



4493 Fiber Post Bonding Using Self-Etching and Resin Cements

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Objectives: the fiber post bonding to root dentin relies on both chemical and micro-mechanical adhesion, this latter could be the main factor to generate retention strength. The aim of this study is to evaluate the push-out strength of different fiber post types when luted with a self-etching and a resin cement. Methods: 3 fiber post types a) Hi-Rem POP #2 (Overfibers); b) Macro-Lock Illusion (RTD) #2; c) RelyX Fiber Post (3M ESPE) and 2 cements were selected (self-etching RelyX Unicem, and resin RelyX ARC, 3M ESPE). 30 human teeth having narrow canals were randomly subdivided in six groups accordingly to each post/cement combination. Post space was prepared to obtain circular section canals using the manufacturer suggested burs. The specimens were subjected to 5000 thermal cycles then embedded in resin cylinders and sectioned obtaining >1mm thick slices for the push-out test. Data were analyzed with 1-way ANOVA and multiple comparison SNK test ($\alpha=.05$). Failure distribution was determined by stereomicroscope/SEM observations (Mann-Witney test). Results: push-out strength of group a) and b) was significantly higher than that of group c) using both cements. The self-etching cement gave the highest values when used with group a) and b) posts: 15.2 and 15.4MPa, respectively; posts of group c) showed significantly lower values (9.7 and 11.8MPa with the self-etching and resin cement, respectively). Failures at the post/cement interface was significantly higher in group c) posts luted with self-etching cement. Conclusion: self-etching cement is a promising material for fiber post cementation. Its bonding to the dentin appeared more stable and stronger than that of the resin cement; the adhesion to the fiber post seems to be improved by a micro-retentive rough surface (Hi-Rem) or by an interlocking effect due to the threaded surface pattern (Macro-Lock). Smooth surface posts showed lower push-out values.
