ABSTRACT

Micro computed tomographic evaluation of canal transportation and centering ability of ProTaper Universal, Hyflex EDM and WaveOne GOLD- An invitro study.

AIM

To determine and compare the canal transportation and centering ability of ProTaper Universal, Hyflex EDM and WaveOne GOLD using Micro computed tomography.

METHODOLOGY

Sixty mesiobuccal canals of mandibular molars were selected and randomly divided into three groups of 20 samples each: ProTaper Universal (group one), Hyflex EDM (group two) and WaveOne GOLD (group three). Pre- and post-instrumentation scanning of samples were done using micro-CT. scanned images were three dimensionally reconstructed, these three dimensional images from root cross-sections at 3mm, 6mm and 9mm from the apex were accessed to determine canal transportation and centering ability. SPSS software was used for statistical analysis. The significance level was set at p =0.05.
RESULTS

ProTaper Universal files showed highest transportation and less centered when compared to Hyflex EDM and WaveOne GOLD files. No significant difference was found between Hyflex EDM and WaveOne GOLD instruments.

CONCLUSION

Hyflex EDM and WaveOne GOLD files shaped curved root canals without significant canal transportation and better centered when compared to ProTaper Universal files.

KEY WORDS

Canal Transportation, Centering ability, ProTaper Universal, Hyflex EDM, WaveOne GOLD, Micro-CT.