ABSTRACT

Comparison Of Smear Layer Removal Ability Using Qmix And MCP Irrigating Solutions By Er:Yag Laser Activation-A Scanning Electron Microscope Analysis

AIM:

To compare the smear layer removal ability of Qmix and MCP irrigating solutions by Er:YAG laser activation system- A Scanning Electron Microscope analysis.

OBJECTIVES:

1. To compare smear layer removal ability of Qmix and MCP using conventional syringe needle irrigation.
2. To compare smear layer removal ability of Qmix and MCP using Er:YAG laser activation system.

METHODOLOGY:

Thirty two single-rooted human mandibular premolars based on the inclusion and exclusion criteria were selected. Soft tissue remnants and debris were cleaned mechanically, ultrasonically and stored in 10% formalin until use. The teeth were decoronated, and root canals were prepared using ProTaper rotary instruments (Dentsply, India) up to apical size (F4) with irrigation with 2 mL 5.25% NaOCl between each file. After the
instrumentation, the specimens were randomly divided into two groups of 16 roots each in the Qmix and MCP respectively. Further 8 samples were activated using conventional syringe needle and 8 were activated using Er:YAG laser system. After irrigation protocol the smear layer scores were identified according to the Hulssman et al.1997 criteria for all the samples. Scanning electron microscope was used to view the samples.

RESULTS:

Qmix irrigating solution showed better smear layer removal ability in conventional syringe needle irrigation and Er:YAG laser activation system than the MCP solution. The laser activation group showed better smear layer removal than the conventional syringe needle irrigation method. There was better smear removal at the coronal and middle thirds in both the groups than at the apical third.

CONCLUSION:

The present study concludes that Qmix removed better smear layer than the MCP solution. The Er:YAG laser system enhanced the smear layer removal ability in the Qmix group than the MCP group.

KEY WORDS: Qmix, MCP, Er:YAG LASER, SMEAR LAYER, SCANNING ELECTRON MICROSCOPE