



Republic of Iraq
Ministry of Higher Education
and Scientific Research
University of Baghdad
College of Dentistry



EFFICACY OF DIFFERENT TYPES OF STORAGE MEDIA ON ENAMEL SURFACE MICROSTRUCTURE OF AVULSED TEETH (AN IN VITRO STUDY)

A thesis submitted to the council of the College of Dentistry / University of Baghdad in partial fulfillment of the requirement for the degree of *Master of Science in Pediatric Dentistry*

By

Rawaa Sadiq Obeid

B.D.S

Supervised by

Assist. Prof Muna Saleem Khalaf

B.D.S, MSc.

2022A.D.

14 43A.H.

ABSTRACT

Introduction: Avulsion is the full displacement of a tooth from its socket, resulting in periodontal ligament damage. Replantation of the tooth is the preferred therapeutic option. The aim of the study was to investigate the effect of different types of storage media on enamel surface microstructure (surface roughness, granularity diameter) of avulsed teeth by using atomic force microscope.

Materials and Methods: Thirty six teeth freshly extracted premolars for orthodontic treatment were selected . The study samples were divided into three groups according to type of storage media : A-egg white , B- probiotic yogurt , and C-bovine milk . All the samples were examined for changes in surface roughness , and surface granularity distribution using atomic force microscope, at four periods: baseline, after 1 hour , 4 hours , and 8 hours of immersing in the three types of storage media.

Results: Milk group has showed a significant increase in mean roughness values at the test periods . Egg white and probiotic yogurt groups have showed decrease in mean roughness value at the test periods ,except probiotic yogurt at four hours slight increase in roughness value , but the result was not statistically significant . No significant changes in grain size of enamel surface of tested teeth in any type of three storage media at three times interval except in 8 hours interval in egg white and probiotic yogurt groups shows slight increase in average diameter of grain size of enamel surface . The use of egg white and probiotic yogurt to store samples may be beneficial in that they contain various ions and proteins that fill up enamel valleys, while longer periods of milk exposure encourage bacteria to continue fermenting lactose, resulting in continual acid generation and increased demineralization.

Conclusion: Egg white and probiotic yogurt can be used to preserved the avulsed tooth which they are safe for enamel surface microstructure from one hour, four hours, and eight hours. Bovine milk was highly erosive of enamel surface microstructure for all times interval.



جمهورية العراق
وزارة التعليم العالي والبحث العلمي
جامعة بغداد
كلية طب الاسنان



فعالية أنواع مختلفة من وسائط التخزين على البنية المجهرية لسطح المينا للأسنان المخلوعة (دراسة مختبرية)

رسالة مقدمة الى مجلس كلية طب الاسنان/ جامعة بغداد
كجزء من متطلبات نيل درجة الماجستير في اختصاص طب أسنان الأطفال

من قبل

رواء صادق عبيد

بكالوريوس طب وجراحة الفم والأسنان

أشراف

أ.م. منى سليم خلف

ماجستير طب أسنان الأطفال