428: Correction of a buccal ridge deficiency at a second stage implant surgery using a sugar cross-linked collagen scaffold

Rodrigo Neiva, Meizi Eliezer

OBJECTIVE

The aim of this case report is to demonstrate the regenerative potential of a double-layered sugar cross-linked collagen scaffold (OSSIX Volumax) in a lateral bone defect at second stage implant surgery. The device was developed using the GLYMATRIX technology that provides extended longevity, improved physical properties and direct device ossification.

MATERIALS AND METHODS

A 32-year-old female presented with a missing maxillary 2nd premolar. A 3.6x13 mm implant (Astra, Dentsply) was placed and the site augmented to correct a horizontal alveolar bone deficiency. At second stage implant surgery the defect remained almost unchanged. Following placement of a healing abutment, a second augmentation procedure was performed using a double-layered sugar cross-linked collagen scaffold, with no additional bone grafting material. Buccal flap was released, advanced and secured with 4.0 PTFE sutures to achieve tension free closure. Provisional restoration was installed at 30 days to develop soft tissue emergence profile. The final implant-supported crown was placed at 5 months and a CT-scan taken at 6 months post 2nd stage and augmentation surgery.

RESULTS

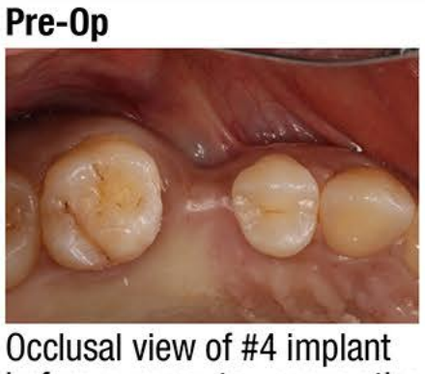
At 6 months the implant was stable with an esthetic final crown and optimal soft tissue volume. A thick radio-opaque layer was evident in CT scans buccal to the implant.

CONCLUSIONS

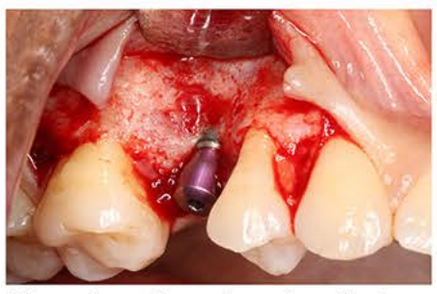
Correction of a buccal ridge deficiency at a 2nd stage implant surgery was successfully achieved with a sugar cross-linked collagen scaffold as a single product. This may offer extended therapeutic options due to its special matrix properties that go beyond the classic indication spectrum of a collagen scaffold.

With GLYMATRIX based products, residual hard and soft tissue deficiencies may be successfully managed with a single product and a simple surgical technique.

Pre-Op



Occlusal view of #4 implant before surgery to uncover the implant. Soft tissue volume deficiency detected.



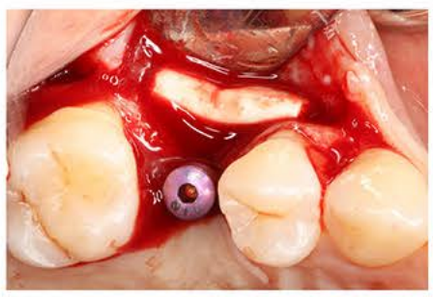
Flap elevation showing that the buccal plate was thin, but still present.

Occlusal view illustrates ridge deficiency that would result in poor esthetic outcome of the future implant restoration.

Procedure

OSSIX Volumax (25x30mm) after hydration in sterile saline.

OSSIX Volumax folded in half for additional tenting and tissue thickness.



OSSIX Volumax adapted for optimal ridge without bone graft.

Buccal flag positioned and sutured with 4.0 PTFE sutures.

2-week post-op showing optimal wound healing and ridge contours.

Provisional restoration was installed at 30 days to develop soft tissue profile.

Radiograph at 30 days showing the provisional restoration.

Follow-up – 3 to 5 months

Occlusal view at 3 months before final impressions.

Occlusal view at 5 months showing stable results and soft tissue health.

Abutment adaptation to the developed soft tissue profile.

Final implant-supported crown at 5 months.

Follow-up – 6 months

Radiograph at 6 months showing optimal crestal bone levels.

Follow-up at 6 months showing stable results after final restoration.

Buccal view showing excellent esthetic result with OSSIX Volumax.

6 months CT scan. Original bone and OSSIX Volumax ossification visible.