"COMPARATIVE EVALUATION OF APICAL MICROLEAKAGE IN IMMEDIATE AND DELAYED POST SPACE PREPARATION USING THREE ROOT CANAL SEALERS -BIOROOT RCS, MTA FILLAPEX AND AH PLUS – AN INVITRO STUDY"

By

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THESIS ABSTRACT

AIMS AND OBJECTIVES:

The aim of this study was to compare the effect of apical microleakage of tricalcium silicate based BioRoot RCS, resin-based AH Plus, and bio ceramic based MTA Fillapex sealers on immediate and delayed post space preparation.

METHODOLOGY:

- Seventy-two extracted human mandibular premolars of approximately equal size with single root canal and mature root apices will be selected.

- All teeth will be stored in 0.9% saline and will be immersed in 5.25% sodium hypochlorite (NaOCl) for 8 hours to remove surface-adhered organic material.

- The teeth will be decoronated at the cementoenamel junction using water-cooled high-speed fissure bur

- Biomechanical preparation will be done in all the teeth using standardized technique. The teeth will be divided randomly into groups. The obturation will be done with BioRoot RCS, AH Plus and MTA Fillapex using cold lateral condensation technique. The post space preparation will be done immediately and after 1 week

- The roots will be placed in 2% methylene blue dye and washed under running water to remove excess dye.

- The teeth will then be sectioned vertically along the long axis and evaluated under a stereomicroscope at ×20 magnification for visible coronal extent of dye penetration from the apical constriction, and the average of the values will be taken.

RESULTS AND CONCLUSION: From the present study it can be concluded that apical microleakage after post space preparation was least with AH Plus used as sealer followed by BioRoot RCS and MTA Fillapex. AH Plus showed least microleakage immediately after post space preparation compared to delayed, whereas BioRoot RCS and MTA Fillapex showed least microleakage when post space preparation was done after one week.

KEYWORDS: AH Plus, BioRoot RCS, MTA Fillapex, apical microleakage