



HISTOLOGICAL EVALUATION OF WHOLE VS ENDODONTICAL TREATED TEETH USED AS AUTOLOGOUS GRAFT IN SOCKET PRESERVATION PROCEDURES: A MULTICENTER PILOT STUDY

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ABSTRACT

AIM: Evaluate the histological and histomorphometrically results between whole and endodontically treated teeth used as autologous grafts in post-extractive socket preservation procedures.

MATERIALS AND METHODS: Twenty-eight patients (average age $52,9 \pm 13,1$ yrs) with post-extractive defects, were enrolled in five dentistry centers. All patients were shared in two groups: with whole teeth (Group 1) and teeth with endodontically root canal therapy (Group 2). The extracted teeth were processed with Tooth Transformer device to obtain a demineralized and granulated graft materials used with a resorbable collagen membrane for socket preservation. After 4 months, 32 bone biopsies were obtained for histological, histomorphometry and statistical analysis.

RESULTS: During bone healing period no infection signs were observed. Nineteen biopsies in group 1 and 13 biopsies in group 2 were detected. The histologic analysis showed no inflammatory or infective reaction in both groups. Autologous grafts surrounded by new bone were observed in all samples and at high magnification, dentin and enamel structure partially resorbed were detected. No gutta-percha or cement were identified. Small non-statistically significant differences between the groups, in total Bone Volume, autologous Graft residual and Vital Bone percentage were detected.

CONCLUSION: The study showed the Tooth Transformer grafts were capable to produce new vital bone in socket preservation procedures. The histomorphometry results showed no statistical differences comparing whole and endodontically treated teeth in bone regeneration. Further studies will be detected to understand the advantages of the autologous graft materials obtained from the tooth compared with the current biomaterials in bone regeneration treatments.