

عنوان مقاله:

The Effect of Expiration Date on Microleakage of Fissure Sealants: An In Vitro Study

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خلاصه مقاله:

Background: Although the prevalence of dental caries has decreased in recent decades, caries is still a major problem. The idea of preventing caries on masticatory surface of teeth has led scientists to use substances as fissure sealants to prevent pit caries and dental fissures. No study has been performed on potential changes in properties of expired fissure sealants. Therefore, considering the current conditions of society and potential coercion to use some expired substances, particularly in some deprived areas, we decided to evaluate the microleakage of these substances. Method: In the present study, healthy human premolars extracted for orthodontics were used. First, enameloplasty was performed for premolar fissures by round bur; acid etching and fissure sealant were used to provide similar conditions in different groups and to remove the bonding effect. Then the samples were subjected to thermocycles; dye penetration was used to check the amount of microleakage. Results: The results showed that, on average, the amount of microleakage increases after expiration date; in this way, the amount of microleakage 1 year after expiration date is about ۱۳% higher than the non-expired group and the amount of microleakage ۶ months after expiration date is about ۷% higher than the non-expired group; however, this difference is not statistically significant. Conclusion: Based on this study and previous studies, it seems that properties of dental substances will be less affected after about 1 year from the expiration date if they are stored properly and there is no prohibition to use them.

کلمات کلیدی:

Dental caries, Fissure sealant, Microleakage, Dye penetration

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