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## An ideal restorative material to minimize the microleakage

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**Introduction:** A good seal at tooth restoration interface is very essential for an ideal restorative material to minimize the micro-leakage. This problem of micro-leakage in tooth colored restorative material is mainly due to polymerization shrinkage, causing failure of the bond between material and tooth structure which may result in micro-space between tooth surface and the material. Through these micro-spaces bacteria, toxic or non-toxic fluids, molecules or ions can pass which may cause marginal discoloration, post-operative hypersensitivity, bacterial penetration, secondary caries and pulpal inflammation and ultimately failure of restoration. This study will help in assessment and comparing the sealing ability of these materials, which may influence their clinical use. The Clinicians will be in a better position to choose/prefer one material over the other for the betterment of comfort, clinical services, economical concerns and psychological benefits.

**Materials & Methods:** Marginal micro-leakage of three tooth colored dental restorative materials were evaluated. In this study 55 specimens were divided into five groups, three experimental and two control groups. For experimental groups (I, II, III), 15 specimens each were allocated, in which, five specimens were allocated to positive control and 10 as negative control group. Standard Class I cavities were

restored using Self-Cured Glass Ionomer (Shofu Inc Japan), Resin Modified Glass Ionomer Cement (Kavitan L C; Spofa Dental Kerr Company) and Posterior Composites (Filtek P60; 3M ESPE). After thermocycling and immersion in 2% methylene blue dye solution, the teeth were sectioned and the dye penetration depth measurement was done for each specimen with a periodontal probe in mm with the aid of magnifying lens.

**Results:** It was found that there was a statistically significant difference ( $p < 0.05$ ) in the micro-leakage of Group II and Group III when compared with group I but no statistically significant difference in the micro-leakage values of Group II and Group III was observed.

**Conclusion:** All the restorative materials were unable to prevent the micro-leakage completely. Filtek P60 displayed minimum mean micro-leakage followed by Kavitan LC while the mean microleakage of self-cured Shofu Glass Ionomer was found to be maximum.

### Speaker Biography

Dr. Farooq has completed his Master of Dental Surgery from Karachi Medical College in 2003. Currently he is working as an assistant professor at Bacha Khan Medical College, Pakistan.

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