

SAMPLE ABSTRACT - ORIGINAL RESEARCH

Title: Comparison of Cutting Efficiency of Reciproc and WaveOne Using Cone Beam Computed Tomography (CBCT): An in-vitro study.

Abstract:

Aim: To compare the cutting efficiency of Reciproc and WaveOne single file systems using Cone Beam Computed Tomography.

Materials and Methods: Thirty freshly extracted single rooted mandibular premolars were selected and divided into two groups (n=15). Teeth were decoronated at the cemento-enamel junction. Teeth of both groups were mounted on a wax template. Pre-instrumentation Cone Beam Computed Tomography (CBCT) imaging of all teeth was done at apical, middle and coronal third levels. Measurement was taken in middle of each section. Group 1 was prepared with Reciproc file and Group 2 was prepared with WaveOne file. Post-instrumentation CBCT imaging was done in a similar method as pre-instrumentation scan and the amount of dentin removed was calculated using iCAT software version, i-CAT CV 500 CBCT machine. Student's t-test was used for inter-group analysis at all the three levels i.e. coronal, middle and apical third, and at all the four sides i.e. buccal, lingual, mesial, distal.

Results: Reciproc system removed significantly more dentin than Wave One reciprocating system at all three levels ($P < 0.05$).

Conclusion: Using Reciproc system in a straight canal, the remaining dentin wall thickness after instrumentation is less as compared to WaveOne single file reciprocating system.