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Histopathological Study of Periapical Inflammation Following Preparation of the Root Canal with Conventional and Profile Rotary Instrumentation in Teeth of Cats

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Abstract:

Statement of Problem: Various factors are involved in causing inflammation following root canal treatment. Controlling these factors may relieve the related pain. One of these factors is extrusion of debris beyond the apex. Although debris extrusion happens in all instrumentation techniques, researchers have declared that in coronal flaring technique, there is minimum debris extrusion. Purpose: The purpose of this study was to evaluate and compare the inflammation of periapical area following root canal therapy, using conventional and profile rotary instrumentation in cats' teeth, from a histopathological point of view. Materials and Methods: This experimental study conducted on thirty Persian one year old cats. Three groups of samples were chosen and treated with different methods. First group were prepared by step-back instrumentation technique using stainless steel K-type files. Second group were prepared by crown down technique using Ni-Ti files. Third group were prepared using profile GT rotary system at 150-rpm speed. Animals were subjected to vital perfusion at 8, 24 & 48 hour intervals after instrumentation. The canine teeth were separated from the jaw along with some of the supporting structures. Then decalcification and laboratory processing were carried out and samples were evaluated histologically. Collected data were analyzed using Kruskal-Wallis test. Results: The results showed that in vital teeth with no evidence of periapical pathosis, the inflammation following various instrumentation methods was not statistically different. Conclusion: In vital teeth, the periapical inflammation following various methods of instrumentation is not statistically different.

Keywords:

[Histopathological inflammation](#) , [Rotary instrumentation](#)

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