

*Title***Short term Evaluation of Resin Sealing and Rebonding on Amalgam Microleakage: An SEM Observation***Author***Moosavi H, Sadeghi S***Journal***J Contemp Dent Pract. 2008 Mar 1;9(3):32-9***Abstract*

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**AIMS:** The aim of this study was to evaluate the effect of two different sealing agents on the microleakage of Class V amalgam restorations with and without resin rebonding. **METHODS AND MATERIALS:** Sixty extracted premolars were divided into six groups with ten teeth in each group. Class V cavity preparations were prepared on the facial surfaces of each tooth with the coronal margins placed in enamel and apical margins in cementum (dentin). The preparations in three groups were treated with Copalite, Scotchbond Multi-Purpose (SBMP), and no sealing agent, respectively. The other three groups received the same sealing agents in conjunction with a rebonding process. This arrangement of specimens provided for a comparison of the groups with and without a rebonding procedure. Amalgam was used as the restorative material. Specimens were thermocycled, stained, and sectioned. Microleakage was graded (0-3) using a stereomicroscope at 40x magnification. A scanning electron microscope (SEM) was used along with a high resolution elemental analysis. Data were analyzed with Kruskal-Wallis, Mann-Whitney, and Wilcoxon pair wise statistical tests ( $\alpha=.05$ ). **RESULTS:** The bonded amalgam groups demonstrated significantly less microleakage, whereas the unsealed groups showed the highest microleakage ( $P=0.001$ ). A significant difference between the mean rank of the microleakage of enamel and dentin margins was observed ( $P=0.037$ ). Insignificant, lower microleakage was observed in groups receiving a rebonding procedure ( $P=0.085$ ). **CONCLUSION:** Copalite and a multi-step adhesive system had a significant effect on microleakage of Class V amalgam restorations. The influence of the multi-step adhesive system was significantly greater than Copalite. The rebonding of the amalgam restorations did not have a significant effect on microleakage.

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