Abstract

Objective To evaluate the push out bond strength of quartz fiber posts after following chemical surface treatment.

Materials and methods Forty five extracted human mandibular first premolar teeth were sectioned perpendicular to long axis at the cementoenamel junction. The roots were endodontically treated, and post spaces were prepared for quartz fiber posts (DT light Post® #1). Posts were divided in 9 groups, 1; posts were not soaked with chemical agent as control group. Group 2 to 7; posts were soaked with hydrogen peroxide in 3 different concentrations (24, 30 and 35%) for 2 different durations (5 and 10 minutes). Group 8; posts were soaked with 10% sodium hypochlorite for 10 minutes and group 9; posts were soaked with 5% hydrofluoric acid for 5 seconds. All posts were applying silane. Consequently, posts were cemented in the prepared root canals using bonding agent (Excite DSC®) and flowable resin composite (Multicore flow®). Each root was sliced into six disc of 1 mm thick specimens representing the coronal, middle and apical regions. A push-out test was performed with an Instron universal testing machine. Data were analyzed with two-way analysis of variances and Tukey HSD test at a 95% confidence level.

Results Post surface treatment with 30% hydrogen peroxide for 10 minutes, 5% hydrofluoric acid for 5 seconds, 10% sodium hypochlorite for 10 minutes and 35% hydrogen peroxide for 5 minutes resulted in a significant increase in push-out bond strength compared to the control group. While the root region did not affect the push-out bond strength.

Conclusion Post surface treatments with 5% hydrofluoric acid for 5 seconds and 35% hydrogen peroxide for 5 minutes improved push-out bond strength and reduced clinical chair time.

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Key words: *hydrofluoric acid; hydrogen peroxide; post surface treatment; push out bond strength; sodium hypochlorite*

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