

ABSTRACT

A three dimensional obturation is an essential key to achieve endodontic success. To accomplish this, many root canal sealers has been tested over time to determine the most effective sealer. The aim of this study was to evaluate and compare the microleakage value of the gold standard sealer commonly used: epoxy resin based: AH 26 (Densply, Germany) with silicon based: GuttaFlow 2 (Coltene, Germany) and two newly bioceramic based: Fillapex (Angelus, Brazil), Endosequence BC (Brasseler, USA). A total forty single-rooted teeth were selected and randomly divided into four groups (n=10). Root canal were prepared using K-files size 10, Proglider and Waveone Gold primary with endo motor (X-smart plus endo motor, Densply, Germany). Experimental groups were obturated with single cone technique as followed: Group 1: Gutta percha + AH 26 sealers, Group 2: Gutta percha + GuttaFlow 2, Group 3: Gutta percha + MTA Fillapex, Group 4: Gutta percha + Endosequence BC. Samples were then stored for 72 hours and then immersed in 2% methylene blue one week. The samples were then sectioned and dye penetration was evaluated under microscope. Statistical analysis were done using Shapiro–Wilk test, Oneway ANOVA test and Turkey HSD test. There were a statistically significant different among experimental groups. Endosequence BC showed the least apical microleakage followed GuttaFlow 2, MTA Fillapex and AH 26.

Keywords: *apical microleakage, AH 26, GuttaFlow 2, MTA Fillapex, Endosequence BC, dye penetration*