BIOBRIEF

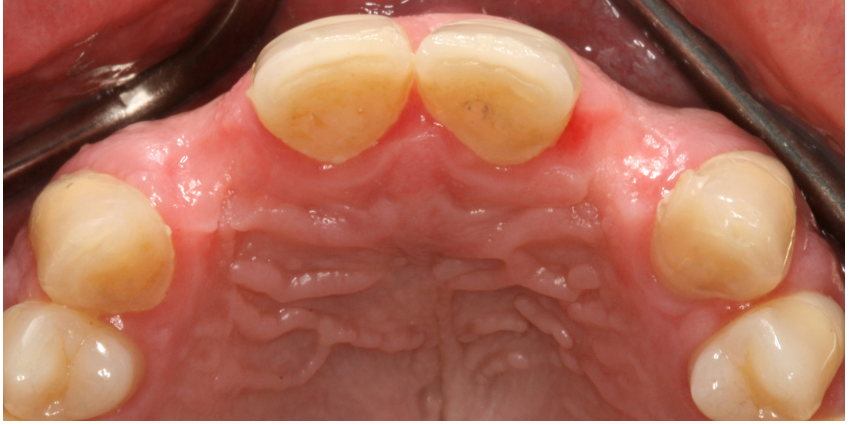
REGENERATIONTIME

Geistlich Biomaterials

A CASE REPORT BY

Dr. AVINASH BIDRA

Successful implant placement and horizontal augmentation for bilateral congenitally missing maxillary incisors



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The Situation

A 30 year-old male patient was referred to me with bilateral congenitally missing lateral incisors in the maxilla. The referring general dentist had previously made a resin bonded bridge which was successful for a few years but had frequent debondings. Clinical examination revealed lack of ridge contour but the CBCT revealed existence of adequate width for placement of narrow diameter implants with additional bone grafting and contour augmentation. The existing bone anatomy precluded placement of implants for screw-retained restorations without a pre-surgical lateral ridge augmentation procedure. The patient accepted a treatment plan for placement of 2 narrow diameter implants and simultaneous bone grafting and contour augmentation followed by restoration with zirconia cement-retained crowns.

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 from contact point	≥ 7 mm from contact point
Restorative status of adjacent tooth	Intact		Compromised
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

SPECIAL INTEREST
Guided Bone Regeneration

"The patient had failed resin bonded bridges with deficient contours for bilateral congenitally missing lateral incisors."

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Dr. Bidra is a Board Certified Maxillofacial Prosthodontist and Director of the Prosthodontics Residency Program at UCONN School of Dental Medicine. He has extensive surgical experience and maintains a part-time private practice restricted to Implant Surgery and Prosthodontics in Meriden, CT. He has lectured at national and international meetings, as well as published extensively in international scientific journals. He has invented prosthetic components and is a co-inventor of a new implant design.

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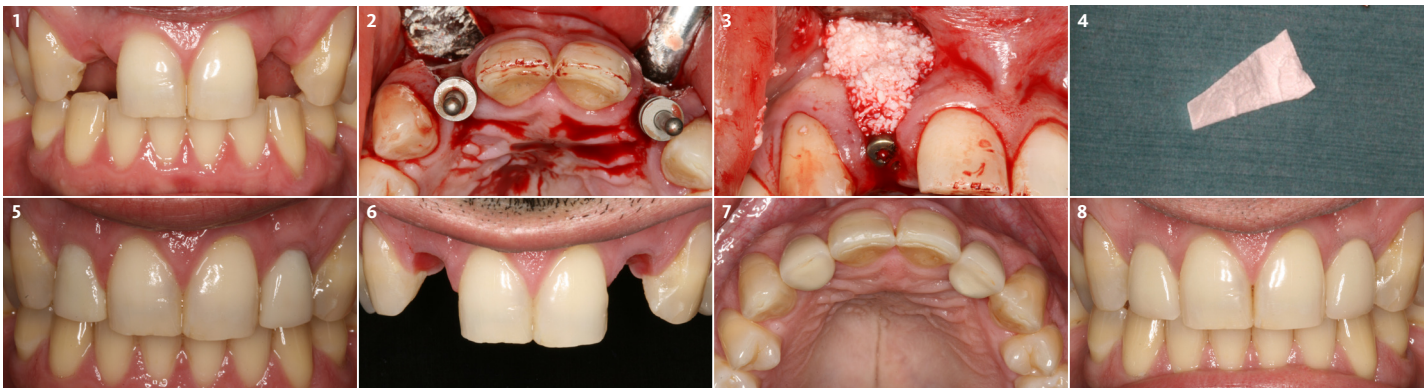
The Approach

My treatment goals were to preserve the existing soft-tissue architecture, especially the interdental papilla, mesial and distal to the lateral incisors, improve the facial contour at the lateral incisor sites by bone grafting with a low substitution biomaterial, and harmonize esthetics and function with optimal implant-supported restorations.



1 Frontal view revealed adequate contours of soft-tissue especially in gingival height and presence of interdental papilla which needed to be preserved.

2 Bilateral papilla-sparing incisions were used to preserve the existing papilla and the osteotomies were prepared to allow implant trajectories for cement retained restorations.

3 An apical fenestration was noted in the osteotomies. After placement of a narrow diameter implant at patient's right lateral incisor, the site was grafted with a mixture of autologous bone chips and Geistlich Bio-Oss®.

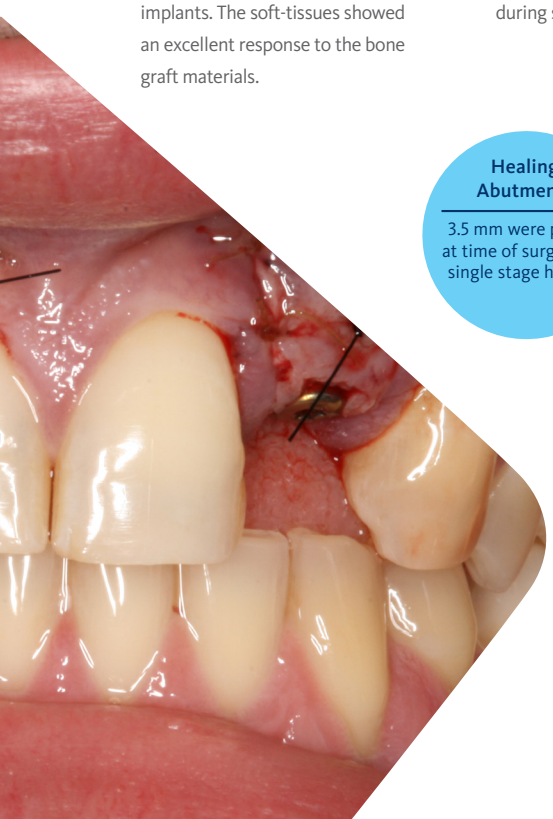
4 Geistlich Bio-Gide® is trimmed to match the trapezoidal flap design and placed over the graft material.

5 After a 3 month healing period, the implants were osseointegrated and then screw-retained provisional crowns were fabricated over both implants. The soft-tissues showed an excellent response to the bone graft materials.

6 The soft-tissues around the implants show excellent maturation and support especially in the interdental papilla region which was preserved during surgery.

7 Occlusal view shows adequate restoration of the facial contour around the implant restorations indicating excellent outcome from the contour augmentation procedure.

8 Frontal close-up view of the implant restorations shows pleasing dental and gingival esthetics.



Healing Abutments

3.5 mm were placed at time of surgery for single stage healing

"Single stage implant placement and simultaneous contour augmentation using a mixture of Geistlich Bio-Oss® and autologous bone chips."

The Outcome

Single stage implant placement with bilateral papilla-sparing incision design and simultaneous contour augmentation using a mixture of Geistlich Bio-Oss® autologous bone chips and Geistlich Bio-Gide®.

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Briefly Speaking

Keys to Success

1. Bilateral papilla-sparing incision design
2. Implant placement with simultaneous contour augmentation procedure
3. Use of a low substitution deproteinized bovine bone material with a rapidly vascularizing membrane
4. Single stage procedure to support soft-tissue volume and contour
5. Appropriate provisional restorations to sculpt the soft-tissues

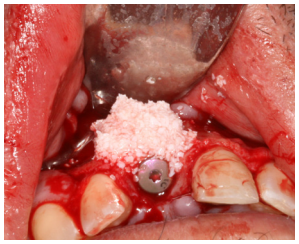
My Materials

A. Geistlich Bio-Oss® 0.5mg
B. Geistlich Bio-Gide® 25 x 25mm
C. Straumann NC Bone Level Implant 3.3 x 12mm
D. Straumann NC Bone Level Healing Abutments 3.5 x 12mm
E. 5-0 Nylon sutures, for closure of crestal incision
F. 5-0 PGA sutures, for closure of vertical releasing incisions

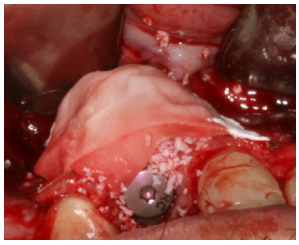
My Biomaterials

Geistlich Bio-Oss® provides a stable scaffold for bone formation leading to long-term volume preservation, while Geistlich Bio-Gide® ensures undisturbed bone regeneration and prevents soft-tissue ingrowth and excellent soft-tissue response.

"The low substitution bone graft combined with a rapidly vascularizing membrane, helped to achieve the biological integration of the biomaterial."



Geistlich Bio-Oss® granules are placed after implant placement



Geistlich Bio-Gide® is placed over the graft material

"The use of Geistlich Bio-Gide® and Geistlich Bio-Oss® mixed with autologous bone can lead to a successful outcome in single stage implant placement with simultaneous contour augmentation."

Click here to view the webinar

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Geistlich Biomaterials

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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

Guided bone regeneration utilizing bone grafting materials and barrier membranes result in stimulating and directing the growth of new bone. Autologous bone and/or a biomaterial is placed into the defect and then a barrier membrane is applied on top of the graft to assist in wound-healing and prevent the ingrowth of soft-tissue.

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. As Geistlich Bio-Oss Collagen® contains collagen, in very rare circumstances cases of allergic reactions may occur.

Indications:
Geistlich Bio-Gide® is indicated for the following uses: Augmentation around implants placed in immediate and delayed extraction sockets; Localized ridge augmentation for later implantation; Alveolar ridge reconstruction for prosthetic treatment; Filling of bone defects after root resection, cystectomy, removal of retained teeth; GBR in dehiscence defects; and GTR procedures in periodontal defects.

Warnings:
As it 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 Biomaterials Instructions for Use at: **www.geistlich-na.com/ifu**