

FROM EXTRACTION TO REGENERATION: CASE MANAGEMENT USING OSSIX® BONE

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INTRODUCTION

Extractions in the posterior region can be challenging — limited visibility, crown destruction, and compromised bone support often make the procedure demanding. But the real challenge begins after the extraction: how do we preserve the bone volume and prepare the site for future rehabilitation, especially implants?

That's where OSSIX™ Bone comes in — a smart, collagen-based grafting solution that helps achieve predictable bone regeneration and ridge preservation. (Figure 1)

THE CASE

A 28-year-old male presented with pain and swelling in the left posterior region. Clinical examination revealed a grossly decayed tooth with severe bone loss and infection. The tooth was deemed non-restorable, and extraction was planned. (Figure 2)

Given the bone loss and periapical infection, the main goal was to preserve the socket and promote new bone formation for possible implant placement in the future.

CLINICAL PROCEDURE

Extraction of posterior teeth often presents challenges due to limited visibility, crown destruction, and bone loss. In this case, the tooth was carefully extracted under local anesthesia, and all granulation tissue along with the infectious debris were meticulously debrided. The extraction socket was thoroughly irrigated to ensure a clean, infection-free environment. (Figure 3)

Following debridement, the socket was filled with the OSSIX™ Bone graft material, (Figures 4a and 4b) a bioresorbable, cross-linked collagen bone designed to support guided bone regeneration (GBR) (Figures 5a, 5b and 5c). The site was sutured for primary closure, and postoperative care instructions were provided.

HEALING AND RESULTS

Follow-up visits demonstrated uneventful healing with no postoperative complications. Radiographic evaluation at successive intervals revealed progressive bone fill and healthy soft tissue response.

After three months, CBCT (Figure 6) evaluation confirmed adequate bone regeneration and ridge contouring, allowing for the placement of a dental implant in the same site. The implant achieved excellent primary stability, and the surrounding bone demonstrated optimal density, validating the effectiveness of the regenerative approach.

The regenerated ridge provided a strong, stable base for the

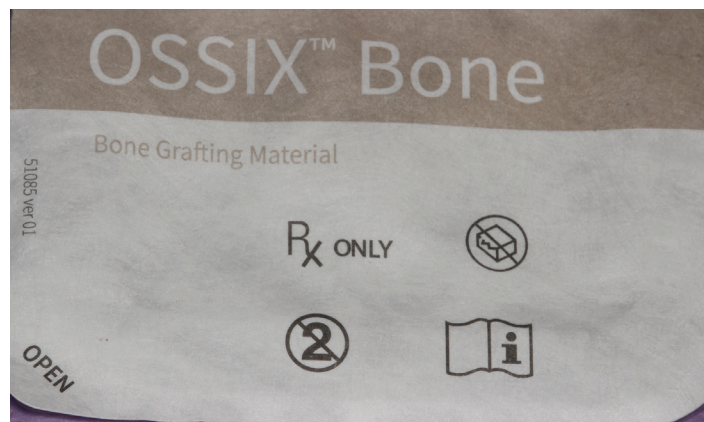


Fig 1: OSSIX™ Bone Graft



Fig 2: Clinical view



Fig 3: Extracted socket



Fig 4a-b: The OSSIX™ Bone Graft material

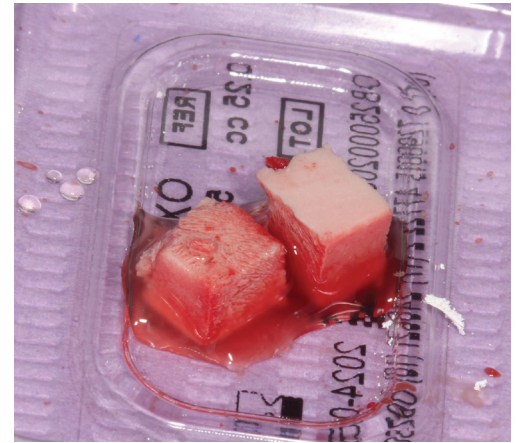
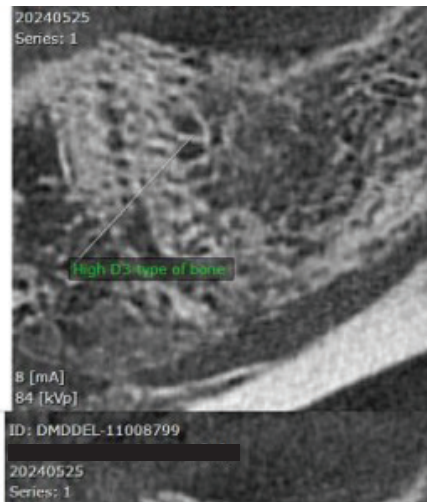


Fig 5a-c: Placing graft in the socket



Fig 6: Post op CBCT



prosthetic restoration, highlighting the efficiency of OSSIX™ Bone in promoting both functional and aesthetic outcomes.

HISTOPATHOLOGICAL FINDINGS

To assess the quality of the regenerated bone, a biopsy specimen from the grafted site was examined microscopically.

Histopathological examination revealed short, fragmented bony trabeculae with a less interspersed fibrocellular matrix. The trabeculae appeared mature and fine, with evident areas of osteoid formation and active bone remodeling.

A sparse residual graft material was seen embedded within the bone matrix, indicating progressive resorption and replacement by the new bone. The surrounding stroma showed good vascularity and absence of inflammation, confirming favourable healing and osteointegration. (Figures 7a, 7b, 7c and 7d)

Histopathological Impression:

Features suggestive of mature bone formation with fine trabecular pattern, minimal residual graft, and adequate regeneration following OSSIX™ Bone grafting.

CLINICAL INSIGHT AND CONCLUSION

Posterior extraction sites often undergo rapid bone resorption, making future implant rehabilitation difficult. Immediate grafting using materials like OSSIX™ Bone preserves the alveolar ridge and enhances bone regeneration without the need for a second grafting procedure. Thanks to its GLYMATRIX® technology, OSSIX™ Bone offers controlled cross-linking of collagen fibers, ensuring long-lasting stability and gradual resorption — key factors for successful guided bone regeneration (GBR).

This case demonstrates that with the right regenerative approach, even complex posterior

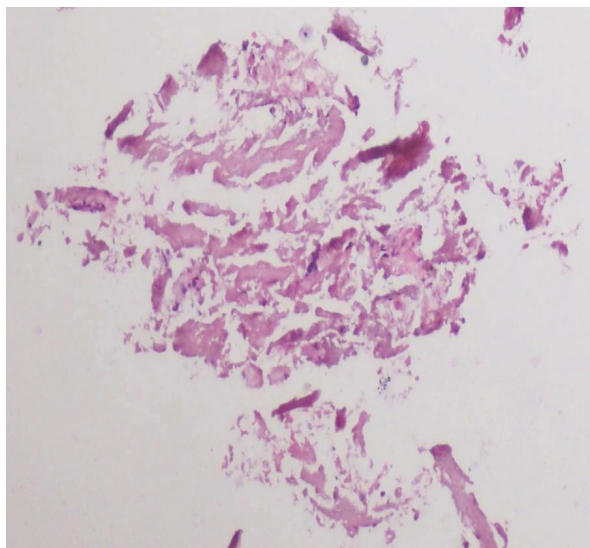


Fig 7a

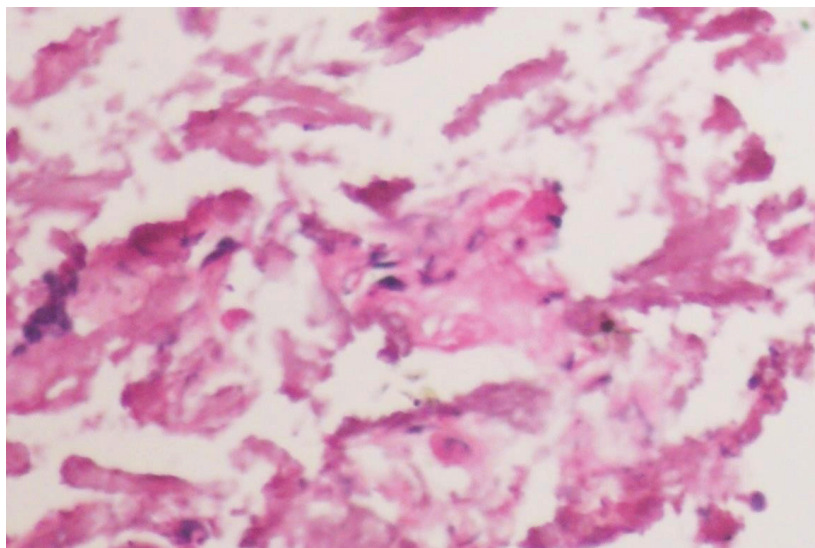


Fig 7b

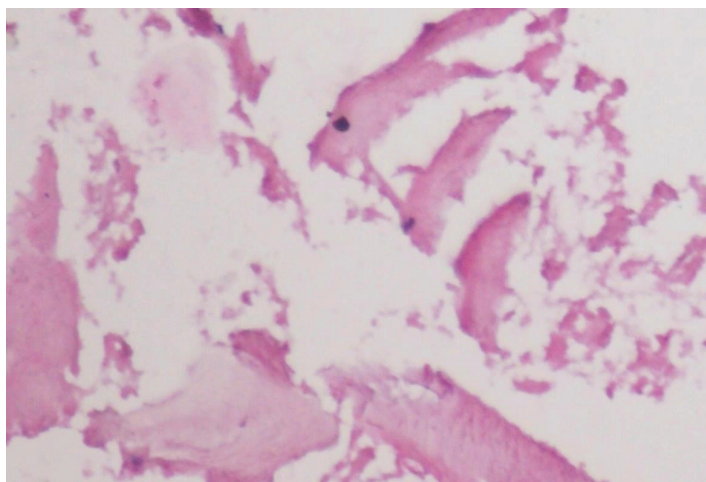


Fig 7c

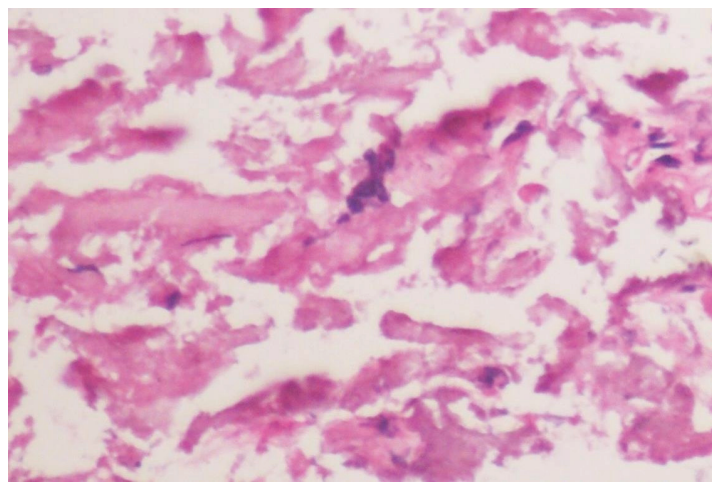


Fig 7d

Fig 7a-d: All are showing H & E stains

extractions can heal predictably. OSSIX™ Bone simplifies socket management, maintains ridge architecture, and prepares the site for timely implant placement.

By combining advanced biomaterials and precise clinical execution, clinicians can confidently plan implant-based restorations with predictable regenerative outcomes. ■

ARTICLE CITATION

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