

The Effect of Enamel Surface Preparation on the Self-Etch Bonding of Orthodontic Tubes: An in Vitro Study

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Abstract : Objective: The purpose of this study was to look at the effect of pre-treatment of enamel with pumice and/or 37% phosphoric acid on the shear bond strength (SBS) of orthodontic tubes bonded to enamel while simultaneously evaluating the efficacy of orthodontic tubes bonded by self-etch primer (SEP). Materials and Methods: 39 of the crown halves were divided into 3 groups at random. Group, I was the control group utilizing both prophylactic paste and the conventional double etching pre-treatment method. Group II excluded the use of prophylactic paste prior to double etching. Group III excluded the use of both prophylactic paste and double etching and only utilized SEP. Bond strength of the orthodontic tubes was measured by SBS. One way ANOVA and Tukey's HSD test were used to compare SBS values between the three groups. The statistical significance was set to $p < 0.05$. Results: The difference in SBS values of groups I (36.672 ± 9.315 Mpa), II (34.242 ± 9.986 Mpa), and III (39.055 ± 5.565) were not statistically significant ($P < 0.05$). Conclusion: This study suggested that the use of prophylactic paste or pre-acid etch of the enamel surface did not provide a statistically significant difference in SBS between the three groups.

Keywords : shear bond strength, orthodontic bracket, self-etch primer, pumice, prophylactic

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