RESTORING A SMILE THROUGH GUIDED BONE REGENERATION IN ESTHETIC ZONE

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Introduction: The fundamental idea of guided bone regeneration (GBR) is the use of a membrane to prevent non-osteogenic tissues from interfering with bone regeneration. The primary types of bone graft material are autogenous grafts, allografts, xenografts, and alloplasts, in which the mechanism of regeneration can be accomplished through three different mechanisms: osteogenesis, osteoinduction, and osteoconduction. Xenografts/alloplasts are typically only osteoconductive whereas autografts involve all the three mechanisms.

Case Presentation: A 24-year-old male patient reported with the complaint of missing teeth in the anterior region and was willing to have an implant supported prosthesis. CBCT revealed a bone width of 2.8mm. To achieve the desired results, a ridge augmentation procedure was carried out using guided bone regeneration through a combination of autogenous and allograft material. A 6-month follow-up revealed a 4.2mm gain in the bone width, following which an implant was placed and immediate loading of the implant was carried out.

Discussion: GBR in the present case was performed using a combination of autogenous graft, allograft material and platelet rich fibrin (PRF). Successful bone regeneration depends on multiple variables including the case selection, type of graft, adequate healing period, and operator skills. GBR using the staged approach provided the benefit to augment the alveolar ridge and improve the ridge morphology.

Conclusion: In the present case, GBR with a mixture of autogenous graft, allograft graft, and PRF was effective for bone augmentation to allow future implant placement.