Effectiveness of Guided Bone Regeneration Using L-shape Technique: A Randomized Controlled Pilot Study

DENTISTRY

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BACKGROUND:

Guided bone regeneration (GBR) is considered as a common procedure for peri-implant bone defect correction. Conventionally, the common GBR technique involves the use of a resorbable collagen membrane combined with particulate bone substitute material. Even though this combination is well documented, incomplete vertical bone fills on the dehiscence was found. This undesirable outcome might be derived from displacement and/or resorption of the graft One alternative for material. improvement is using the L-shape technique performed by trimming and placing a soft-type bone block made of deproteinized bovine bone mineral with 10% collagen (DBBMC) at the buccal-occlusal aspect of the dental implant. The remaining gaps were with of filled deproteinized bovine bone mineral granules (DBBM) collagen and covered with а membrane. Therefore, L-shape technique could provide better stabilization at buccal and vertical aspect of grafted site when compared to conventional GBR.

AIM: To compare the effectiveness of GBR using L-shape versus conventional technique for the treatment of buccal dehiscence defects in terms of bone thickness (primary outcome), patient-reported clinical, and outcome measures (PROMs)

MATERIALS & METHODS:

dehiscence (n=6)

RESULTS: The changes in bone thickness were lower for L-shape technique than conventional technique, especially vertical and buccal bone thickness at the implant platform level. Patients' pain perception tended to be slightly higher in the L-shape group. All peri-implant bone defects observed at the time of second stage surgery can be corrected. However, additional soft tissue surgery (CNT graft) was required in some cases in both groups.

CONCLUSION Within the limitations of this pilot study, the use of the L-shape technique showed the trends toward more stable vertical and buccal bone thickness at implant platform level and demonstrate comparable clinical outcomes to conventional GBR technique. Further randomized controlled trials with larger sample sizes are needed to validate these findings

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1. the changes in vertical and buccal bone thickness assessed by CBCT between at the time of implant placement and 6 months after surgery 2. PROMs: pain perception (VAS)

3. The need of soft tissue augmentation

