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"Comparison of Spreader Penetration during Lateral Compaction of 0.04 and 0.02 Tapered Gutta-Percha Master Cones"

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Abstract:

Statement of Problem: It has been established that successful root canal treatment depends on the quality of obturation. Deeper penetration of spreaders can improve the apical seal and the quality of the obturation. Purpose: The aim of this study was to compare the initial penetration depth of spreaders during lateral condensation of 0.04 and 0.02 tapered gutta-percha master cones. Materials and Methods: In this study, sixty two freshly extracted single canal teeth were selected. The crowns were removed and the canals were prepared using the step-back technique. Patency of the apical foramens was maintained. The teeth were divided into 2 experimental groups of 31 teeth each. 0.02 and 0.04 tapered gutta-percha were inserted in the root canals of the first and second groups, respectively. A spreader was then placed next to the master cone and a digital scale was used to measure the force that was applied during spreader placement. An apical force of 1.5kg was employed to place the spreaders. The penetration depth was measured, subtracted from the working length, and recorded. Statistical analysis was performed using t-test. Results: The mean spreader penetration depth, recorded as distance from working length, was 2.16 (1.03) mm when using 0.02 tapered master cones and 3.52 (1.88) mm following insertion of 0.04 tapered master cones. The difference between the two penetration depths was statistically significant ($P < 0.01$). Conclusion: The results of this study showed that the spreader penetration using 0.02 tapered master cones was significantly larger than the 0.04 master cones.

Keywords:

[Gutta-percha](#) . [Master cone](#) . [Spreader](#)

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