

Vertical Augmentation After Traumatic Bone Loss Due a Car Accident in Lower Jaw Using OSSIX® Volumax Scaffold

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 24-year-old female who is a normal healthy patient (ASA 1) required vertical augmentation of the lower jaw due to traumatic bone loss.

Case Description

Two months after the car accident, under local anesthesia, a mucoperiosteal safety flap was designed and raised from the second premolar to the second premolar in the lower jaw using C reverse incisions ranging from split to total thickness dissection, so that the mental nerve could be protected, as well as the blood supply to the entire area maintained.

A lingual flap was dissected taking into consideration the anatomical area and related structures in order to prevent injuries and flap disruptions. Afterward, autogenous bone was extracted from the chin, mixed with xenografts in a 50-50% ratio, and OSSIX® Volumax scaffold was selected, adapted, and fixed to the area, from the lingual flap to the

buccal compartment, covering both the bone mixture and defect. The sutures were then made using non-resorbable nylon 5-0.

To avoid any complications, the flap was raised and sutured properly to prevent membrane exposure or flap disruption.

After seven months, new bone was evident related to the vertical reconstruction of the tenting screw to the head. Implants were inserted and tissue samples were harvested.

- During the entire healing process, no complications were observed.
- The new implants were inserted with a torque of 25 to 30 Ncm.
- A histology sample shows new bone that is related to the native bone.
- A variety of temporary structures were used during the nine-month period.

Pre-Op



FIG 1-2: Baseline. Frontal and occlusal view

Pre & Post Op View

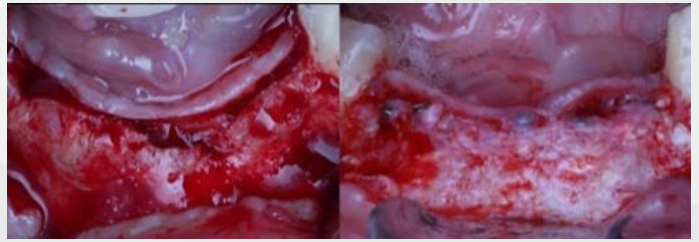


Fig 9-10: pre and post-op view (new bone covering the screws to the head)

Surgery



Fig 3-4: Vertical defect and tent screws in position

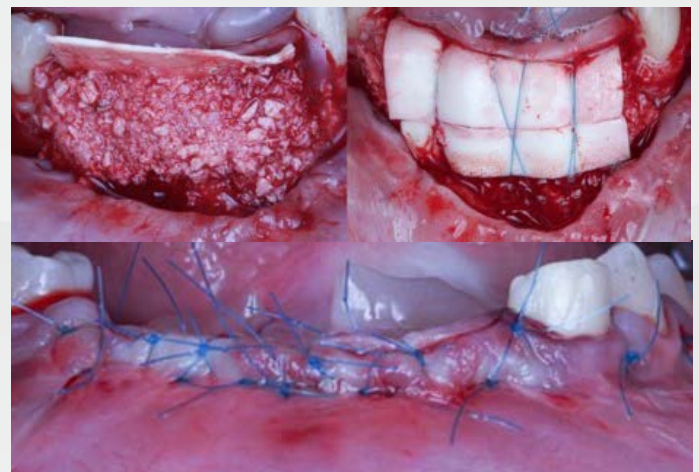


Fig 5-6-7: Auto and Xenograft Mixture (50-50%) OSSIX® Volumax fixed Flap Closure detail

Follow-Up



Fig 8-9: post-op seven months follow up. Clinical

Scan & Histology



Fig 10-11 final panoramic xray with implants inserted. histology



OSSIX® Volumax - Real Volume, Strong Infrastructure

The innovative OSSIX® Volumax scaffold is designed to add volume and promote ossification¹. It is ideal for guided bone and tissue regeneration, its 2mm thickness and expandable nature ensures optimal handling contributing positively to hard and soft tissue quality².



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 Drs. Istvan Urban, Iñaki Gamborena, Joseph Kan, Luca Di Estavola, Markus Hürzeller, among others.

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

Reference

1. Alveolar Ridge Augmentation and Ossification of Thick vs. Thin Sugar Cross-linked Collagen Membranes in a Canine L-shape Defect Model, Zubery et al, AAP Research Forum Poster Session, 2016.
2. 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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