

Three-Dimensional Guided Bone Regeneration (GBR) Reconstruction in the Aesthetic Zone Using OSSIX® Volumax

A Case Study by Dr. Gerardo Chacón

At Dentsply Sirona Regenerative Solutions, we strive to provide you with the latest advancements and trends in guided bone regeneration and guided tissue regeneration (GBR/GTR). Learn from clinical case studies tailored for dental professionals like you and elevate your practice.

Background

A thirty-three-year-old healthy female patient (ASA 1), who experienced implant failure with an affected neighboring teeth, came to the clinic for procedure.

Case Description

Under local anesthesia, a safety flap was designed and released from the distal canine to the canine, using C-shaped reverse incisions from partial to full thickness to ensure adequate blood supply. The implant was removed along with the extraction of two teeth due to the incorrect placement of the implant. Esthetic concerns also resulted from previous treatment. The bone was cleaned mechanically, perforations were made, and no additional chemical or biological treatments were applied.

Two microsurgical tent screws were placed strategically to maintain the vertical dimensions of the guided bone regeneration (GBR). Autogenous bone was harvested from the mandibular angle and mixed with xenograft in a 50-50% ratio. Next, two OSSIX® Volumax scaffolds were adapted and fixed next to each other to cover the bone from palatal to buccal, secured with resorbable sutures.

Finally, the flap was advanced and sutured without tension and without any membrane exposure to minimize the risk of bone loss or bacterial contamination that could compromise the procedure.

During the first month following the surgery, no provisional structure was used.

Throughout the entire healing period (six-nine months), no adverse events were observed. After the healing period, two new implants were placed, surrounded by new bone (implant insertion torque was beyond 25 NCM).

A CBCT scan performed beyond the initial three-year follow-up confirmed that the bone grew both horizontally and vertically.

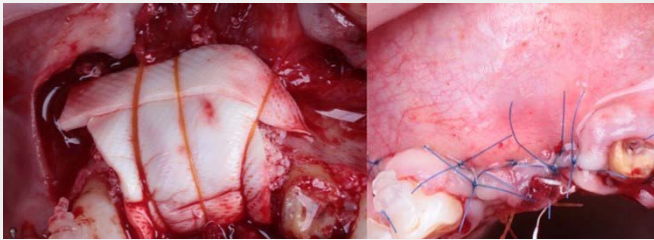
Surgery



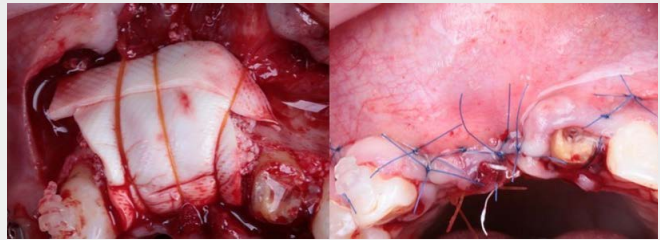
Safety flap after released from distal canine to canine.
After tooth and implant removal two microvascular tent screws located



Autogenous bone that was harvested from the
mandible angle mixed with xenograft (50:50)

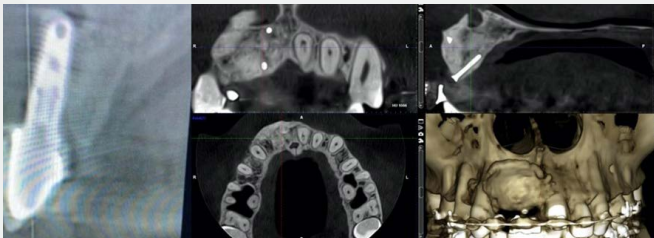


Two OSSIX® Volumax membranes fixed to the compartment.
The membranes are next to each other and cover the bone



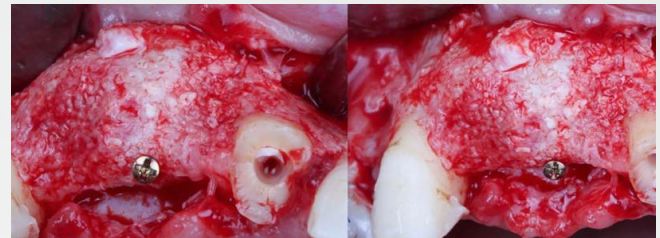
Flap advancement and Closure

Scans

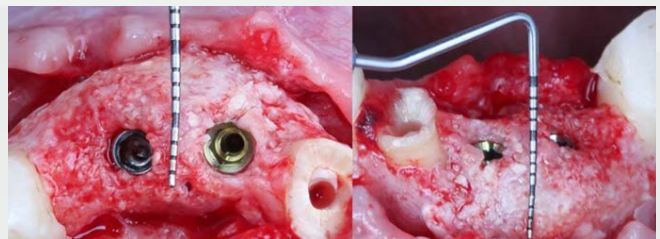


Pre and Post Op CBCT (New bone volume outcome)

Post-Op



Frontal and occlusal view of new bone



Two new implants located surrounded by new boneview



OSSIX® Volumax - Real Volume, Strong Infrastructure

The innovative OSSIX® Volumax scaffold is designed to add volume and support ossification¹. Ideal for guided bone and tissue regeneration, its 2mm thickness and expandable nature ensures optimal handling, contributing positively to hard and soft tissue quality¹.



About the Clinician, Dr. Gerardo Chacón

Dr. Chacon is an oral surgeon and periodontist from Venezuela. The author has also attended several courses related to Plastic Surgery and GBR under the direction of leading dental professionals.

Dr. Chacon is a Professor at Harvard University and an international lecturer. Dr. Chacon has published several scientific and clinical publications related to plastic surgery and guided bone regeneration.

Reference

1. Tavelli L, Barootchi S, Rodriguez MV, Meneghetti PC, Mendonça G, Wang HL. Volumetric Outcomes of Peri-implant Soft Tissue Augmentation with a Xenogeneic Cross-Linked Collagen Scaffold: A Comparative Clinical Study. Int J Periodontics Restorative Dent. 2023 Jul-Aug;43(4):415-422.

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Warnings

OSSIX® Volumax must not be used in patients with known collagen hypersensitivity, sensitivity to porcine-derived materials, or suffer from autoimmune diseases and connective tissue diseases. As the membrane is of a collagen origin, allergic reactions may not be entirely excluded.

Please read the [IFU](#) before use and for additional information on indications, contraindications, warnings, and precautions.

For more information on OSSIX® regenerative products and activities in your region: regenerative.dentsplysirona.com