PENGARUH IRIGASI AKHIR MENGGUNAKAN *EDTA* 17% DAN EDTA 17% DIIKUTI KLORHEKSIDIN DIGLUKONAT 2% TERHADAP KEKUATAN PELEKATAN *PUSH OUT* SILER SALURAN AKAR BERBAHAN DASAR RESIN EPOKSI DAN BIOKERAMIK

INTISARI

Kekuatan pelekatan siler terhadap dinding saluran akar dapat membantu keberhasilan perawatan saluran akar. Irigasi akhir dengan bahan yang tepat dapat meningkatkan pelekatan siler terhadap dinding saluran akar. Tujuan penelitian ini untuk melihat kekuatan pelekatan siler saluran akar setelah irigasi akhir menggunakan EDTA 17% dan EDTA 17% diikuti Klorheksidin 2%.

Duapuluh delapan gigi premolar mandibula dipotong pada bagian servikal dengan panjang akar 14 mm kemudian dilakukan perawatan saluran akar dengan metode *crown down*. Saluran akar dipreparasi menggunakan file putar sampai file #30/0,09. Saluran akar diirigasi menggunakan NaOCl 2,5% dan dibilas dengan akuades steril. Spesimen penelitian dibagi dalam 2 kelompok (masing-masing kelompok 14 gigi), yaitu kelompok I irigasi akhir EDTA 17% dan kelompok II irigasi akhir EDTA 17% diikuti klorheksidin 2%. Kelompok IA irigasi akhir EDTA 17% dan siler resin epoksi, kelompok IB irigasi akhir EDTA 17% dan siler biokeramik, kelompok IIA irigasi akhir EDTA 17% diikuti klorheksidin 2% dan siler resin epoksi, kelompok IIB irigasi akhir EDTA 17% diikuti klorheksidin 2% dan siler biokeramik. Setelah dilakukan penyimpanan dalam inkubator pada suhu 37 °C selama 7 hari, dilakukan pemotongan secara horizontal pada sepertiga apikal dengan ketebalan 2 mm. Potongan gigi kemudian dilakukan uji *push-out*. Data yang didapat dilakukan uji ANAVA dua jalur dengan tingkat kepercayaan 95%.

Hasil uji statistik menunjukkan perbedaan kekuatan pelekatan *push-out* antara siler biokeramik dengan resin epoksi ($p<0,05$) dan kekuatan pelekatan *push-out* siler setelah irigasi akhir dengan EDTA 17% dan EDTA 17% diikuti klorheksidin diglukonat 2% ($p<0,05$). Kesimpulan : kekuatan pelekatan *push-out* siler biokeramik lebih besar dibandingkan siler resin epoksi, kekuatan pelekatan *push-out* setelah irigasi akhir dengan EDTA 17% diikuti klorheksidin 2% lebih besar dibandingkan irigasi akhir EDTA 17%, dan penggunaan irigasi akhir EDTA 17% dan EDTA 17% diikuti klorheksdin 2% tidak mempengaruhi kekuatan pelekatan *push-out* siler saluran akar berbahan dasar resin epoksi dan biokeramik.

Kata kunci : Irigasi akhir, siler biokeramik, siler resin epoksi, *Ethylenediaminetetraacetic acid*, klorheksidin, uji pelekatan *push-out*

THE EFFECT OF FINAL IRRIGATION WITH 17% EDTA AND 17% EDTA FOLLOWED BY 2% CHLORHEXIDINE ON PUSH-OUT BOND STRENGTH OF EPOXY RESIN AND BIOCERAMIC BASED ROOT CANAL SEALER

ABSTRACT

The bond strength of root canal sealer to root canal dentin contribute the succesfull of root canal treatment. Final irrigation with proper solution can enhance of sealer bond strength to root canal dentin. The purpose of this study was to evaluate bond strength of root canal sealer after final irrigation with 17 % EDTA and 17% EDTA followed by 2% chlorhexidine.

Twenty eight mandibular premolar teeth were cut 14 mm of root portion length, then root canal treated using crown down technique. The root canals were prepared using rotary files up to #30/0.09. The canals were irrigated with 2.5% NaOCl and rinsed with sterile water. All teeth were randomly divided into 2 groups of 14 each, group I(17% EDTA as final irrigation) and group II(17% EDTA followed by 2% chlorhexidine as final irrigation). Group IA was irrigated with 17% EDTA as final irrigation and epoxy resin sealer, group IB was irrigated with 17% EDTA as final irrigation and bioceramic sealer, group IIA was irrigated with 17% EDTA followed by 2% chlorhexidine as final irrigation and epoxy resin sealer, group IIB was irrigated with 17% EDTA followed by 2% chlorhexidine as final irrigation and bioceramic sealer. All specimens were stored in an incubator for 7 days at 37°C. Specimens were horizontally sectioned at the apical third of root with 2 mm-thickness then tested using push-out technique. Data were analyzed with two way anova at 95% level of significance.

The results revealed that the differences occurred in the push-out bond strength between bioceramic to epoxy resin-based root canal sealers ($p<0.05$) and push-out bond strength of root canal sealer after final irrigation with 17% EDTA and 17% EDTA followed by 2% Chlorhexidine ($p<0.05$). It can be concluded that the push-out bond strength of bioceramic sealer was higher than epoxy resin sealer, push-out bond strength of sealers after final irrigation with 17% EDTA followed by 2% chlorhexidine were higher than final irrigation with 17% EDTA. The push-out bond strength of root canal sealer was not affected by final irrigation.

Keywords: final irrigation, bioceramic sealer, epoxy resin-based sealer, Ethylenediaminetetraacetic acid, chlorhexidine, push-out bond strenght.