

In Vitro Effect of Different Dental Composites on the Cuspal Deflection

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Objectives: the aim of this study was to evaluate cuspidal deformation effects due to shrinkage stress of the composite restorations using different types of composite resins.

Methods: Forty premolars were selected and randomly divided in Group A and B. Group A specimens were subjected to a class I cavity preparation., Group B elements were subjected to Class II preparation. Group A and B were sub-divided in 4 subgroups. Group A1 and B1 were restored with Clearfil Majesty (kuraray, Japan). Group A2 and B2 were restored with Enamel plus (micerium, Italy). Strain deformation was measured using a strain gauge technique. A linear strain gage (SG) was placed on buccal tooth side. The strain gauges were connected to digital hardware. The software acquired and stored 5 strain measurements per second. Each strain measurement was converted in a single strain-time function. Data were subjected to statistical analysis.

Results: Group A1 show lower percentage of detachments (15%) than Group A2 (37%). Group B1 and B2 strain-time functions show an absence of strong deflections. Plateau functions values show no statistically significant variations. $p < 0.05$

Conclusions: Our results showed that the composites tested might cause different effects on cuspal deflection and in turn on the success of dental restorations.