Ministry of Higher Education
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University of Baghdad
College of Dentistry

Efficacy of Papacaire in Removal of Caries and Reduction of Total Bacterial Count Comparative with the Conventional Rotary Method

A thesis
Submitted to the Council of the College of Dentistry/
University of Baghdad
In Partial Fulfillment of the Requirements for the Degree of Master of science in

Pediatric Dentistry

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2015 1436

Abstract

Background : Many chemomechanical caries removal (CMCR) agents have been introduced and marketed since 1970s, with each new one being better and effective than the previously introduced. Papacarie is new system in the field of CMCR techniques. Papacarie reportedly minimally invasive methods of removing carious dentin while preserving sound dentin.

Aim of study:

This study was aimed to determine the effectiveness of Papacarie as compared to the conventional method in caries removal, reduction of total bacterial count, time that has been taken for caries removal, child's behavior, pain perception and preference of treatment for child and for parent.

Materials and Methods:

The study is clinical controlled trial 'split mouth' design, sample consisted of 60 mandiblar primary molars from 30 children, between 6 -9 years of age with bilateral cavitated occlusal lesions not involving the pulp**.** The study samples were divided into group A and B having 30 teeth in each. Carious teeth in group A were treated by Papacárie and group B were treated by the conventional airotor method. Caries excavation in group A. was done according to the manufacturer's instruction using Papacarie gel. While in group B, caries excavation was done with help of airotor using a round bur. Complete caries excavation was confirmed by the tactile and visual method. Before and After completion of caries removal in each method, healthy dentin samples were collected using a sharp spoon excavator and immediately transferred to microbiological investigations by uses transported media. Also the degree of cooperation by the child before, during and after caries removal was evaluated and recorded according to Frankl's Behavior Rating Scale. Time taken was

recorded for both the procedure with the help of a digital stop watch. And before and after completion of the caries removal procedure by each method, the child was interviewed regarding pain or discomfort (face rating scale) and the preferred caries removal method. All the sample teeth were finally restored with glass ionomer restorative material.

Results:

Comparatively, statistical highly significant difference was reported in total bacterial count between two period (before and after) for papacaire treatment (Matched Paried t_test.p<0.01) also same result for conventional treatment group, while statistically result show significant different between two group after treatment (Levenes test and two independent samples t_test.p<0.05). The mean preparation time for papacaire treatment was 2.9 minutes and conventional treatment was 10.48 minutes (Mann-Whitney U test. P < 0.01). Statistically no significant difference in child behavior in three period (before, during and after) for group A p=0.097(P<0.05) and while for group B result show highly significant difference P=0.00(P<0.01). In comparison between two group in three period the result showed highly statistically significant difference in their behavioral score (P <0.01). Child experienced pain after treatment in group A was 0.67 % as compared to 34.6% in group B. The result of this study showed that all child and parent preference papacaire treatment over conventional treatment .

Conclusion:

The papacarie method for removal of caries can be considered as an effective method to control pain and preserve sound tooth structure during caries excavation with reduction of total bacterial count.