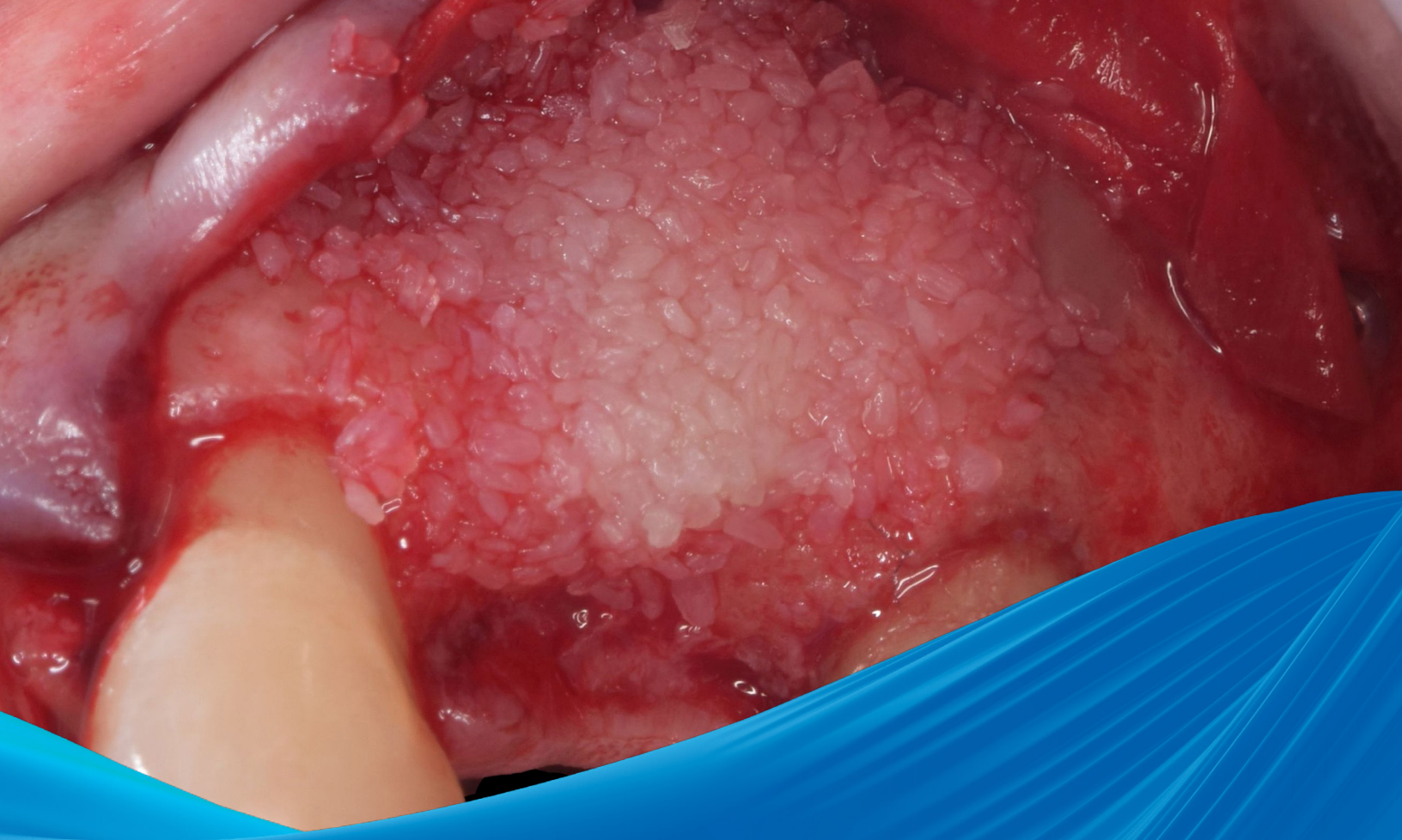

BioBrief

HORIZONTAL RIDGE AUGMENTATION FOR IMPLANT PLACEMENT

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Eswar Kandaswamy, BDS, MS
Amber Kreko, DDS

Horizontal Ridge Augmentation with a Layered Allograft-Xenograft Approach

leading regeneration

Geistlich

The Situation

The patient presented to the clinic for a dental implant in the tooth #12 location. Clinical evaluation revealed a ridge deficiency. A Cone Beam Computed Tomography (CBCT) scan was taken, confirming insufficient ridge width for implant placement. As a result, the site was treatment planned for horizontal ridge augmentation.

The Approach

Horizontal ridge augmentation was performed using a horizontal layering technique. An inner layer of demineralized freeze-dried bone allograft (DFDBA), featuring vallos® demineralized cortical particles (to promote osteoinduction and support early bone formation), was followed by an outer layer of deproteinized bovine bone, Geistlich Bio-Oss® (to maintain space and volume). The graft was contained with a native bilayer collagen membrane, Geistlich Bio-Gide®, and secured with titanium pins (tacks).

The Risk Profile

	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 sight	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
Soft-tissue anatomy	Intact		Compromised
Bone anatomy of the alveolar ridge	No defect	Horizontal defect	Vertical defect

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Periodontist

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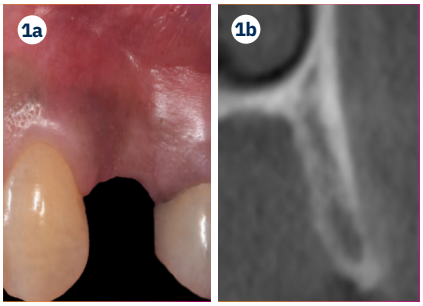
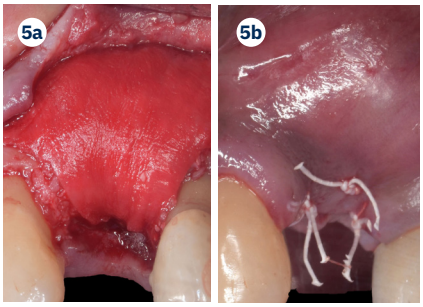
Periodontics Resident

Dr. Eswar Kandaswamy, BDS MS, is an Assistant Professor at Louisiana State University Health Sciences Center, School of Dentistry. He earned his Dental Degree from Sri Ramachandra University, India, and practiced general dentistry for two years. He then completed his specialty training in Periodontics and a Master of Science at The Ohio State University.

Dr. Amber Kreko, DDS is a third-year Periodontics resident at Louisiana State University School of Dentistry, soon to earn her Master of Science. With a foundation in dental hygiene and six years of clinical practice in Southeast Louisiana,she returned to LSU for her DDS. Her comprehensive background enriches her approach to periodontal care. Upon graduation, she will transition to private practice.

"The patient required horizontal ridge augmentation for successful placement of a dental implant."

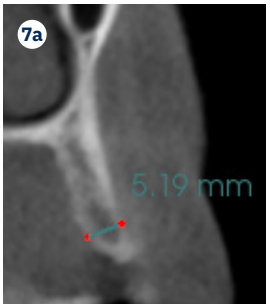


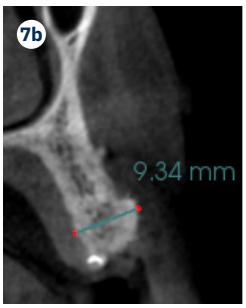


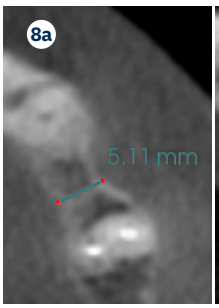
The Outcome

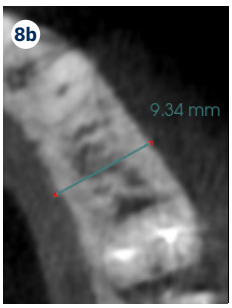
The 6-month post-operative CBCT evaluation demonstrated sufficient ridge width for restoratively driven implant placement, a result achieved through the utilization of vallos® and Geistlich Bio-Oss® bone graft materials.

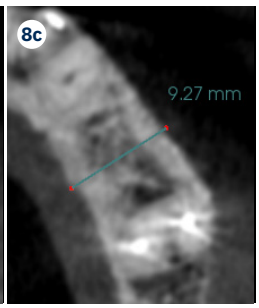
1. Image 1a depicts the pre-operative situation, while image 1b shows a cross-sectional view of the deficient ridge in area #12.
2. Pre-operative view, post-flap reflection.
3. An inner layer of vallos® demineralized cortical particles (allograft) was applied to the defect.
4. An outer layer of Geistlich Bio-Oss® (xenograft) was applied on top of vallos® (allograft).
5. Image 5a displays the bone grafts covered with Geistlich Bio-Gide® and secured via tacks, followed by Image 5b, which demonstrates the final sutured closure.
6. Four-week post-operative image demonstrating good soft tissue healing.
7. Comparative CBCT cross-sectional analysis of pre-operative (image 7a) and 6-month post-operative (image 7b) images reveals an increase in horizontal ridge width.
8. Sequential CBCT imaging comparisons, from pre-operative to 6 and 9 months post-operative, confirm the re-establishment of horizontal ridge width achieved through bone augmentation.











> “By horizontally layering two distinct bone graft materials (Geistlich Bio-Oss® and vallos®), this approach was designed to tailor the regenerative environment, harnessing the unique remodeling profile of the allograft and the long-term space-maintaining properties of the xenograft to optimize both early bone formation and dimensional stability.”

Geistlich

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Keys to Success

- → Leveraging the osteoinductive properties of vallos® cortical particles.
- → Utilizing Geistlich Bio-Oss® osteoconductive and space-maintaining properties.
- → Graft containment achieved using Geistlich Bio-Gide® membrane.
- → Effective stabilization of the Geistlich Bio-Gide® membrane by means of tacks.

> “The incorporation of vallos® demineralized cortical particles, leveraging its reliable osteoinductive properties, was paramount for achieving predictable and successful bone regeneration in this case.”

For more information, please visit:
www.geistlich.us

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

For more information on contraindications, precautions, and directions for use, please refer to the Instructions for Use at:
https://www.geistlich-na.com/dental-professionals/instructions-for-use

Disclaimer: These results are not guaranteed; individual outcomes may vary depending on patient circumstances. This information is for informational purposes only and may not reflect Geistlich’s official position, opinion, or recommendation. Treatment decisions are made at the physician’s discretion, based on the unique needs of each patient.