

Perbandingan Kebersihan Dinding Saluran Akar Pasca Perawatan Ulang dengan Teknik Rotasi Kontinu dan Resiprokal (Analisis dengan Micro-CT) = The Comparison of Root Canal Wall Cleanliness in Retreatment Using Continuous Rotary and Reciprocal Movement (A Micro-CT Study)

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Abstrak

Latar Belakang: Kegagalan perawatan saluran akar dapat terjadi walaupun perawatan saluran akar mempunyai tingkat keberhasilan yang tinggi. Salah satu pilihan perawatan untuk kasus kegagalan adalah perawatan non bedah. Pembuangan bahan pengisi saluran akar merupakan faktor penting yang menentukan keberhasilan perawatan saluran akar ulang. **Tujuan**: Menganalisis perbedaan kebersihan pembuangan bahan pengisi dengan menggunakan instrumen putar tenaga mesin yang bergerak rotasi kontinu (*ProTaper Universal Retreatment System* [Dentsply Maillefer]) dan resiprokal (*Reciproc® Blue* [VDW, Munich]). **Metode**: 42 premolar rahang bawah pasca pengisian saluran akar dibagi 2 kelompok (n = 21): kelompok 1: R25 (sistem resiprok). kelompok 2: *ProTaper Universal Retreatment System* (sistem rotasi kontinu). Sampel dipindai dengan *Micro Computed Tomography*, data direkonstruksi dan dianalisis dengan perangkat lunak *CTAnalyser* (Bruker). Dihitung volume sisa bahan pengisi. Hasil yang didapat dibandingkan dengan uji *Mann-Whitney* ($p < 0,05$). **Hasil** : Masih terdapat bahan pengisi pada seluruh sampel. Secara statistik, terdapat perbedaan bermakna pada volume sisa bahan pengisi dari kedua kelompok. **Kesimpulan** : Instrumen gerak resiprokal membuang lebih banyak bahan pengisi dari saluran akar terutama area 1/3 apikal dibandingkan instrumen gerak rotasi kontinu.

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Background: Despite having a high success rate, failure in endodontic treatment can still occur. One of the treatment options for failure cases is non surgical retreatment. Maximum removal of root canal filling material is essential for successful endodontic retreatment. **Objective**: To analyze the difference in cleaning of root canal filling by using continuous rotary motion (*ProTaper Universal Retreatment System*) and reciprocating motion (*Reciproc® Blue* [VDW, Munich]). **Methodolgy**: 42 mandibular premolars post-endodontic treatment divided into 2 groups (n = 21): group 1: R25 (reciprocating system). group 2: *ProTaper Universal Retreatment System* (continuous rotary system). Samples were scanned with *Micro Computed Tomography*, data reconstructed and analyzed by *CTAnalyser* (Bruker). Volume of residual filling material were calculated. The results were compared with *Mann-Whitney* test ($p < 0.05$). **Results**: All teeth examined had filling remnants within the canal. Statistically, there were significant differences in residual volume of filling material from both groups. **Conclusion**: The reciprocal motion instrument removes more filling material from the root canal, especially at the 1/3 apical area than the continuous rotary motion instrument.