

C-2. Ridge Augmentation using Guided Bone Regeneration with Bone Graft & e-PTFE Membrane

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Background

Osseointegrated implants have been widely utilized with high success rate for missing teeth in edentulous patients. However, preoperative analysis often indicates the presence of inadequate case for implantation due to an insufficient volume of supporting bone. For these cases, bone augmentation is necessary. When width of residual ridge is not sufficient, corticocancellous bone graft and osteopromotive membrane on the facial aspect of the ridge can be available. Osteopromotive membrane placed over bone graft could enhance graft corporation because it gives preference to osteogenic and angiogenic cells originating from the adjacent bone marrow cavity. And it could also maintain the volume of graft because it prevents invasion of competing nonosteogenic soft tissue cells from the overlying soft tissues. Mandibular symphysis bone graft and osteopromotive membrane was utilized to examine the synergistic effect in the extensive deficient ridge.

Material and Method

This patient was 51 year-old male, and complained of missing tooth of #41. The area had vertical defect beyond MGJ. Crevicular incision from #43 to #33 and vertical incision on #43, #33 distal line angle was made and full thickness flap was reflected. Using diameter 8mm trephine bur, corticocancellous bone with 8mm depth was achieved from the symphysis area. This autogenous bone was crushed and mixed with deproteinized bovine bone. The intramarrow penetration was made in the recipient site and the mixed bone was grafted. TR4Y e-PTFE membrane was applied with 3mm Mempix pin, and primary closure was achieved with Gore-Tex suture material.

Results

The width of ridge is widened enough buccolingually to implant placement.

Conclusion

The use of mandibular symphysis autogenous bone mixed with xenograft and osteo-promotive membrane together may be predictable for implant site development.