Clinical Assessment of Using two Types of Adhesive (PQ1 and Prompt-l-pop) on the Success Rate of Fissure Sealant in Saliva-contaminated Enamel


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Abstract

Statement of Problem: Contamination during the procedure is the main reason for failure of fissure sealant therapy. In clinical conditions with difficult isolation such as semi-erupted tooth or poor cooperation of the patient, the contamination is probable. There is a limited number of clinical studies regarding the effect of adhesive on the success rates of fissure sealant.

Purpose: The present study was conducted to compare the effects of two adhesives on the success rate of fissure sealant in the contaminated enamel.

Methods and Material: In this clinical trial, 35 school children (6-8 years of age) with healthy and newly-erupted upper molar teeth participated. Sixty molar teeth were selected and divided into two groups. PQ1 adhesive was used for one group and PROMPT-L-POP for the other. As the teeth were newly erupted and the distopalatal area was in contact with the gingival sulcus and therefore it was impossible to isolate, the distal area was considered as contaminated and the mesial area, capable of adequate isolation, was assumed as isolated. In each group, after etching in one side, the teeth were treated only with sealant and on the other side before treatment with sealant, firstly the bonding agent was applied. So, two control groups were formed for each bonding agent. After 3, 6 and 12 month intervals, the results of the treatment were studied in terms of the success and failure and then analyzed using Wilcoxon, Mann Whitney and Chi-square tests.

Results: The success rate of the sealant treatment increased significantly, by using adhesives (p <0.001). The use of the two adhesives significantly increased the success rate of the fissure sealant on the contaminated teeth, even more than when the teeth had been isolated properly and treated only with fissure sealant (p <0.001). The result of using PQ1 was better than that of Prompt-l-pop although the difference was not statistically significant.

Conclusion: The results of the study showed that the contaminated enamel influenced the success of treatment after etching and before sealant application. So, the use of the adhesives in the treatment of fissure sealants is recommended in both the isolated and contaminated conditions.

Key words: Contamination, Fissure sealant, Adhesive