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A REGENERATIVE TREATMENT FOLLOWING ROOT SURFACE BIOMODIFICATION USING ENAMEL MATRIX PROTEINS OR DENTIN COLLAGEN – CELL CULTURE EXPERIMENTAL PROCESS

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Objective: The aim of this study was to assess the effect of using enamel matrix proteins (EMP) or dentin collagen in the treatment of human root surfaces as bio-modifiers.

Material & Methods: Thirty root slices were obtained from proximal surfaces of fifteen lower anterior teeth that had been extracted due to hopeless periodontitis. The root slices were randomly divided into three groups and subjected to one of the following treatments: I) Control group (no treatment received), II) Enamel matrix proteins, III) Dentin collagen. Periodontal cells were seeded in each group with a concentration of ($5 \times 10^3 / 20 \mu\text{l}$), and incubated for seven days on dentin surfaces of the root slices. Following incubation, the attached cells were calculated and also the cell morphologies were evaluated by SEM. The statistical analysis was done using One-way ANOVA test at ($p \leq 0.05$).

Results: Second and third groups did not show significant differences regarding attached cells ($p > 0.05$), but showed significance in comparison to control. However, the attached cells were highest in second group (EMP) and lowest in the control group. Regarding cell morphologies, control group had mostly round to oval cells whereas other two experimental groups showed evidently flat elongated cells.

Conclusion: Despite EMP showed the highest gained attached cells, both of EMP and dentin collagen showed comparable effective positive way on the adhesion and attachment of cells to root surfaces. This may have a critical major role in the periodontal regenerative treatment.

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