

بررسی آزمایشگاهی نشت آپیکالی پس از آماده سازی کانال با کاربرد RC Prep

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Title: An invitro evaluation of apical leakage after root canal preparation by RC Prep

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Introduction:

Today use of chelater materials such as RC Prep for easy root canal preparation with rotary instruments has been increased. According to the importance of apical seal and probably influence of instruments and materials on apical constriction size, the aim of this study was to evaluate the effect of RC Prep on apical leakage.

Materials & Methods:

In this experimental invitro study the crown of 66 single-root extracted human adult teeth with minimum root curve and same diameter were resected and divided to 3 experimental groups and two control groups (test groups: 20 teeth, control groups: 3 teeth). The working length determined 1mm from the apex. The canals were prepared as follow:

Group A: The canals were prepared by step back technique (MAF#40) and RC Prep, irrigated by 5cc Naocl 2.6% and obturated by AH26 and gutta percha via lateral condensation.

Group B: The canals were prepared and obturated similar to group A without use of RC Prep.

Group C: The canals were prepared like group A, but the irrigator was saline.

Root canals of control groups were prepared like group A, but the canals of group D (positive control) were not obturated. Crowns of experimental groups and negative group were sealed by glass Ionomer. Then the surface of all roots except 2mm of apical end were covered by nail polish. Teeth were incubated in 37°C and 100% humidity for 24 hours, then centrifuged in India ink for 15 minute by 3000 rpm and soaked in it for 72 hours. They were mounted in polyster and sectioned buccolingually. The dye penetration was measured by stereomicroscope with 0.1mm accuracy. The data analyzed by ANOVA and DUNCAN test.

Results:

The results showed that there was a statistical difference between experimental groups (P=0.011). This difference was between groups B & C (P=0.008) and leakage was lower in group C. Groups A & B, A & C did not have significant differences, statistically.

Conclusion:

RC-Prep as a lubricant and chelator doesn't have any effect on apical leakage and is useful for canal preparation by instruments.

Key words:

RC Prep, sodium hypochlorite, apical leakage.

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