COLLECTION

SUMMARY OF FEATURED CLINICAL CASES

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PICTURE BY SEBASTIÁN CIFUENTES, DDS

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PERI-IMPLANTITIS REGENERATIVE TREATMENT GUIDE

Protocol Author:
George Kotsakis DDS, MS
KOTSAKIS LAB

Steps 1 - 2

Remove the crown to assess whether or not cement residues are present on the implant surface. ***If present, there is a 75% chance for successful treatment using this protocol.***[1]

If possible to retrieve the crown, primary closure is preferable for regeneration. Replace the crown with a sterile (not a sterilized or re-used) cover screw to aid in gingival augmentation.[2] *This is a critical step for ensuring there is enough tissue growth after 3-4 weeks to achieve passive primary closure. If the cover screw is exposed during healing, immediately replace with a healing abutment or the replaced crown using a second stage procedure to avoid food impaction and infections.*

Step 3

Mechanical contact non-abrasive *(e.g. nylon brushes) and* ***mechanical non-contact*** *(e.g.*

Use a solution of 1 part NaOCl (Sodium Hypochlorite) to 5 parts sterile water only in areas where the titanium surface is exposed in the sulcus. Applied with gentle burnishing with a gauze, NaOCl has a minor surface oxide alteration effect but it does not kill osteoprogenitor cells.[4]

> **CAUTION:** *Using titanium brushes or curettes on implant areas that will be grafted is not advised. Metal to titanium contact results in permanent removal of the passivation layer and causes the loss of cytocompatibility.*[5] *Chlorhexidine is not recommended for use on implant surfaces because it prevents the cells from reattaching which results in failed regeneration.*

Step 4

Apply ample irrigation followed by grafting of the area with an Osteostimulative (NovaBone® Morsels) or Osteoinductive biomaterial[6]*, which is then covered with a collagen membrane (Zmatrix™, Osteogenics).*

Primary closure should be achieved relatively easily as the site was previously prepped with a soft tissue augmentation. If the crown was not removed, proceed with secure closure by adding a sling suture around the crown for increased clot stabilization.

Step 5

Allow 4-6 months for healing without probing. Recommend water irrigation with a waterpik for home care after initial healing (4 weeks), then assess radiographically. If the site in question is regenerated, replace the restoration, and complete oral hygiene without the use of Fluoride. Fluoride is electronegative and can corrode titanium.

1. The positive relationship between excess cement and peri-implant disease: a prospective clinical endoscopic study. J Periodontol. 2009 Sep;80(9):1388-92. 2. Spontaneous in situ gingival augmentation. Langer B. Int J Periodontics Restorative Dent. 1994 Dec;14(6):524-33. 3. Strategies for implant surface decontamination in peri-implantitis therapy. Int J Oral Implantol (Berl). 2022 Sep 9;15(3):233-248. Monje A, Amerio E, Kook Cha J, Katsakis G, Pons R, Renvert S, Sanz-Martin I, Schwarz F, Sculean A, Stavropoulos A, Tarnow D, Wang HL. 4. Increased Levels of Dissolved Titanium Are Associated With Peri-Implantitis - A Cross-Sectional Study. Safioti LM, Katsakis GA, Pothitikov AE, Chung WO, Daubert DM. J Periodontol. 2017 May;88(5):436-442 5. Antimicrobial Agents Used in the Treatment of Peri-Implantitis Alter the Physicochemistry and Cytocompatibility of Titanium Surfaces. Katsakis GA, Lan C, Barbosa I, Lill K, Chen R, Rodney J, Apolicio C. J Periodontol. 2016 Jul;87(7):809-19 6. Osteostimulative calcium phosphosilicate biomaterials partially restore the cytocompatibility of decontaminated titanium surfaces in a peri-implantitis model. Karoussis IK, Kyriakidou K, Papaporakhevas J, Vrotsos IA, Simopoulou M, Katsakis GA. J Biomed Mater Res B Appl Biomater. 2018 Oct;106(7):2645-2652

Featured Products:

▶ *NovaBone® Dental Morsels* ▶ *Zmatrix™*

Intraoral scan images prior to crown removal (Fig. 1 - see access hole created with a diamond bur), and 3 weeks after healing with substantial increase in keratinized tissue over the cover screw

Implant surface decontamination - the most critical part of the entire procedure. Implant-specific cleaning approach

Membrane tacked into place for stability then packed with 0.5cc NovaBone® Morsels

Membrane secured

Replaced and recontoured restorations to allow proper hygiene in place at 4-months post-healing. The tissue is now healthier with probing depths < 5 mm.

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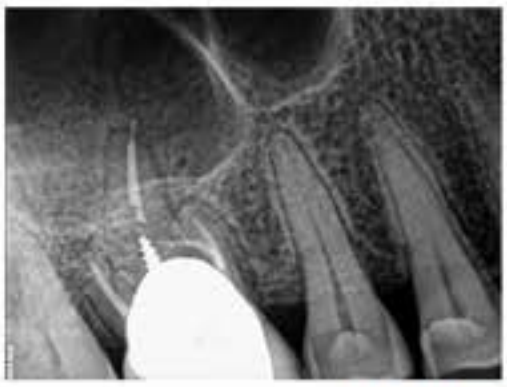
ISAAC TAWIL, DDS. NEW YORK, US

SINUS LIFT PROTOCOL WITH NOVABONE PUTTY - 4 YEARS FOLLOW UP




Initial situation - x rays

Initial situation

Graft

PRF

2 weeks

3.5 months

Sinus lifting access

Bone added incrementally combined with Versah burst

Implant placement wit high stability / ISQ

3 months post operative

Final restoration / Soft tissue response

4 year PO CBCT

Dr. Isaac Tawil, DDS

Masters degree in Biology from Long Island University
DDS from NYU College of Dentistry
Diplomat International Academy Dental Implantology
Diplomat International Academy for Dental Facial Esthetics
Fellow International Congress of Oral Implantology
International speaker and

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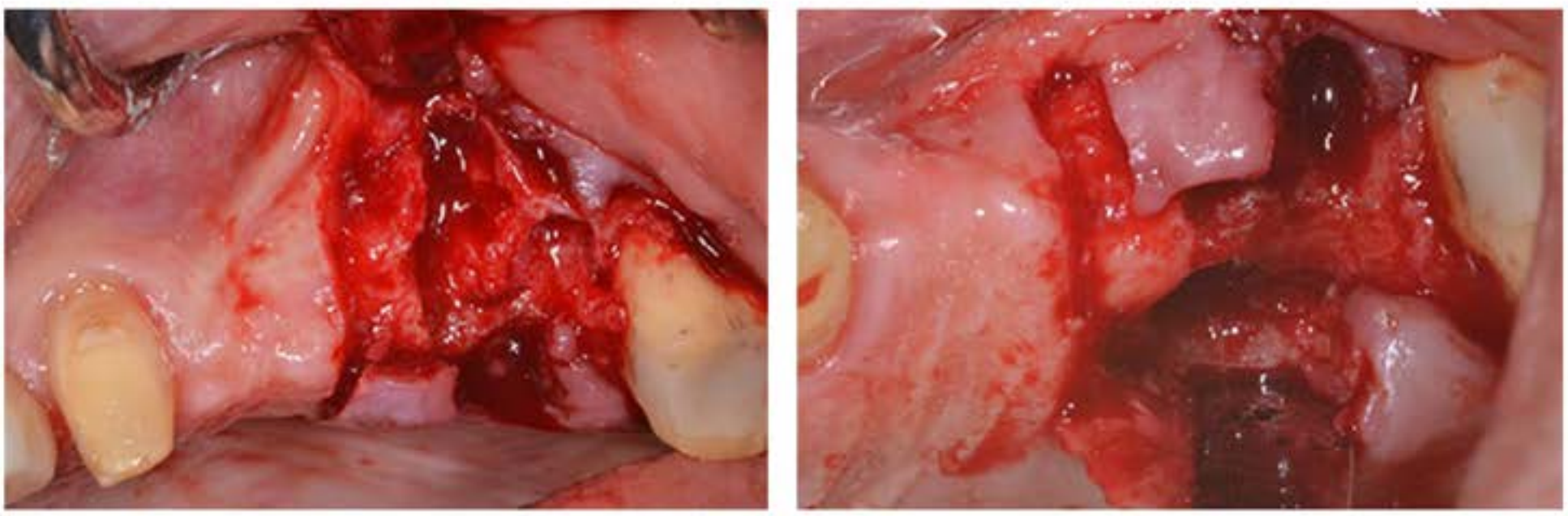
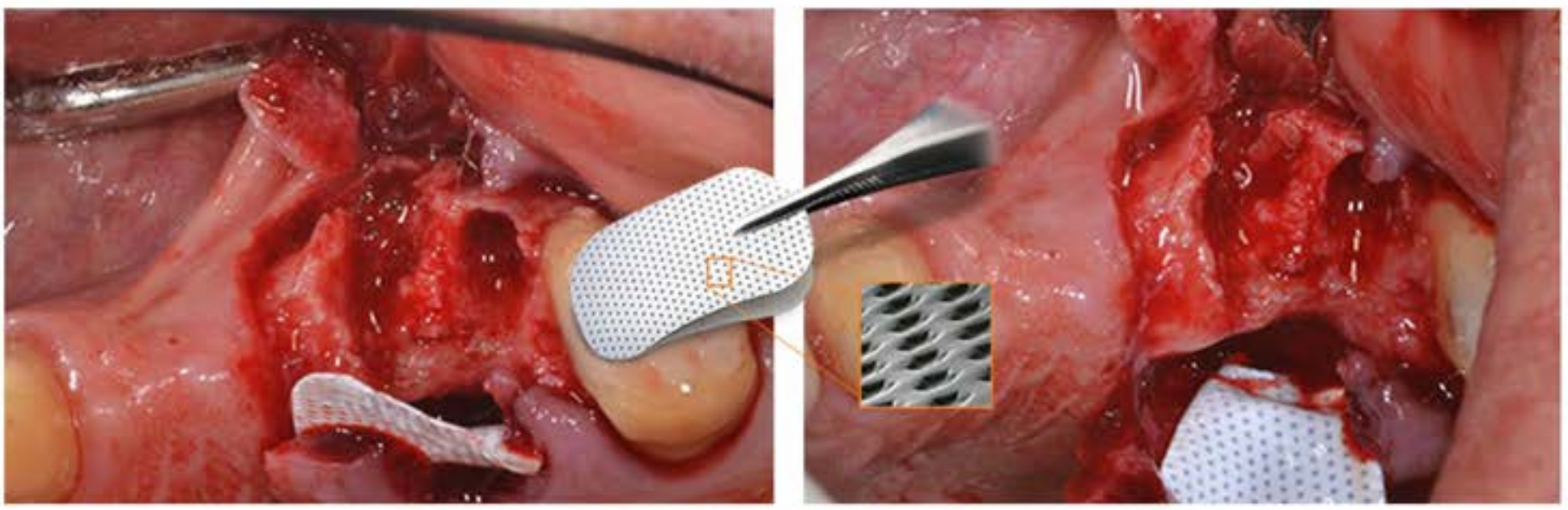
FABRIZIO BELLEGGIA, DDS. Rome, Italy

CLINICAL CASE: SOCKET AUGMENTATION UPPER MOLAR WITH NOVABONE

Complete palatal socket wall resorption Partial buccal socket wall resorption.



Complete resorption of the palatal wall and mesio vestibular



Cytoplast TXT 20012x24 membrane stabilized with a suture to the palatal flap

Since the bone defect was so extensive, a second membrane (Vitala 20x30) was inserted below the PTFE one, to cover the NovaBone dental Putty graft along the entire defect (buccal, coronal, palatal. Only the PTFE membrane remained exposed

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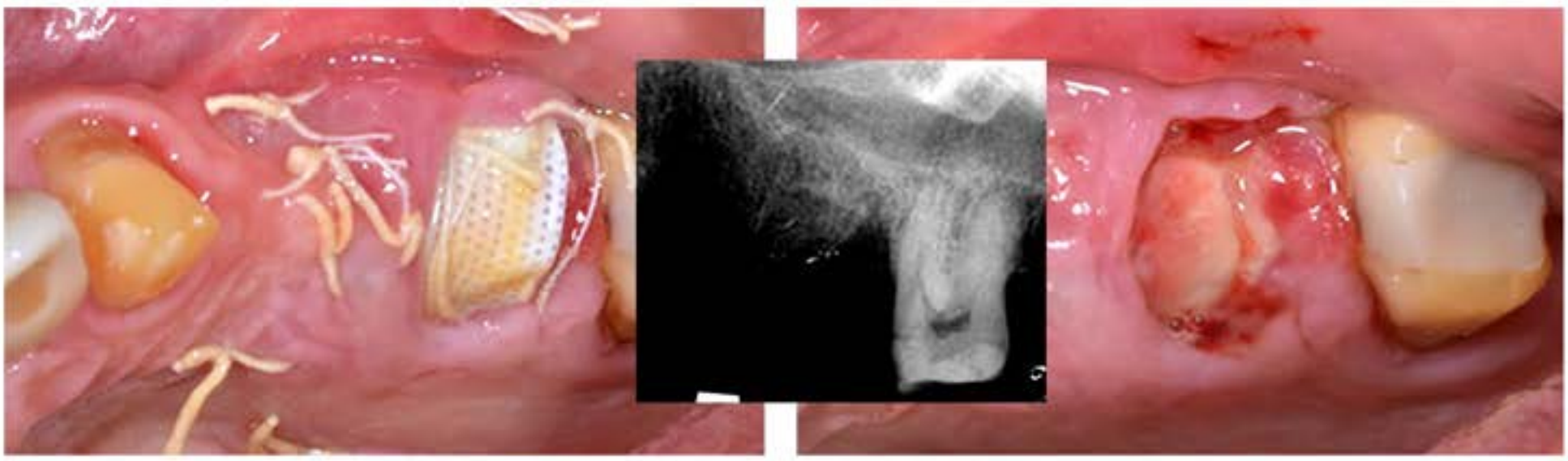
FABRIZIO BELLEGGIA, DDS. Rome, Italy

CLINICAL CASE: SOCKET AUGMENTATION UPPER MOLAR WITH NOVABONE



3 weeks. The PTFE membrane was removed and the Vitala membrane was visible.

6 months later, the tissue is completely healed 3 weeks. The PTFE membrane was removed and the Vitala membrane was visible.
6 months later, the tissue is completely healed

Implants placed trough guided surgery.

Final Restorations. Prosthetics by Dr. Mattei. Fondi, Italy

Dr. Fabrizzio Belleggia, DDS
Dentistry and Dental Prosthesis,
Catholic University of Sacred Heart. Rome, Italy
Post graduate degree in oral surgery.
University of Rome "Tor Vergata"

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MARCELO FERRER. SANTIAGO, CHILE

CLINICAL CASE: SOCKET SHIELD TECHNIQUE

Initial situation

Socket Shield Technique

Implant placement

Novabone Putty

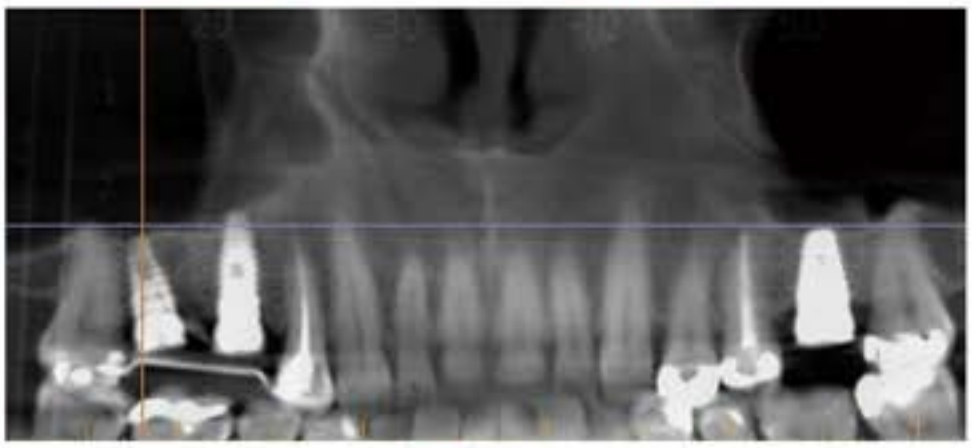
Suture

One week control

Two weeks control

Healing abutments

Initial situation



Final situation

12 month control

24 month control

36 month control

Dr. Marcelo Ferrer, DDS

Periodontist and Implantology Specialist
Postgraduated Program Director
San Sebastian University

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MARCELO FERRER, DDS. SANTIAGO, CHILE

CLINICAL CASE: FOLLOW UP 6 YEARS WITH NOVABONE

Initial Situation

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MARCELO FERRER, DDS. SANTIAGO, CHILE

CLINICAL CASE: FOLLOW UP 6 YEARS WITH NOVABONE

2014 2014 2015 2018 2019

Dr. Marcelo Ferrer, DDS
Periodontist and Implantology Specialist
Postgraduated Program Director
San Sebastian University

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OSCAR RAMÓN, DDS. COLOMBIA

CLINICAL CASE: BONE REGENERATION IN IMPLANT THERAPY

42 years old female heavy smoker with a root fracture in tooth number 1.1 (Fig 1). The root was extracted and implant was placed post extration(Fig 2). The implant fail two months after surgery and a large defect in the hard and soft tissue appear (Fig 3). After the flap was opened and a big bone deficiency was found (Fig 4). At Dynamix Conical implant (Cortex Dental IND.) was inserted in the residual bone (Fig 5), a complementary bone regeneration procedure was done using Morsels (NovaBone Products, Fig 6) and a collagen membrane (3Biomat Inc, Fig 7). After 5 months the site was re-opened. the implant was loaded with a temporary restoration and a connective tissue graft was done to improve the soft tissue (Fig 8, 9, 10 and 11). After 3 months a final Crown was placed (Fig 12).

Oscar Ramón, DDS

Dental Degree - National University of Colombia.
Audiovisual Pedagogy Specialist - El Bosque University.
Master in Comprehensive Adult Dentistry (Prosthodontics-Periodontics) - University of Antioquia.
Associate Professor Faculty of Dentistry - University of Antioquia.
Active Member Colombian Association of Periodontal and Osseointegration.
Author of scientific articles in Prosthodontics, Periodontics and Dental Implants.
International lecturer.

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CLINICAL CASE : POST IMPLANT EXTRACTION BONE GRAFT

A 46 years old female with non medical pre-existing condition was referred for implant management in tooth 11 due to a non-restorable root fracture. A immediate implant was placed in palatal position.

1. The gap between bucal plate and the implant surface was filled with novabone Morsels to preserve the dimensions of the ridge and the profile of the soft tissue

2. A 3 mm healing cap was used to seal the socket

3. Vestibular view

4. The soft tissue profile was managemed using a temporary crown

5. Vestibular view

6. The case ready for final restoration three years after the implant was placed

Oscar Ramón, DDS

Dental Degree - National University of Colombia.
Audiovisual Pedagogy Specialist - El Bosque University.
Master in Comprehensive Adult Dentistry (Prosthodontics-Periodontics) - University of Antioquia.
Associate Professor Faculty of Dentistry - University of Antioquia.
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MAARTEN J. BOOGAARD, DMD. AMSTERDAM, NETHERLANDS

CLINICAL CASE: IMPLANT PLACEMENT WITH NOVABONE PUTTY

Initial Situation

Implant preparation through molar up to drill 5.0 mm Separation of the mesial and lingual root, and molar extracted. The socketwalls were excavated.

After implant placement NovaBone putty was applicated to fill the jumping gap between the implant and the socket walls. A Osseoguard flex (15mm x 20mm) has been placed over the implant. Even though the initial stability was great, because of the large defect I decided to place the implant 2-phase. (Sutures, 3-0, Ethicon PERMA-Hand)

Placement of healing abutment

3 months follow up

Crown placement
and RCT done

Dr. Maarten J. Boogaard, DMD

Dental Medical Degree University of Amsterdam
Masters of Periodontology University of Alabama (UAB)
Private practice in Amsterdam and Amstelveen,
The Netherlands, where he specializes in Implantology.

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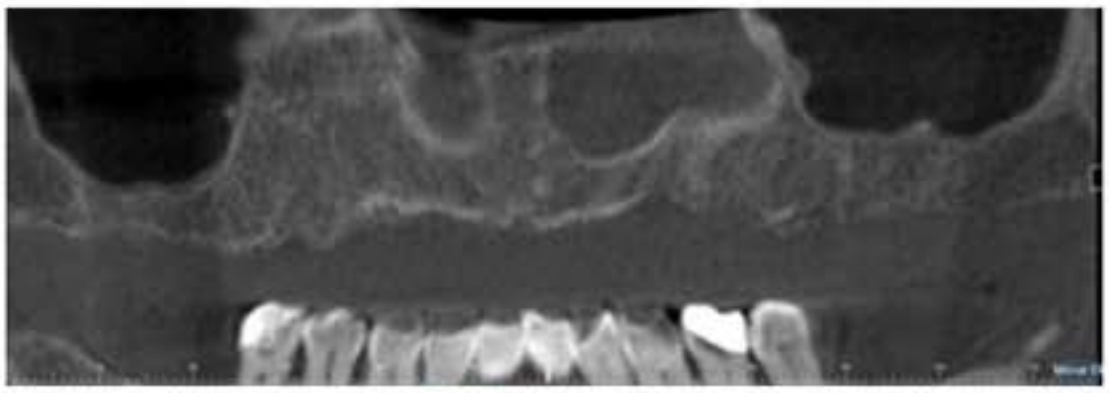
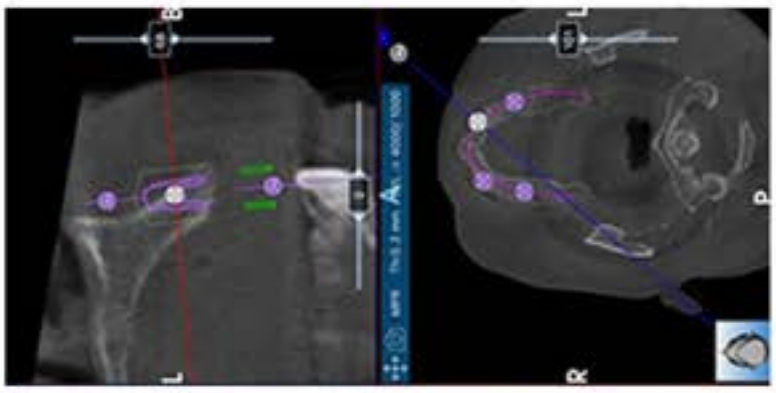
MAARTEN J. BOOGAARD, DMD. AMSTERDAM, NETHERLANDS

CLINICAL CASE: IMPLANT-SUPPORTED PROSTHESIS WITH DOUBLE BAR

This 61-year-old healthy woman has had a history with periodontitis, and she lost all her upperteeth. She was not happy with her prosthesis and wanted a better solution.



CBCT of upper jaw.



To get a parallel implant placement, the cbt shows there is to little bone bucally

Situation after implant placement (Blue diamond 3.3mm diameter NC 10mm length)

GBR using Novabone Morsels

Placement of Osseoguard membrane Biomet 3i

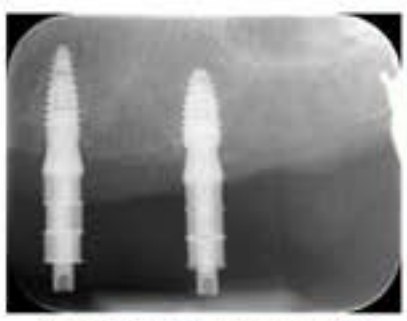
Clinical situation after suturing

X Ray of implants after placement

Situation after two weeks, sutures removed

Xray after three months

Situation after three months, ISQ measurement 73



Xray checking if impression posts are fitted correctly

Impression posts in place

Xray of bar placed

Bars placed

Dr. Maarten J. Boogaard, DMD

Dental Medical Degree University of Amsterdam
Masters of Periodontology University of Alabama (UAB)
Private practice in Amsterdam and Amstelveen,
The Netherlands, where he specializes in Implantology.

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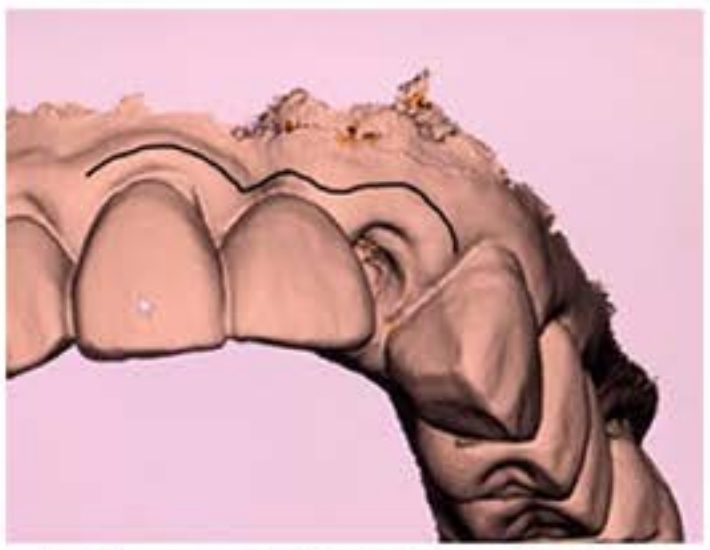
MAARTEN J. BOOGAARD, DMD. AMSTERDAM, NETHERLANDS

CLINICAL CASE: SOCKET SHIELD IN COMBINATION WITH NOVABONE

A woman in her sixties came with a broken tooth. There was not enough ferrule to build a crown on, so decide was to place an implant in combination with the socket shield technique, according to the protocol of Howard Gluckman.

Situation/ xray before treatment

Socket shield and implant placement. NovaBone was applicated in between the shield and the implant.



She did not want any immediate crown since she already had a partial prosthesis. A conelog progressive line implant was placed. A scan was made with a trios 3d scanner. Here it shows how the buccal plate and shape is still in contact. Especially if you look at the defect at tooth #21. This implant was placed over 10 years ago and shows significantly resorption of the buccal plate.

End result. The Crown on the 3d printed model, the X Ray after placement and intra oral, showing nice healthy pink tissue

Dr. Maarten J. Boogaard, DMD

Dental Medical Degree University of Amsterdam
Masters of Periodontology University of Alabama (UAB)
Private practice in Amsterdam and Amstelveen,
The Netherlands, where he specializes in Implantology.

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MANUEL DE LA ROSA - GARZA. DDS, MS, FID. MEXICO

CLINICAL CASE: SOCKET SHIELD WITH NOVABONE

Patient presented with a Maxillary Central Incisor with recurrent caries apical to the existing crown limit. A Socket Shield approach was performed for the extraction and immediate implant placement.

Final crowns placed five months after implant placement are shown as well.

Manuel de la Rosa - Garza. DDS, MS, FID
Implantology Fellowship
University of Texas at Houston Dental Branch
Graduate Periodontology and Oral Implantology
University of Texas at Houston Dental Branch

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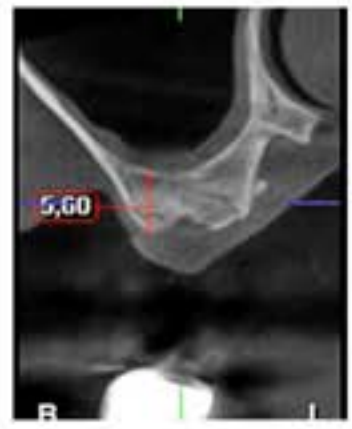
RAMÓN GÓMEZ MEDA, DDS. SPAIN

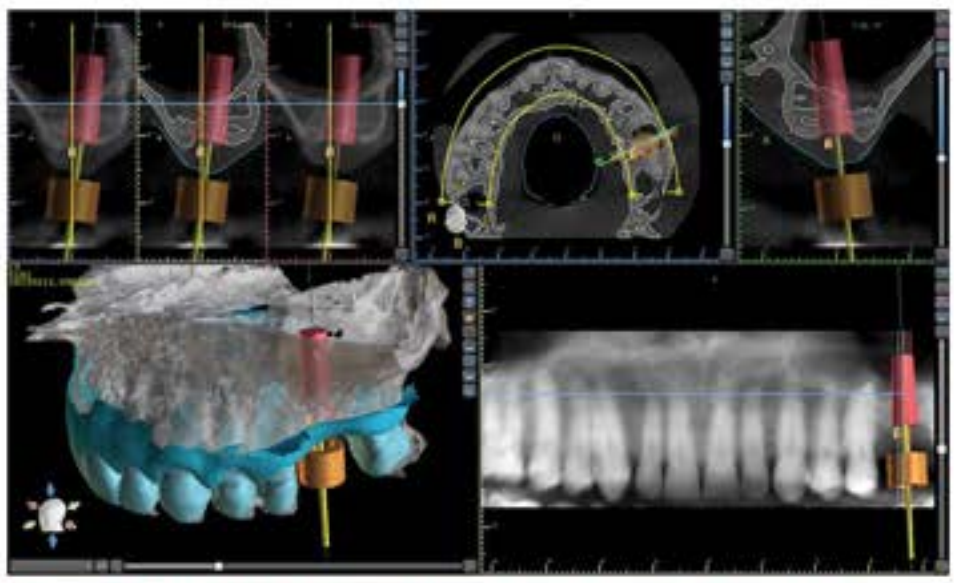
CLINICAL CASE: MINIMALLY INVASIVE TRANSCRESTAL SINUS LIFT

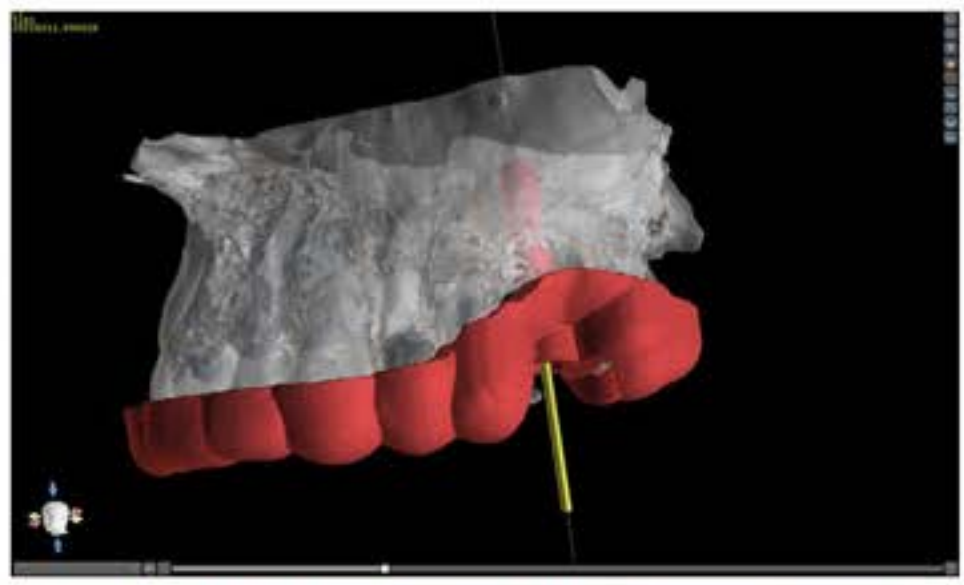
With osseodensification, calcium phosphosilicate and simultaneous placement of the Progressive-Line implant with guided surgery.

Initial situation



CBCT Initial Situation





Overlaped the DICOM and STL files using a planning software implants that allow us to place virtually the implant in the ideal three-dimensional situation with a suitable emergency prosthodontic profile

Finally a surgical guide is designed and printed to execute the sinus lift and implant surgery

Calcium phosphosilicate paste is injected and comming up next the implant bed and compacts in an apical direction, achieving partial filling of the sinus cavity with said biomaterial

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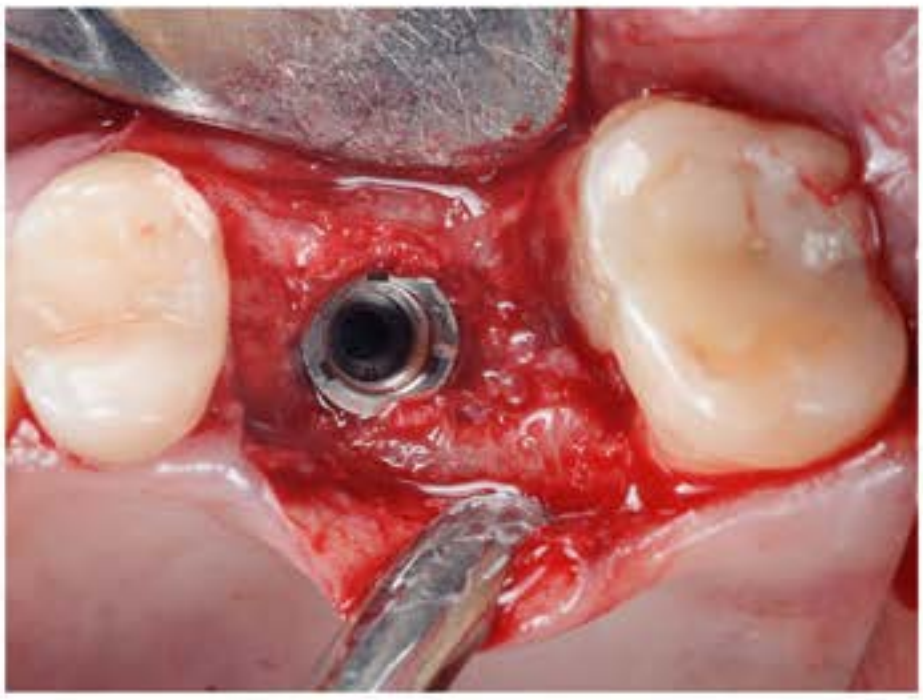
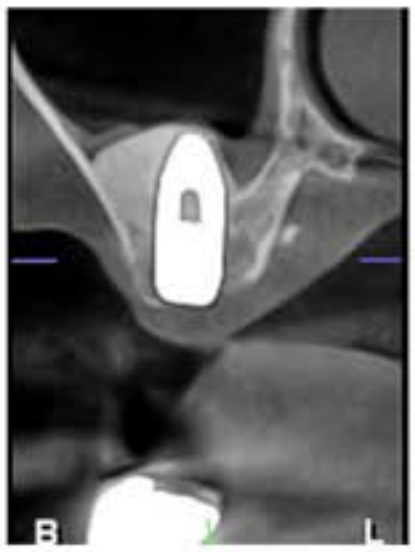
CLINICAL CASE: MINIMALLY INVASIVE TRANSCRESTAL SINUS LIFT

With osseodensification, calcium phosphosilicate and simultaneous placement of the Progressive-Line implant with guided surgery.



A Camlog Progressive-Line implant 5x13 mm, obtaining a high primary stability above of 35 Ncm and closes microsurgically without any tension with polyamide 6-0mm.



Osseodensification as a protocol for transcrestal sinus floor elevation shaped maxilla It is a safe, efficient and predictable for placement implants in the posterior sector of the upper jaw with low height residual bone. Osseodensification preserves the bone of the implant bed and improves the primary stability of the implant in areas with reduced quantity and quality of bone. The Progressive-Line implant elevates even more insertion torque thanks to the design of its body and its aggressive spirals that allow underprepare the bed for so self-screwing the implant in locations with insufficient Bone density. The combined paste calcium phosphosilicate with osseodensification promotes bone regeneration in the maxillary sinus, and its radiopacity allows easy radiographic control indicating to the clinician its position end and therefore the integrity of Schneider's membrane and finally the technique success.

Ramón Gómez Meda, DDS
Dental Degree University of
Santiago de Compostela, Spain
Periodontist and Implantologist

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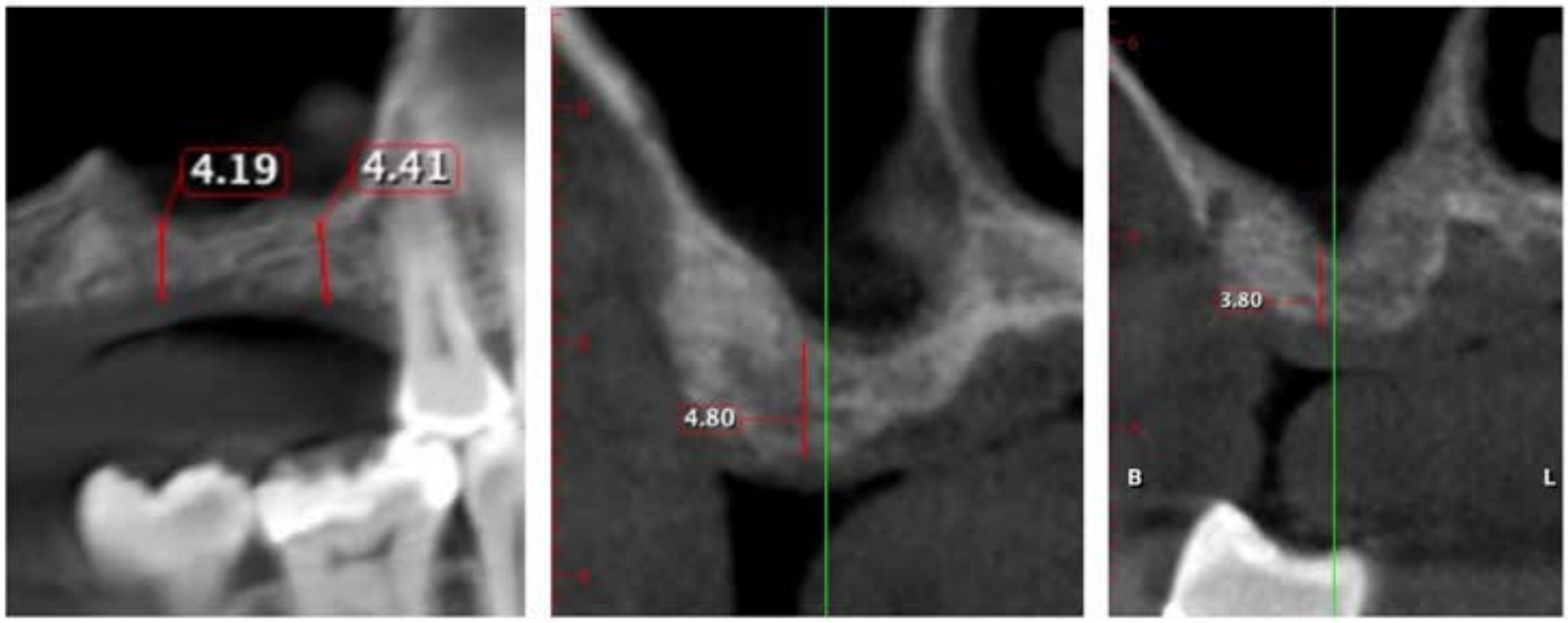
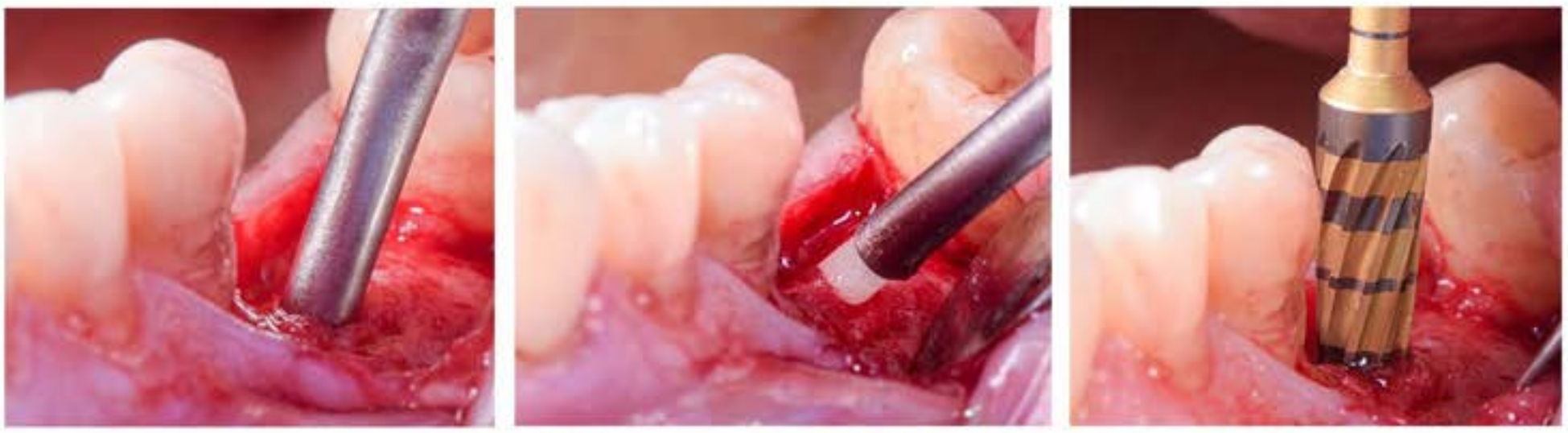
ISRAEL PUTERMAN, DMD, MSD. WASHINGTON, US

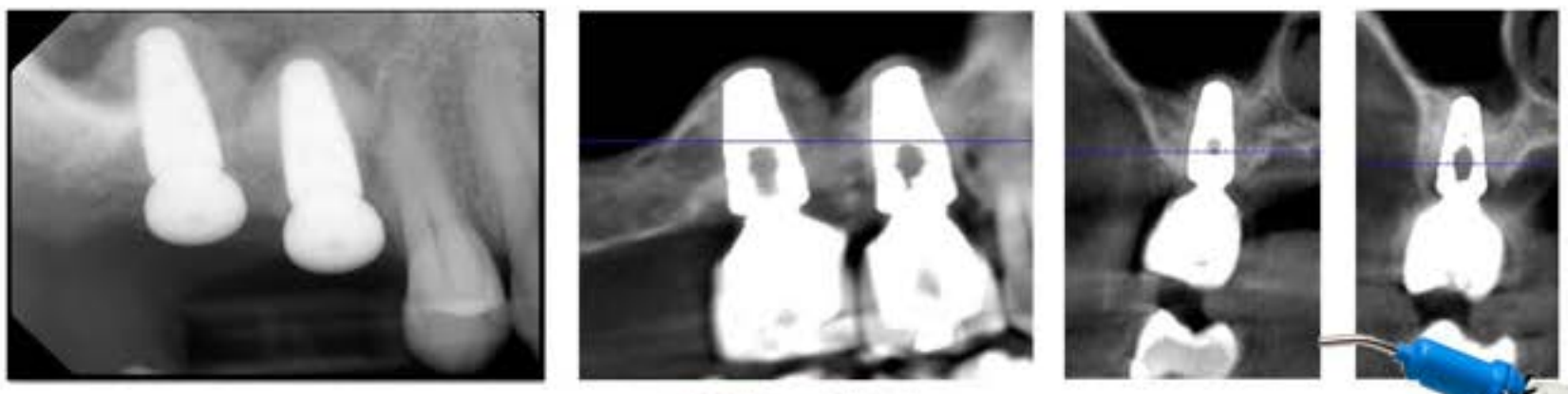
CLINICAL CASE: SINUS LIFT AND IMPLANT PLACEMENT WITH NOVABONE PUTTY



CBCT initial situation



Combined use of Novabone Putty and Versah sistem for osseodensification for the sinus lift and implant placement final result



CBCT follow up final situation

Israel Puterman, DMD, MSD
Periodontist
Implants DC Private Practice

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OSCAR RAMÓN, DDS. COLOMBIA

CLINICAL CASE: SINUS LIFT AND BONE GRAFT

51 years old female pacient lost tooth number 15 for endodontic and periodontal reasons (Fig 1, 2, and 3). Two months after extraction and implant placement, sinus lift was performed (Fig 4). The implant treatment failed after 4 months. The site was cleaned, the patient waited for two months to repeat the tratment (Fig 5). Orthodontic treatment was executed to distrubute the spaces and to improve the oclusion.

The site was reopened, but the membrane was perforated on the sinus lift procedure. One Dynamix Implant (Cortex Dental Ind.) was placed and estabilized using autologous bone graft (fig 6). The membrane was repared with a colagen membrane (Fig 7) and Novabone Morsels (NovaBone Products) for bone regeneration (Fig 8). A collagen membrane (3Biomat Inc.) was placed to protect the bone. The flap was sutured (Fig 9 and 10). X ray control image (Fig 11).

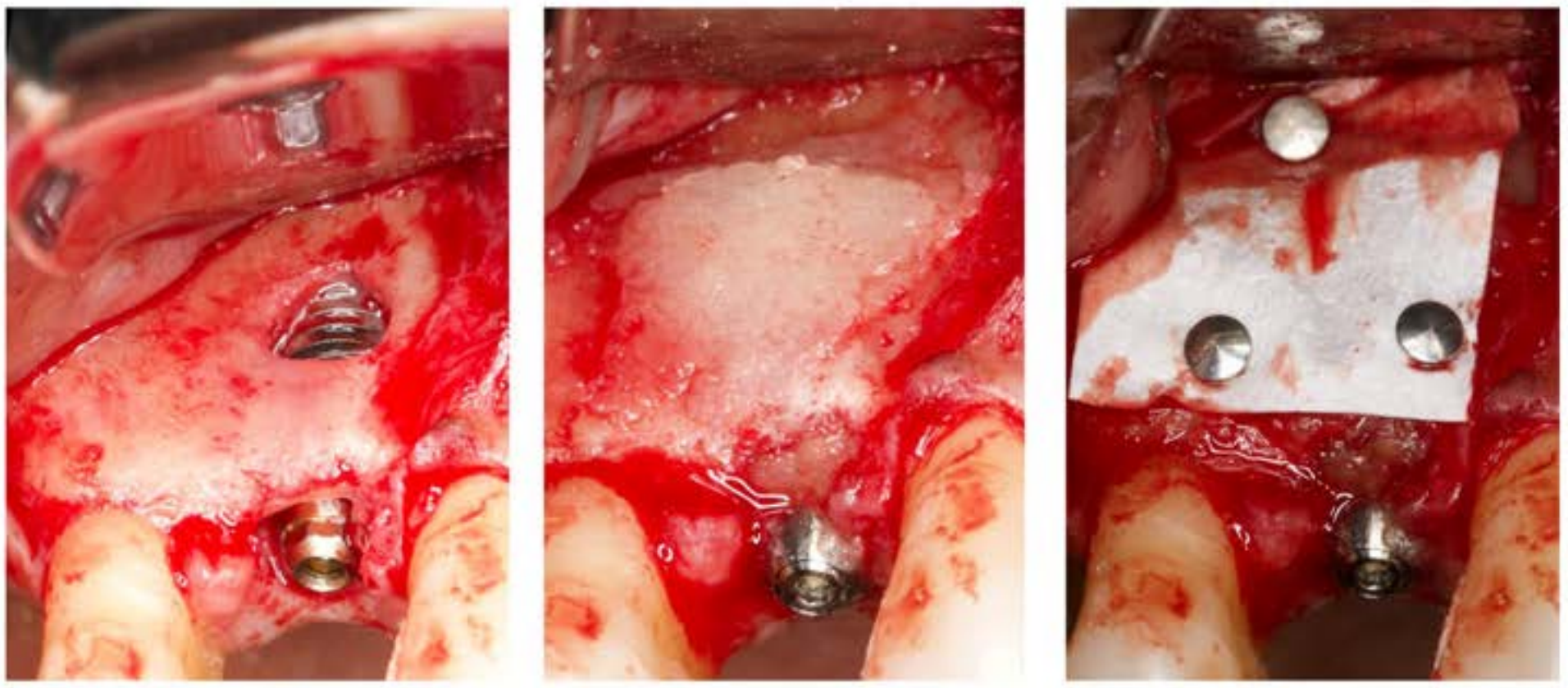
After the healing time was complete, the site was re opened and a 3 mm healing cap was placed (Fig 12 abd 13). An impression was taken using the snap technique (Fig 14) and the tissue profile was created with a temporary restoration (fig 15). Final restoration and X ray control image after two years follow-up (Fig 16 and 17).

Oscar Ramón, DDS

Dental Degree - National University of Colombia.
Audiovisual Pedagogy Specialist - El Bosque University.
Master in Comprehensive Adult Dentistry (Prosthodontics-Periodontics) - University of Antioquia.
Associate Professor Faculty of Dentistry - University of Antioquia.
Active Member Colombian Association of Periodontal and Osseointegration.
Author of scientific articles in Prosthodontics, Periodontics and Dental Implants.
International lecturer.

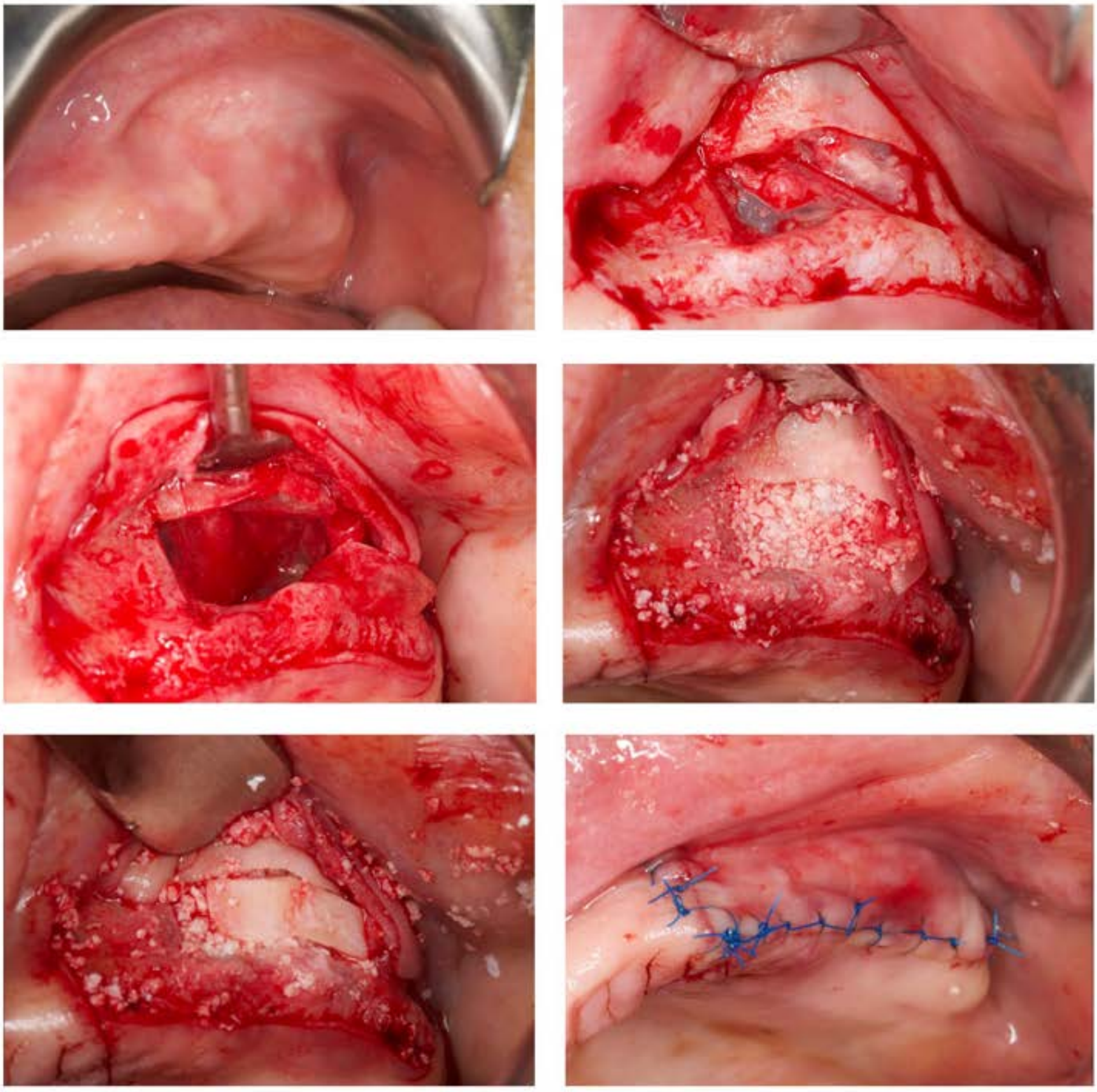
CASE RESOLUTION POSSIBILITIES WITH NOVABONE IN DIFFERENT SITUATIONS

Ti Mesh & NovaBone Morcels in horizontal bone regeneration



SS Complication management with NovaBone Putty and collagen membrane

CASE RESOLUTION POSSIBILITIES WITH NOVABONE IN DIFFERENT SITUATIONS



Caldwell Luc sinus lift with NovaBone Morsels

Dr. Bernardo de Mira Correa. DDS, DMD

Obtained his DDS and DMD from the University of Porto in Portugal. He currently lectures in the BTI's advanced oral implantology courses. He is CEO of the Clínica Mira Corrêa, an implantology and oral rehabilitation centre in Oporto, Portugal.

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FILIPE LOPES, DDS, DMD. PORTUGAL

HISTOMORPHOMETRY RESULTS USING NOVABONE AS BONEGRAFT AFTER 6 MONTHS

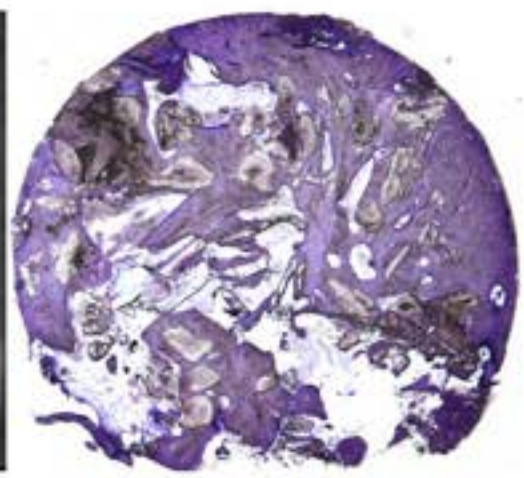
CBCT Initial situation

Initial clinical situation

Fractured implant

Use of Novabone as bone graft

Biopsy of the bone sector



Histomorphometry of the biopsies collected after 6 months show an enormous quantity of native bone

Final clinical situation

Dr. Filipe Lopes. DDS, DMD

DDS and DMD University of Porto in Portugal.
Clinical lecturer Postgraduate programme in oral rehabilitation at the Faculty of Dental Medicine of the University of Porto.
CEO of the Centro Português de Medicina Dentária—Portugal Implant Dental Center, the Centro de Ortodontia Damon Portugal and the Centro de Medicina Dentária de Braga.

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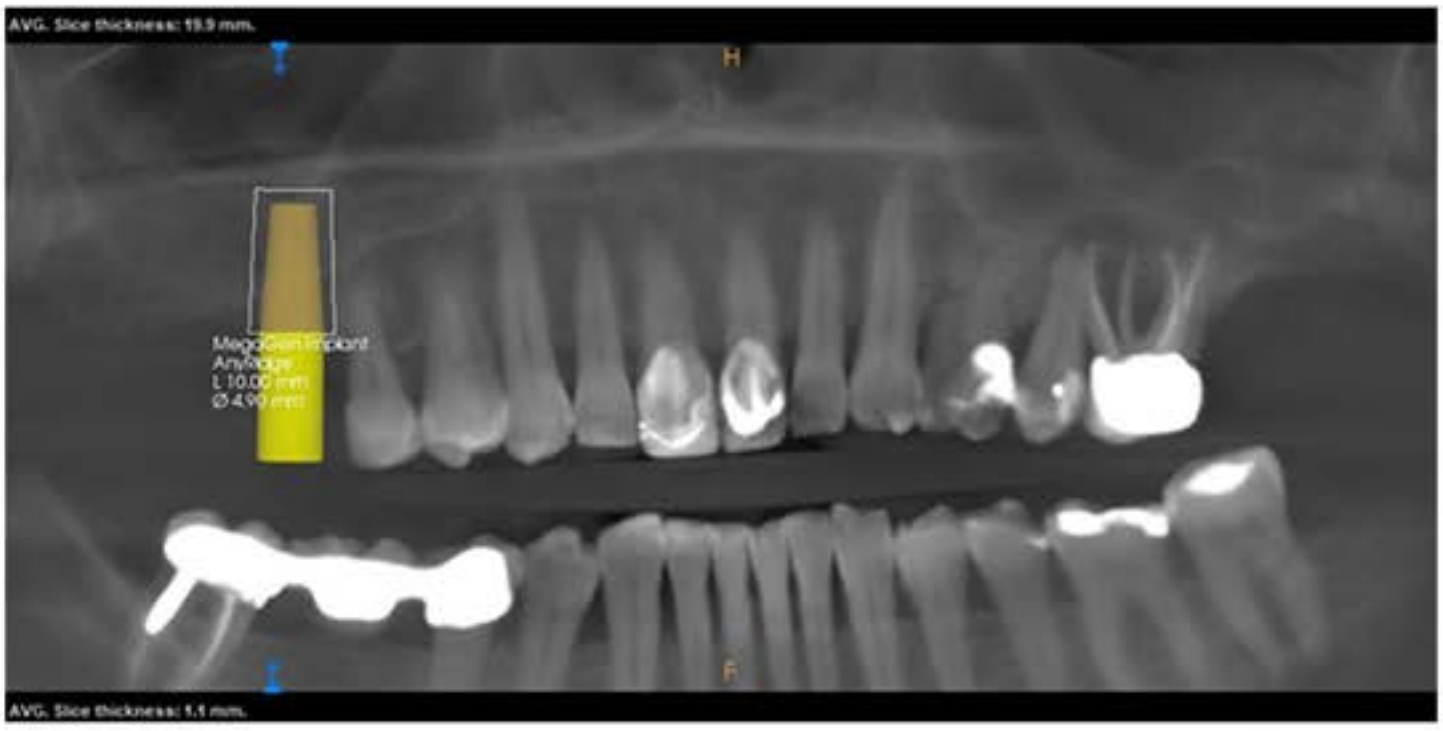
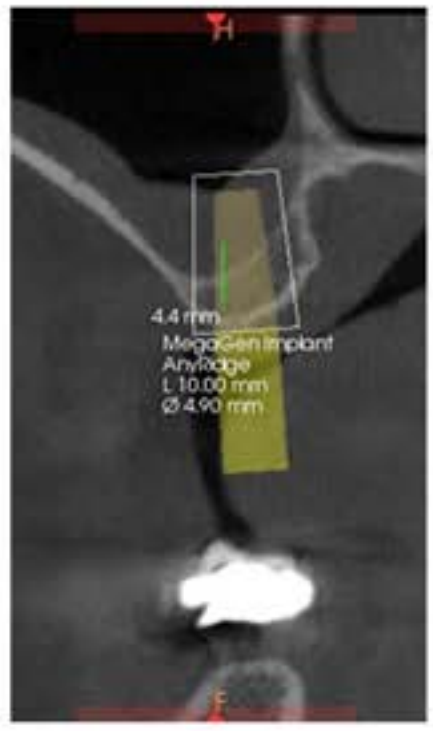
ISAAC TAWIL, DDS. NEW YORK, US

SINUS LIFT PROTOCOL WITH NOVABONE PUTTY





Initial situation - CBCT and planning implant palcement

Sinus lifting access

Sinus lift executed

I mplant placement

Radiographic follow up

Final restoration / Radiographic follow up

Dr. Isaac Tawil, DDS

Masters degree in Biology from Long Island University
DDS from NYU College of Dentistry
Diplomat International Academy Dental Implantology
Diplomat International Academy for Dental Facial Esthetics
Fellow International Congress of Oral Implantology
International speaker and

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ANDRES E. PONCE, DDS. CHILE

SOCKET PRESERVATION WITH NOVABONE PUTTY: STEP BY STEP

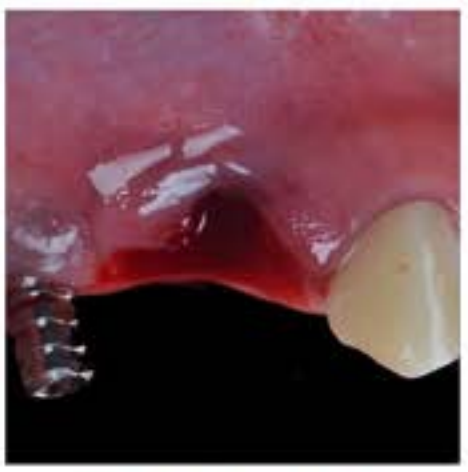
Initial situation

Probing periodontal pocket

Extraction tooth 3.5

Cleaning of the site

Cleaning of the site



Site clean and ready to graft

Novabone putty cartridge

Placement of the putty

Placement of the putty

Putty placed into the socket

Procedure complete after suture

Dr. Andres E. Ponce, DDS

DDS La Frontera University. Temuco, Chile
Prosthodontist Del Desarrollo University. Concepción, Chile
Private Practice Simetrica and Concept Clinic. Temuco, Chile

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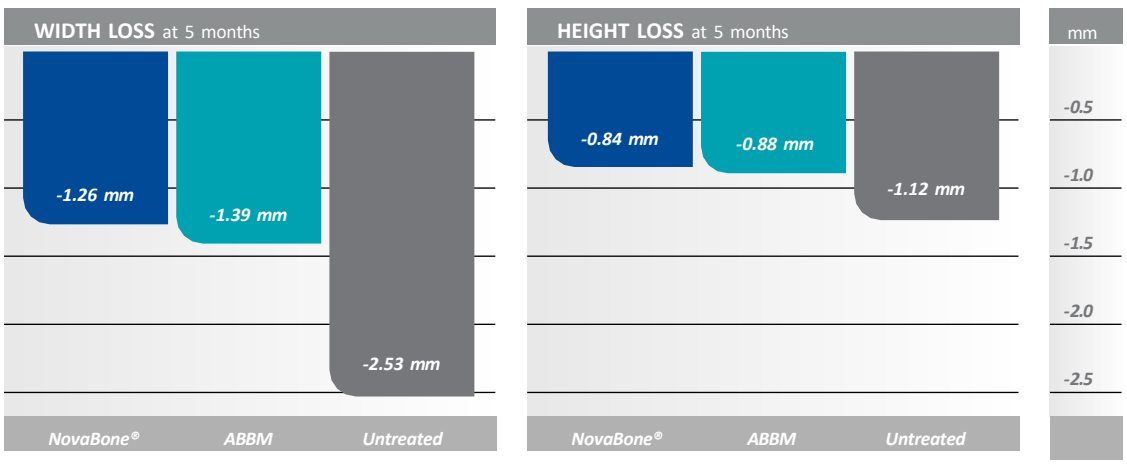
NovaBone® Dental Putty - Socket Preservation

In a blinded randomized controlled trial comparing dimensional changes at 5 months following socket preservation using NovaBone® Dental Putty or anorganic bovine bone mineral (ABBM), both groups showed a statistically significant reduction in ridge width loss. NovaBone® treated sites showed comparable results to sites treated with ABBM in both width and height changes.[1]



NovaBone® Dental Putty Histomorphometry

In four separate studies, histomorphometric evaluation of cores taken from extraction sockets grafted with NovaBone® Dental Putty showed vital bone regeneration and significant graft resorption.[2,3,4,5]

	Number of Sites	Average Re-Entry Time	Mean Vital Bone Content	Mean Residual Graft
2015 Lanka et al.[2]	*N = 10*	*4.9 months*	*47.15%*	*17.4%*
2014 Kotsakis et al.[3]	*N = 17*	*5.7 months*	*31.76%*	*11.47%*
2012 Lanka et al.[4]	*N = 20*	*4.9 months*	*49.57%*	*4.3%*
2011 Gonshor et al.[5]	*N = 22*	*5.4 months*	*48.2%*	*2.4%*

1. Kotsakis GA, et al. A randomized, blinded, controlled clinical study of particulate anorganic bovine bone mineral and calcium phosphosilicate putty bone substitutes for socket preservation. Int J Oral Maxillofac Implants. 2014 Jan-Feb;29(1):141-51. 2. Lanka M, et al. Alveolar ridge preservation with the socket-plug technique utilizing an alloplastic putty bone substitute or a particulate xenograft: a histological pilot study. J Oral Implantol. 2015 Apr;41(2):178-83. 3. Kotsakis GA, et al. Histomorphometric evaluation of a calcium-phosphosilicate putty bone substitute in extraction sockets. Int J Periodontics Restorative Dent. 2014 Mar-Apr;34(2):233-9. 4. Lanka M, et al. Socket grafting with calcium phosphosilicate alloplast putty: a histomorphometric evaluation. Compend Contin Educ Dent. 2012 Sep;33(8):e109-15. 5. Gonshor A, et al. Histologic and Clinical Evaluation of a Bioactive Calcium Phosphosilicate Bone Graft Material in Postextraction Alveolar Sockets. Int J Oral Imp and Clin Res. 2011;2(2): 79-84.

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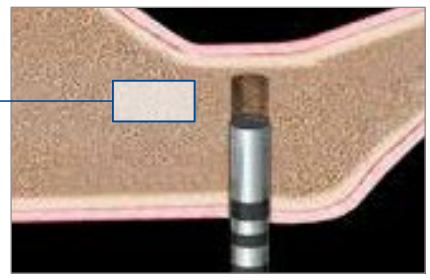
Minimally Invasive Transcrestal Sinus Augmentation with NovaBone® Cartridge System

There are several ways to access the sinus via a crestal approach to elevate the sinus membrane prior to augmentation. Once access is gained to the sinus membrane, bone graft delivery into the sinus can be challenging. The NovaBone® Cartridge System simplifies the delivery of the graft into the sinus. The tip of the cartridge is 2.8 mm in diameter and is designed specifically to deliver the graft material into the sinus through a crestal approach. The putty's consistency can help prevent membrane tears, and the hydraulic pressure created when delivering the putty to the sinus elevates the sinus membrane with minimal instrumentation.

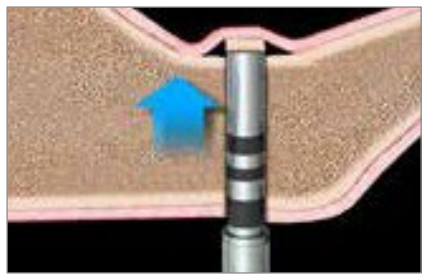
Applicable References

Sinus Augmentation *1. A simplified approach to the minimally invasive antral membrane elevation technique utilizing a viscoelastic medium for hydraulic sinus floor elevation. Kotsakis GA, Mazor Z. Oral Maxillofac Surg. 2015; 19(1): 97-101. 2. A clinical and radiographic case series of implants placed with the simplified minimally invasive antral membrane elevation technique in the posterior maxilla. Kher U, Ioannou AL, Kumar T, Siormpas K, Mitsias ME, Mazor Z, Kotsakis GA. J Craniomaxillofac Surg. Dec 2014; 42(8): 1942-7. 3. One-stage transaveolar vs. lateral maxillary sinus augmentation in severely resorbed sites using Calcium Phosphosilicate Putty: A proof of concept study. Kher U, Shanbhag S., Clin. Oral Impl. Res Oct 2014; 25(10). 4. Implants placed simultaneously with lateral-window sinus augmentation utilizing a calcium phosphosilicate putty alloplastic bone substitute for increased primary implant stability: A retrospective study. Udatta Kher, Ziv Mazor, Georgios A. Kotsakis, Panagiotis Stanitsas. Imp Dent 2014, 23(4):496-501 5. Sinus Elevation with an alloplastic material and simultaneous implant placement: A 1-stage procedure in severely atrophic maxillae. Jodia K, Sadhwani B, Parmar BS, Anchlia S, Sadhwani SB., J Maxillofac. Oral Surg (July-Sept 2014) 13(3):271-280. 6. Minimally Invasive Crestal Approach Technique Utilizing a Cartridge Delivery System. Mazor Z, Ioannou A, Venkataraman N, Kotsakis G, Kher U., Implant Practice. Sept 2013; 6(4): 20-24. 7. Clinical and histologic comparison of two different composite grafts for sinus augmentation: a pilot clinical trial. Galindo-Moreno P, Avila G, Wang HL, et al., Clin Oral Implants Res. Aug 2008; 19(8): 755-9.*

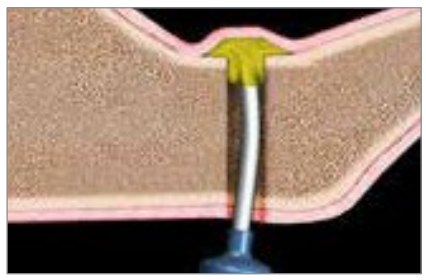
Socket Preservation *1. Clinical Evaluation of 262 Osseointegrated Implants Placed in Sites grafted with Calcium Phosphosilicate Putty: A Retrospective Study. Babbush CA, Kanawati A., J Oral Implantol. Feb 2015; 41(1): 62-9. 2. One-stage transaveolar vs. lateral maxillary sinus augmentation in severely resorbed sites using Calcium Phosphosilicate Putty: A proof of concept study. Kher U, Shanbhag S., Clin. Oral Impl. Res Oct 2014; 25(10). 3. Periotest Values of Implants Placed in Sockets Augmented with Calcium Phosphosilicate Putty Graft: A Comparative Analysis against Implants Placed in Naturally Healed Sockets. Mahesh L, Narayan T, Kostakis G, Shukla S. J Contemp Dent Pract. 2014 Mar 1;15(2):181-5. 4. Ridge Preservation with Socket Plug Technique Utilizing an Alloplastic Putty Bone Substitute or a Particulate Xenograft. Mahesh L, Kotsakis G, Venkataraman N, Shukla S, Prasad H., J Oral Implantol. Apr 2015; 41(2): 178-83. 5. A Randomized Blinded Controlled Clinical Study of Particulate Anorganic Bovine Bone Mineral and Calcium Phosphosilicate Putty Bone Substitutes for Socket Preservation. Kotsakis G, Salama M, Chrepa V, Hinrichs JE, Gaillard P., Int. J Oral Maxillofacial Implants. Jan-Feb 2014; 29(1):141-51. 6. Histomorphic Evaluation of a Calcium-Phosphosilicate Putty Bone Substitute in Extraction Sockets. Kotsakis G, Joachim F, Saroff S, Mahesh L, Prasad H, Rohrer M. Int J Periodontics Restorative Dent. 2014 Mar-Apr; 34(2)233-9. 7. Histologic and Clinical Evaluation of a Bioactive Calcium-Phosphosilicate Bone Graft Material in Post-Extraction Alveloar Sockets. Gonshor A, Lanka M, Saroff S et.al., JIACD Dec 2011; 3(7): 21- 31. 8. Socket grafting with calcium phosphosilicate alloplast putty: A histomorphometric evaluation. Salama MA, Lanka M, Kurtzman GM, Joachim FPC, Compend Contin Educ Dent.. Sept 2012; 33(8): 109-115. 9. Practical application of the newly introduced natural bone regeneration (NBR) concept utilizing alloplastic putty. Kotsakis G, Chrepa V, Katta S Int. J Oral Imp Clin Res Sept-Dec 2011; 2(3):145-149. 10. Ridge preservation with a calcium phosphosilicate putty in 12 consecutive cases.. Kotsakis G, Chrepa V, Katta S., Clin Oral Implants Res. Sept 2011; 22(9):10-24.*



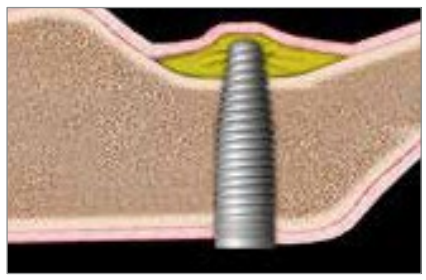
Step 1:
An osteotomy is prepared to less than 1 mm from the sinus floor.



Step 2:
An osteotome is then used to gently fracture the bone at the apex of the osteotomy.



Step 3:
The canula from the cartridge tip can be pressed against the surface of the bone and the putty can then be injected into the area resulting in membrane elevation with hydraulic pressure from the putty.



Step 4:
An implant can then be placed in the augmented area.

Notes

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