PENGARUH DESAIN DAN GERAKAN *SINGLE FILE SYSTEM* YANG BERBEDA TERHADAP TRANSPORTASI SALURAN AKAR DI SEPERTIGA APIKAL BENGKOK (KAJIAN *CONE BEAM COMPUTED TOMOGRAPHY)*

INTISARI

Preparasi saluran akar merupakan tahap terpenting dalam perawatan endodontik dan mempengaruhi desinfeksi dan obturasi saluran akar. Kelengkungan saluran akar di bagian sepertiga apikal mempengaruhi kemampuan instrumen untuk preparasi dan beresiko tinggi menyebabkan kesalahan preparasi berupa transportasi saluran akar. Tujuan penelitian ini untuk melihat pengaruh desain dan gerakan *single file system* yang berbeda terhadap transportasi saluran akar di sepertiga apikal bengkok.

Tiga puluh dua gigi premolar mandibula dilakukan foto radiografi CBCT untuk mendapatkan data kriteria inklusi sampel gigi, ketebalan dinding mesial, dan distal dentin di ketinggian 3 mm dari apikal. Spesimen dipreparasi akses kavitas dan diukur dengan panjang kerja dengan K-*file* #10. Spesimen penelitian dibagi dalam 2 kelompok (per kelompok 16 gigi), yaitu kelompok I *rotary single file cross-sectional parallelogram taper 7%* dan kelompok II *rotary single file cross-sectional S-shape taper 8%*. Tiap kelompok tersebut terbagi 2 subkelompok (per kelompok 8 gigi), yaitu kelompok A gerakan preparasi *continuous rotation* dan kelompok B gerakan preparasi *reciprocal motion*. Hasil preparasi difoto radiografi CBCT untuk mendapatkan data ketebalan dinding mesial dan distal dentin di ketinggian 3 mm dari apikal. Data yang diperoleh dianalisis dengan anava dua jalur.

Uji statistik menunjukkan tidak ada pengaruh desain dan gerakan *single file system* yang berbeda terhadap transportasi saluran akar di sepertiga apikal bengkok ($p>0,05$). Kesimpulan penelitian ini adalah tidak ada pengaruh desain dan gerakan *single file system* yang berbeda terhadap transportasi saluran akar di sepertiga apikal bengkok (kajian CBCT).

Kata kunci : *single file system*, transportasi saluran akar, *cone beam computed tomography*

THE EFFECT OF DIFFERENT SINGLE FILE SYSTEM DESIGNS AND MOVEMENTS ON CANAL TRANSPORTATION IN THE CURVATURE APICAL THIRD (REVIEW WITH CONE BEAM COMPUTED TOMOGRAPHY)

ABSTRACT

Root canal preparation is the most important stage in endodontic treatment and affects root canal disinfection and obturation. Root canal curvature in the apical one-third affects the ability of the instrument for preparation and is at high risk of causing preparation errors in the form of root canal transport. The purpose of this study was to look at the effect of different single file system designs and movements on root canal transportation in the curvature apical third.

Thirty-two mandibular premolar teeth were CBCT radiographed to obtain data on inclusion criteria for dental samples, mesial wall thickness, and distal dentin at an altitude of 3 mm from the apical. Specimens were prepared with access cavity and measured by working length with K-file #10. The study specimens were divided into 2 groups (per group of 16 teeth), namely group I rotary single file cross-sectional parallelogram taper 7% and group II rotary single file cross-sectional S-shape taper 8%. Each group is divided into 2 subgroups (per group of 8 teeth), namely group A, the continuous rotation preparation movement and group B the reciprocal motion preparation movement. Results of the preparation were photographed by CBCT radiography to obtain mesial and distal dentine wall thickness data at an altitude of 3 mm from the apical. The data obtained were analyzed by two-way Anova.

Statistical tests showed no effect of different single file system designs and movements on root canal transport in the curvature apical third ($p > 0.05$). The conclusion of this study was that there was no effect of the design and movement of different single file systems on root canal transportation in the curvature apical third (CBCT study).

Keywords: single file system, canal transportation, cone beam computed tomography