"AN EVALUATION OF THE MARGINAL MICROLEAKAGE OF DIFFERENT TEMPORARY CEMENTS IN PROVISIONAL RESTORATIONS – AN INVITRO STUDY"

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ABSTRACT

Background and objective: In many situations provisional restorations require long term permanence in the oral cavity, during this period the abutments need the best possible biologic and mechanical protection. Various studies have been carried out individually to evaluate the efficacy of marginal design, properties of temporary cement that may affect the marginal adaptation and microleakage. Therefore it was found essential to evaluate the combined effect of commercially available temporary cements and different finish lines after thermocycling on the marginal microleakage in provisional restorations.

Method: A total of 64 sound extracted mandibular 1st molar were prepared to receive a full veneer crown .The preparation was divided into 2 groups-

Group 1 samples were prepared with shoulder finish line.

Group 2 samples were prepared with chamfer finish line.

Provisional crowns were fabricated with polymethlymethacrylate acrylic resin. Specimen of each group were again divided into two subgroups and cemented with two different eugenol free cements. Among the subgroups, half of the samples were subjected to thermocycling. All the specimens were then immersed in basic fuschin dye, sectioned and observed under stereomicroscope to evaluate the marginal microleakage.

Results: The observation under optical microscope showed the microleakage between the cement layer and the tooth surface. All samples subjected to thermocycling showed higher marginal microleakage.

Interpretation and conclusion - It was found that, there were no statistically significant differences in values of microleakage between shoulder and chamfer finish lines. Also, significant difference in the extent of microleakage between the two cements Relyx and Provicol has been obtained with more microleakage value for Provicol cement. The results of the study also concluded that the thermocycling significantly increased the microleakage for all the samples.

Keywords: Provisional restorations, Microleakage, finish line, eugenol free, thermocycling.