Histopathological Effect of Advanced Periodontal Disease on the Dental Pulp

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Abstract

Statement of Problem: Many authors have claimed that pulpal inflammation may occur following periodontal diseases. Appropriate diagnosis of different lesions that have affected the dental pulp or periodontium is critical for prevention of unnecessary or harmful treatments; this must be taken into account before treatment.

Purpose: The purpose of this study was histological evaluation of the pulp in the teeth with advanced periodontitis.

Materials and Method: 30 permanent single teeth root that had advanced periodontitis with attachment loss $\geq 5$ mm at least in one surface were used. The teeth were not maintainable and did not have caries, restoration and any sign of primary trauma from occlusion and did not receive any periodontal professional treatment in the past 6 months with no background of trauma. After clinical and radiographical examination and confirmation of the existence of advanced periodontitis, the teeth were extracted. Then cracks were created in the teeth by special clips. After fixation of the teeth in 10% formalin solution and decalcification by 10% nitric acid, the sections were prepared and stained by hematoxylin and eosin and then evaluated from histological perspectives. The data were analyzed by Spearman correlation coefficient ANOVA, t-test and Kruskal wallis tests.

Results: In this survey, we did not find any significant correlation between clinical findings and histopathological situation. The relationship between clinical attachment loss and pulp diagnosis was statistically significant ($p =0.043$). Also there was a statistically significant relationship between clinical attachment loss and calcification in the pulp ($p =0.014$).

Conclusion: According to the result of this research, it seems that periodontal condition affects the pulpal condition and it should be considered in future treatments on these teeth.

Key words: Dental pulp, Periodontium, Periodontal disease