

17
Free gingival graft (FGG) for soft-tissue optimisation.

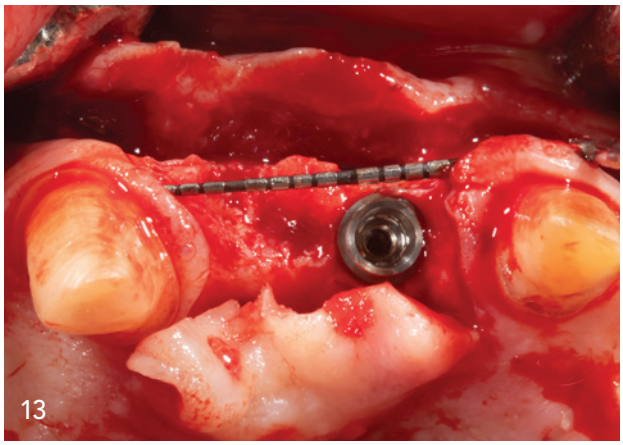
placement was combined with GBR using synthetic biphasic calcium phosphate granules comprising 60% hydroxyapatite and 40% ß-tricalcium phosphate (TIXXU graft, bredent medical; Fig. 8). The graft was covered with a resorbable collagen membrane (TIXXU CONTROL membrane, bredent medical) and stabilised using fixation pins (Fig. 9). Following flap mobilisation, tension-free primary closure was achieved, and the first fixed provisional PMMA restoration was delivered (Fig. 10).

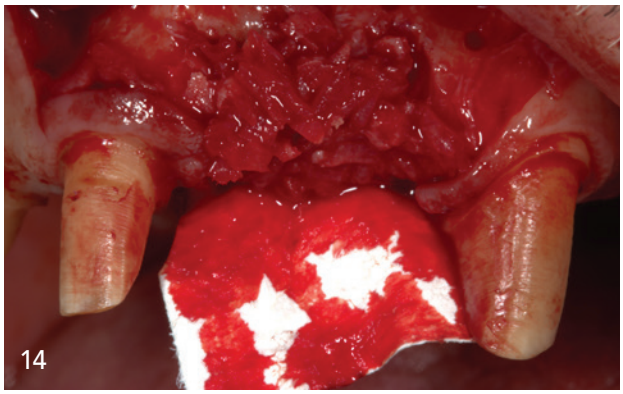
One month later, the left posterior maxillary sextant was treated. A crestal incision extending from sites 27 to 23 was performed, preserving the papilla distal to site 23. Following full-thickness flap elevation, two copaSKY implants were placed: a standard implant measuring 4 × 12 mm in the premolar site and an ultrashort implant measuring 6 × 5.2 mm in the molar region (Fig. 11). Both implants were left submerged during healing.

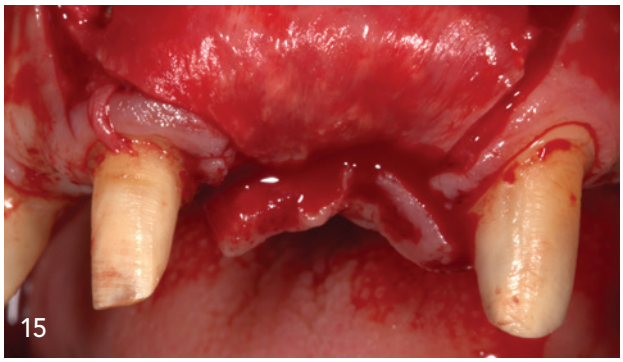
Four months after the initial surgical procedures in the left posterior quadrant, the previously submerged implants were uncovered using apically repositioned flaps to increase the width of the buccal keratinised mucosa (Fig. 12).

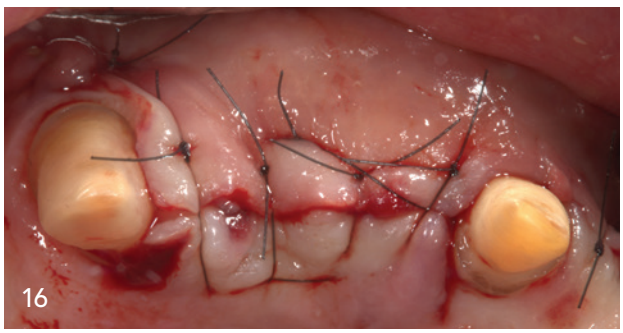
A further surgical procedure was performed at site 21 one month later. A standard copaSKY implant (4 × 12 mm) was placed (Fig. 13), accompanied by GBR using a mixture of autogenous bone chips and porcine-derived xenograft (THE Graft™, Purgo; Fig. 14). The graft was covered with a collagen barrier membrane (THE Cover™, Purgo; Figs. 15+16).

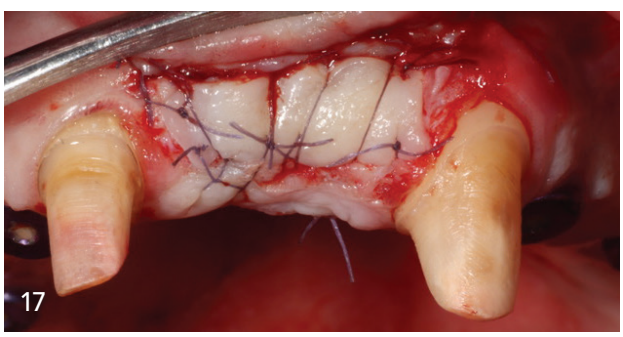
Because of an unfavourable mucogingival junction and insufficient keratinised mucosa, a free gingival graft (FGG) was subsequently performed using the strip technique (Fig. 17).[6]


13

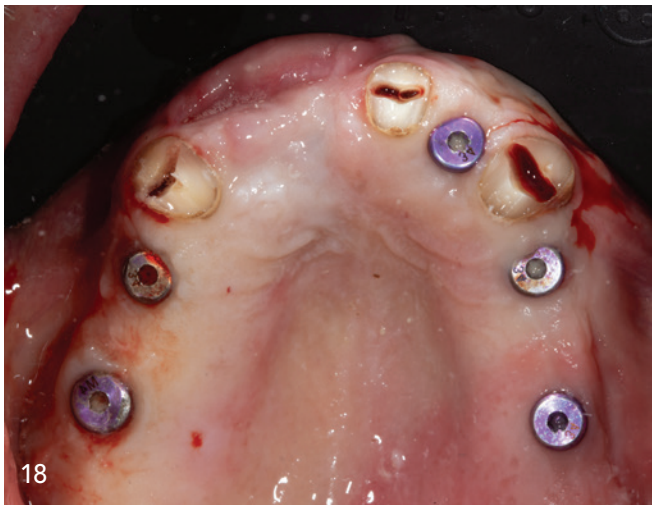

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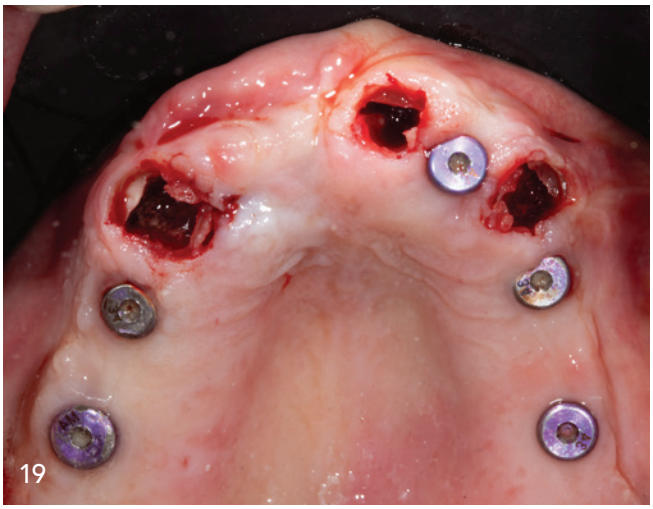

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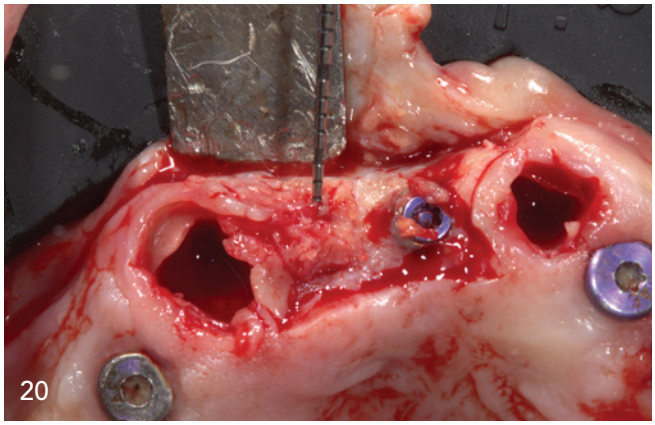

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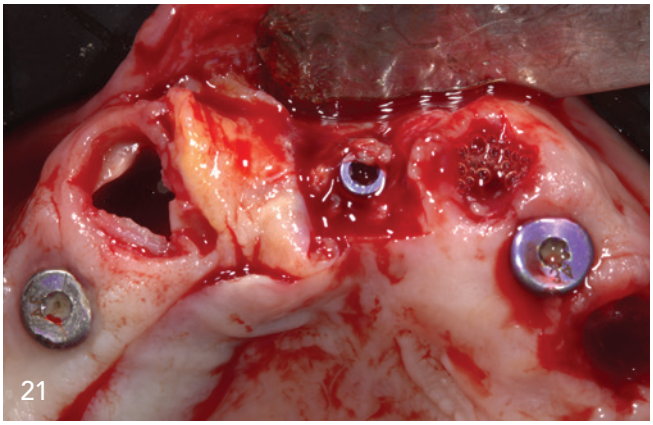

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18
Tooth sectioning according to the socket-shield technique (SST) protocol.

19
Retention of the buccal shield.

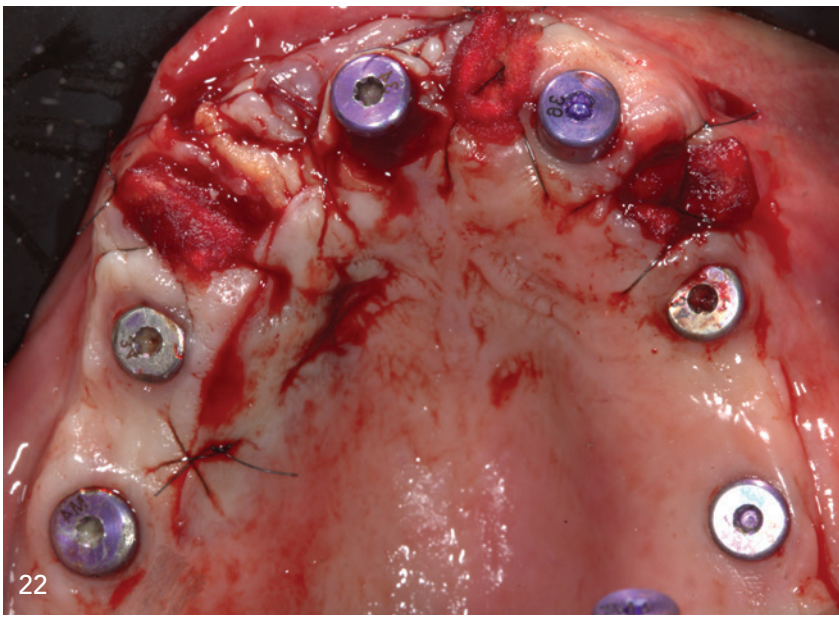
20
Uncovering of the anterior implant.

21
Connective tissue grafting.

22
Primary wound closure.

Following soft-tissue healing, the residual roots at sites 13, 11, and 23 that were intentionally maintained during the initial phases of treatment were sectioned and managed according to the socket-shield technique (Figs. 18+19). The coronal and palatal portions of the roots were removed, while thin, stable buccal root fragments were retained in close contact with the facial socket walls.

The implant at site 21 was subsequently uncovered (Fig. 20). Additional soft-tissue augmentation using a connective tissue graft (CTG) was performed to optimise the buccal profile and the contour of the edentulous span (Figs. 21+22). A second implant-supported provisional resin restoration was delivered immediately following the procedure (Fig. 23).





23
Implant-supported PMMA provisional restoration.

24
Definitive full-arch zirconia prosthesis.

25
Postoperative follow-up at one year.

26
Postoperative follow-up at two years.

27
Postoperative follow-up at four years.

28
Postoperative follow-up at six years.

29
Postoperative follow-up at seven years.

Definitive prosthetic rehabilitation and follow-up

The peri-implant soft tissues were conditioned over a nine month period through incremental additions of composite resin to the second set of provisional PMMA crowns. The provisional restoration was then replaced with a definitive screw-retained zirconia full-arch prosthesis (Fig. 24). Prosthetic screws were tightened to 25 Ncm according to the manufacturer's recommendations.

A mutually protected occlusal scheme was established, with bilateral, evenly distributed contacts in maximum intercuspation. Posterior contacts were adjusted to remain light and predominantly axial. Posterior interferences were eliminated during lateral excursions, with guidance provided by the anterior and canine regions. Posterior disclusion was established during protrusive movements to minimise non-axial loading.





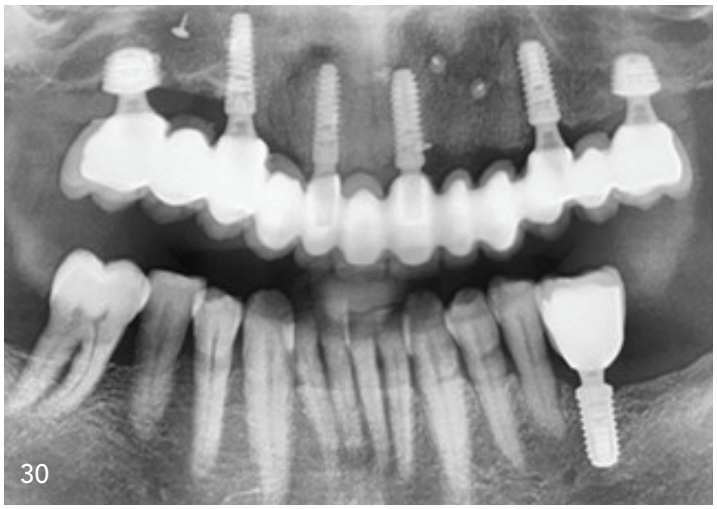








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30
OPG at the four-year follow-up.



31
OPG at the seven-year follow-up.

Clinical and radiographic examinations were performed at one, two, four, six, and seven years. Follow-up records and clinical photographs showed maintenance of the maxillary implant-supported prosthesis and favourable peri-implant soft-tissue contours throughout the documented period (Figs. 25–29). Radiographic evaluations showed stable crestal bone levels around the implants (Figs. 30+31). These observations represent a qualitative assessment.

Conclusion

The key learning from this case is that successful complex implant rehabilitation depends not merely on the execution of individual surgical procedures, but on their integration within a carefully planned treatment sequence.

Addressing hard-tissue deficiencies through site-specific guided bone regeneration, followed by appropriate soft-tissue augmentation and implant uncovering, created a favourable tissue foundation for subsequent prosthetic rehabilitation. The sequential management of extraction sites, peri-implant tissues, and provisional contours further emphasised the importance of coordinating surgical interventions with prosthetic requirements. A planned, staged approach to hard- and soft-tissue management, with each intervention timed to support the next phase of treatment, can contribute to predictable functional and aesthetic rehabilitation in periodontally compromised cases.

Acknowledgement: Dental laboratory support provided by dental technician Marco Boccanera, Rome, Italy.



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Author details

References

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Bone Growth Concept

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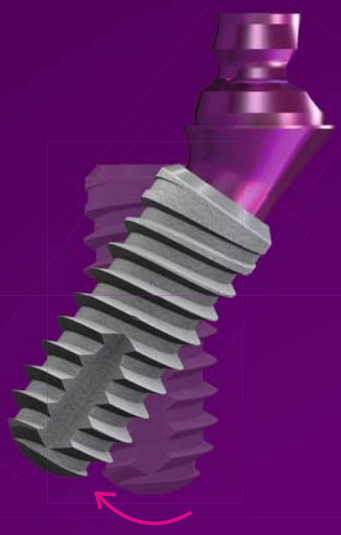
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Digital workflow for immediate maxillary full-arch implant reconstruction

By combining digital planning, guided implant surgery and CAD/CAM prosthetic fabrication, an integrated workflow for immediate full-arch rehabilitation can streamline treatment, facilitate the rapid delivery of a fixed provisional restoration and support favourable functional and aesthetic outcomes while addressing individual patient needs.

Dr Giuliano Fragola, Spain

A 60-year-old male with a compromised maxillary dentition underwent a digitally planned, immediately loaded full-arch reconstruction. A unified diagnostic dataset combining CBCT, intra-oral scanning and a digital wax-up was used within the 3P concept (Plan–Print–Place) to design implant positions and surgical guides. Six Axiom bone level implants were placed using a dual-guide protocol, followed by same-day digital impressions. A Ready to smile (RTS) workflow enabled rapid fabrication of a screw-retained PMMA provisional prosthesis through validated CAD/CAM libraries and model-less positioning of temporary cylinders. After three months of healing, a monolithic 3Y-TZP zirconia definitive prosthesis on Ti-base abutments was delivered following a hybrid analoguedigital verification process.

The patient achieved stable peri-implant soft-tissue health, satisfactory occlusion and improved masticatory function. No mechanical complications occurred during the provisional or definitive phases. Aesthetic continuity with the pre-existing smile was maintained, and follow-up evaluations at one, three and six months confirmed stable function and tissue adaptation.

This case illustrates the feasibility of combining the 3P Concept with a structured RTS digital workflow to support predictable immediate loading in maxillary full-arch rehabilitation.[4–7,10–12] Integration of digital planning, guided surgery and CAD/CAM provisionalisation contributed to efficient treatment progression and favourable short-term outcomes.[4–9] Further studies are needed to validate long-term performance and to standardise fully digital full-arch protocols.[8,9]

Introduction

Immediate full-arch implant rehabilitation increasingly relies on digital workflows that combine CBCT-based diagnosis, intra-oral scanning and CAD/CAM-generated restorations.[4,5] Recent studies have shown that virtual prosthetic planning, digitally prefabricated provisional prostheses and guided implant placement can streamline treatment, reduce clinical steps and support predictable immediate loading when case selection and primary stability criteria are met.[4–7,10–12]

Static computer-assisted implant surgery (s-CAIS) has demonstrated higher accuracy than freehand placement, particularly in full-arch cases, and is associated with high implant survival and prosthesis success in the short to medium term.[6,7] Methodological reviews also suggest that digital tools enhance communication between clinic and laboratory, reduce chairside time and improve prosthetic accuracy, although long-term evidence and standardised protocols are still limited.[8,9]

Within this context, the 3P concept (Plan–Print–Place), developed by the author, provides a structured digital pathway in which prosthetically driven virtual planning, additive manufacturing of guides and guided implant placement are integrated into a unified sequence. When combined with Ready to smile (RTS) solution, an immediate loading concept based on validated digital libraries and CAD/CAM fabrication, the workflow enables a direct transition from virtual wax-up to guided surgery and rapid screw-retained provisionalisation.[10–12] This is particularly useful in situations where patients refuse removable interim prostheses or prolonged edentulism.[2]

The present clinical case illustrates the application of this combined digital strategy in a compromised maxillary arch requiring extraction of terminal teeth and failing implants, guided placement of new implants with simultaneous bone grafting, and same-day intra-oral digital impressions.

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Initial situation

A 60-year-old healthy, non-smoking male presented with recurrent peri-restorative inflammation and perceived mobility affecting a maxillary fixed restoration placed approximately 15 years earlier. Owing to previous discomfort and social embarrassment during an earlier provisional phase, he categorically declined any removable interim solution and stated that he would not accept being edentulous for more than a few days. From an aesthetic standpoint, he was generally satisfied with his current smile but reported intermittent inflammation in the canine region associated with localised changes in gingival contour. He requested that any new rehabilitation preserve the overall tooth morphology and smile appearance as closely as possible.

Clinical examination revealed failing implant-supported restorations in both posterior maxillary segments and a failing tooth-borne fixed dental prosthesis extending from 14 to 23, with bleeding on probing and cervical caries at 13 and 14. The mandibular arch presented no acute issues relevant to the maxillary treatment plan (Figs. 1–3).

CBCT demonstrated advanced vertical and horizontal bone loss in regions 16, 25 and 26, while the implant at 17 appeared radiographically stable. Considering the compromised dentition, the pattern of bone loss and the patient's refusal of removable temporisation, a prosthetically driven, immediately loaded maxillary full-arch implant-supported rehabilitation was indicated, provided that adequate primary stability could be achieved and standard clinical selection criteria fulfilled (Figs. 4+5).[2]

Digital planning: 3P concept and RTS solution integration

The 3P concept structures all treatment steps into three phases:

- Plan: diagnostic and prosthetically driven planning, combining CBCT data, photos, intraoral scans and a virtual wax-up to define ideal implant and prosthetic positions.[4–7]
- Print: chairside/laboratory fabrication, including 3D printing of surgical guides and milling or printing of provisional restorations.[4,5,10–12]
- Place: clinical execution of guided implant surgery and subsequent delivery, adjustment and follow-up of provisional and definitive prostheses.[6,7,10–12]

Within this framework, the RTS solution provides the prosthetic bridge between digital planning and immediate loading.[10–12] Starting from an intra-oral scan of the implants, the IOS file is imported into CAD software and specific RTS libraries are selected

01
Diagnostic right lateral view.

02
Diagnostic frontal view.

03
Diagnostic left lateral view.



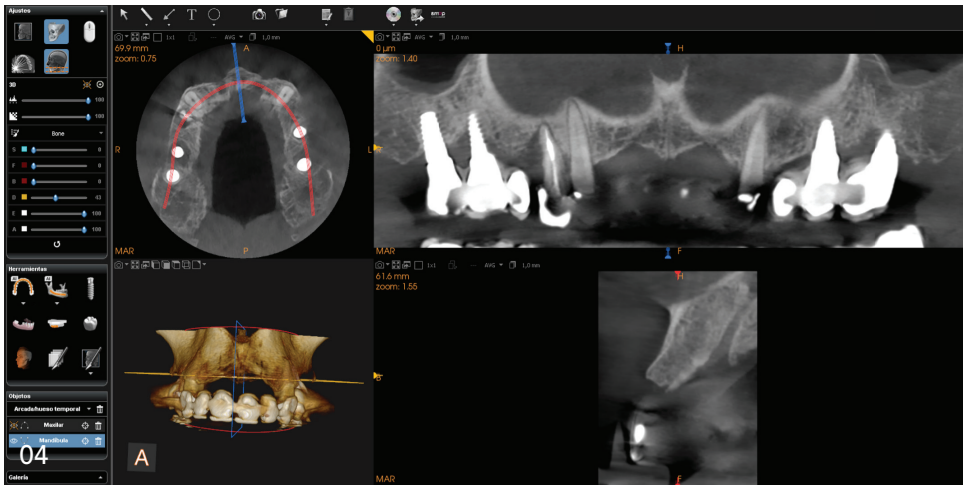




to design the provisional restoration, which is then exported for milling (typically in PMMA) or 3D printing. RTS offers two main design modalities:

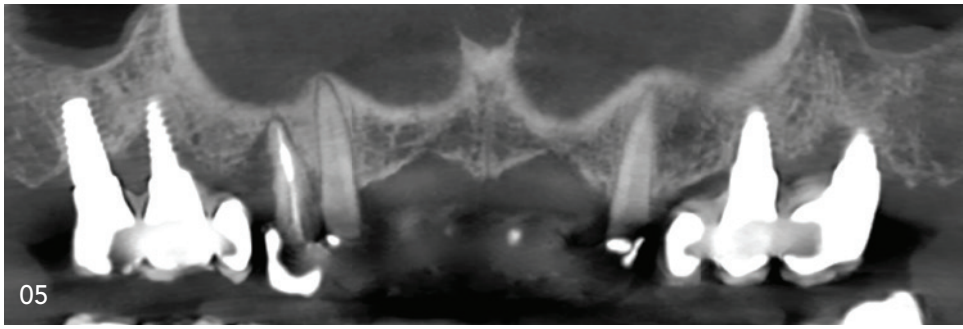
1. Monobloc: the provisional framework is screwed directly onto multi-unit abutments without intermediate titanium abutments to be bonded.
2. Abutment-based: the framework incorporates internal housings for titanium temporary abutments that are cemented extra-orally and then screw-retained onto the multi-units.[10–12]

RTS libraries also include angulated screw-channel options on multi-units, allowing correction of unfavourable implant angulations and relocation of screw-access holes to more favourable aesthetic



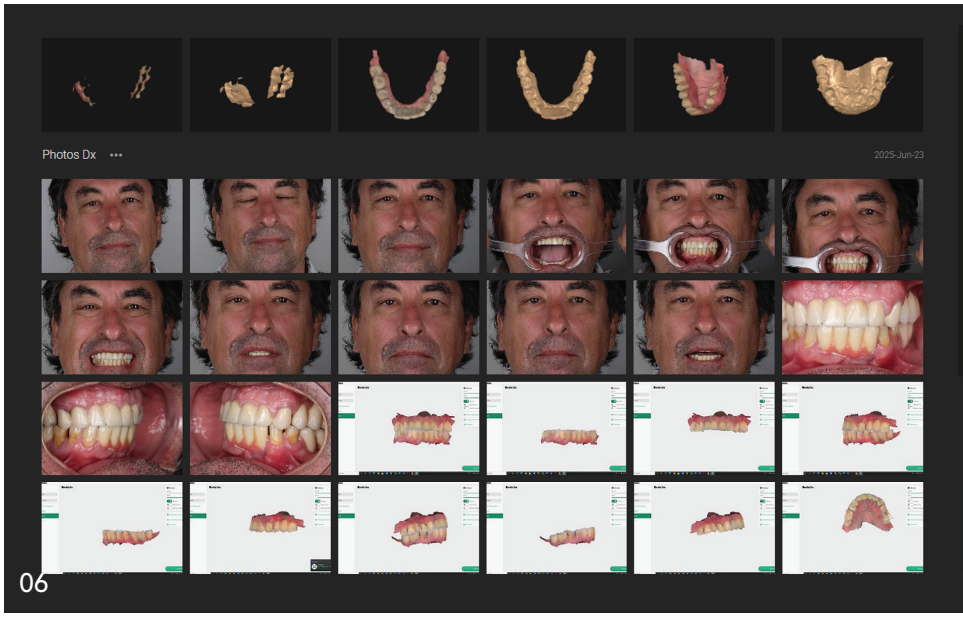
04
CBCT of the initial situation.

05
Detailed view of the maxillary arch.



or functional positions.[10–12] This combination of the 3P concept with RTS establishes a continuous digital chain from prosthetically driven planning, through guide fabrication and provisional framework design, to chairside immediate loading in both full-arch and partial rehabilitations.[4–7, 10–12]

All extra- and intra-oral photographs, CBCT data and diagnostic intra-oral scans were uploaded to the digital SmileCloud® platform (Straumann Group®). Using its 3D tooth library and dynamic smile-simulation modules, an aesthetic and functional proposal was generated that reproduced the patient's existing restoration as closely as possible, in line with his request to maintain the same general appearance. This virtual set-up was used both to visualise the intended outcome and to communicate the treatment objectives to the patient. In parallel, the CBCT and diagnostic intra-oral scans were imported into the planning software and merged. The diagnostic IOS served as a virtual wax-up, again respecting the existing tooth form and smile line. By superimposing the planned tooth set-up on the radiographic data and using segmentation tools, relevant anatomical structures (maxillary sinus, nasal floor, residual ridges) were precisely outlined and correlated with the prosthetic design, allowing accurate three-dimensional assessment of the available bone and of the prosthetically oriented implant positions (Figs. 6+7).[4–7]



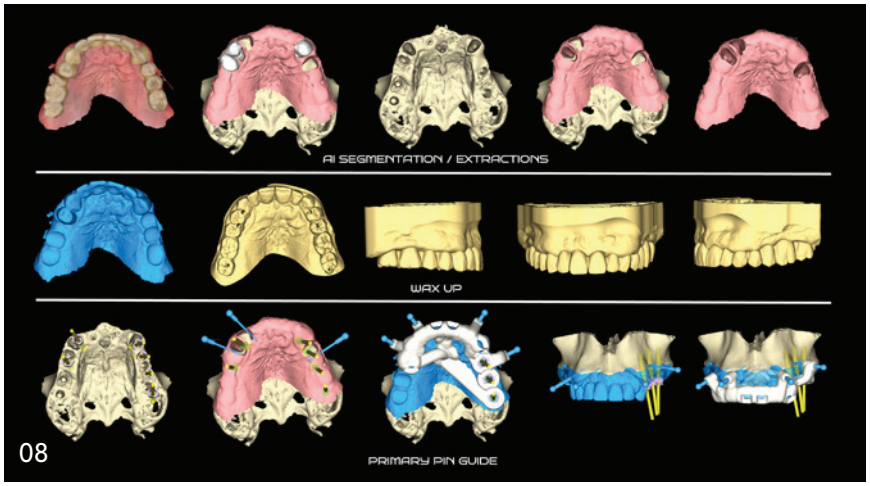
On this basis, a prosthetically driven surgery plan was established, with the specific aim of minimising implant placement in aesthetically critical areas and avoiding unfavourable screw-access channels or excessive angulations in the anterior region.[6, 7, 10–12] Six bone level implants were planned (Anthogyr Axiom BL®), together with preservation of the existing implant 17, to provide seven maxillary supports. The area 25–26 was considered the most critical due to the extent of bone loss; four implants were therefore planned in the second quadrant, in-

06
Uploaded data for digital smile simulation.

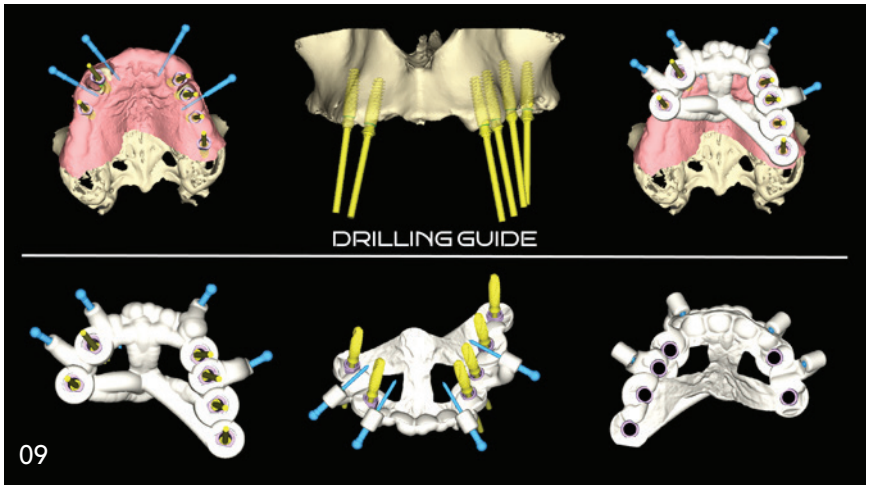
07
Smile design simulation.



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08
Prosthetically driven implant planning.



09
Digital surgical guide design.

cluding a "strategic" implant in position 27 to provide robust posterior support and built-in redundancy. All peri-implant defects were scheduled to be grafted with xenograft (XenoOss ®Plus) at the time of implant placement (Figs. 8+9).

RTS was selected for both clinical and laboratory reasons. Clinically, it allowed delivery of a fixed screw-retained provisional within two hours when printed and less than four hours when milled, in line with the patient's refusal of removable dentures.[2,10–12] In addition, the CAD design was generated as a direct transfer from the digital wax-up to the provisional prosthesis, helping to preserve the existing tooth shape and smile line.[4,5,10–12] From the laboratory perspective, RTS offered a streamlined digital pathway: standardised monobloc and abutment-type libraries enabled modelless CAM fabrication of the provisional, while the specific internal geometry of the RTS receptacles allowed precise extra-oral cementation of titanium abutments when this option is chosen.[10–12] The definitive restoration could then be designed either by reusing the initial digital wax-up or by refining the CAD file after final digital impressions, maintaining or optimising pontic morphology and soft-tissue contours.

Surgical procedure

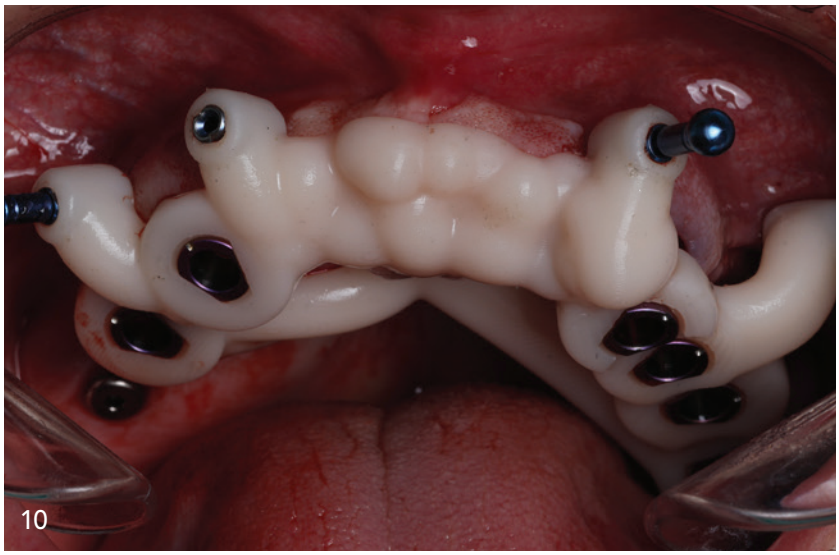
Local anaesthesia was administered across the maxillary arch using 4% articaine with epinephrine 1:100,000 via buccal and palatal infiltrations. The tooth-supported guide was positioned and used to prepare the sites for horizontal fixation pins. After pin placement, the guide was removed and all remaining maxillary teeth and failing implants were atraumatically extracted using a flapless approach. Extraction sockets were thoroughly debrided to eliminate granulation and inflamed tissues.

The mucosa-supported surgical guide was then seated and secured onto the previously placed fixation pins, with additional palatal support ensuring stable positioning. Fully guided osteotomies were performed using the Integral 4.2 system following the manufacturer's sequential drilling protocol. All six implants were placed under guided conditions and achieved insertion torques exceeding 40 Ncm.[6,7]

Following implant placement, the guide was removed and six 4.0 mm diameter and 2.5 mm height multi-unit abutments (OPMUN0-2) were connected to the implants and torqued to 25 Ncm in accordance with manufacturer recommendations. Peri-implant defects were grafted, and the operative field was then prepared for immediate digital impressions and RTS-based provisional prosthesis fabrication (Figs. 10+11).

Prosthetic workflow within the 3P concept and RTS solution

Immediately after surgery, six metal scanbodies (151-04-MDT) were connected to the multi-unit abutments and a healing cap was placed on implant 17. A full-arch digital impression was acquired with the intra-oral scanner using the full-arch protocol, which merges the pre-extraction reference scan with the post-operative scan of soft tissues and scanbodies. This approach has been shown to improve the trueness of full-arch implant impressions with intra-oral scanners, bringing their accuracy close to that of conventional techniques in many scenarios.[3] In this case, it ensured precise registration of implant positions, preservation of the planned vertical dimension and accurate







10
Surgical guide in place for drilling.

11
Xenograft used for guided bone regeneration (GBR).

12
Intra-oral digital impression taken during surgery.

13
CAD design of the temporary "Ready to Smile" restoration.

14
Occlusal view of the milled PMMA restoration.

15
Intaglio view of the PMMA restoration with bonded Ti-bases.



transfer of occlusal relationships for the RTS temporary prosthesis design (Fig. 12).[3,4–7]

At the Plan → Print interface, the laboratory adapted the previously generated wax-up design to the definitive 3D implant positions. An access channel was incorporated at site 17 to allow intra-oral connection of a titanium provisional abutment, as this configuration is not natively available in the RTS digital library for that implant brand (Fig. 13).

The CAD file was then used in the milling phase to manufacture a full-arch provisional prosthesis milled from multilayer PMMA (Ivoclar®, A3 shade). When the "abutment" RTS libraries were selected, the software generated specific internal receptacles corresponding to the geometry of the titanium temporary cylinders (MUNC-100). Thanks to this pre-defined internal geometry, the cylinders could be extra-orally bonded to the PMMA framework in a model-less procedure using a dual-cure resin cement (VITA Adiva®), while maintaining alignment with the virtual design.[10–12] A 3D-printed resin model was nonetheless produced to verify passive fit as an additional check. This combination of RTS receptacle design and CAD/CAM accuracy is what enables predictable model-less bonding within the RTS workflow (Fig. 14).[10–12]

At the end of the surgical appointment, healing abutments were placed and sutures





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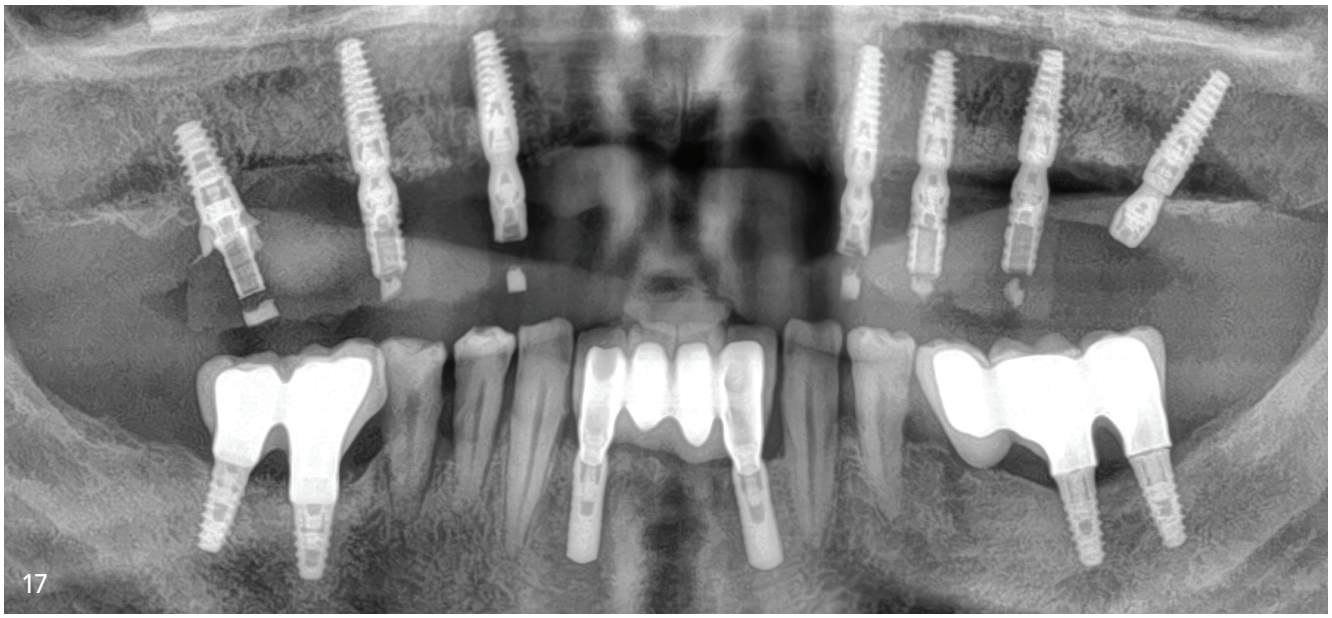


16
Temporary restoration placed at the 12-hour follow-up visit.

17
Radiograph at the three-month follow-up.

18
Restoration at the three-month follow-up visit.

19
Soft tissue healing after three months.



were completed. The pre-operative medication regimen (amoxicillin, ibuprofen and 0.12% chlorhexidine rinses) was maintained.

At the 12-hour visit (Place phase), the patient was asymptomatic and only mild irritation was observed at the fixation-pin entry sites. Healing caps were removed, and a titanium provisional abutment for multi-unit was connected to implant 17; this abutment was then intra-orally bonded to the PMMA prosthesis in the area previously reserved in the CAD design. After finishing and polishing the bonded zone, the bridge was seated on the multi-unit abutments. Prosthetic screws were tightened in a cross pattern to perform a Sheffield test and verify passivity before applying the final torque of 15 Ncm. Achieving a passive framework is considered critical for immediate full-arch loading, as it minimises implant micromovement and reduces mechanical stress on the bone–implant interface.[6,7,10–12] Occlusion was evaluated in maximum intercuspation and adjusted to obtain stable bilateral contacts and group function in lateral excursions, ensuring controlled load distribution from day one (Fig. 15).[4–7,10–12]



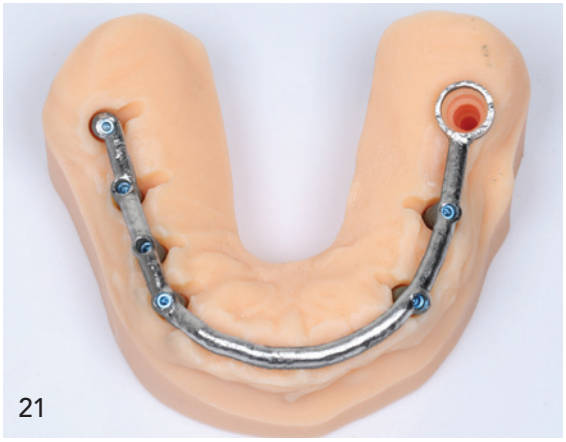


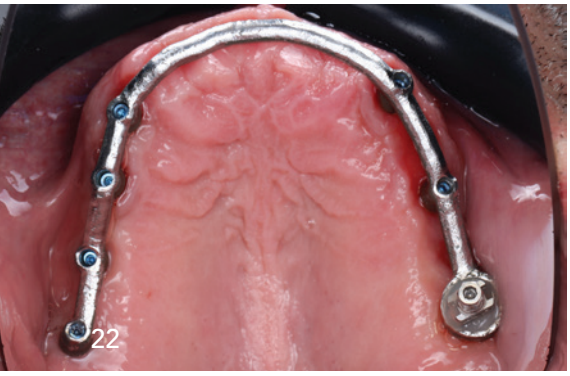
The patient received post-operative instructions and was scheduled for follow-up visits at one and three months. At the one-month review, peri-implant soft tissues appeared healthy and well adapted around the multi-unit abutments. The patient reported excellent comfort, normal masticatory function and high satisfaction with the immediate aesthetic result.

Postoperative follow-up and clinical outcomes

The patient was reviewed 15 days after surgery to assess early comfort, soft-tissue adaptation and the absence of temporomandibular joint symptoms. Subsequent visit at three months was planned to take a panoramic X-ray









20
Final digital impression.

21
Model prepared for the pick-up of implant site 17.

22
Pick-up of implant position 17.

23
Repositioning of the implant replica at site 17 in the model.

24
Milled zirconia restoration before sintering.

25
Final restoration after sintering.





to control bone healing around implants, to monitor peri-implant tissue stability, to evaluate oral hygiene, and to verify occlusal contacts and reinforce maintenance protocols as required (Fig. 17).[2,8,9]

Throughout the follow-up period, peri-implant soft tissues demonstrated favourable healing, with no suppuration, no bleeding on probing and no plaque accumulation of clinical relevance. The maxillary provisional remained mechanically stable, with no incidents of screw loosening or prosthetic fracture.

Definitive prosthetic procedure

After a three-month healing period, the patient returned for definitive records. A new full-arch digital impression was obtained with the IOS using the same full-arch protocol. Metal multi-unit scanbodies were connected to all implants, and MedentiWings enablers were used in wide edentulous spans to shorten distances in between implants and improve overall scanning precision.[3] The impression captured implant positions together with peri-implant soft-tissue contours and the emergence profiles shaped by the RTS provisional (Figs. 18–20).

Because of library incompatibilities between the implant system (position 17) and the CAD software, a combined analogue–digital workflow was adopted. A digital master model was created and 3D-printed with digital replicas in place, incorporating an access channel for the analogue of implant 17. A passive metal verification framework was fabricated and clinically tested; once passive fit was confirmed, the analogue for implant 17 was picked up chairside and repositioned into the printed model through the dedicated channel. This produced a hybrid master model that incorporated all implants and could be used to verify passive fit and occlusion for the definitive restoration (Figs. 21–23).[6,7]

The final prosthesis was planned as a continuation of the RTS design. The technician could either reuse the original digital wax-up or refine the CAD file







26
Healed soft tissue.

27
Insertion of the final restoration.

28
Final lateral view.

of the provisional based on the definitive scans, maintaining established pontic morphology and soft-tissue contours. A monolithic 3Y-TZP zirconia framework on cemented X-Base® abutments was selected, supported by evidence that zirconia-based FDPs show satisfactory medium-term survival and complication rates comparable to metal-ceramic alternatives.[13–15] The main reason for choosing Anthogyr X-Bases was their ease of bonding to the zirconia framework, ensuring anti-rotation stability, eliminating micromovements, providing a precise fit with the inner core of the framework, and enhancing cement retention thanks to their patented laser grip bonding surface.

In the anterior segment, a controlled buccal cutback was created to allow limited veneering ceramic on a printed resin model support, while posterior areas remained fully monolithic for improved mechanical durability (Figs. 24+25).[13–15]

The completed zirconia prosthesis was seated and screw-retained on all multi-unit abutments. Screws were tightened in a cross pattern to reassess passivity, followed by final torque of 15 Ncm according to manufacturer recommendations. Minor occlusal refinements were performed to optimise functional guidance. The patient reported good comfort and function with the definitive restoration, and peri-implant soft tissues appeared stable. Follow-up appointments were scheduled at three, six and 12 months to monitor soft-tissue health, hygiene, occlusion and radiographic bone levels. At approximately six months, a control radiograph was planned to document the post-healing bone baseline after biological-width stabilisation (Figs. 26–28).

The definitive restoration exhibited harmonious tooth proportions and an aesthetic integration consistent with the pre-existing smile.[13–15] Functionally, the patient reported marked improvement in masticatory efficiency, phonetics and overall comfort compared with the pre-operative condition. Soft-tissue contours around the implants remained stable, and occlusion was maintained with no occlusal adjustments at routine visits.[2,4–7,10–12]

Clinical summary and final considerations

This case demonstrates how a structured digital workflow anchored in prosthetically driven planning, guide assisted implant placement and same-day intra-oral digital impressions can support predictable immediate loading in full-arch rehabilitation.[4–7,10–12] The favourable outcomes align with recent reports showing that fully digital full-arch protocols can improve treatment efficiency, enhance the transfer of virtual planning to surgery and yield high patient satisfaction when appropriate stability thresholds and case-selection criteria are respected.[2,4–7,10–12]

Consistent with current methodological reviews, the integration of CBCT-based planning, virtual wax-ups and CAD/CAM provisionalisation in this case contributed to reduced chairside time, streamlined laboratory communication and more controlled prosthetic workflows.[8,9] The ability to capture implant geometry immediately after placement allowed rapid fabrication of a screw-retained provisional with clinically verified passivity, like other digitally prefabricated PMMA approaches for immediate loading.[10–12]

While the workflow proved effective here, further refinement is possible. Future improvements may include broader digital-library compatibility across implant systems to reduce the need for hybrid analogue–digital models, additional validation of digital impression accuracy over long edentulous spans and long-term studies evaluating peri-implant tissue stability around monolithic zirconia full-arch frameworks.[3,8,9,13–15]

Continued research aimed at standardising fully digital full-arch protocols will help strengthen the predictability and reproducibility of such workflows across different clinical settings.[8,9]

Overall, this case adds to the growing evidence supporting digitally driven, immediately loaded full-arch rehabilitation as a viable treatment modality when guided by careful planning, adequate primary stability and meticulous execution.[2,4–7,10–12]



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References

The use of dental roots and directed ankylosis in complex anterior aesthetic case—Part I

Following a first article in 2022 that presented the use of root grafts for treating simple cases, this article—published in two parts—explores the use of dental roots in complex anterior peri-implant bone reconstruction and their contribution to treatment protocols. Specifically, it illustrates how the use of root grafts simplifies the surgical workflow and patient journey by reducing both the number of procedures and the number of donor sites.

Dr Renaud Girieud, France

The management of bone deficiencies is a daily challenge for practitioners in implantology, particularly in the anterior maxilla. Such deficiencies can compromise implant placement, long-term stability, and aesthetic outcomes. The latter is of particular concern when planning treatment in the anterior maxilla.

In cases of bone defects, two main categories of techniques are commonly used:

1. Guided Bone Regeneration (GBR), involving a membrane and a biomaterial (with several variations depending on the membrane type and materials used).
2. Autogenous bone grafts, used in block or particulate form, applied either as onlay or using the Khoury technique.

These approaches typically require multiple surgical steps and several months before tooth restoration.

This article proposes a third approach based on the principle of ankylosis and root resorption: We suggest grafting the patient's own extracted tooth roots in block form — a process referred to as "directed ankylosis." The extracted root fragments are termed "root grafts."

This technique was first described by Prof. Frank Schwarz's team in 2016 for pre-implant surgery. Through two clinical cases, we illustrate the practical applications of root grafts as implemented in our daily dental practice, particularly in simplifying the management of complex anterior cases. Our philosophy is to minimise the edentulous period, defined as the time during which a patient has no fixed tooth on the arch. Whenever possible, we compress the surgical timeline by performing extractions, bone reconstruction, implant placement, and provisional aesthetics in a single procedure.

Root grafts, due to their biological properties, offer safe, simple, and rapid solutions for managing certain complex anterior cases that would otherwise require extended treatment periods with removable partial dentures.

Materials and methods

First, the root—destined to become the root graft—is extracted (Fig. 1). It is then gently scaled to clean and remove any tartar deposits.



01
Atraumatic extraction of the root intended for use as an autogenous root graft.

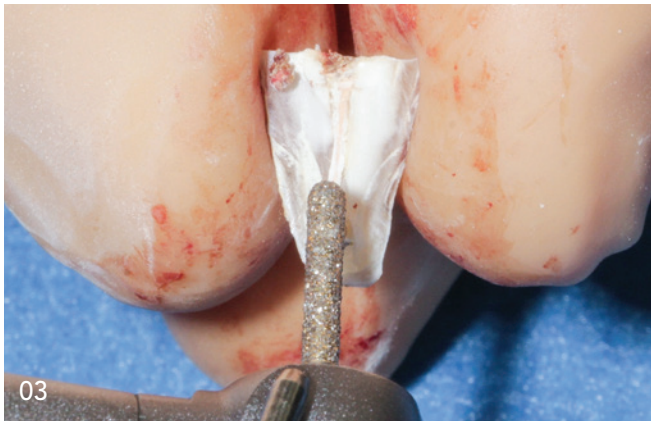
All images: © Dr. Renaud Girieud



02
Longitudinal sectioning of the extracted root to obtain graft fragments.

03
Preparation of the root graft using a diamond bur to remove pulpal tissue, endodontic filling material, carious tissue, and other residual debris.

04
Final shaping and drilling of the root graft to fit the recipient site and permit fixation with osteosynthesis screws.





The coronal part and any soft or carious tissue are removed. The root is split in half using a disk. A diamond bur is used to clean the canals and remove all residual filling materials (Figs. 2+3). If needed, it is trimmed to fit the defect and drilled to allow for osteosynthesis screw fixation (Fig. 4).

The graft is fixed and immobilised onto the recipient site using osteosynthesis screws, with the dentin surface facing the alveolar crest and the cementum facing the soft tissues (Fig. 5). Root grafts are polarised; the dentine portion must be in contact with bone to allow ankylosis, while the cementum acts as a biological barrier protecting the graft from soft-tissue resorption.

The graft functions as a biological membrane, forming a containment structure. The space between the graft and the crest is filled with a bone substitute or autogenous bone harvested locally (Fig. 6). In our practice, we use Collapat II (Symatese), a synthetic material composed of collagen matrix and hydroxyapatite.

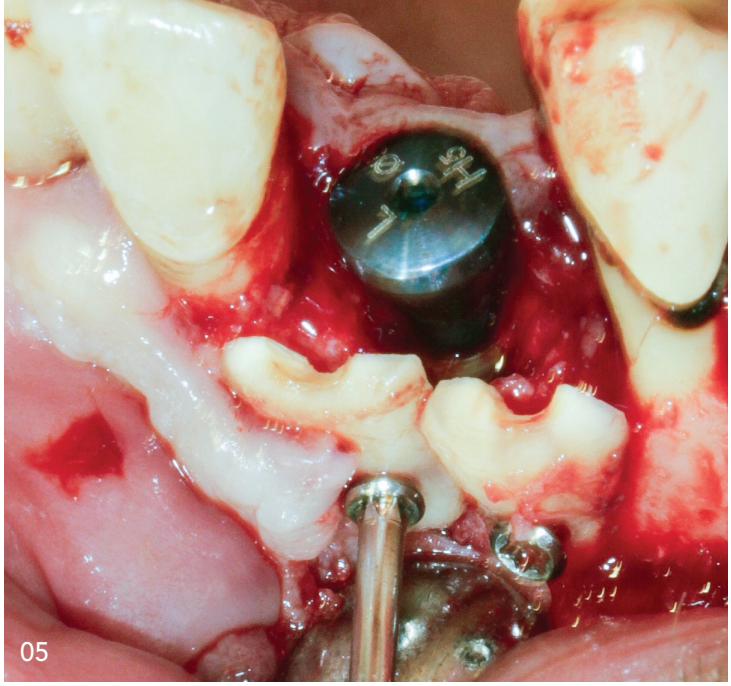
Patients with severe periodontal disease undergo periodontal therapy (prophylaxis, scaling, and root planing) between the initial consultation and the procedure, followed during three-month maintenance phase to ensure adherence to oral hygiene. Periodontal monitoring continues throughout the osseointegration period (six months), with a strict follow-up protocol involving the referring practitioners. Patients are seen annually in our clinic.

Clinical case

A 48-year-old female patient was referred in 2020. A former smoker with no significant medical history, she had long-standing periodontal disease and endodontic lesions affecting teeth #11 and #21, leading to the loss of both central incisors (Fig. 7). She had postponed treatment due to fear of a prolonged edentulous period with a removable prosthesis.

Clinical examination revealed significant buccal bone and gingival tissue loss, particularly in region 21, where the entire buccal wall of the crest was destroyed, and the root was completely detached. A high-attached labial frenulum was also noted. Despite these findings, the soft-tissue architecture—including interdental papillae—and sufficient apical bone volume were preserved (Figs. 8–10).

The treatment objective was to perform extractions, place implants, reconstruct the ridge, and deliver fixed provisional restorations while maintaining the soft-tissue architecture.



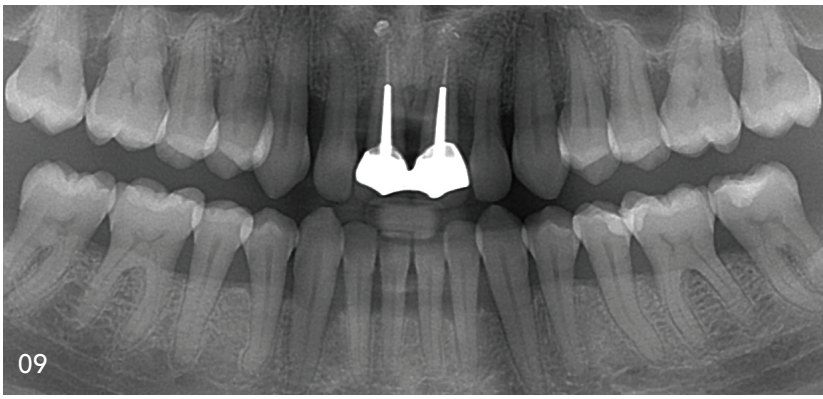
05
Fixation of the root graft to the recipient site. The dentine surface is positioned toward the alveolar bone, while the cementum surface faces the overlying soft tissues.

06
Root graft functioning as a rigid biological membrane and containment wall. The space between the graft and the residual alveolar crest is filled with bone substitute or locally harvested autogenous bone.







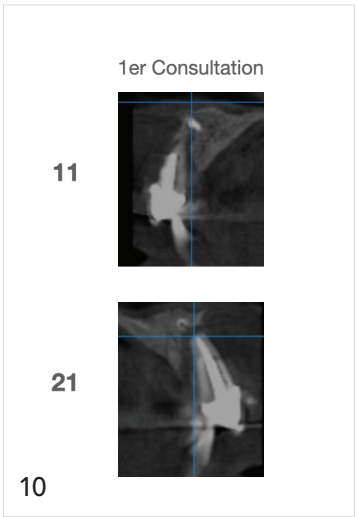


07
Initial presentation of a 48-year-old woman with longstanding periodontal disease and endodontic lesions involving the maxillary central incisors (#11 and #21).

08
Preoperative clinical assessment showing severe loss of buccal bone and gingival tissue in the maxillary anterior region, particularly at site #21.

09
Preoperative OPG demonstrating destruction of the buccal alveolar wall and complete detachment of the root at site #21.

10
Preoperative radiographic assessment showing preservation of the interdental papillae and soft-tissue architecture despite the extensive buccal defect. Sufficient apical bone remained available for implant anchorage.



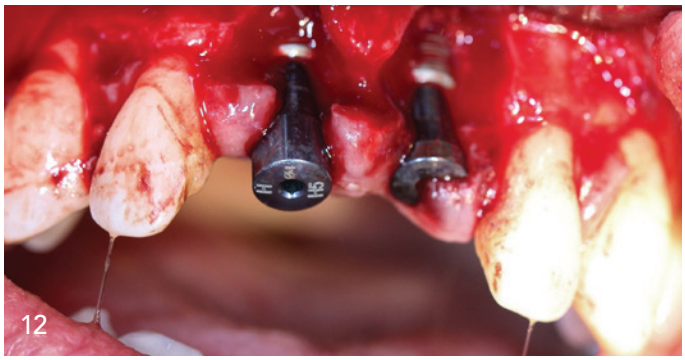
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11
Elevation of a full-thickness flap through a sulcular incision extending from teeth #13 to #23, with preservation of the papillae and vertical releasing incisions distal to the canines.

12
Implant placement following extraction and meticulous socket debridement. Two 4 × 10 mm implants were positioned palatally within the extraction sockets, leaving buccal dehiscence defects.

13
Preparation and positioning of longitudinally sectioned fragments of the extracted root of tooth #11 for reconstruction of the deficient buccal alveolar wall.



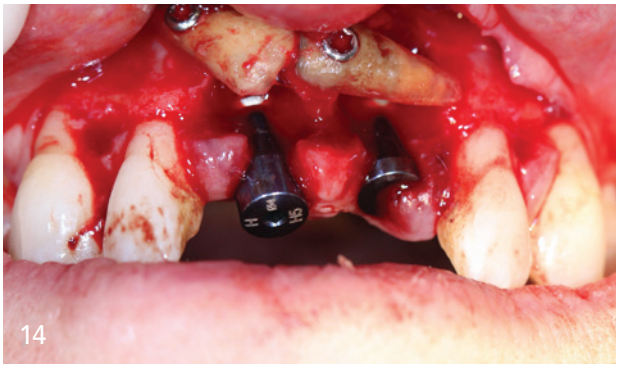


The extracted roots (#11 and #21) were repurposed to reconstruct the buccal wall of the alveoli.

A sulcular incision was made from tooth #13 to #23, preserving the papillae, with vertical releases distal to the canines. A full-thickness flap was elevated (Fig. 11). The teeth were easily extracted and the sockets meticulously curetted. Two implants (4×10 mm) were placed in the palatal aspect of the sockets, with buccal dehiscence remaining (Fig. 12).

Tooth #11's root was split longitudinally and prepared as described. The fragments were screwed onto the buccal crest with two osteosynthesis screws (0.9 mm diameter) to reconstruct the buccal wall (Figs. 13+14). The space between the implant and graft was filled with synthetic material (Collapat II, Symatese).

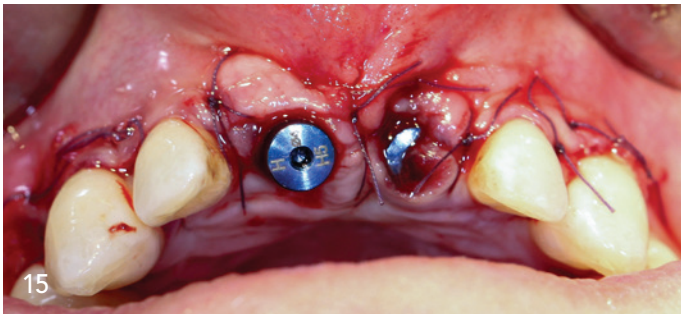
The flap was repositioned and coronally sutured with synthetic braided suture 5/0 (Fig. 15). An impression was taken at the end of the procedure, and the temporary restoration—fabricated the same day by our prosthetic lab—was screwed in that



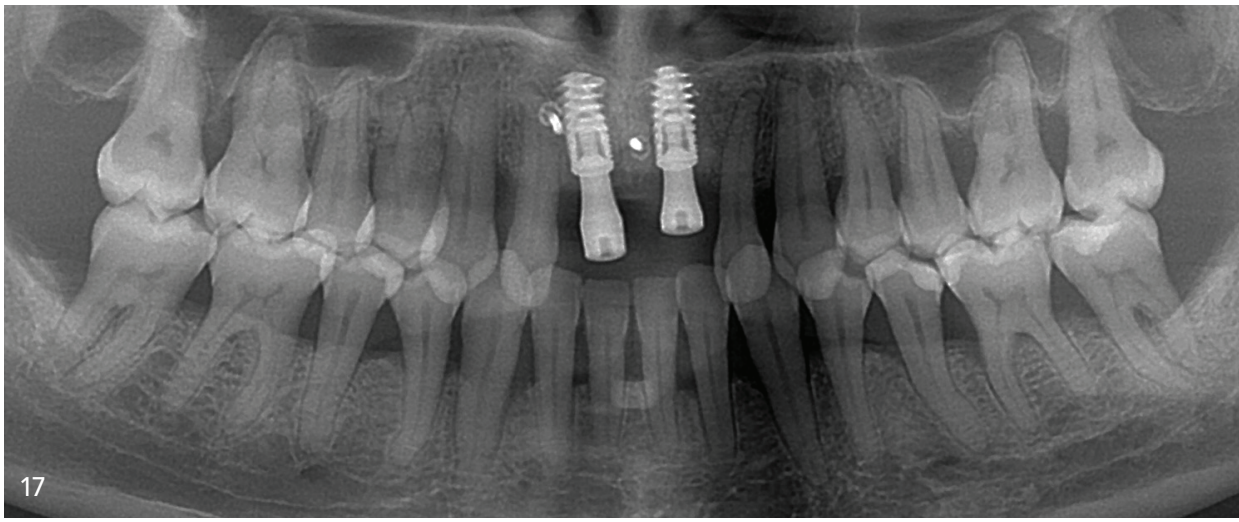
14
Root graft fragments immobilised on the buccal aspect of the alveolar crest using two 0.9 mm diameter osteosynthesis screws.

15
Surgical site after placement of Collapat II between the implants and root graft, followed by coronal repositioning and closure of the flap with 5/0 synthetic braided sutures.

16
Immediate postoperative appearance after placement of the laboratory-fabricated fixed provisional restoration on the day of surgery.







17
Cantilevered provisional restoration supported by implant #11. Implant #21 was not immediately loaded because adequate primary stability was not achieved.



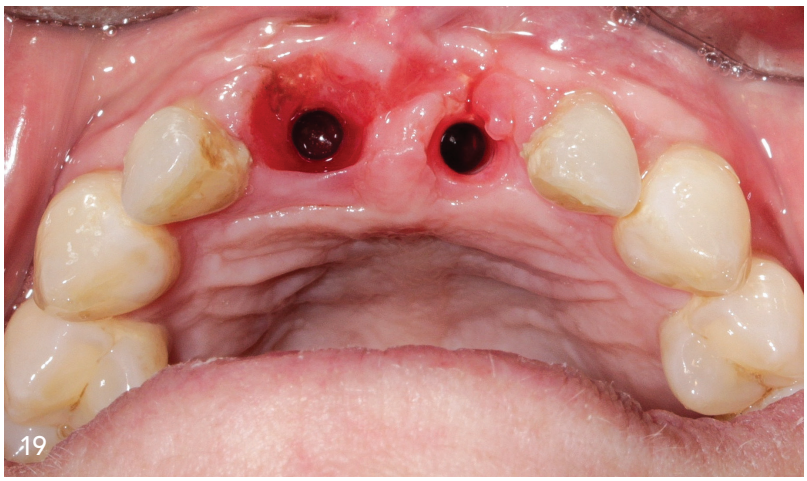
18
Clinical assessment at two months after surgery, showing early healing of the reconstructed maxillary anterior region.

19
Assessment at two months after surgery confirming implant osseointegration and stability of the reconstructed ridge.

20
Clinical appearance of the definitive implant-supported prosthesis delivered nine months after surgery.

evening (Fig. 16). Implant #21 lacked sufficient torque for immediate function, so a cantilevered provisional crown was screwed directly onto implant #11 (Fig. 17).

Sutures were removed after 15 days. Osseointegration was assessed at two months post-op (Figs. 18+19). The final prosthesis, fabricated by our referring dentist, was placed at nine months (Figs. 20+21). Annual clinical and radiographic follow-ups monitor the ankylosis, resorption of root grafts, and maintenance of graft volume (48-month follow-up, Fig. 22).





Discussion

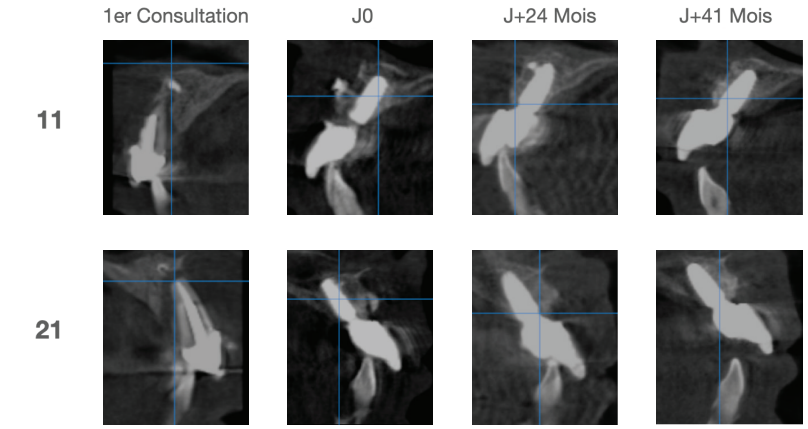
Root grafts share many properties with autogenous bone and offer some advantages over biomaterials. They are autogenous materials composed of mineral, organic (patient proteins), and water fractions in proportions comparable to alveolar bone, and are

All images: © Dr. Renaud Girieud



21
Clinical and/or radiographic assessment at definitive prosthesis placement, demonstrating preservation of the reconstructed ridge and peri-implant tissue architecture.

22
Radiographic findings at the 48-month follow-up, showing long-term maintenance of the reconstructed ridge and peri-implant tissues, with monitoring of root-graft ankylosis and resorption.



recognised as native by the body—thus avoiding foreign body inflammatory reactions.

They integrate well with soft tissues, provided no sharp edges remain upon closure, leading to rapid, high-quality healing.

Root grafts can be used as standalone blocks or as biological membranes combined with biomaterials or autogenous bone chips. Initially, ankylosis occurs between the graft and the crest, followed by gradual replacement resorption—root tissue is resorbed and replaced by bone. When placed away from the crest, new bone formation occurs in contact with the dentine. The material is both osteoconductive and osteoinductive.

Grafts are easy to harvest, do not require special storage protocols, and can be left in the open surgical field before placement without adverse effects. They are solid, not influenced by muscle pull, and easy to shape with a bur or disk. Their slight flexibility allows gentle bending without fracture.

Their slow resorption ensures long-term volumetric stability of the grafted site. However, their main limitation is availability—typically limited to extracted roots from implant-extraction procedures, wisdom teeth, or hopeless teeth.

Conclusion

In both presented cases, this technique successfully combined implant placement, bone reconstruction, and immediate provisional restoration. Surgical, mechanical, and aesthetic objectives were achieved while minimising surgical trauma and treatment time. In the long term, full ridge reconstruction, complete graft resorption at three years, and stable volume were observed. Given their properties and numerous advantages, root grafts have become our first-line choice when non-restorable roots are available.

Scan the code and find the article from 2022.

References

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Growing globally, staying close to clinicians



Adin manufactures more than two million implants annually and operates in more than 80 countries. With a partnership with Septodont in France supporting its European expansion, the privately owned company is also pursuing growth in the United States. CEO Eyal Milman discusses these developments, the company's investment priorities, and why he continues to visit clinicians in their practices.

Dr Alina Ion

To begin, could you introduce Adin's product portfolio and the philosophy that guides the development of your implant systems?

Over more than 25 years, we have built a portfolio that covers routine implant treatment through complex rehabilitation. The range includes, for example, UniFit with its unified conical connection; CloseFit, our 2.75 mm UNP (Ultra Narrow Platform) implants; and our internal-hex systems: Touareg, Triple, and Swell. We also offer long and zygomatic implants, together with the restorative components and digital solutions that support these treatments.



Our philosophy is closely connected to the scale of the business. Our manufacturing scale allows us to invest in equipment, testing, and research at a level that would be difficult for a smaller operation to sustain. That is one reason we have pursued growth so deliberately.

We also learn from working in very different markets. That experience informs which products we develop and where we invest next.

Looking more closely at the technology, what distinguishes Adin's implant systems?

The surface treatment is one of the technologies I would highlight. Adin's surface treatment technology, OsseoFix™, uses resorbable calcium phosphate blasting media rather than alumina. Calcium phosphate is biocompatible and closely related to the mineral composition of natural bone. Its resorbability means that any remaining blasting material can be absorbed, rather than persisting as alumina residue.

We have investigated the surface through comparative preclinical research. A study published in *Clinical Oral Implants Research* found higher removal torque at three weeks than an alumina-blasted, acid-etched surface in an animal model, indicating stronger early biomechanical fixation in that study.

01
Adin hosts 900+ educational events annually, offering training from foundational skills to advanced full-arch techniques through webinars, hands-on workshops, and clinical courses worldwide.

All images: © Adin Dental Implant Systems Ltd.



02
A glimpse of Adin's new headquarters taking shape during construction.

We have now completed another preclinical comparison with the University of Miami. It is still awaiting publication, so I will leave the results for the paper. Surface research remains an area where we are investing.

Scientific evidence is central to clinicians' treatment decisions. What published clinical research supports Adin's implant portfolio, and how do you plan to expand collaborations with universities and clinical research centres internationally?
A long-term study of our tissue-level angled-head system followed 185 implants in 29 patients for an average of more than eight years. It reported 97.8% survival and mean marginal bone loss of approximately 0.43 mm at ten years. A larger retrospective study of 3,043 Adin implants in 787 patients reported 98.7% survival over follow-up ranging from six to 28 months.

Our preclinical work has also included direct comparisons with established implant systems. In a study by Jimbo and colleagues, published in *Implant Dentistry* in 2013, Adin's OsseoFix implants were evaluated alongside systems including Straumann SLA, NobelActive, and Astra Tech OsseoSpeed. The researchers found that OsseoFix showed comparable bone-to-implant contact to these systems at three and six weeks in an animal model.

Our research has involved investigators from New York University, Malmö University, and Ghent University. The Miami study is a further step in that work. As we expand, we want to develop more academic collaborations in the markets where our systems are being used.

How are clinicians' evolving needs shaping Adin's research and development priorities? What advances can they expect across your implant systems, prosthetic components, and digital solutions?
Several years ago, we identified full-arch rehabilitation as an area where we wanted to invest more heavily. That decision continues to shape our implant range, restorative components, and advanced training.

The direction is to shorten treatment and chair time, including in cases with limited bone. Immediate loading, where appropriate, and the development of our zygomatic range are part of that work. We offer guided surgery solutions and components for digital restoration, including titanium bases, with broad representation of our implant systems in CAD/CAM libraries.

The pace of adoption differs considerably between markets. Our management and development teams spend time with clinicians and local partners to understand which changes are reaching everyday practice and where further work is needed.

Bringing new technologies into everyday practice often requires ongoing training. How does Adin's education centre support clinicians at different stages of their careers and help them adopt new implant treatment approaches and digital workflows?
We organise more than 900 educational events a year, with training centres in countries including Colombia, India and Israel. The programme ranges from foundational courses to advanced full-arch training, using webinars, practical workshops, cadaver courses, and clinical training. Full-arch rehabilitation accounts for a substantial part of our advanced programme; we have invested in that training alongside the products.

We develop the programmes with local clinical leaders and partners. The subjects clinicians want to study, their experience, and the techniques already established in practice differ between countries. Our local teams help determine the programme and remain in contact with participants afterward.

Turning to the wider market, how does Adin position itself in the highly competitive dental implant sector? What do you see as the most compelling reasons for clinicians to choose your systems?
For me, the answer is trust: in the products, in the service, and in the company being there over the long term. Direct access to the people running the business is part of that.
I still visit clinicians in their practices when I travel. Our senior

team does the same. I want to hear directly what is working, what is difficult, and what they need from us. By the time a conversation has passed through several people, you can lose a great deal of what the clinician was actually saying.

Being privately owned gives us room to make decisions with those relationships in mind. Many of our managers, engineers, and local partners have worked with us for decades. They know one another and know the markets. That continuity has helped us grow while keeping the company accessible to the people using our systems.

Value is also a part of that trust. Manufacturing more than two million implants a year allows us to invest in quality control, research, and production technology while keeping our systems competitively priced. We intend to keep building that capacity as we grow.

As Adin expands internationally, which markets are you prioritising? What guides both your choice of markets and your approach to establishing a local presence?
We have built substantial businesses in markets including India and China, alongside an established presence in European countries such as Italy and Greece. That foundation gives us the resources and experience to expand further across Europe and grow our business in the United States.

In Europe, we are already making progress: we are an authorised supplier to Colosseum Dental, one of Europe's largest dental groups, and are launching our collaboration with Septodont in France. To support this next stage of growth, we are building a new manufacturing facility with advanced production capabilities and significantly greater capacity.

Our experience has also made us careful about transferring a business model from one country to another. Argentina and Colombia, for example, require quite different approaches. We work with local teams to decide how to build each market.



03
Adin's current production hall, where over 2 million implants are produced annually, is ready for its next stage of expansion.

What led to Adin's partnership with Septodont in France, what does each company contribute, and what opportunities does it create for clinicians in the French market?
This partnership brings together two privately owned manufacturers with a shared long-term view of the market.

For clinicians in France, the most practical change is local support. Septodont is creating a dedicated implant business unit to provide specialised commercial and clinical support to dental professionals nationwide. French clinicians will have a team they can reach directly, with local stock and delivery.

Adin contributes implant and restorative systems, technical expertise, and educational programmes. Septodont brings its local organisation and its long-standing relationships with French dental professionals. Training will be one of our first priorities together, and clinicians who want to see the systems can meet both teams at ADF.

Beyond regulatory compliance and product distribution, what role do local partnerships play in Adin's international strategy? How will you measure the success of that strategy over the coming years?
Many of our partners have been with us for more than 15 years. They have committed their own resources to building Adin in their countries, and that commitment has to work both ways.

At the beginning of the pandemic, we told partners to keep cash in their businesses, pay their teams, and resume payments to us as they recovered. We gave them that flexibility because we wanted those businesses to survive. We had spent years building them together.

We operate through distributors in some markets and our own subsidiaries in others. In both cases, building a local business takes sustained investment. The team needs to know that we will stay committed while they develop it.

Our benchmark is at least 10% of implant volume in every market where we operate, a level we already exceed in several countries.

Finally, at which upcoming trade exhibitions and scientific congresses in Europe and internationally can clinicians meet the Adin team and explore your latest developments?
We will be at ADF in Paris alongside Septodont, and we also plan to attend IDS in Cologne. Much of our contact with clinicians happens through the courses, congresses, and local meetings our partners organise throughout the year.

Readers are also welcome to contact us directly. I still enjoy visiting a practice and sitting down with the clinician to talk.

Thank you for your time and for the interesting insights!

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leading regeneration

Geistlich



Geistlich Bio-Gide® Forte

Trusted Technology with Advanced Handling

Geistlich Bio-Gide® Forte is the newest bilayer collagen membrane from Geistlich. It is firmly rooted in the trusted Geistlich Bio-Gide® Technology, which has been validated by extensive scientific research and decades of clinical use worldwide. With its differentiated handling properties and high tensile strength, Geistlich Bio-Gide® Forte is designed for use in a wide range of bone and soft tissue regeneration cases.[1-3]

References:
1 Data on File, Usability Test (Geistlich Pharma AG, Wolhusen, Switzerland).
2 Dewilde F, et al.: J Clin Implant Dent Relat Res 2024; 26(3): 545–53. Epub ahead of print. (clinical study)
3 IFU Geistlich Bio-Gide® Forte

swiss made

Meeting in Lisbon attracts delegates from across the globe



Founded in the early 1990s, the European Association for Osseointegration (EAO) is dedicated to "bridging the gap between science and clinical practice". The Association brings together researchers, scientists, dental clinicians and other healthcare professionals from around the world to exchange knowledge, define best practice in implant dentistry and promote cutting-edge research in osseointegration, peri-implant biology and implant-supported rehabilitation.

A total of 3,300 delegates gathered in Lisbon, Portugal, for the 33rd Annual Congress of the EAO. Organised in partnership with the Brazilian Society of Periodontology and Implant Dentistry (SOBRAPI), the congress took place from 24 to 26 September 2026.

The theme of this year's meeting was "Delivering Health and Predictability: Shaping the Future of Patient Care". Over three days, the scientific programme featured a comprehensive series of plenary lectures and parallel sessions presented by more than 100 distinguished speakers from 20 countries. Discussions explored innovative and evidence-based approaches to improving patient health, optimising clinical outcomes and enhancing predictability across surgical, prosthetic and peri-implant treatment protocols.

Collaboration, practical education and leadership

In addition to providing a platform for the dissemination of high-quality scientific and clinical content, the congress offered an extensive programme of social and networking events. Delegates also had numerous opportunities to engage directly with speakers, industry partners and exhibitors, encouraging professional collaboration and the exchange of expertise.

A particular highlight was the hands-on workshop "My First Implant", organised by the EAO Junior Committee. Designed for clinicians with limited experience in implant dentistry, the workshop introduced participants to the biological principles underpinning osseointegration,


02


03

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04



05



06



07

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evidence-based surgical protocols and contemporary prosthetic strategies. Under expert supervision, participants were also able to gain practical experience with a range of implant systems.

During the EAO General Assembly, Prof. Irena Sailer of Switzerland was inaugurated as the Association's 24th president.

Recognising excellence in research and education

The recognition and promotion of excellence in scientific research remain central to the EAO Congress. Dedicated research sessions provided the authors of the highest-rated abstracts with an opportunity to present their findings to an international audience of clinicians, academics and researchers.

Awards were presented across several categories, recognising outstanding contributions to basic, clinical and translational research, as well as innovation and clinical video production:

- Satar Yousefiasl, Norway—European Prize for Basic Research in Implant Dentistry
- Xinbo Yu, China—European Prize for Clinical Research (Surgery)
- Carina Boven, the Netherlands—European Prize for Clinical Research (Prosthetics)
- Maria José Bendek, Colombia—European Prize for Clinical Research (Peri-implant Biology)
- Milda Vitosyte, Lithuania—European Prize for Clinical Innovations in Implant Dentistry
- Jun Li, China—European Prize for Clinical Video on Implant Dentistry

The awards ceremony also celebrated important achievements in postgraduate education and professional development. Eight dentists were awarded the EAO Certificate in Implant Dentistry, while the 2026 cohort of the Master Diploma in Implant Dentistry graduated, with 17 clinicians receiving their diplomas.

Finally, Lino Esteve Colomina received the EAO Distinguished Service Award in recognition of his significant contribution to the EAO Congress Scientific Report. Initiated by Lino and his colleagues in 2015, the report has since been published annually and has become an important record of the scientific advances, clinical insights and key discussions presented at each congress.

Source: EAO

EAO on Instagram

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AEEDC Dubai 2027: A legacy of dental excellence

AEEDC Dubai 2027 will bring the international dental community together from 19 to 21 January 2027 to exchange scientific knowledge, explore technological innovations and build business connections. Recognised as the world's largest annual scientific dental conference and exhibition, the event combines professional education with an extensive showcase of the products, services and ideas shaping the future of dentistry and oral healthcare.

Register here

Built in Dubai, connected to the world

Under the banner "31 Years of Inspiration, Progress & Global Impact," the 2027 edition builds on a legacy that began in 1996. From its origins as a regional gathering of dental professionals, AEEDC Dubai has grown into a globally recognised meeting point for clinicians, researchers, educators, manufacturers and suppliers. Its development reflects the growing importance of international collaboration in advancing dental science and strengthening the profession.



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AEEDC Dubai's published figures highlight its global reach: more than 4,316 exhibitors, over 5,860 brands and upwards of 80,000 visitors, with 192 countries represented. Bringing scientific expertise and commercial activity together, the event fosters connections across disciplines, markets and healthcare systems.

Scientific knowledge and continuing education

The conference will provide an international forum for dental professionals to share expertise, discuss emerging developments and pursue continuing education. Scientific sessions and discussions will explore advances in dentistry and their application to clinical practice, with continuing medical education credits forming part of the educational programme.

Alongside the main conference, AEEDC Dubai's scientific activities will include specialised courses, competitions, awards and international knowledge-sharing platforms. These varied formats combine structured learning with opportunities for discussion, professional recognition and the exchange of experience. Together, they reinforce the event's longstanding commitment to education as a foundation for progress in oral healthcare.

A global exhibition for the dental industry

The exhibition will complement the scientific programme with a comprehensive international showcase of dental products, technologies and services. Manufacturers, suppliers and brands will connect with dental professionals, buyers, distributors and decision-makers to explore how industry developments can address the needs of clinical practice.

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With its extensive international reach, AEEDC Dubai provides a business platform for established companies and those seeking to expand into new markets. The exhibition encourages direct dialogue between suppliers and professional audiences, supporting product presentations, market insights and the development of commercial relationships.

Dental business hub: Focused professional connections

The Dental Business Hub will offer a dedicated business-to-business platform connecting senior decision-makers with global suppliers. Through pre-scheduled meetings, dedicated networking lounges and focused commercial discussions, it will help participants identify relevant contacts and explore business opportunities.

This structured approach will support discussions on procurement, distribution and potential partnerships. By bringing relevant business contacts together, the hub will complement the wider exhibition and foster relationships across international markets.

Country pavilions and the start-up zone

The country pavilions will highlight the international diversity of the dental sector. Bringing together manufacturers, technology leaders and suppliers from around the world, they will showcase national expertise and industry developments within the wider exhibition.

Emerging businesses will take centre stage in the start-up zone, a dedicated space connecting dental innovators with investors, potential partners and established industry leaders. By placing new enterprises alongside the broader dental industry, the zone will increase their visibility and create opportunities for dialogue and growth. It will also bring an entrepreneurial perspective to the relationship between scientific research, technological development and commercial application.

Education corner: Pathways to postgraduate study

The education corner will extend the event's educational focus to postgraduate study. Participating universities will present MSc and PhD programmes in dentistry, alongside information on scholarships and academic pathways.

University representatives will be available to discuss further study, research opportunities and professional specialisation. By incorporating postgraduate pathways into the event, AEEDC Dubai will connect continuing education with longer-term academic development and international professional networks.

Across its conference, exhibition and dedicated activity areas, AEEDC Dubai 2027 will bring together scientific exchange, professional education and business collaboration. Building on three decades of progress, it will continue to serve as a global meeting point for dentistry and oral healthcare.

AEEDC DUBAI

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Septodont and Adin Implants announce strategic partnership to advance implant dentistry in France

Septodont, a global leader in dental pharmaceuticals and solutions for dental professionals, and Adin Implants, a global dental implant company, announced a long-term strategic partnership to expand implant dentistry in France.

The partnership combines Septodont's strong reputation, commercial infrastructure and relationships with French dental professionals with Adin's global expertise in implant dentistry and comprehensive implant, prosthetic and digital solutions.

Under the agreement, Septodont will become the exclusive distributor of Adin implant solutions in France, supported by a dedicated implant business unit providing specialised commercial and clinical assistance to dental professionals across the country.

For Septodont, the partnership marks an important step in the expansion of its surgical portfolio, adding a comprehensive implant and restorative offering to its existing solutions.

For Adin, with more than 25 years of experience, a presence in over 80 countries and more than two million implants manufactured annually, France represents an important strategic market and another step in its long-term strategy of partnering with leading organisations.

Adin will support the development of the French market through its global implant expertise, clinical education capabilities, and commercial resources.

Adin Dental Implant Systems Ltd.
www.adin-implants.com

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Complete laser support for implantology

Laser technology from Fotona can support multiple stages of implant treatment, including tooth extraction, post-extraction ridge preservation and peri-implant disease management. Fotona offers a comprehensive implantology solution through three powerful technologies on its LightWalker and SkyPulse dental laser systems: TwinLight, SWEEPS and ComfortLase.

Fotona's TwinLight protocol combines Er:YAG and Nd:YAG wavelengths for two key implantology applications: post-extraction ridge preservation and minimally invasive peri-implant disease management. In post-extraction treatment, Er:YAG supports cleaning and decontamination of extraction sockets, while Nd:YAG enables deep disinfection and biostimulation, promoting healing. In peri-implant disease management, Er:YAG supports effective removal of granulation tissue and cleaning of implant surfaces, while Nd:YAG enables bacterial reduction and biostimulation, supporting re-osseointegration.

Fotona's proprietary SWEEPS Er:YAG photoacoustic technology enables cleaning and decontamination in anatomically complex or difficult-to-reach areas. ComfortLase photo-biomodulation utilises Nd:YAG laser energy to stimulate tissue repair, promote faster healing and support patient recovery. Together, TwinLight, SWEEPS and ComfortLase help clinicians preserve tissue, support healing and improve implant outcomes.

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Evidence-based learning. Anywhere, anytime.

The Osteology Foundation launched Osteology Learn, a new digital learning platform bringing together evidence-based education and expert knowledge in oral tissue regeneration. Designed to support dental professionals in their ongoing development, Osteology Learn offers flexible access to educational content—whenever and wherever it suits the learner.

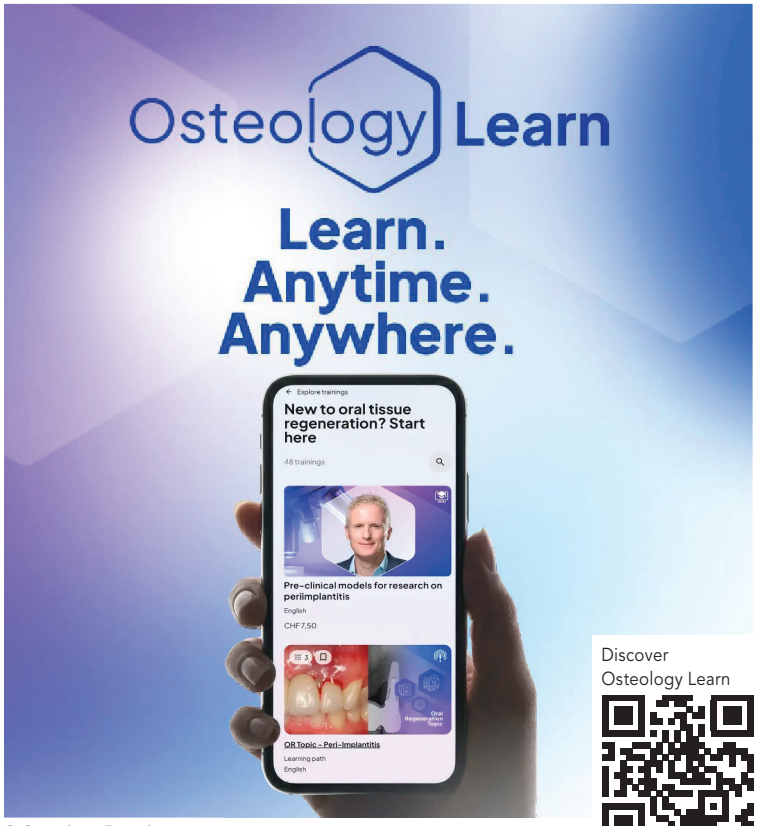
From self-paced e-learning and live webinars to webinar recordings and clinical videos, users can choose how they learn and explore topics relevant to their clinical practice.

One platform, multiple ways to learn

Osteology Learn brings different learning formats together in one digital environment, making it easier to access and revisit Osteology education beyond physical events. The platform also features a personal dashboard to track learning activities and offers CE credits to support continuing professional development.

The platform is particularly suited to early- and mid-career clinicians and final-year dental students, while offering relevant learning opportunities for dental professionals at all stages of their careers.

"With Osteology Learn, we are extending the Osteology Foundation's educational mission into a digital environment," says Purnima Kumar, Foundation Board Member and Member of the Education Committee.



© Osteology Foundation

Discover Osteology Learn

"We want to make high-quality, evidence-based knowledge and expert-insights more accessible to our community—wherever and whenever they want to learn."

Just the beginning

The launch of Osteology Learn marks the beginning of a continuously growing digital learning environment. New courses, webinars, recordings, and clinical content will be added over time, creating an evolving library of knowledge for dental professionals looking to invest in their professional growth.

A selection of learning modules and content is already available free of charge, giving users the opportunity to explore the platform and start learning without a subscription.

For those looking to access the full offering, an annual subscription provides 12 months of access to all content, including more than 70 hours of CE-eligible learning content. To celebrate the launch, the subscription is currently available with a special launch offer of CHF50 for one year.

Source: Osteology Foundation

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From evidence to clinical implementation



© Steve Forrest

Over the past two years, GCCG has established a pathway for developing and disseminating evidence-based, patient-centred guidance in implant dentistry. Its first edition, focusing on the treatment of the edentulous maxilla, has already led to the publication of consensus proceedings and clinical recommendations (Link). Building on this scientific foundation, the initiative is now entering its next phase: translating evidence into everyday clinical decision-making.

Turning evidence into clinical practice

A key highlight at the EAO Congress was the announcement of a dedicated GCCG clinical translation supplement in the *International Journal of Prosthodontics*. The supplement translates the consensus recommendations into practical implementation, showing how evidence-based guidance can be applied in real-world clinical scenarios. Several articles are already available online ahead of print.

Another major step forward is the launch of the Clinical Guidance Tool for the Edentulous Maxilla. This interactive resource helps clinicians apply GCCG recommendations in practice. By turning scientific conclusions into accessible clinical guidance, GCCG continues to bridge the gap between consensus proceedings and patient care.

A growing global partnership

The EAO Congress also gave the GCCG Board and organisational representatives an opportunity to discuss the initiative's future direction. The three founding organisations were represented by Irena Sailer for the EAO, Ronald E. Jung for the ITI and Frank Schwarz for the Osteology Foundation. They were joined by members of the growing international partner network. Although not all representatives could attend in person, several participated remotely and contributed actively to the discussions, underscoring the initiative's global commitment.

Reflecting GCCG's growing international relevance, its partnership network continues to expand. Alongside the established partners CSA, JSOI, KAOMI, OSI and SOBRAPI, the initiative recently welcomed EFP, DGI and SEPES, further strengthening its global reach and multidisciplinary perspective.

Building the framework for the next phase

At the meeting, the representative of the member organisation reviewed the organisational framework developed over recent months. Significant progress has been made towards a transparent governance structure designed to safeguard the long-term sustainability, independence and scientific integrity of future GCCG activities.

Preparations for the second edition of GCCG are already under way. Building on the success of the first consensus process, the participating organisations are working closely to define the initiative's next phase and further advance evidence-based, patient-centred clinical guidance.

Further details on GCCG's future direction and upcoming activities will be announced **soon.**

Source: Global Consensus for Clinical Guidelines (GCCG)

The new Clinical Guidance Tool for the Edentulous Maxilla*

An interactive resource based on the Global Consensus for Clinical Guidelines (GCCG)—now available in a beta version.

The Clinical Guidance Tool for the Edentulous Maxilla is an interactive educational resource designed to support clinicians in applying GCCG consensus recommendations in daily clinical practice. Through structured clinical pathways, recommendations and supporting evidence, it translates scientific guidance into practical clinical decision-making.

*The tool supports but does not replace professional clinical judgement.

Try it and run a patient case

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IDS 2027: The future of dentistry comes to Cologne

From 16 to 20 March 2027, Cologne will once again become a global meeting place for the dental industry. The 42nd International Dental Show (IDS) will bring together companies, professionals, and decision-makers from around the world to explore new products, technological advances, and practical solutions for dental practices and laboratories.

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How are digital technologies reshaping dentistry? Which materials are opening up new possibilities in patient care? And how can practices and laboratories make their workflows more efficient? IDS offers an opportunity to explore these questions and gain a comprehensive overview of the international dental market.

Beyond discovering new products, visitors can step back from their daily routines, compare approaches, and exchange ideas with colleagues. These encounters can provide fresh perspectives on current challenges and valuable inspiration for future developments.

Innovations for practices and laboratories

The exhibition spans a wide range of disciplines, from diagnostics and prevention to restorative dentistry, implantology, orthodontics, and dental laboratory techniques. Instruments, dental treatment units, hygiene products, and solutions for practice organisation and administration complete the offering.

Digital technologies are expected to attract particular interest once again. Intra-oral scanners, CAD/CAM systems, additive manufacturing, and software-supported processes are transforming collaboration between dental practices and laboratories. Their potential extends beyond individual tasks to more closely connected workflows, clearer communication, and smoother coordination throughout treatment and production.



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Artificial intelligence brings further opportunities—and important questions. What value can it add to diagnostics, treatment planning, and documentation? How should its reliability and suitability be assessed? IDS provides a forum for exploring these applications, discussing their limitations, and considering their role in everyday clinical and laboratory work.

A visit to IDS offers far more than browsing product catalogues. At exhibitor booths, dental professionals can learn about new products, explore their applications, and discuss specific requirements directly with suppliers. Comparing solutions first-hand helps visitors look beyond individual features and assess what best meets their needs.

Visitors with concrete projects in mind can use the exhibition to gather information, meet potential partners, and establish contacts for follow-up consultations. Clear objectives and well-prepared questions can help turn a broad market overview into a sound basis for investment decisions.

International exchange and fresh perspectives

Discussions with colleagues and suppliers offer opportunities to compare experiences, challenge assumptions, and discover different approaches to familiar issues. Whether the focus is on improving daily processes or evaluating emerging technologies, personal exchange adds depth to the products and solutions on display.

Combining an extensive market overview with professional dialogue, IDS 2027 will offer ideas and connections to support the continued development of dental practices and laboratories—and a closer look at what the future of dentistry could mean for everyday patient care.

Events









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Published by
OEMUS MEDIA AG
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Printed by
Silber Druck GmbH & Co. KG
Otto-Hahn-Straße 25
34253 Lohfelden, Germany

implants—international magazine of oral implantology is published in cooperation with the German Association of Dental Implantology (DGZI).

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