

## Comparing the Effect of Self-adhesive Resin Cements and Self-etching Bonding System on Retentive Strength of DT light Fiber Post: an in-vitro study

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### Abstract

**Background and Aim:** : Loss of bond strength is the most common reason for failure of fiber posts. The aim of this study was to compare the effect of self adhesive resin cements (Bifix SE, Clearfil SA luting) and self-etch adhesive systems (Panavia F.2, Bifix QM) on bond strength of DT light fiber post.

**Materials and Methods:** This experimental study was performed on 40 single-rooted human premolars. After being endodontically treated and preparing post spaces for DT light fiber posts, the samples were randomly divided into 4 groups of 10 based on the resin cement type, and were submitted to 4000 thermal cycles (5-55c). Then three 2mm thick segments from coronal, middle and apical thirds of roots were prepared and push out test was performed on them. Then all root segments were assessed for failure mode using stereomicroscope. From the coronal slices of each group based on dominant failure mode, one slice was randomly selected to be observed under SEM. Data were analyzed using T-test, two way ANOVA and Tukey test.

**Result:** No significant difference was found between the self adhesive cements and self-etch adhesive system. ( $p < 0.4$ ) The highest and the lowest bond strength values were observed respectively in Bifix SE and Clearfil SA luting, which was statistically significant. ( $p < 0.05$ ) In the studied cements, there was no significant difference between the different regions of root; ( $p > 0.05$ ) however the interaction between the luting cement and different root regions was significant. ( $p < 0.001$ ) The most common failure mode was type 4 (adhesive between the cement and dentin).

**Conclusion:** the type of cement used and interaction between the luting cement and different root regions influenced the bond strength value, but different root regions per se could not influence the bond strength.

**Keywords:** Adhesives; Dental; Clearfil bonding agent; Panavia F2.0; Bifix