

R-15. The Effects of Autograft and Calcium Carbonate On The Periodontal Healing Of 3-Wall Intrabony Defects In Dogs

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Background

The ultimate goal of periodontal therapy is the regeneration of periodontal tissue and repair of function. For more than a decade there have been many efforts to develop materials and bioactive molecules to promote periodontal wound healing.

The purpose of this study was to examine the effect of autograft and calcium carbonate on the epithelial migration, gingival connective tissue adhesion, cementum formation, alveolar bone regeneration in intrabony defects of dogs.

Materials and Methods

4mm deep and 4mm wide 3-wall defects were surgically created in the mesial and distal aspects of the 2nd premolars and mesial aspects of the 4th premolars. Following the flap procedure, two test groups with 6 defects each received either coralline calcium carbonate (group 1), autograft (group 2). The rest of the six defects received the flap procedure-only as the control group. Defects were evaluated by histologic and histometric parameters following a 8-week healing interval.

Results

Histologic analysis after 8 weeks of healing revealed the following results : The length of epithelial growth (the distance from alveolar crest to the apical end of JE) was 0.03 ± 0.43 mm in the control group and 0.20 ± 0.36 mm in the group 1 and 0.06 ± 0.18 mm in the group 2. There was no statistically significant difference between the three groups.

The length of connective tissue adhesion was 1.46 ± 0.18 mm in the control group and 1.58 ± 0.13 mm in the group 1 and 0.38 ± 0.16 mm in the group 2. The group 2 showed significantly difference ($P < 0.01$) The length of new cementum was 2.83 ± 0.85 mm in the control group and 2.60 ± 0.98 mm in group 1 and 4.11 ± 0.10 mm in the group 2. The group 2 showed significantly difference ($P < 0.01$) The length of new bone height was 3.11 ± 0.63 mm in the control group and 3.36 ± 0.56 mm in the group 1 and 3.81 ± 0.22 mm in the group 2. The group 2 showed significantly difference compared to the control group

Conclusion

These results suggest that the use of autograft in 3-wall intrabony defects has a significant effect on new cementum and new bone formation height.

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