

Abstract

Title: In vitro comparison of apical microlakage of MTA Fillapex, AH₂₆ and Endofill root canal sealers

Background and Aim

A good apical seal plays a critical role in the success of endodontic treatment. The most common cause of treatment failure has been the lack of root apical seal. The aim of this study was to compare the apical seal of three root canal sealers including MTA Fillapex, AH₂₆ and Endofill together, using a dye penetration test.

Materials and methods

Seventy two extracted single root canal teeth were used in this study. Teeth were randomly divided into three experimental groups (N=20) and two negative and positive control groups (N=6). Teeth were instrumented by stepback technique and obturated using lateral condensation technique with gutta-percha and either MTA Fillapex, AH₂₆ and Endofill. In positive control group, after preparation, the canals were filled with gutta-percha without sealer, and in negative control group, the canals were prepared but not filled. The samples were incubated for 72 hours after that they were submerged in 2% methylene blue for 72 h. Then they were longitudinally sectioned and observed under a stereomicroscope. Data were analyzed by ANOVA and Benferoni test, through SPSS 19 software.

Results

Higher level of dye penetration was observed in Endofill which was significantly greater than the rate in AH₂₆ and MTA Fillapex, while the difference observed between AH₂₆ and MTA Fillapex was not statistically significant (P<0,05).

Conclusion

The results of this study showed there was no statistically significant difference in apical seal of AH₂₆ and MTA Fillapex sealers: However, the leakage of them was significantly less than that of Endofill sealer.

Key words: Sealer, MTA Fillapex, Microleakage.