Journal of Oral Medicine and Surgery





Influence of Different Obturation Systems on the Fracture Resistance of Endodontically Treated Roots

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Abstract

Objective: This study aimed to compare the fracture resistance of endodontically treated roots filled by different obturation systems.

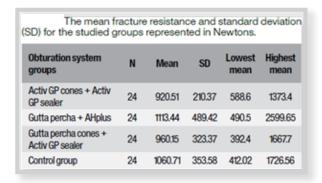
Materials and Methods: Ninety-six maxillary central incisors were used and decoronated, retaining 12 mm of the roots. On the basis of obturation systems, the roots were randomly divided into 4 groups (n=24): Group1 (COGR): control group (unprepared, unfilled), Group 2 (AVGR): ActiV GP points/ActiV GP sealer, Group 3 (GPGR): Gutta percha points / AH plus sealer, and Group4 (GAGR): Gutta percha points/ActiV GP sealer. The last three groups were obturated with the single cone technique. The roots were then stored in 100% relative humidity at 37 °C for 2 weeks. A vertical compressive force was exerted in a universal testing machine until fracture occurred. Data were statistically analyzed using one-way ANOVA.

Results: Mean (SD) failure loads for groups ranged from 920.51 ± 210.37 to 1113.44 ± 489.42 N. The fracture resistance between the different study groups indicated no statistical difference (p>0.05).

Conclusion: ActiV GP system did not exert a significant effect on the fracture resistance of endodontically treated teeth.

Biography

Mazen Doumani is working at the Department of Restorative Dental Sciences, Alfarabi Colleges of Dentistry and Nursing, Saudi Arabia.



28th Global Summit Expo on Dental Science and Oral Hygiene Webinar | June 08-09, 2020

Citation: Mazen Doumani, Influence of Different Obturation Systems on the Fracture Resistance of Endodontically Treated Roots, Dental Science 2020, 28th Global Summit Expo on Dental Science and Oral Hygiene, Webinar, June 08-09, 2020, pp. 02