

Influence of Zinc Oxide Eugenol on microleakage at cavity margin of composite restoration

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This study evaluated effect of zinc oxide eugenol temporary cement on marginal leakage of composite restoration in vitro. Class V cavities were prepared at cemento-enamel junction on buccal and lingual surfaces of fourteen extracted human molar. Teeth were sectioned mesiodistally and grouped by enamel thickness, and randomly divided into four groups of seven samples. Two groups were restored with zinc oxide eugenol for seven days then replaced with each type of composite resin (Group I-SE-Bond and Clearfil APX, Group II-Scotchbond Multipurpose Plus and Filtek Z250). The other two groups were restored only with composite resin and used as control. After finishing and polishing, the teeth were thermocycled for 500 cycles. Samples were coated with two layers of nail varnish leaving 1 mm around restoration. Microleakage testing was performed using 50% AgNO₃ solution and x-ray developer. The samples were serial sectioned longitudinally. Microleakage was evaluated with the stereomicroscope and scored into 0-3 scale. Statistical analysis using the Man-Whitney U test revealed more significant leakage at margins of two treatment groups than their control groups ($p < 0.05$). In conclusion, ZOE increases marginal leakage of tested composite restoration.

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