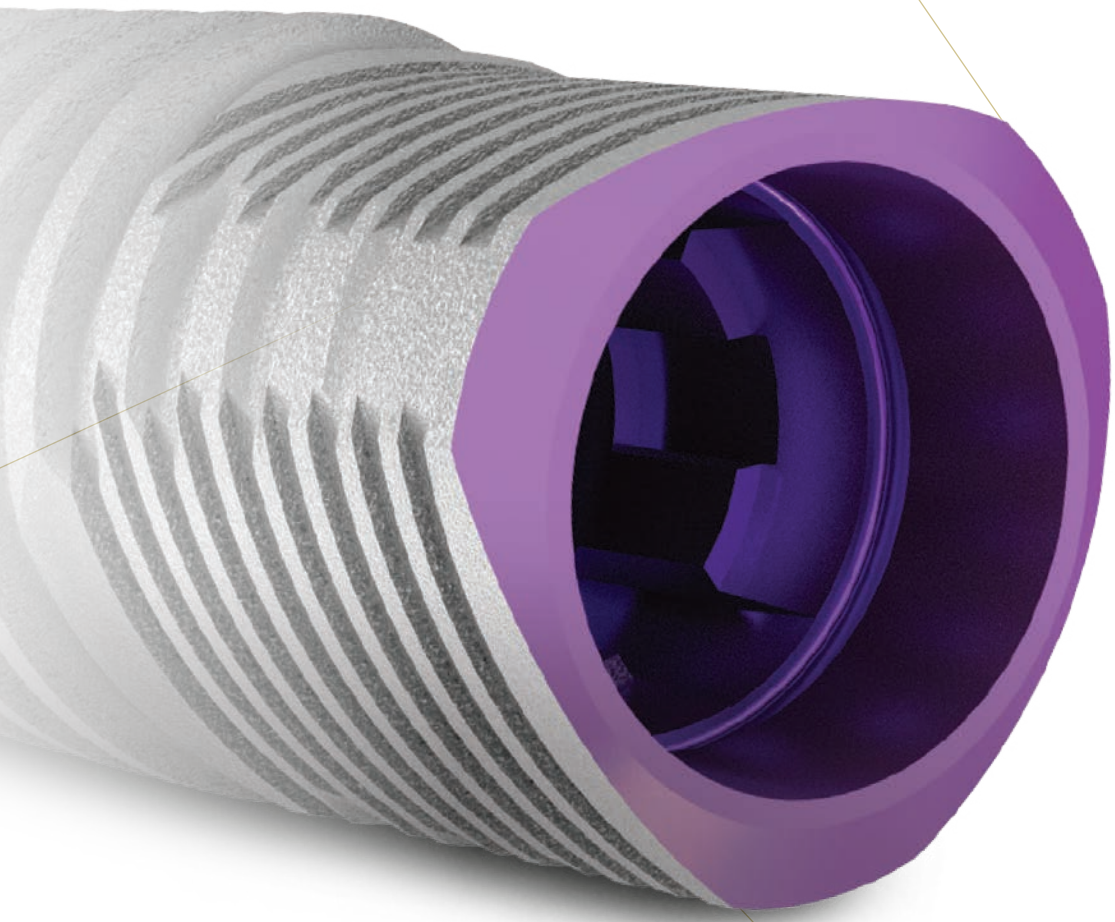
V3 By MIS

More with Less

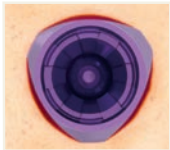
Overview

The V3 implant system is the outcome of an exceptionally high-level R&D process that has resulted in an implant that is simple, easy-to-use and offers enhanced functionality and performance. The V3 conical connection implant features built-in design characteristics which may provide biological benefits for hard and soft tissues and promote esthetic results.



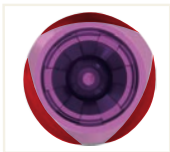
V3 Features

Each and every V3 implant comes with a sterile, single-use final drill.



Designed for more bone

The compression-free gaps around the coronal area of the V3 were engineered to provide a reservoir for blood pooling and the formation of blood clots. These conditions are both required for optimum implant integration and bone growth.



Engineered for stress reduction

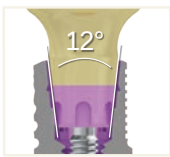
The gaps around the sides of the implant neck were designed to result in an open, compression-free zone. Crestal bone loss may be minimized by reducing stress in the cortical bone.

Implant neck

The triangular shape at the V3 neck was engineered to provide high immediate crestal stability and potential bone preservation. Anchorage may be achieved at three points without compromising crestal primary stability.

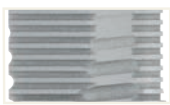
Platform switching

The V3 implant incorporates the platform-switching design concept. Implants with a platform-switched configuration have been shown to exhibit less bone loss when compared to non-platform-switched implants, which may lead to soft tissue preservation and growth.



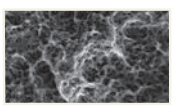
Conical connection

The 12° conical connection was engineered to create an ultimate seal and ideal connection between the implant and abutment with built-in platform switching, reducing micro-movements.



Micro-rings

Micro-rings on the neck of the implant are designed to facilitate an increase in bone to implant contact (BIC). This design concept has been reported to be associated with less crestal bone loss when compared with other implant design features.



Surface treatment

The surface roughness and micro-morphology is a result of sandblasting and acid etching. This proven MIS surface technology leads to a high level of cleanliness, which leads to effective osseointegration. This is one of the key factors which contribute to long-lasting clinical success.

Flat apex

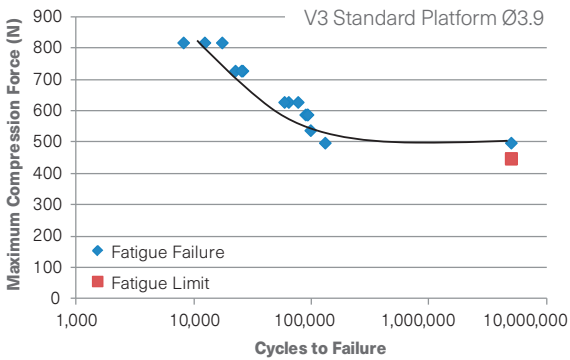
The flat apex is designed to allow good grip into bone, especially in immediate placement procedures.

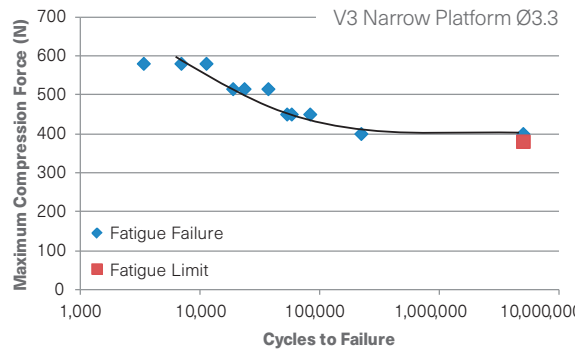
Strength and Durability of V3 Implants

Strength and durability testing is critical to ensure continued successful outcomes of dental implant treatment provided by doctors and the well-being of their patients. MIS adheres to the strictest industry standards in testing the mechanical properties of our implants and superstructures, to ensure full compliance on the highest possible level.

Fatigue Testing

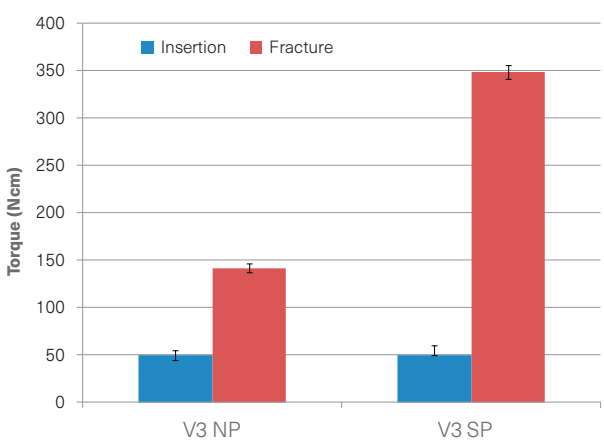
Fatigue testing is critical for establishing the ultimate strength and reliability of an implant-abutment assembly in accordance with ISO 14801:2007 standards. The testing process specifies a method for determining the fatigue strength and behavior of these devices in vitro. The tests simulate the functional loading of the implant body under "worse case" loading conditions. V3 test results exceeded expectations.





Fracture Torque Testing

Fracture torque testing establishes the fracture resistance characteristics of an implant. The test apparatus is used to verify and validate the performance of a torque loaded structure by pre-set values in accordance with the designated use of the structure.



MIS Implant Surface

MIS surface is sand-blasted and acid-etched. This surface treatment eliminates various surface contaminants while increasing the implant surface area, generating a hydrophilic surface with micro and nanostructures for optimal osseointegration.

MIS goes to great lengths to ensure the surface purity of our implants, adding any steps necessary to ensure the lowest percentage of contaminants, including blasting residue or remnants from various stages of production. We monitor the surface roughness, uniformity and purity of our implants on a daily basis, taking samples from selected batches, using our own in-house Scanning Electron Microscope.

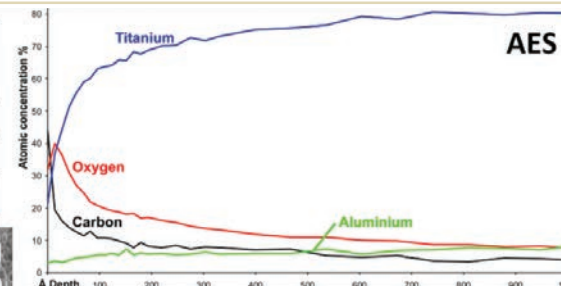
Supported by independent research:

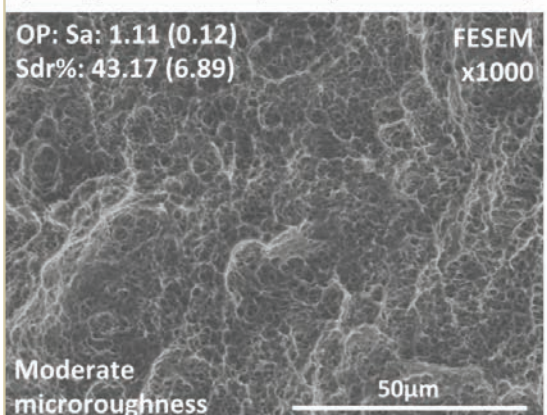
The POSEIDO Journal-2014 (Volume 2): “Identification card and codification of the chemical and morphological characteristics of 62 dental implant surfaces”. Identification card of the MIS SEVEN® implant, titanium grade 5 ELI, grade 23: “No pollution or chemical modification was detected.”

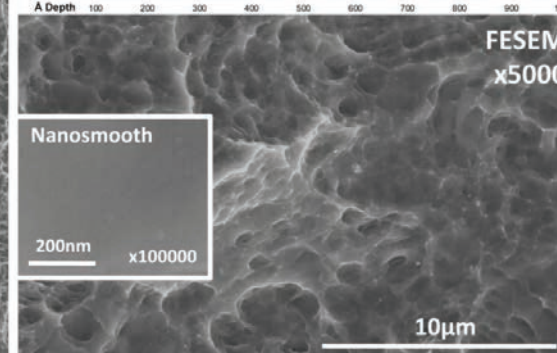
Only 3 surfaces presented no pollution (and also no chemical modification at all):
GC Aadva, Genesio, MIS SEVEN®.

Identification card of the MIS Seven surface, following the Implant Surface Identification Standard (ISIS) codification

MIS Seven (MIS Implants Technologies, Bar Lev, Israel) (Ref:MF7-13500; Batch:WO1129838) XPS/ESCA Surface chemical composition (%)			
Ti	20.3 %	N	0.7 %
O	54.3 %	Al	2.6 %
C	21.9 %	V	0.2 %





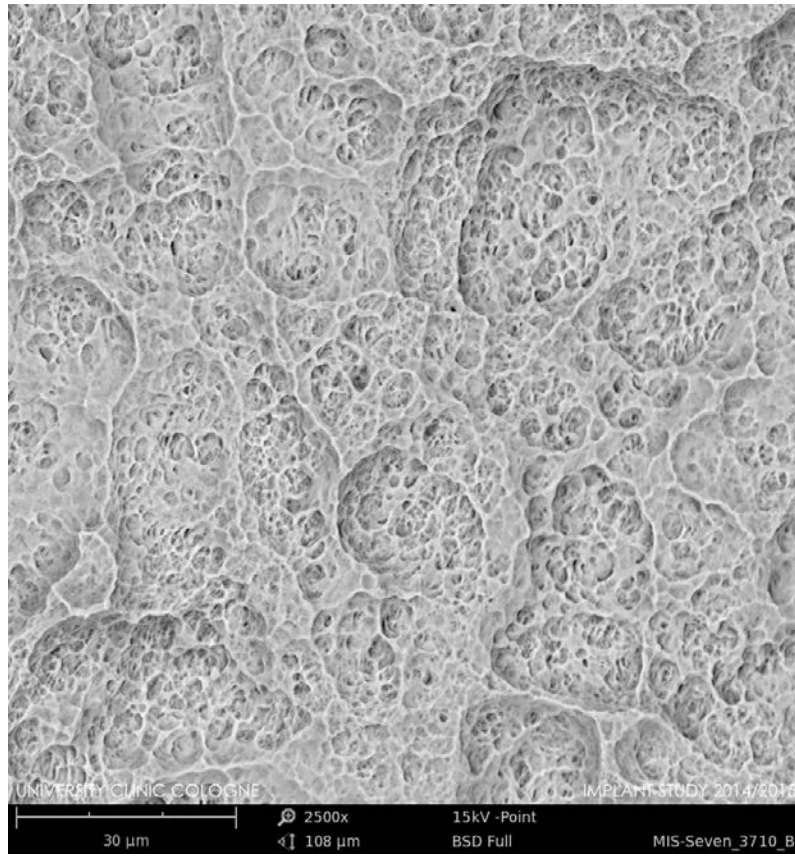


Surface	Core Material (Core)	Modification (Mod)	Microtopography (Micro)	Nanotopography (Nano)	Global Architecture (Archi)
MIS Seven (MIS Implants Technologies, Bar Lev, Israel)	Ti-6Al-4V ELI Grade 23 Titanium (G23Ti)	None	Rough (R). Moderate (Mo). Flat (Fl)	Smooth (S)	Non Fractal (NF). Homogeneous (Ho)
	Core.G23Ti		Micro.R.Mo.Fl	Nano.S	Archi.NF.Ho

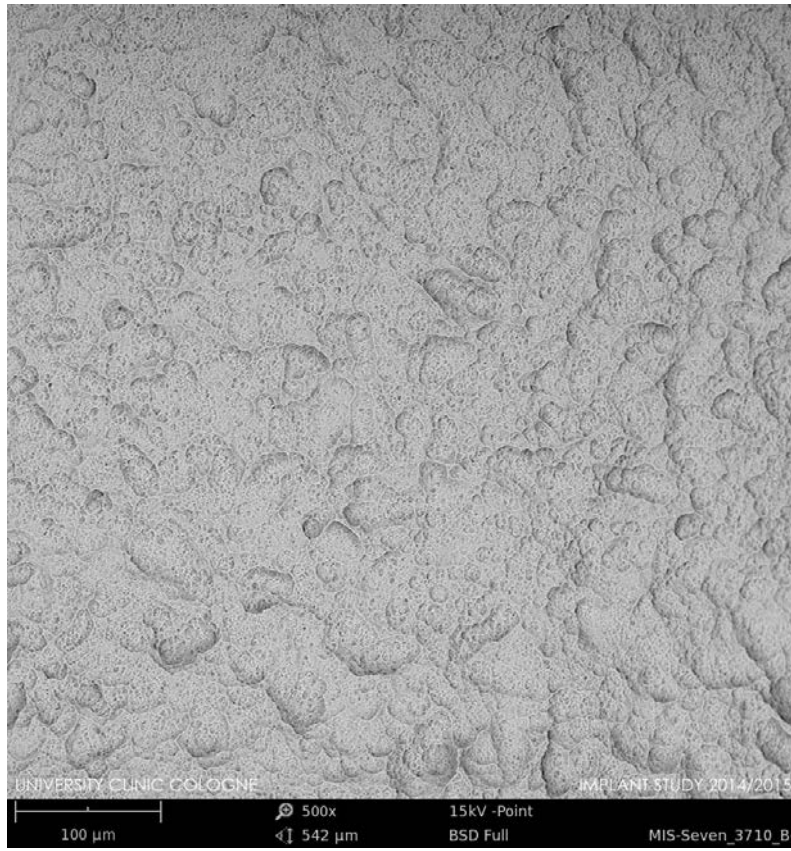
ISIS (MIS Seven) = Core.G23Ti / Micro.R.Mo.Fl / Nano.S / Archi.NF.Ho

EDI Journal – Issue 1/2015, Vol.11:

Surface analysis of sterile-packaged implants, 65 different implant systems from 37 manufacturers and ten countries examined by (SEM). MIS implants, C1 and SEVEN, stood out positively without any findings of isolated spots with residue on the implants surface.

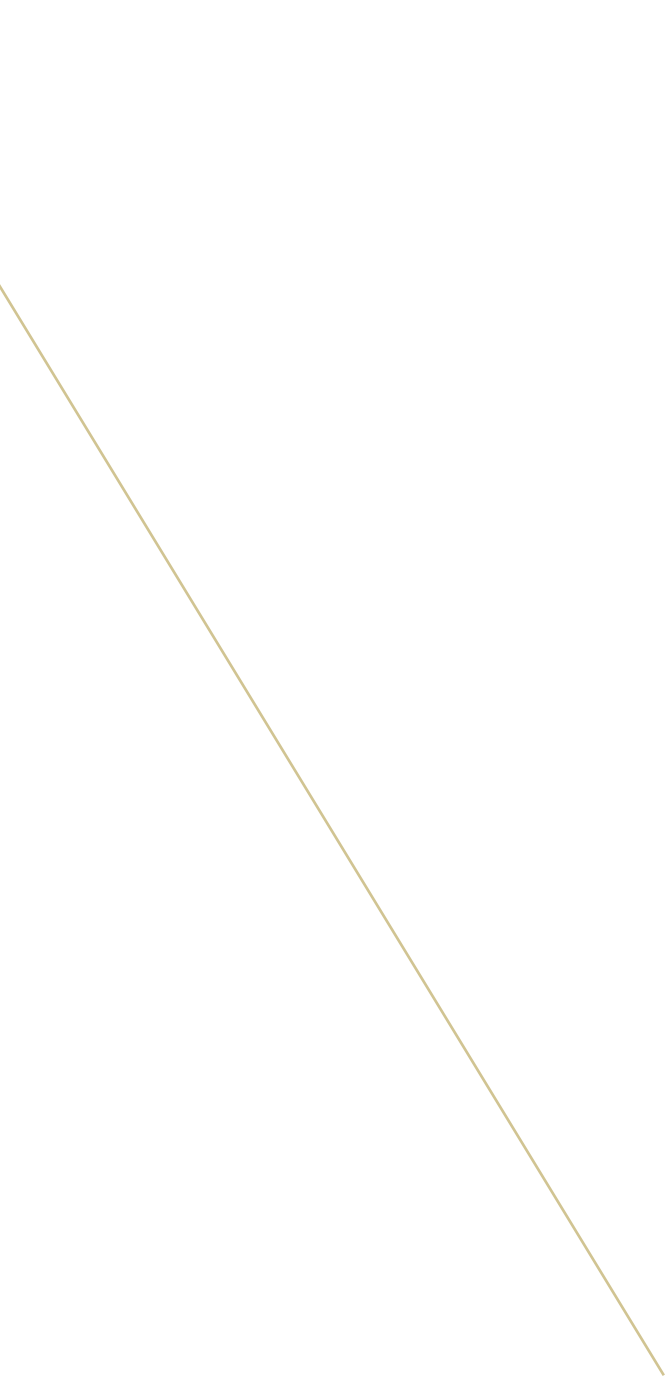


MIS SEVEN® implant surface with micro-nano-structure (x 2500).



Residue-free surface, MIS SEVEN® implant (x500).

The quoted implant surface studies are available for download from the MIS Website: Surface Analysis of Sterile-Packaged Implants: EDI Journal, Issue 1/2015: http://www.mis-implants.com/Scientific/Articles.aspx . The POSEIDO Journal 2014 (Volume 2): Identification card and codification of the chemical and morphological characteristics of 62 dental implant surfaces: http://www.mis-implants.com/Scientific/ResearchMaterials.aspx



V3 Clinical Cases

CASE 1.

Surgical part: Gustavo Giordani (Brazil)
Prosthetic part: Florin Cofar (Dentcof, Timisoara, Romania)
Technician: Edson Silva (Dentcof Lab, Timisoara, Romania)

Patient: 52 years old

The patient came to Dentcof-Timissoara-Romania for a check-up. We found at the tomography an internal root resorption on tooth number 22. We decided to replace the tooth with an implant. Using the alveolar model technique, we extracted #22 with minimal invasive instruments. Placed a 3,9x13mm V3 implant. We grafted with connective tissue graft and Bio-Oss and finished the surgical procedure with immediate loading.

After 3 months, Florin Cofar and Edson Silva finished her case with Zirconia abutment on number 22 and a feldispatic cemented crown on 21, 22 and a ceramic veneer on 23.

Fig. 1 Initial

Fig. 2 Minimal Invasive extration

Fig. 3 V3 Implant placement

Fig. 4 Connective Tissue Graft

Fig. 5 Biomaterial

Fig. 6 Provisional

Fig. 7 Provisional Insertion

Fig. 8 Final Surgery

Fig. 9 Final Ceramic

CASE 2.

Restorative Dentist: Florin Cofar (Dentcof, Romania)
Surgeon: Eric Van Dooren (Antwerp, Belgium)
Dental Technician: Loana Popp (Dentcof, Romania)

Also contributed: Ioan Cofar, You Nino,
Alin Dinca, Mihai Simonia

Patient: Andrada, 21 years old

Diagnosis: Deciduous Canines, Unhappy about her smile. Treatment: Crown lengthening, Guided surgery (MGUIDE), Extraction and V3 Implants (Tooth number 13 and 23) with soft tissue grafting followed by Monolithic restorations (Empress CAD Multi Block) using SKYN concept on tooth 25 to 15.

Fig. 1 Patient is a 21 year old model, concerned and unhappy about her smile.

Fig. 2 Case is guided by DSD (Digital Smile Design) that helps us determine the tissue level, and vertical implant position. Case execution is a rehearsal of the digital planning.

Fig. 3 3D implant position is planned with MSOFT, and surgically performed using MGUIDE.

Fig. 4 Final restoration and tissue integration

Fig. 5 Final smile. Happy patient >

CASE 3.

Surgeon: Tommie Van de Velde (Mond@Medipolis, Antwerp, Belgium)
Prosthodontist: Alexander Declerck and Vincent Bielen
Technician: Benedikt Vernaillen (Lab@Mond, Antwerp, Belgium)
Emergency treatment: Annelien Verhelst
Endodontist: An Van Kerkhoven

Patient: 24 years old

The patient (M.R.), 24 years old, presented for the first time in our office in 2011 on a sunday afternoon with an emergency. He is a professional basketball player and was hit with an elbow that resulted in avulsion of teeth 21 and 22. Appropriate treatment was performed the same day and following weeks. Follow-up radiographs (figure 2) showed resolution both teeth, however beginning of 2015 signs of internal resorption were visible on radiographs. The patient had disturbing sensitivity but clinically no signs of inflammation were visible around the resorbing 21 (Figure 1-3).

The idea was to replace part of the tooth that was failing to preserve surrounding tissues (socket shield technique) with a V3 implant. A zirconia abutment was prefabricated based on the pre-surgical planning (MGUIDE). A MIS V3 4,3 x 13 mm implant was placed. The triangular shape of the coronal part of the implant leaves a space between the remains part of the root and the implant for bone formation (Figure 4-5). A connective tissue graft was placed to increase mucosal thickness on the buccal side of the implant.

The definitive abutment was tried and bonded to a lithium-disilicate coping that allows adhesive bonding. The buccal part of the extracted 21 was prepared to veneer the definitive abutment (Figure 6). This results in an immediate restoration with a one-abutment-one time concept: biocompatible Zirconia submucosally, lithium-disilicate layering and an autologous veneer. The socket shield, together with the biocompatible materials results in a maximal preservation of peri-implant tissues (Figure 7). Figure 8 shows the clinical situation after 5 weeks. This semi-provisional implant restoration can last on a long-term basis. If the autologous veneer fails, a new ceramic veneer can be bonded after preparation onto the lithium-disilicate layer. If a more profound adaptation of the abutment is needed, the zirconia abutment can be unscrewed with consecutive prosthetic treatment on implant level.

Fig. 1 Pre-operative occlusal and frontal images (January 2015).

Fig. 2 Frontal image of the maxillary anteriors without any clinical signs of infection.

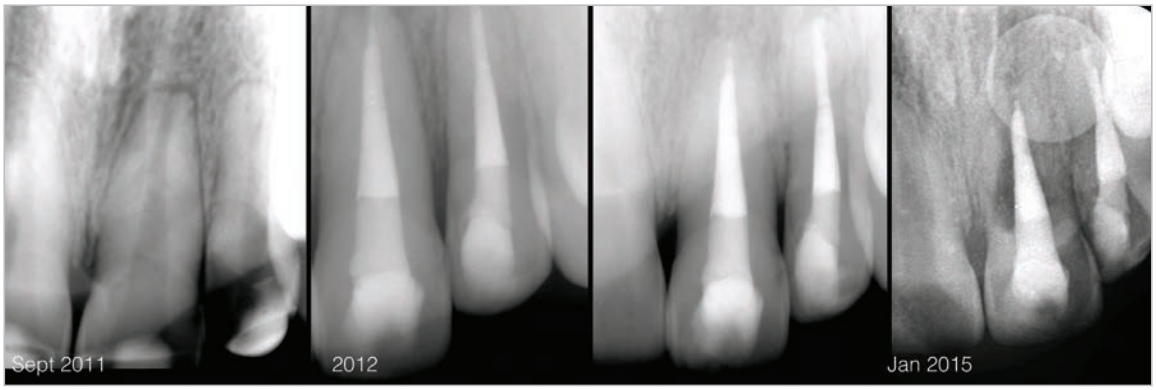


Fig. 3 Peri-apical radiographs from 2011-2015 (pre-operative)

Fig. 4 Pre-surgical planning (MSOFT, MIS, Israel) and clinical view of the MGUIDE to facilitate precise implant positioning.

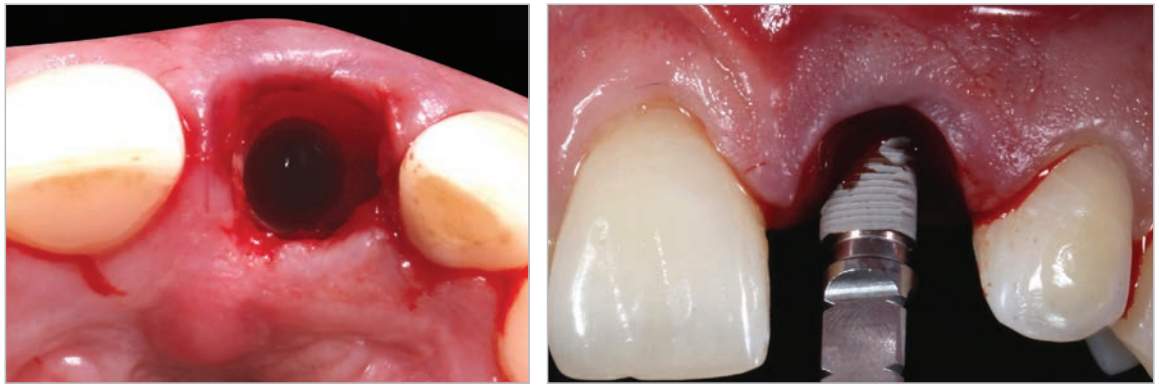


Fig. 5 Left: occlusal view of the alveolar socket with buccal part of the root (socket shield technique) present. Right: V3 (MIS, Israel) implant insertion.

Fig. 6 Overview on the laboratory procedure to adhesively bond the autologous veneer to the zirconia abutment (lithiumdisilicate interface).

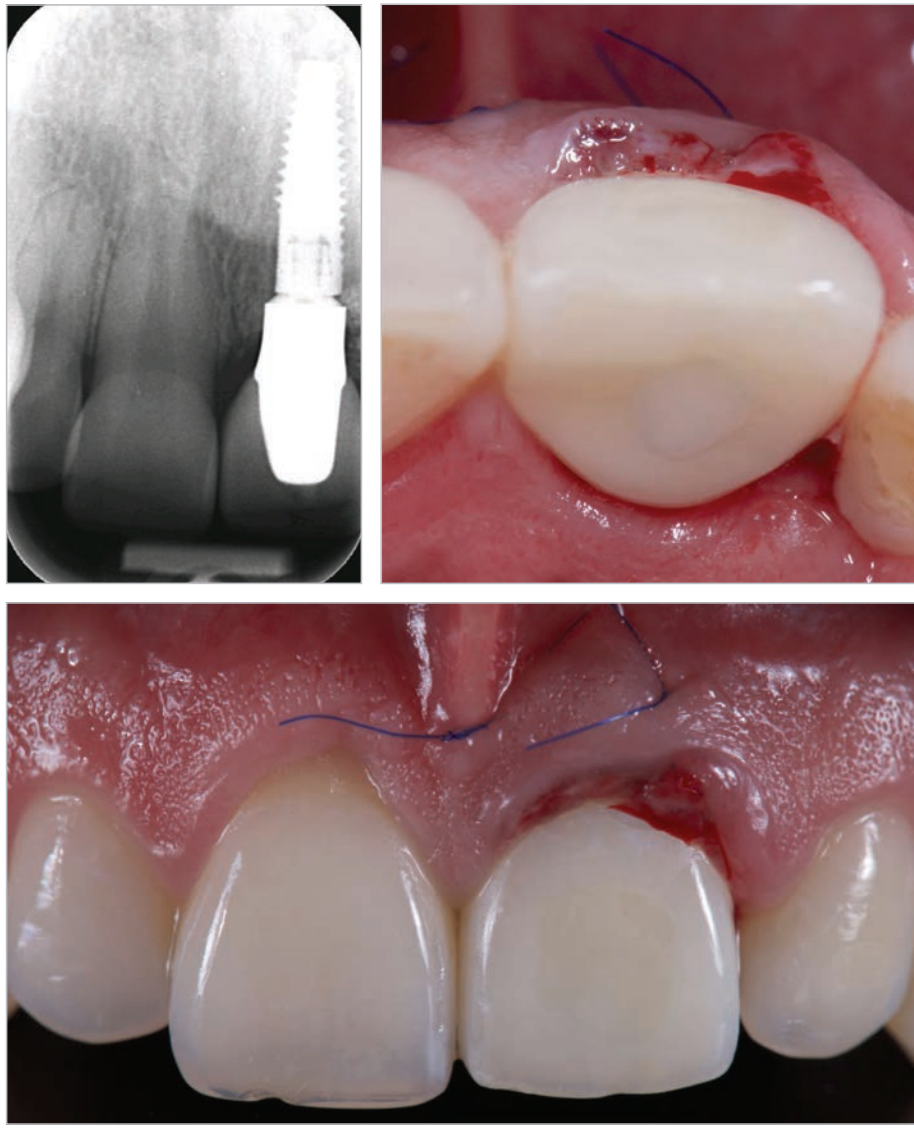


Fig. 7 Post-operative radiograph and clinical images.

Fig. 8 Maxillary anteriors 5 weeks post-operative.

Fig. 9 Maxillary anteriors 14 months post-operative.

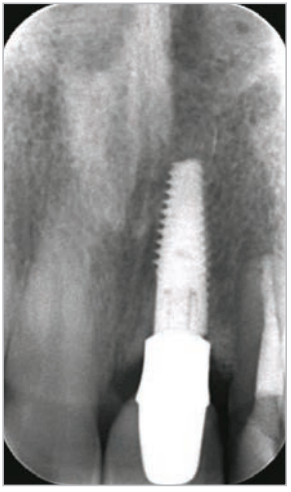


Fig. 10 Radiograph 14 months post-operative.

CASE 4.

Surgeon: Mithridade Davarpanah (France)
Restorative Dentist: Philippe Rajzbaum
Dental Technician: Nicolas Millière

Patient: 48 years old

A 48 year-old male patient attended because of recurrent decementation of his prosthetic crown on tooth #21. Clinical and radiographic examination revealed that the loss of integrity of the root is what impaired stabilizing the prosthetic crown. Extraction and subsequent implant therapy were indicated.

During extraction, the vestibular bone lamella remained unexpectedly attached to the removed root. The original implant placement-immediate temporization procedure was cancelled; instead a preservation crest with delayed implant procedure was implemented. A Maryland bridge served the purpose of temporization.

After 6 months of healing, a V3 implant of Ø4.3 x 13 mm was placed in the preserved crest; in addition, the site was over-contoured with BioOss. Another 6 months healing period was allotted before placing the temporary crown. Two months later, the final implant-supported crown was placed simultaneously with an adjacent porcelain veneer. By the end of the treatment, a highly pleasant esthetic result with an adequate emergence profile was successfully achieved.

Fig. 1 Prosthetic single crown at site #21 undergoing recurrent decementation.

Fig. 2 Radiograph of tooth # 21 showing a loss of radicular integrity.

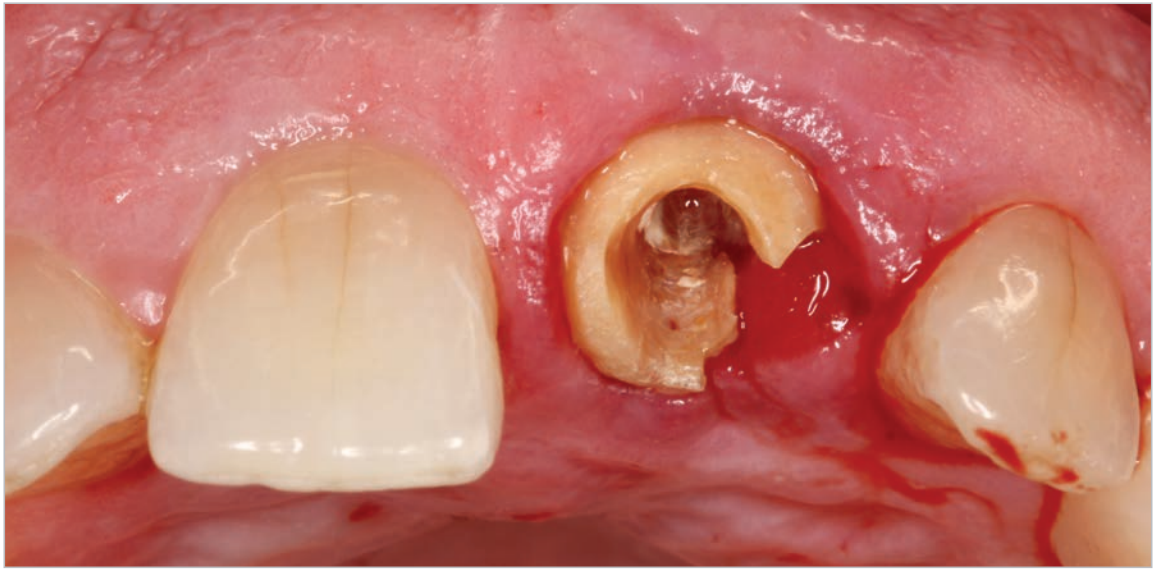


Fig.3 Occlusal view of the decayed root that is unable to provide stability to the prosthetic crown.

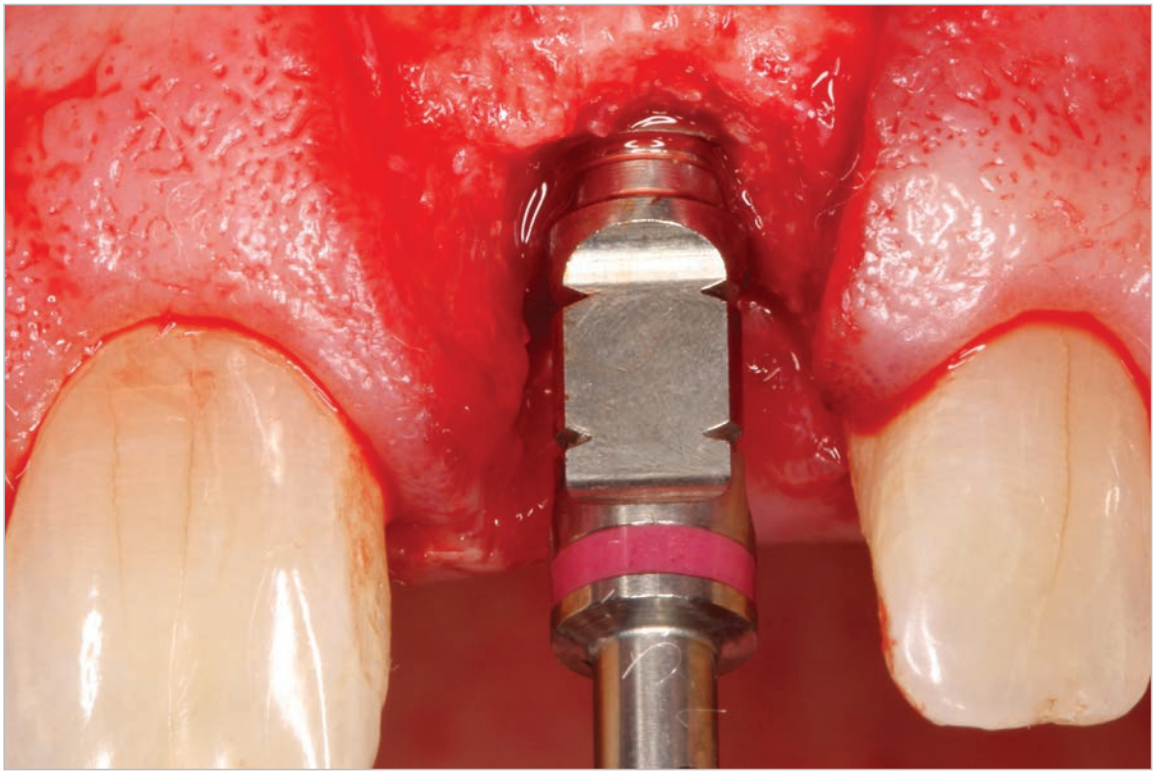


Fig 4 Implant placement of a V3 implant in the preserved crest. The flat part of the neck is parallel to the vestibular cortical lamella as witnessed by the flat part of the implant-holder.

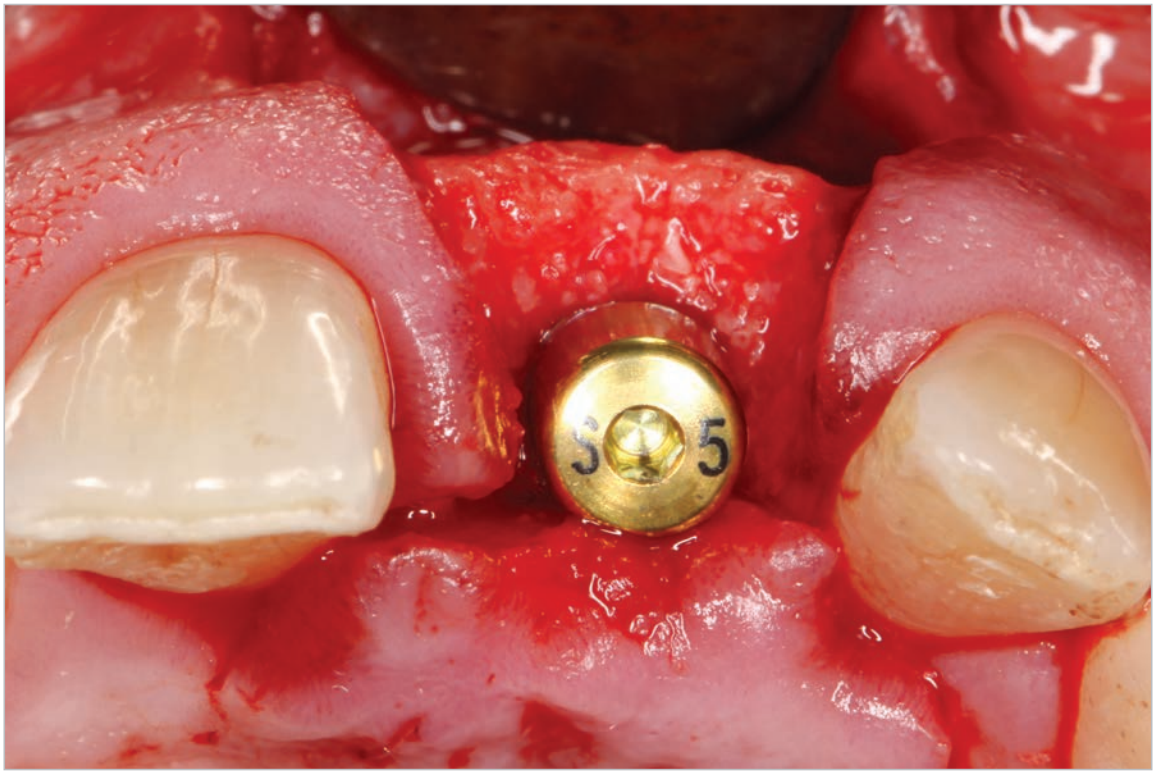


Fig. 5 Occlusal view of the V3 implant with its healing abutment. Note the width of the achieved vestibular bone lamella.

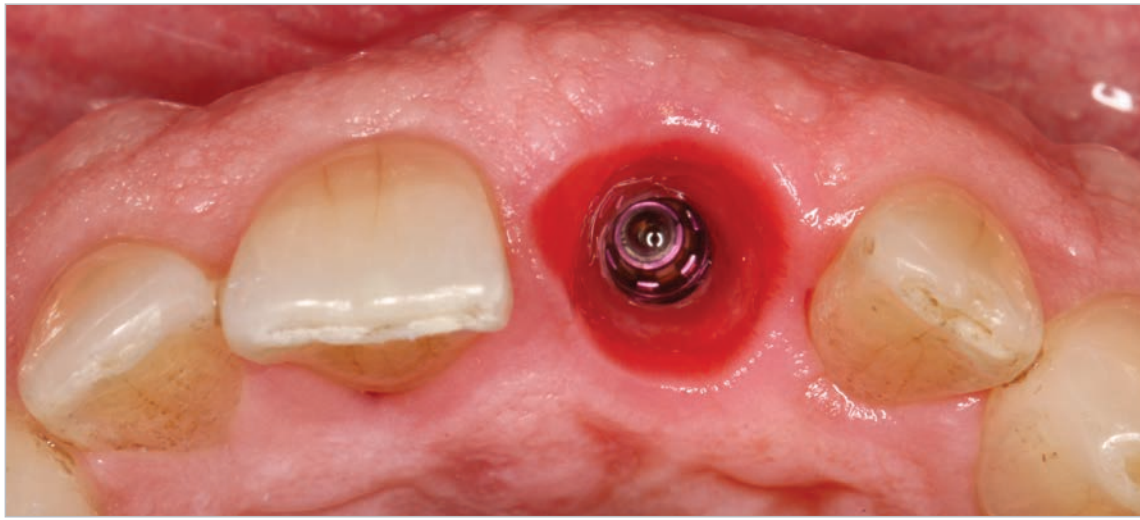


Fig. 6 Occlusal view of the emergence profile obtained with the temporary crown at impression taking. Note the shape of the vestibular gingiva at the treated site.

Fig. 7 View of the final implant-supported crown and the adjacent porcelain veneer.

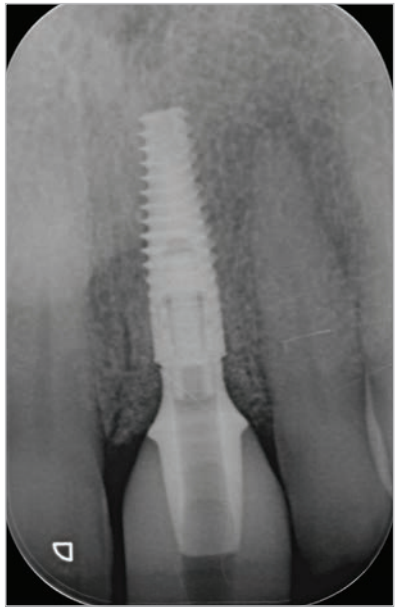


Fig. 8 Radiographic control at final crown placement. Note the bone levels adjacent to the prosthetic abutment.

Fig. 9 Left and right lateral views of the esthetic result of the treatment.

CASE 5.

Surgeon: David García Baeza (CIMA DENTAL, Madrid, Spain)
Prosthodontic: David Garcia Baeza
Technician: Calos Saavedra (CS LAB, Madrid, Spain)

Patient: 62 years old

The patient was a 62-year-old female, non-smoker with no remarkable disease. The patient presented 4 old crowns in the four anterior incisors. She was looking to improve the esthetic result changing the prosthetics and she also mentioned some pain in the upper right central incisor.

Upon exploration with a periodontal probe, we detected a root fracture obliging us to make the extraction of that tooth. After this finding, the treatment proposed was to change the four anterior crowns and rehabilitate the central incisor with an implant and a soft tissue graft. During healing period we used a four-unit acrylic bridge for the provisional restoration.

Fig. 1 Baseline.

Fig. 2 Initial situation without old crowns.

Fig. 3 Provisional restorations.

Fig. 4 Fractured tooth extraction.

Fig. 5 Drilling.

Fig. 6 V3 final drill.

Fig. 7 V3 implant placement.

Fig. 8 Soft tissue graft.

Fig. 9 Pocket incision for graft placement.

Fig. 10 Final monofilament suture.

Fig. 11 2 weeks after healing.

Fig. 12 Zirconia abutment.

Fig. 13 Final restorations.

Fig. 14 1-year final result.

CASE 6.

Surgeon: José Manuel Navarro (Branemark Osseointegration Center, Spain)
Dental Technician: Jordi Tafall, MDT (Zirconstetic)

Patient: 38 years old

38 years old patient presents at our clinic with a hopeless UR1. He has had a failed root canal treatment (RTC) and peri-apical surgery as can be seen form the scar in the vestibule area that is presented at the first visit appointment.

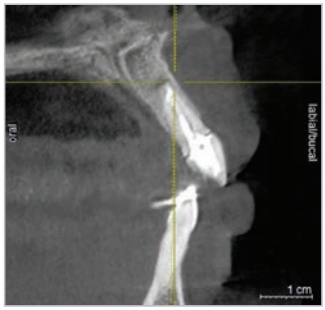



Fig. 1 38 year old patient presents with helpless upper right central incisor.



Fig. 2 Atraumatic extraction of 11. Note scaring present as result of the peri-apical surgery previously performed and the periodical lession at root apex

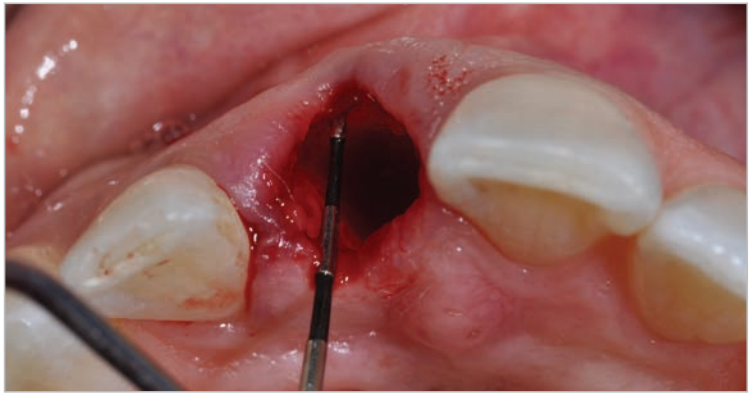


Fig. 3 Favourable buccal bone plate.

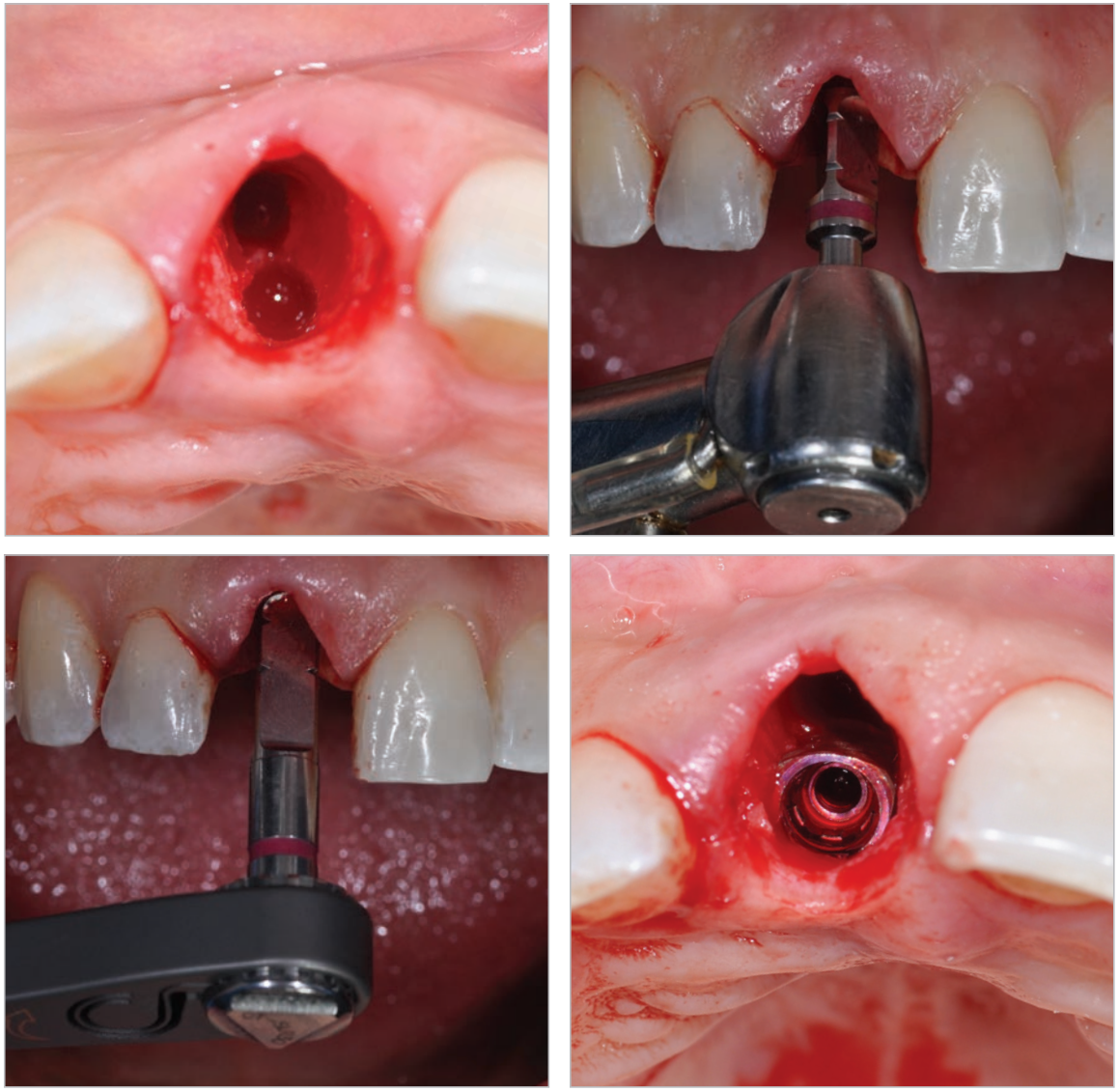


Fig. 4 4.3x16 MIS V3 Implant placement with palatal osteotomy.

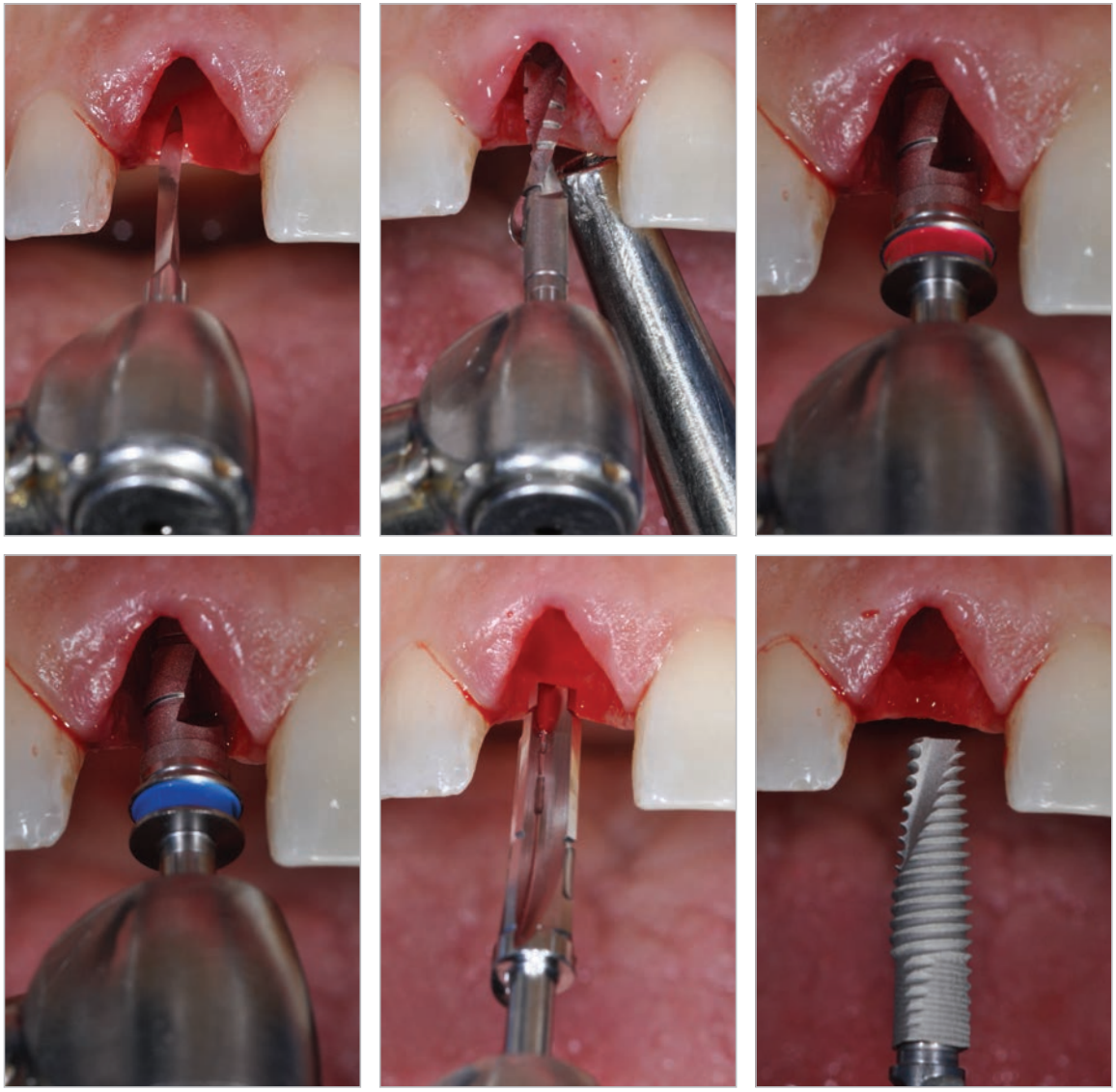


Fig. 5 Detailed drilling sequence and implant placement (MIS V3 4.3x16)

Fig. 6 Placement of the prefabricated screw retained abutment and connective tissue graft.

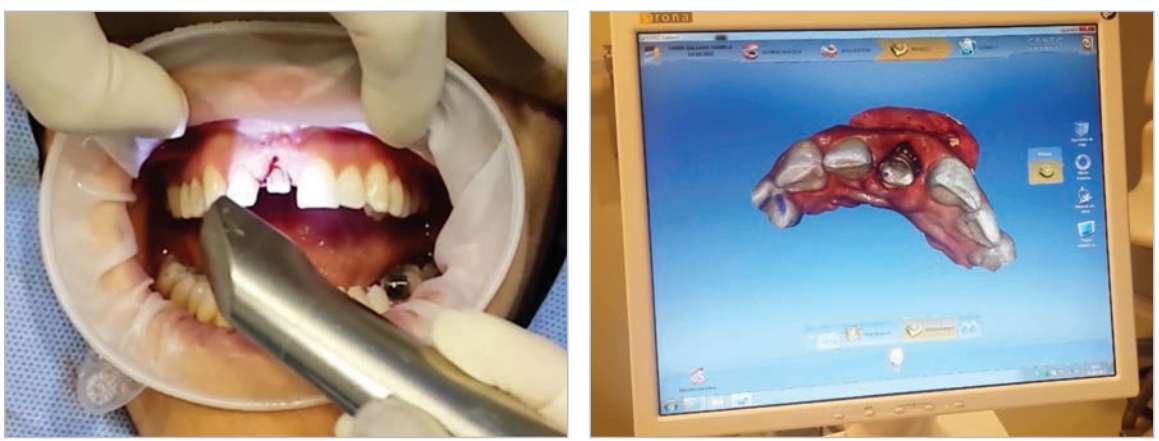


Fig. 7 Digital Impression utilizing CEREC Omnicam.

Fig. 8 Digital Impression of opposing arch utilizing CEREC Omnicam.

Fig. 9 Chair-side milling of the provisional crown Vita CAD-Temp.

Fig. 10 Provisional crown in place 1/2 hour after the surgical procedure has finished. 1 week Pot-op Review.

Fig. 11 Suture removal at 1 week.

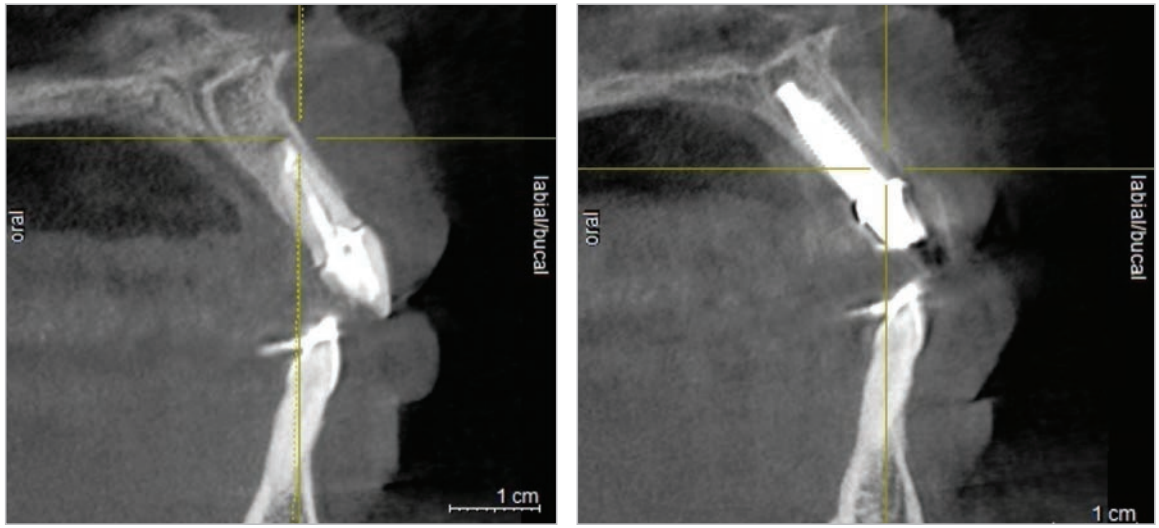
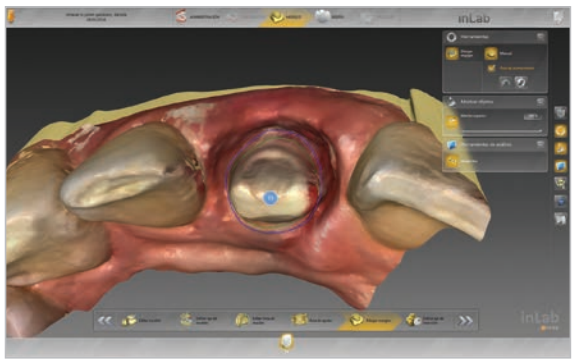


Fig. 12 CBCT showing the situation before the extraction and after the extraction and implant placement. Note presence of buccal bone plate in both images.

Fig. 13 4 months after the initial surgery impressions are taken for fabrication of the final crown utilizing CEREC Omnicam.



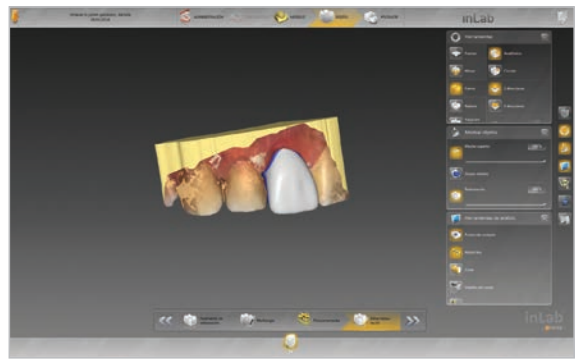


Fig. 14 Design of final Crown in CEREC In Lab 15.

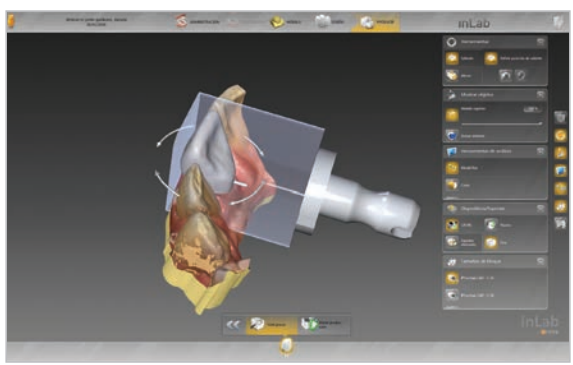


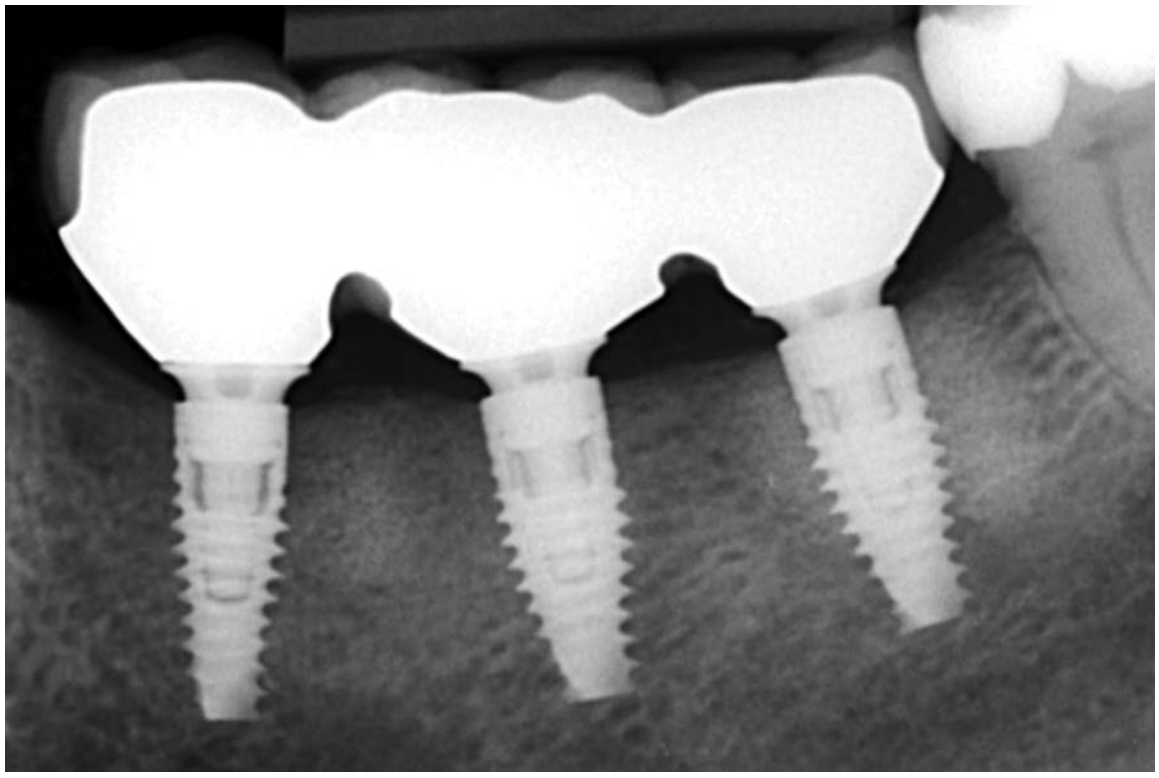
Fig. 15 Milling of the final Lithium Discilicate crown.

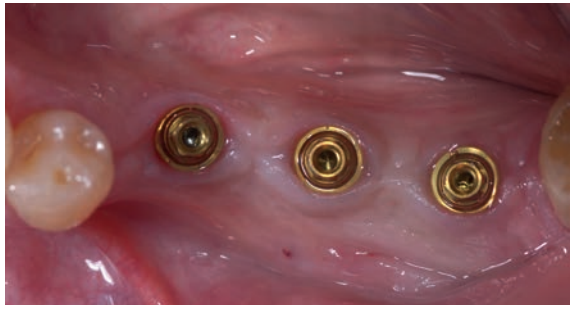
Fig. 16 Final photographs

CASE 7.

Surgeon: Dr. Eric Van Dooren (Belgium)
Ceramist: Mirko Picone

V3 Ø3.90, 11.5mm (#35); V3 Ø4.30, 11.5mm (#36, #37)

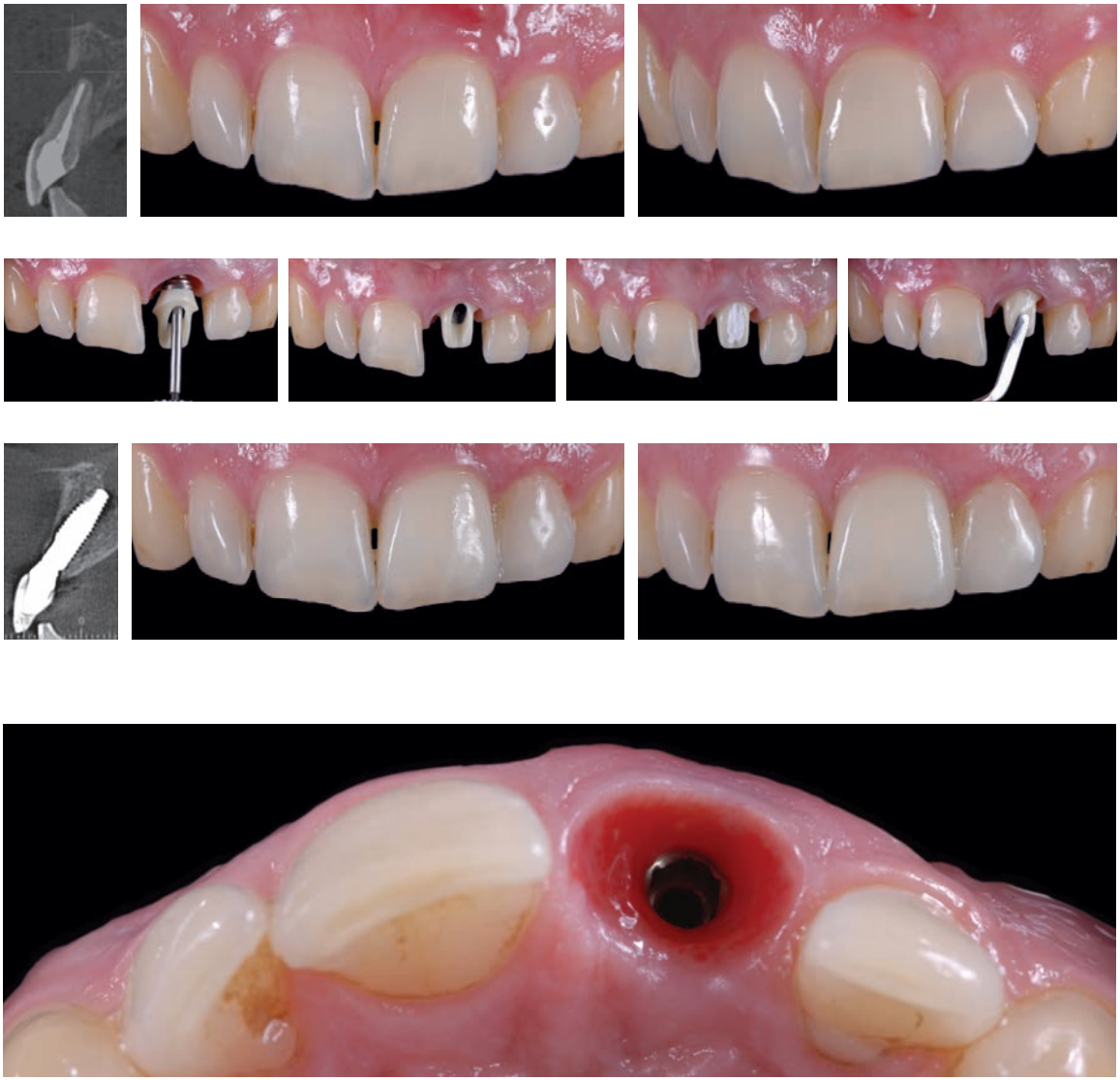




CASE 8.

Surgeon: Dr. Eric Van Dooren (Belgium)
Ceramist: Leonardo Bocabella

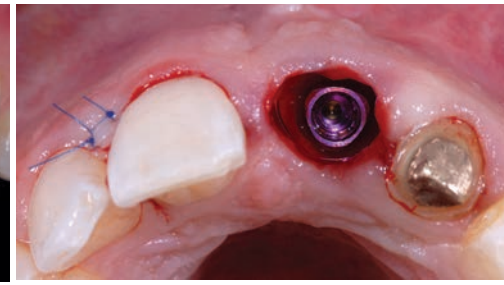
V3 Prototype (#21)

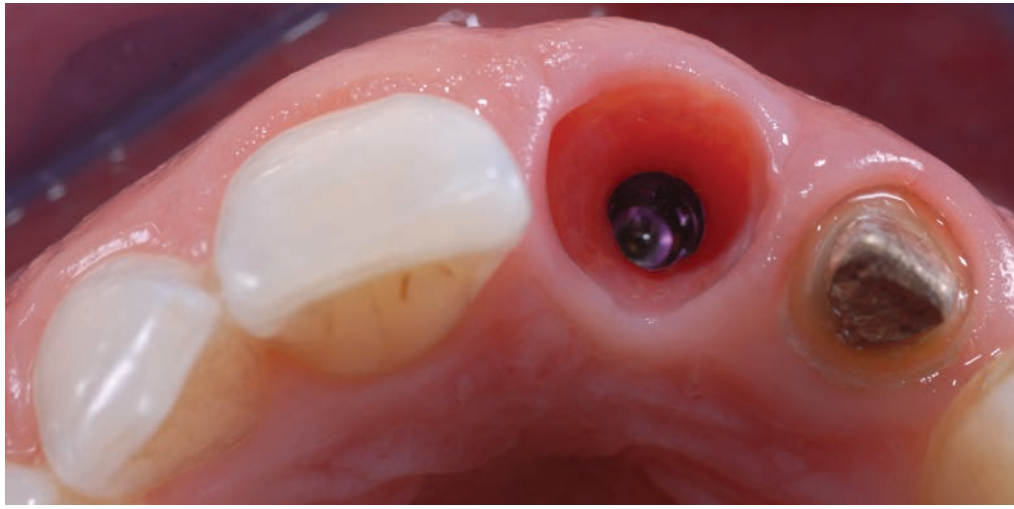


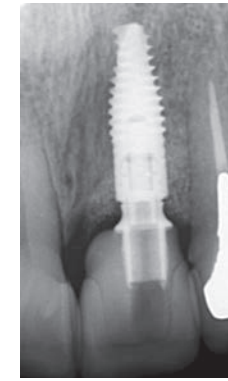
CASE 9.

Surgeon: Dr. Eric Van Dooren (Belgium)
Ceramist: Cristiano Soares

V3 Ø4.30, 13mm (#21)



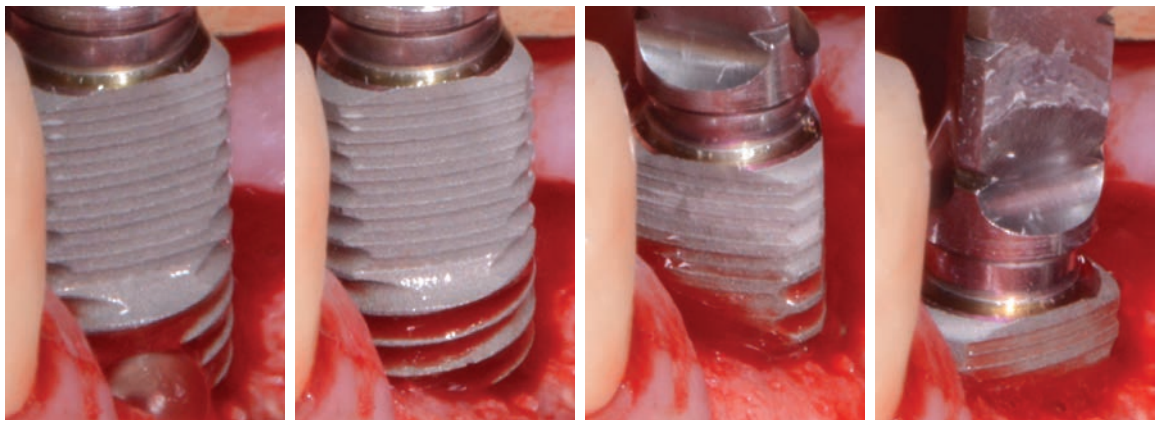


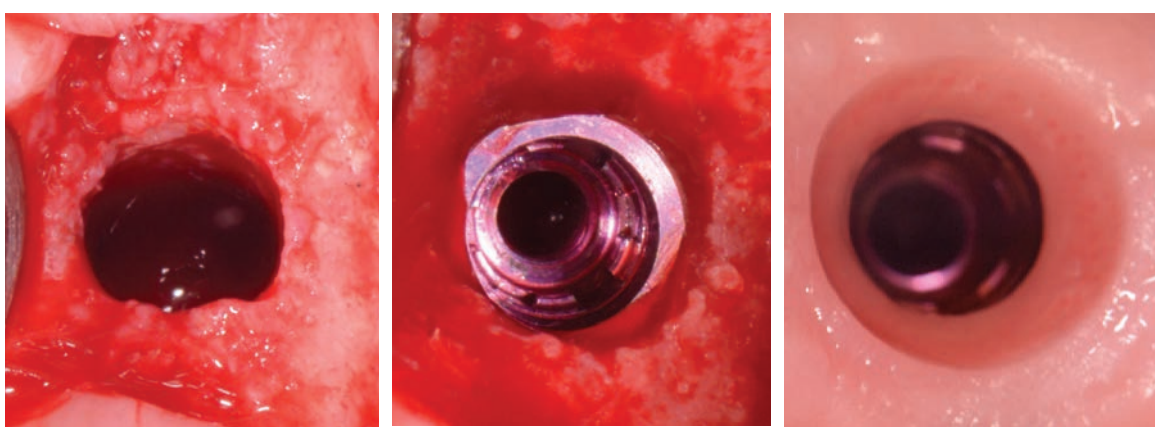


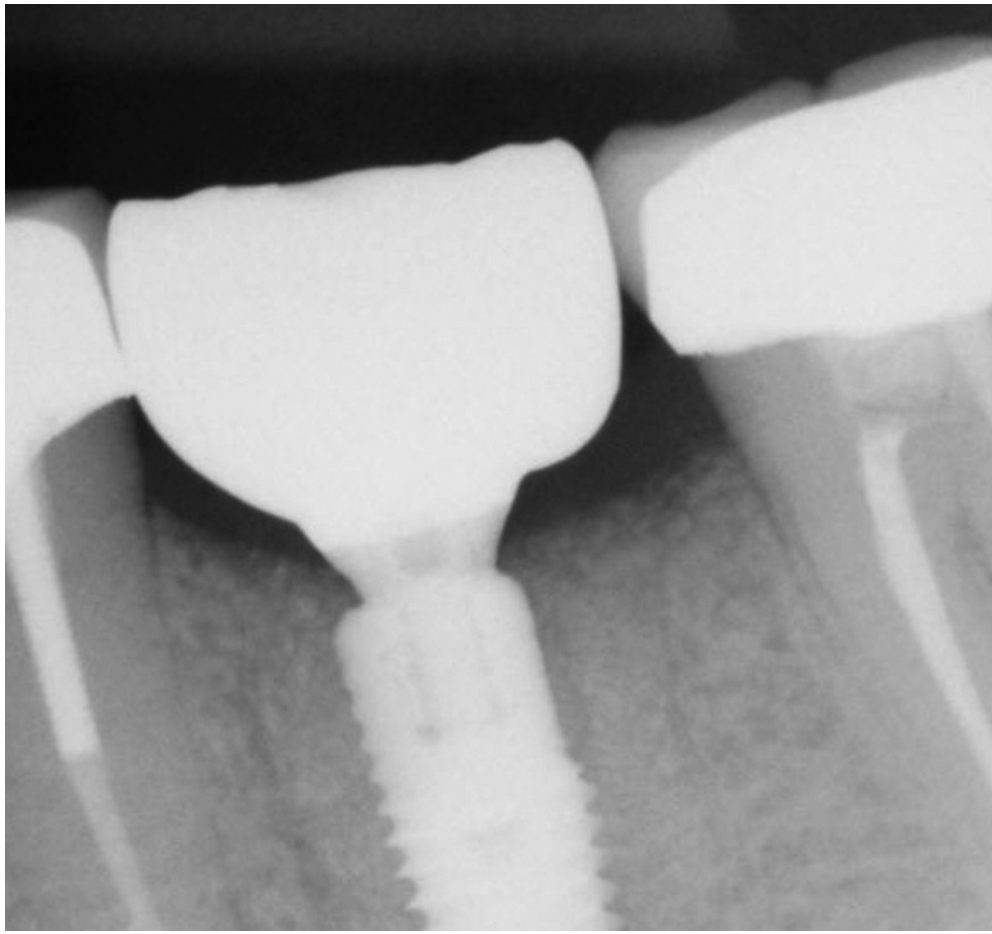
CASE 10.

Surgeon: Prof. Nitzan Bichacho (Israel)
Ceramist: Yuli Kuperstein

V3 Ø5, 13mm (#36)



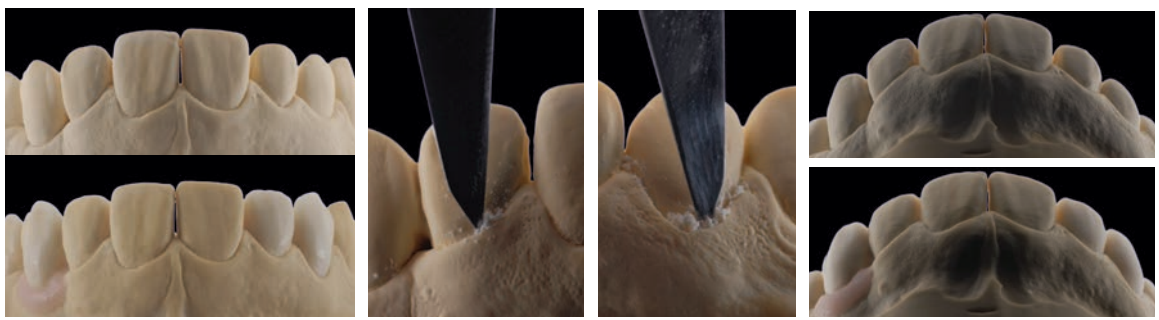


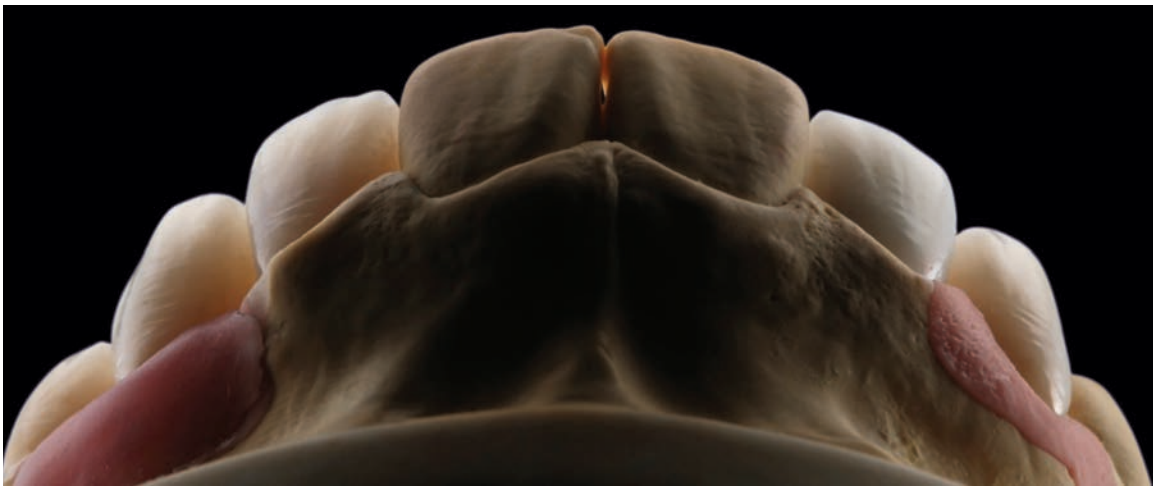


CASE 11.

Surgeon: Dr. Eric Van Dooren (Belgium)
Ceramist: Murilo Calgaro

V3 Prototype Ø4.30, 13mm (#13, #23)

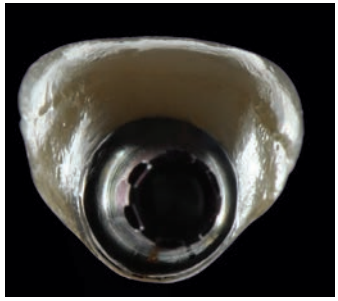


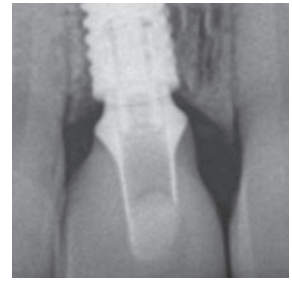


CASE 12.

Surgeon: Prof. Nitzan Bichacho (Israel)
Ceramist: Vincenzo Musella

V3 Ø4.30, 13mm (#11)





CASE 13.

Surgeon: Dr. Eric Van Dooren (Belgium)
Ceramist: Murilo Calgaro and Willy Clavijo

V3 Prototype Ø3.90, 13mm (#11, #21)