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Posterior mandibular tooth socket preservation with amniotic membrane and allograft bone versus conventional methods

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Introduction: Tooth socket preservation has become a key component of contemporary clinical dentistry. This term designates alveolar preservation that is achieved by the immediate filling of the undamaged tooth socket with biomaterials. Different types of bone substitutions and membranes have been utilized for socket augmentation. Our goal was to evaluate the efficacy of the amniotic membrane, as a new material, on bone density in comparison with conventional methods in this study.

Materials & Methods: In this randomized clinical trial 75 patients (48 females and 27 males) underwent mandibular molar extraction and socket preservation by using allograft bone in control group: allograft bone with collagen membrane in group 1 and allograft bone with the amniotic membrane in group 2. All 25 stages of socket preservation procedures in each group were done by the same surgeon and evaluated by the same radiographic machine. The data were statistically analyzed by SPSS software, one-way ANOVA and Tukey post-hoc tests. The P-value <0.05 was considered as significant.

Results: The results of this study showed that after four months the mean density difference in the extracted site was 1736.88 in control group; for patients who underwent socket preservation with allograft and collagen membrane it was 1746.20 and in cases, with allograft in addition amniotic membrane it was 1762.48.

Discussion & Conclusion: The results demonstrated that, compared with control group, both collagen membrane and amniotic membrane showed a higher mean bone density (P-Value=/998 and P-Value=/918), but this difference was not statistically significant. Whereas amniotic membrane showed a higher bone density than the collagen membrane, there are no significant differences between these two groups (P-Value=/994). Although socket preservation methods may be effective on alveolar bone contour stability, we cannot significantly confirm the efficacy of these methods on bone quality and density.

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