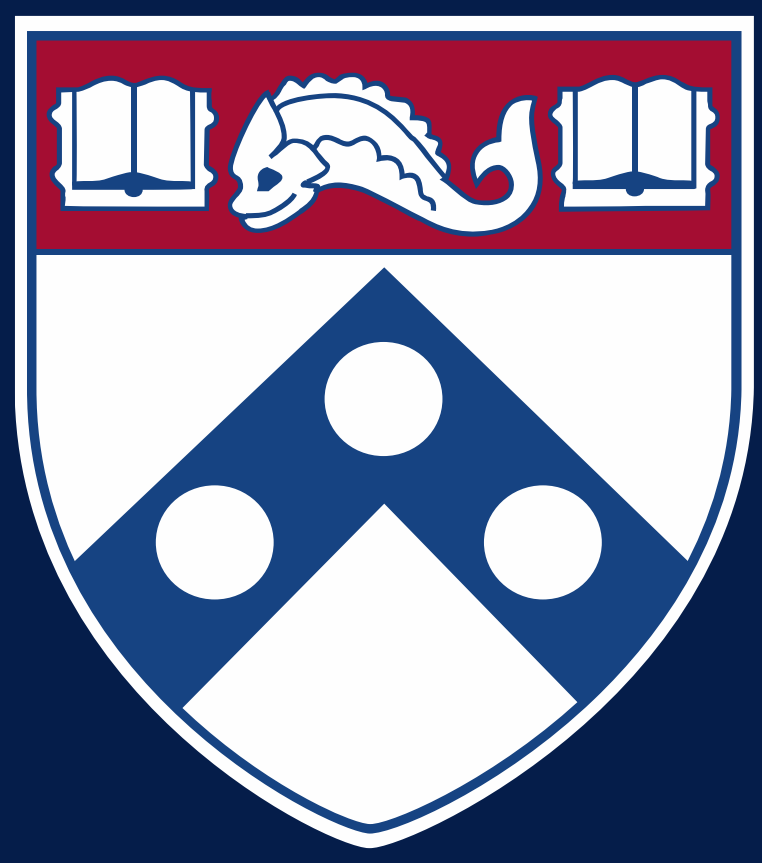




Guided Bone Regeneration in the Posterior Mandible

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Introduction

Severe ridge atrophy in the posterior mandible can limit implant placement. Guided bone regeneration (GBR) using biologically enhanced grafts and stable membrane fixation is a predictable approach to restore bone volume. This case describes GBR using an allograft combined with platelet-rich fibrin (PRF) and a titanium-reinforced PTFE membrane to augment a deficient mandibular ridge.

Methods

A male patient presented with significant bone deficiency in the mandibular posterior area of #19 desiring implant placement. Following local anesthesia, a mid-crestal incision was made, and a full-thickness flap was elevated. Secondary and mylohyoid muscle releases were performed to achieve tension-free closure. The recipient site was decorticated to promote vascularization and bone remodeling.

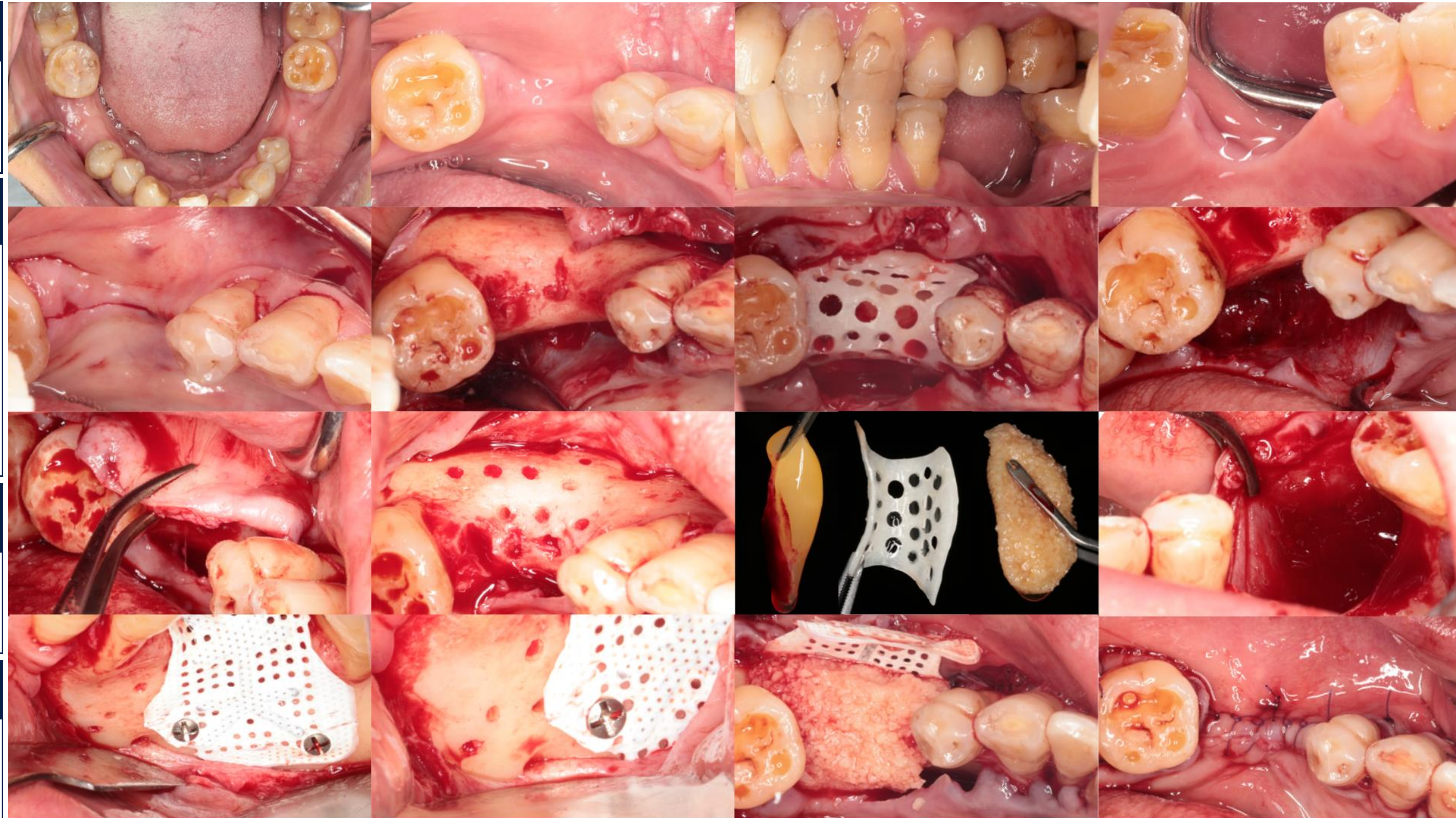
Patient blood was drawn to prepare PRF membranes and PRF liquid, which were mixed with allograft particles to create “sticky bone.” The graft was carefully adapted to the defect, and a titanium-reinforced PTFE membrane was trimmed and stabilized using tacking fixation to maintain space. The flap was advanced and sutured tension-free. Postoperative care included antibiotics and analgesics.

Results

Healing was uneventful with no membrane exposure. The patient reported minimal discomfort, and soft-tissue closure remained intact. The regenerated ridge demonstrated sufficient volume and density to support standard-diameter implant placement.

Conclusion

GBR using allograft combined with PRF under a titanium-reinforced PTFE membrane provided predictable ridge augmentation in a severely atrophic posterior mandible. Proper flap release, graft stabilization, and biologic enhancement with PRF were key to achieving tension-free closure, graft integration, and optimal bone regeneration for future implant placement.



References

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