

# 429: Bone regeneration around immediate implant placement using only GLYMATRIX technology

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## OBJECTIVE

The purpose of this case report is to present a concept for remnants free bone correction of peri-implant defects during an immediate implant placement in a maxillary molar site. This by using a GLYMATRIX technology based novel scaffold, composed of a thick (2mm) sugar cross-linked collagen (OSSIX® Volumax) without using a bone graft.

## METHODS

Case report: Surgical procedure: A 71-year-old female underwent extraction of tooth #16 with immediate placement of implants in the extraction socket and in the position of tooth #15. Following local anesthesia and root separation, tooth #16 was extracted and full thickness buccal and palatal flaps were elevated, revealing a deficient buccal bony wall. High implant stability was achieved and a transgingival healing abutment was placed. The deficient extraction socket was treated with a novel collagen scaffold without an additional bone substitute. A 3.5mm diameter tissue punch was used to punch a hole in the dry collagen scaffold and a "poncho-like" fixation was achieved with the healing abutment. Following tension free suturing, a portion of the scaffold was intentionally left non-submerged.

## RESULTS

At sutures removal (7 days post-op) the collagen scaffold was partially exposed with no clinical signs of inflammation. Healing by secondary intention continued until complete epithelialization was noted. At 5 months the mesial implant was exposed following a CBCT scan that revealed a complete restoration of the missing buccal bony wall. Mineralization of the buccal collagen scaffold was also clearly visible. Clinically, a favorable tissue contour allowed both functional and aesthetic restoration of the site.

## CONCLUSIONS

A thick sugar cross-linked collagen scaffold (OSSIX® Volumax) offers extended therapeutic options due to its special matrix properties that go beyond the classic indications of a barrier membrane. It allows successful treatment of contained peri-implant bone defects. The scaffold ossifies and supports the formation of a remnants-free peri-implant bone. The application of the scaffold in this case, allowed a simple, single product, less invasive augmentation protocol without vertical release incisions and flap advancement and without using a bone graft.



Fig. 1, 2, 3  
Pre-operative photographs and a radiograph of tooth #16 with caries and a combined periodontal-endodontal lesion.

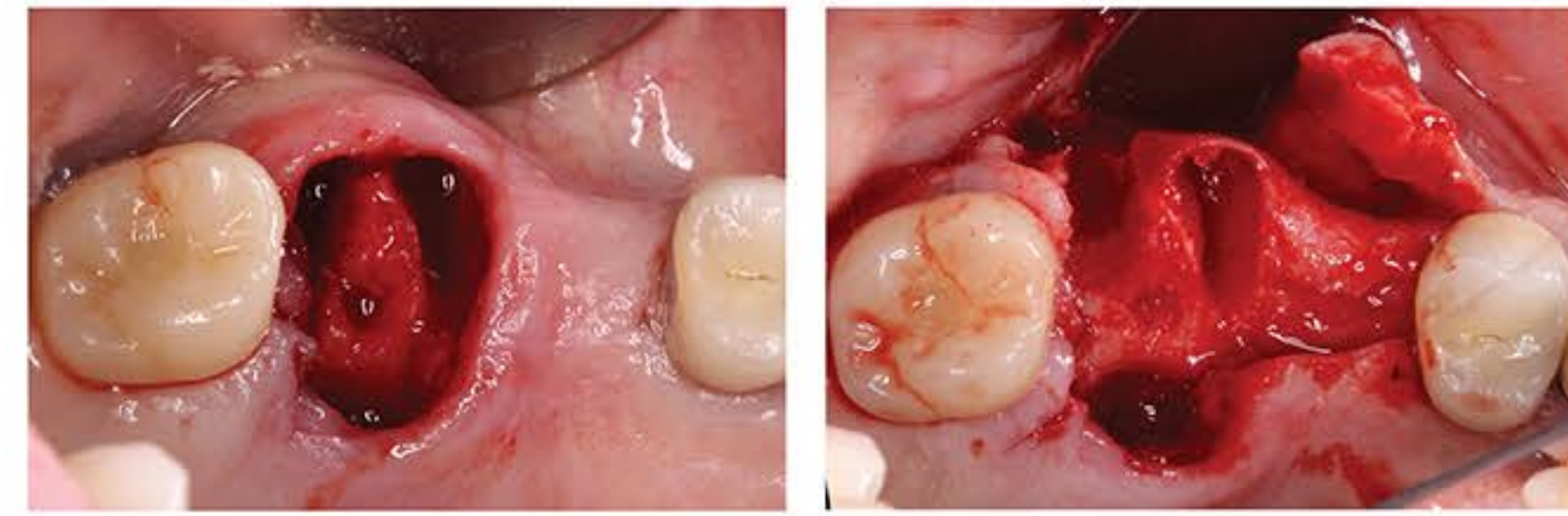


Fig. 4, 5  
Following careful extraction of tooth #16 and flap elevation, a missing buccal wall is noted on the distal root.

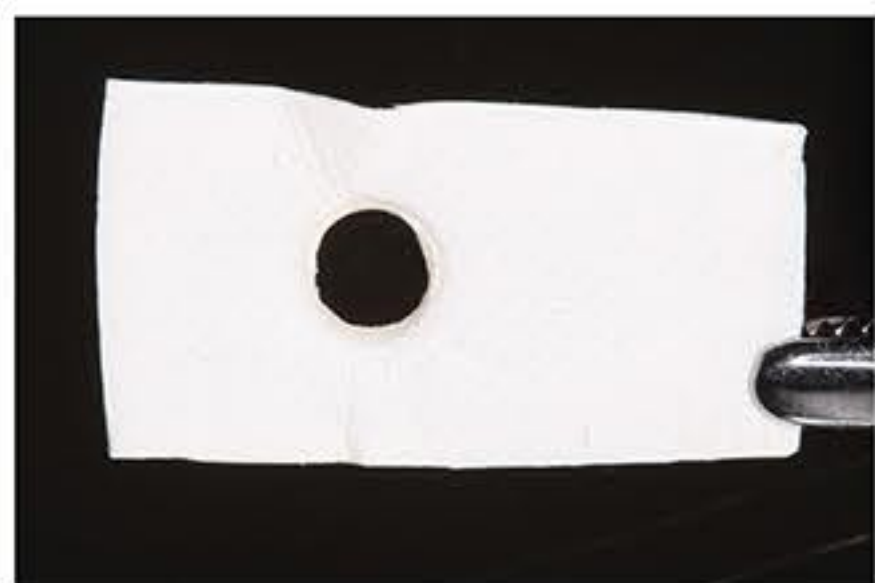
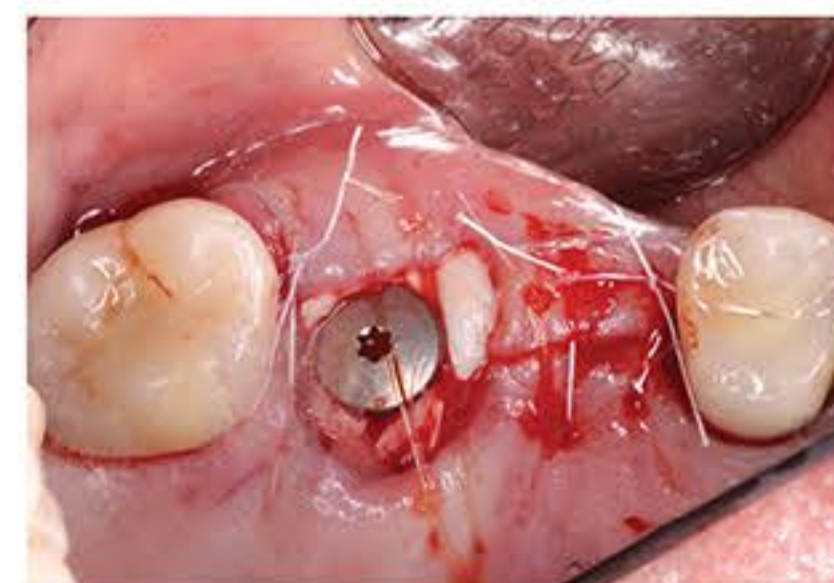


Fig. 6  
A thick, sugar cross-linked collagen scaffold (OSSIX® Volumax) is punched with a tissue punch.



Fig. 7  
A "poncho-like" placement of the scaffold is demonstrated on a model.



Figs. 8, 9  
Immediate post-op photograph and radiograph showing two implants in the position of teeth #15, 16, a healing abutment in tooth #16 is used to stabilize a collagen scaffold that covers the defect. Tension free suturing with no flap advancement is achieved, leaving a portion of scaffold intentionally non-submerged.



Fig. 10  
Suture removal and healing progress at one week after surgery. The non-submerged portion of the scaffold demonstrates the expansion tendency of the material due to saturation with fluids.



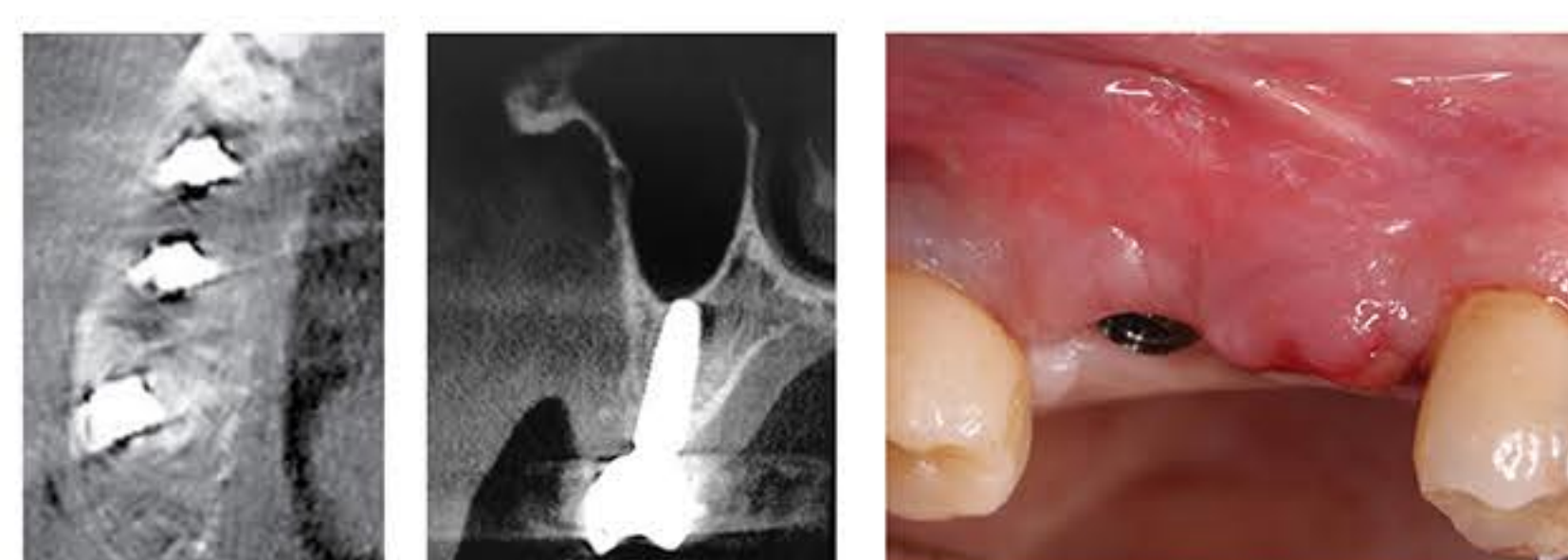
Fig. 11  
At 6 weeks complete epithelialization of the exposed site is visible.



Fig. 12  
Second stage implant surgery at 5 months.



Figs. 13, 14  
Final restorations at 6 months following final insertion. Note buccal tissue volume and keratinization.



Figs. 15, 16  
CBCT scans at 6 months following final insertion. Note complete restoration of buccal bone.