BIOBRIEF

REGENERATIONTIME

Geistlich Biomaterials

A CASE REPORT BY
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Horizontal Ridge Augmentation in the Esthetic Zone

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The Situation

An adult female patient presented with a long history of edentulism at site #9. Patient was interested in replacing her missing tooth with a dental implant, and was wearing a Nesbit appliance. The irritation from the ill-fitting Nesbit appliance resulted in irregular and friable soft-tissue at site #9.

Pre-operative CBCT demonstrated a hard-tissue concavity apical to the crest of the bone. The primary goal of therapy was to regain horizontal dimension of hard and soft-tissue to achieve prosthetically-driven placement of a dental implant to replace the patient's left central incisor.

The Risk Profile

Esthetic Risk Factors	Low Risk	Medium Risk	High Risk
Patient's health	Intact immune system	Light smoker	Impaired immune system
Patient's esthetic requirements	Low	Medium	High
Height of smile line	Low	Medium	High
Gingival biotype	Thick - "low scalloped"	Medium - "medium scalloped"	Thin - "high scalloped"
Shape of dental crowns	Rectangular		Triangular
Infection at implant site	None	Chronic	Acute
Bone height at adjacent tooth site	≤ 5 mm from contact point	5.5 - 6.5 mm from contact point	≥ 7 mm from contact point
Restorative status of adjacent tooth	Intact		Restored
Width of tooth gap	1 tooth (≥ 7 mm)	1 tooth (≤ 7 mm)	2 teeth or more
Soft-tissue anatomy	Intact		Compromised
Bone anatomy of the alveolar ridge	No defect	Horizontal defect	Vertical defect

* Lack of mutually protected occlusion on the patient's left side due to wear from parafunctional habit.

SPECIAL INTEREST

Guided Bone Regeneration

"Patient with a long history of partial edentulism was seeking a long-term, predictable restorative option to replace her missing left central incisor."

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Periodontist

Dr. Justin Kang received his Doctor of Dental Medicine degree from University of Pennsylvania School of Dental Medicine. He completed his residency and received his Masters of Science in Periodontics at Columbia University College of Dental Medicine. Dr. Kang is a Diplomate of the American Board of Periodontology and a member of numerous professional associations including the Academy of Osseointegration, American Dental Association and the New Jersey Dental Association.

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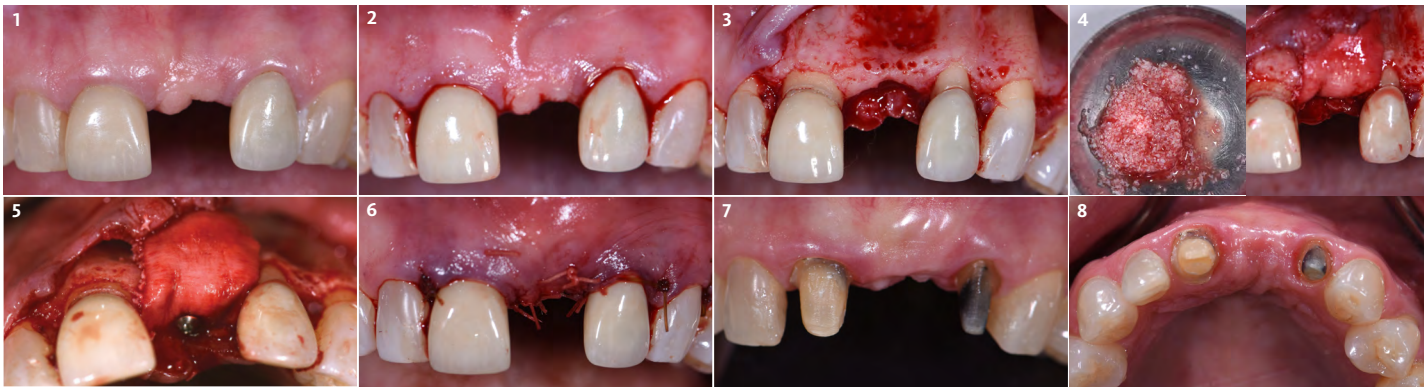
The Approach

The treatment goal was to regain the horizontal dimension of hard and soft-tissue through guided bone regeneration. In coordination with the restoring dentist, a diagnostic wax up was completed to determine the ideal tooth position and to regain mutually protected occlusion on the patient's left side. The combination of Geistlich Bio-Oss® and autologous bone chips was used along with Geistlich Bio-Gide® to regenerate the horizontal dimension for prosthetically-driven implant placement.



1 Baseline: compromised soft-tissue architecture at site #9 due to ill-fitting Nesbit appliance.

2 Sulcular and paracrestal incision for full thickness flap elevation with single vertical incision distal to the site.

3 Presence of horizontal tissue deficiency clearly visible following flap elevation.

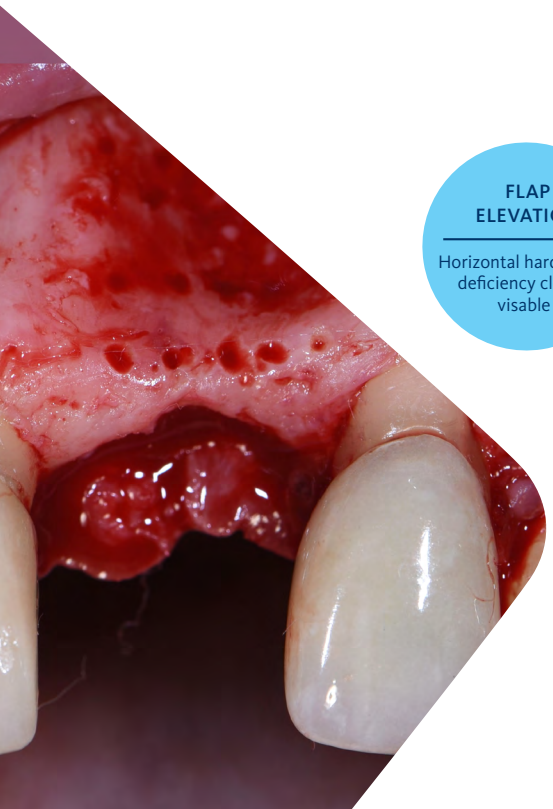
4 Application of 50:50 mixture of Geistlich Bio-Oss® and autologous bone chips harvested using Geistlich SafeScraper Twist.

5 Geistlich Bio-Gide® stabilized using fixation pins and covering the graft material.

6 Tension-free primary closure achieved using 4-0 PTFE sutures.

7 Soft-tissue contour at 4-month healing. Fixed provisional in place for soft-tissue contouring.

8 Occlusal view demonstrating gain in horizontal dimension for prosthetically-guided implant placement.



FLAP ELEVATION

Horizontal hard-tissue deficiency clearly visable

"Decortication allows for improved blood supply and nutrients to the bone graft."

(See image to the left)

The Outcome

Adequate hard and soft-tissue architecture was restored with the use of Geistlich Bio-Oss® and Geistlich Bio-Gide® for predictable, prosthetically-driven implant placement. The combination of Geistlich Bio-Oss® and autologous bone chips provides the best chance for regeneration while maintaining the hard and soft-tissue contours.

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Briefly Speaking

Keys to Success

1. Identifying and understanding the esthetic needs of the patient.
2. Prosthetically-driven surgical therapy based on ideal tooth position.
3. Incision and flap design to provide adequate blood supply to the graft.
4. Adequate release of the mucogingival flap for primary closure.
5. Harvesting of autologous bone chips using the Geistlich SafeScraper Twist.
6. Stabilization Geistlich Bio-Gide® using fixation pins and sutures.

My Instruments

1. Geistlich Bio-Oss® small granules 0.5 g
2. Geistlich Bio-Gide® 25 x 25 mm
3. Geistlich SafeScraper Twist to obtain autologous bone chips
4. Master-Pin-Control (Meisinger®) for membrane stabilization
5. PTFE non-resorbable suture (4-0 PS-2 18" Maxima®)
6. 5-0 Chromic Gut suture (C-3 undyed 18" monofilament (Ethicon®)
7. Metzenbaum scissor for periosteal release (A.Titan)

"This case demonstrates the importance of meticulous incision design, flap advancement, and suturing technique to ensure adequate blood supply and nutrients to the graft material and to maintain primary closure throughout the course of healing."

My Biomaterials

Geistlich Bio-Oss® is a biocompatible bone substitute, its osteo-conductive properties lead to effective and predictable bone regeneration.

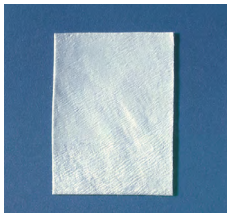
Geistlich Bio-Gide® with its unique bilayer structure not only prevents the ingrowth of soft-tissue into the augmented site but also integrates with the surrounding soft-tissues.

Geistlich Bio-Oss ® provides long-term volume stability

Geistlich Bio-Oss® & Geistlich Bio-Gide®

The ideal combination for Bone Augmentation

"The combination of Geistlich Bio-Oss® and autologous bone chips provides the best chance for regeneration while maintaining the hard and soft-tissue contours."



Geistlich Bio-Gide® provides excellent wound stability and graft containment

Click here to view the webinar

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ABOUT BIOBRIEF

We know that exposure to new or refined treatment approaches brings innovation to practice. Geistlich Biomaterials is pleased to introduce a periodic opportunity to get up close and personal with creative clinicians from around the world. Focused on peer-to-peer exchange, BIOBRIEF features clinically relevant cases and techniques in specific therapeutic areas – highlighted with valuable insights about materials and instrumentation, as well as KEYS TO SUCCESS.

Geistlich Biomaterials – bringing you *regeneration on time.*

The Therapeutic Area

Geistlich biomaterials optimally compliments autogenous bone in Major Bone Augmentation procedures. Due to its high resorption stability and osteoconductivity Geistlich Bio-Oss® protects human bone grafts against degradation, ensuring long-term volume preservation. When combined with Geistlich Bio-Gide® healing is undisturbed and provides significantly enhanced bone regeneration.

CAUTION: Federal law restricts these devices to sale by or on the order of a dentist or physician.

Indications:
Geistlich Bio-Oss® is indicated for the following uses: Augmentation or reconstructive treatment of the alveolar ridge; Filling of periodontal defects; Filling of defects after root resection, apicoectomy, and cystectomy; Filling of extraction sockets to enhance preservation of the alveolar ridge; Elevation of the maxillary sinus floor; Filling of periodontal defects in conjunction with products intended for Guided Tissue Regeneration (GTR) and Guided Bone Regeneration (GBR); and Filling of peri-implant defects in conjunction with products intended for GBR.

Warnings:
Possible complications which may occur with any surgery include swelling at the surgical site, flap sloughing, bleeding, local inflammation, bone loss, infection or pain.

Indications:
Geistlich Bio-Gide® is indicated for the following uses: Augmentation around implants placed in immediate or delayed extraction sockets; localized ridge augmentation for later implantation; alveolar ridge reconstruction for prosthetic treatment; filling of bone defects after root resection; cystectomy and removal of retained teeth and guided bone regeneration in dehiscence defects.

Warnings:
As Geistlich Bio-Gide® is a collagen product, allergic reactions may not be totally excluded. Possible complications which may occur with any surgery include swelling at the surgical site, flap sloughing, bleeding, dehiscence, hematoma, increased sensitivity and pain, bone loss, redness and local inflammation.

For more information on contraindications, precautions, and directions for use, please refer to the Geistlich Bio-Oss® and Geistlich Bio-Gide® Instructions for Use at: **dental.geistlich-na.com/ifu**