

Single file concept in root canal treatment and retreatment

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Introduction: In this study One Shape file (OS) which was already designed as a shaping file was compared to R-Endo file (RE) in retreatment of endodontically treated teeth in terms of time required for completion of retreatment procedure and amount of remaining gutta-percha on root canal dentin.

Methods: Sixty mandibular mesio-buccal canals with angles of curvature between 15 and 45 degrees were prepared using Protaper Universal rotary files then obturated using gutta-percha and AH-Plus sealer. Canals were then divided equally into 2 groups according to the retreatment system. Time required to reach the full working length (T1) and for complete removal of gutta-percha (T2) were measured during retreatment procedure using a digital stopwatch. Also the amount of remaining gutta-percha on the root canal dentin was measured using Stereomicroscopic images analyzed by Image J software.

Results: OS group recorded statistically significant less time required for retreatment and less amount of remaining gutta-percha than RE group. As for the effect of Retreatment system on the percentage of remaining filling material regardless of canal curvature and Canal third:

There was statistically significant difference between (R-Endo) (47.61 ± 7.27) and (One Shape) (35.01 ± 5.77) where ($p < 0.0001$). The lowest mean percentage of remaining filling material was shown in (One Shape) (35.01 ± 5.77). As for the effect of retreatment system on time required for retreatment regardless of canal curvature and (T1 and T2):

There was statistically significant difference between (R-Endo) (46.41 ± 2.86) and (One Shape) (35.12 ± 6.57) where ($p = 0.007$). The lowest mean time was shown in (One Shape) (35.12 ± 6.57).

Conclusion: OS system showed less time required for retreatment and less amount of remaining gutta-percha on the root canal dentin when compared and analyzed by Image J software.

Key words: Retreatment, OneShape, R-Endo, Image J, Time, Stereomicroscope.

Biography:

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