



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



EVALUATION OF ENAMEL DISCOLORATION FOLLOWING DIFFERENT ORTHODONTIC ADHESIVE REMOVAL PROCEDURES

(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 orthodontics

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ABSTRACT

Introduction: Following completion of orthodontic therapy, the brackets and bonding resins must be removed ideally. When not properly removed, this residual material can interfere with the surface of the enamel, potentially resulting in staining of the enamel, hence the present study aimed to evaluate the tooth color stability following removal of orthodontic adhesive by different techniques in addition to the use of polishing discs.

Materials and Methods: The sample included 60 human premolars extracted for orthodontic purposes. All teeth were bonded with metal brackets then separated randomly into three groups (n=20) using high speed hand-piece, low speed hand-piece and ultrasonic scaler. Each group was further divided into two subgroups (n=10). In the first subgroup polishing was performed using Sof-LexTM polishing discs. While in the second subgroup, no polishing was conducted. Spectrophotometric color records were obtained using the VITA easyshade[®] spectrophotometer for all the teeth initially. These were recorded as first measurement (E1). A specific bond removal procedure for each group was conducted, followed by a second measurement for all samples (E2). Then a third measurement after immersion of teeth in black tea for 10 minutes every day for 30 days as (E3). The results were statistically analyzed using one-way analysis of variance (ANOVA) tests ($P \leq 0.05$).

Results: the results showed statistically no significant difference among the adhesive removal techniques when compared according to $\Delta E1$, but there was a significant difference among these techniques when compared according to $\Delta E2$.

Conclusion: Orthodontic treatment may affect the original color of enamel, and both the adhesive system and the resin-removal methods may be responsible about this change. Polishing with Sof-Lex is essential step after adhesive removal.



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تقييم تلون المينا بعد إزالة اللواصق التقويمية بتقنيات مختلفة
(دراسة مختبرية)

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من قبل
حسن منير روؤف
بكالوريوس طب وجراحة الفم والاسنان

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