



A CASE REPORT BY
HECTOR L. SARMIENTO, D.M.D., MSc.

A Regenerative Approach to Peri-implantitis



► The Situation

A 55 year old man was referred to me by his general dentist. Upon initial clinical and radiographic findings, failing implant #9 showed signs of peri-implantitis that included BoP, Suppuration, 9+mm PD and radiographic bone loss affecting both the implant and the natural adjacent tooth. Patient stated that although his gums bleed, he does not have any pain. Gingival erythema was also found.

► 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

*Peri-implantitis on implant #9 migrating to the mesial portion of root #8

SPECIAL INTEREST

Peri-implantitis
Bone biology

HECTOR L. SARMIENTO, D.M.D., MSc., NEW YORK, NEW YORK

Periodontics / Maxillofacial Surgery

Dr. Hector Sarmiento was awarded his D.M.D. degree by the University of Rochester. He is uniquely trained in both maxillofacial surgery and periodontics. He is a professor in the maxillofacial surgery department of trauma and reconstructive unit at the Regional Hospital in Mexico and is an Assistant Clinical Professor in periodontics at the University of Pennsylvania. Along with his periodontal degree, he also received his masters in oral biology from the University of Pennsylvania. Dr. Sarmiento is an international and national lecturer and has published numerous articles in peer reviewed journals and textbooks. His research focus includes infected dental implants such as peri-implantitis, sinus complications as well as bone biology. Dr. Sarmiento maintains his private practice in the upper east side of Manhattan in NYC.



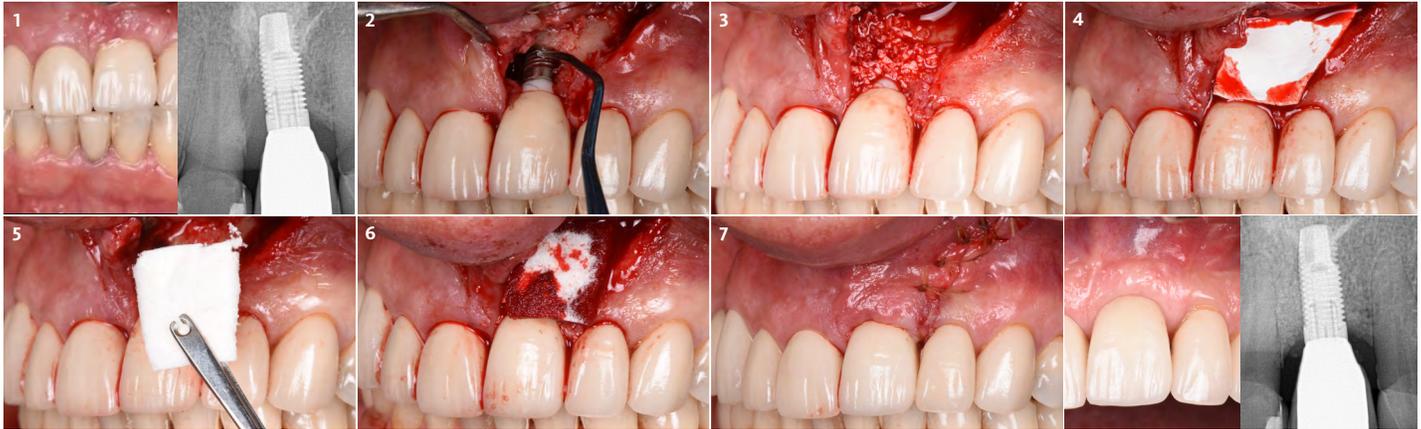
@drhsarmiento



L. Sarmiento

► The Approach

The clinical goals were to eliminate the peri-implant infection, restore hard and soft-tissues and have long-term success. The technique utilized was a systematic regenerative approach to eliminate the underlying cause of the peri-implantitis infection and restore hard and soft-tissues to prior health.



- 1 Initial situation, patient presented with radiographic and clinically traditional signs of peri-implantitis, including bleeding on probing, suppuration, radiographic progressive bone loss and clinical pathologic probing depths.
- 2 Mechanical debridement was achieved using titanium scalers, an ultrasonic device with an implant protective cap and titanium brushes to remove all of the visible contaminants of the implant surface. Citric acid was then placed on shreds of a non-woven gauze and applied to the surface for approx. 1min. Copious irrigation was done using saline solution and the surface was ablated using the Er:YAG laser at 20pps/50mj.
- 3 After the surface was prepped and no signs of residual granulation tissue was noted, the defect was grafted with Geistlich Bio-Oss®. Attention was given towards not augmenting beyond the bony envelope.
- 4 A protective Geistlich Bio-Gide® membrane was placed over Geistlich Bio-Oss®.
- 5 Geistlich Fibro-Gide® was placed over Geistlich Bio-Gide® to enhance soft-tissue volume and quality. Geistlich Fibro-Gide® was trimmed and adapted to the defect site ensuring a tension free closure.
- 6 Geistlich Fibro-Gide® was placed on the top of the bone graft to enhance soft-tissue thickness. Geistlich Fibro-Gide® is porous. We can observe the rapid penetration of blood through the matrix.
- 7 Closure with a tension-free flap was achieved by releasing incisions and secured using 4-0 chromic gut sutures.
- 8 1.5 year post-operative photo and radiograph show the healing of the soft-tissues with no signs of peri-implantitis and adequate tissue thickening. Radiographic bone levels have maintained stable over the course of the year.

SOFT-TISSUE VOLUME

Geistlich Fibro-Gide® in place for improved soft-tissue volume

“Geistlich Fibro-Gide® was utilized to enhance the soft-tissues during a regenerative peri-implantitis approach. In my opinion, healthy, thick soft-tissue is easier for a patient to maintain and creates a better environment for long-term survival.”

(See image to the left)

► The Outcome

My observation at the 1.5 year follow-up shows the elimination of peri-implantitis and complete peri-implant health was achieved showing a reduction in BOP, PD and most importantly soft tissue thickness stability. Radiographically, crestal bone shows no signs of progressive pathological loss and has maintained adequate volume.



Briefly Speaking

► Keys to Success

1. Diagnosis and classifying peri-implantitis to elect the appropriate treatment.
2. Detoxification methods.
3. Hard-tissue enhancement with Geistlich Bio-Oss®.
4. Guided bone regeneration with Geistlich Bio-Gide®.
5. Soft-tissue enhancement with Geistlich Fibro-Gide®.

► 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 Fibro-Gide® is a volume-stable collagen matrix specifically designed for soft-tissue regeneration. As an alternative to connective tissue grafts, it is ideally suited for augmentation around natural teeth and implants.

Geistlich Bio-Oss®
Geistlich Bio-Gide®
Geistlich Fibro-Gide®

A novel approach for the regenerative treatment of peri-implantitis

“Geistlich Fibro-Gide® has the capacity to enhance the soft-tissue during a bone regenerative approach.”

► My Instruments

1. Implant curette - Hu-Friedy TITANIUM IMP SCALER LANGER 1/2 (For mechanical debridement)
2. Titanium Brushes- Straumann Tibrush (For mechanical debridement)
3. EDTA - Straumann PrefGel EDTA 24%, pH neutral (0.6ML) (For root conditioning of the exposed adjacent root)
4. 1000 Citric Acid 60% solution (For surface decontamination)
5. Morita AdvErL EVO, Er:YAG laser, (20pps/50Mj) (For surface decontamination)
6. Geistlich Bio-Oss® for bone regeneration
7. Geistlich Bio-Gide® for guided bone regeneration
8. Geistlich Fibro-Gide® for soft-tissue thickening and stability around the implant



Geistlich Bio-Oss® provides long-term volume stability



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



Geistlich Fibro-Gide® provides soft-tissue volume and long-term stability



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Geistlich Pharma North America, Inc.

202 Carnegie Center

Princeton, NJ 08540

Customer Care Toll-free: 855-799-5500

info@dental.geistlich-na.com

dental.geistlich-na.com

fibro-gide@geistlich-na.com

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 can play a significant role in the treatment of Peri-implantitis. Due to its high resorption stability and osteoconductivity Geistlich Bio-Oss® ensures long-term volume preservation. When combined with Geistlich Bio-Gide® healing is undisturbed and provides significantly enhanced bone regeneration. The addition of Geistlich Fibro-Gide® provides improved soft-tissue quality and volume.



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.

Indications:

Geistlich Fibro-Gide® is indicated for the following uses: Soft-tissue augmentation; localized gingival augmentation to increase keratinized tissue around teeth and implants; Alveolar ridge reconstruction for prosthetic treatment; and recession defects for root coverage.

Warnings:

As Geistlich Fibro-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, redness and local inflammation.

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