R-13. Effect of Enamel Matrix Derivative on Guided Bone Regeneration with Intramarrow Penetration

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The purpose of this study was to investigate effect of enamel matrix derivative on guided bone regeneration with intramarrow penetration in rabbits. Eight adult male rabbits (mean BW 2Kg) were used in this study. Intramarrow penetration defects were surgically created with round carbide bur(HP long #6) on calvaria of rabbits. Defects were assigned to the control group grafted with mixture of the same quantity of demineralized freeze-dried bone allograft and deproteinized bovine bone mineral. Then, guided bone regeneration was carried out using resorbable membrane and suture. Enamel matrix derivative applied to defects was assigned to the test group. And treated as same manners as the control group. At 1, 2, 3 and 8 weeks after the surgery, animals were sacrificed, specimens were obtained and stained with Hematoxylin-Eosin for light microscopic evaluation.

The results of this study were as follows :

1. At 1, 2 and 3 weeks, no differences were observed between the control group and the test group in the aspect of bone formation around bone graft.
2. Proliferation of blood capillary was faster in the test group than in the control group.
3. Bone regeneration in intramarrow penetration was faster in the test group than in the control group.
4. At 8 weeks, new osteoid tissue formation around bone graft was more prominent in the test group than in the control group.

From the above results, enamel matrix derivative might be considered as the osteopromotion material and effective in the guided bone regeneration with intramarrow penetration.