Clinical Evaluation of a Two-Component Self-Etching Adhesive and Hybrid Composite

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Objectives: Self-etching resin adhesive systems have become very popular, largely because they are associated with less post-operative sensitivity than total-etch adhesives in posterior composite restorations. The purpose of this study was to evaluate post-operative sensitivity associated with a new self-etching adhesive (Xeno III, Dentsply Caulk) versus a total-etch control (OptiBond Solo Plus, Kerr) in Class I posterior composite restorations.

Methods: Sixty Class I occlusal restorations were placed in 21 subjects. Most of these were replacements of existing amalgam restorations. Fifty-one restorations were placed in molars, and nine in premolars. Paired restorations were done using either Xeno III and Esthet·X (Dentsply Caulk) or OptiBond Solo Plus and Point 4 (Kerr). Esthet·X and Point 4 are microhybrid composites. Both materials were placed incrementally. The assignment of adhesive/composite system was randomized. Pre-treatment tooth sensitivity was determined by patient interview, and cold and biting tests. Subjects were interviewed at one week to evaluate post-operative sensitivity. When subjects reported sensitivity, they were interviewed again at two weeks. At six-month recall, post-operative sensitivity will be evaluated by patient report and by biting pressure and cold tests.

Results: At one week after restoration placement, post-operative sensitivity occurred in 23% of the treated teeth in both groups, but it was mild in nature. Sensitivity was associated primarily with biting pressure. The incidence of post-operative sensitivity was not statistically significant between the two groups (Chi-square, p>0.05), but the mean duration of sensitivity was five days for the self-etch adhesive and 10 days for the total-etch adhesive.

Conclusions: The results of this study indicate that both of the tested adhesive systems had only mild, short-duration sensitivity when used to bond Class I occlusal composite restorations. Supported by Dentsply Caulk. ed_swift@dentistry.unc.edu

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