بسم الله الرحمن الرحيم

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بقسم التوثيق الإلكتروني بمركز الشبكات وتكنولوجيا المعلومات دون أدنى مسئولية عن محتوى هذه الرسالة.

ملاحظات: لا يوجد

The Effect of Different Polishing Methods on the Surface Roughness of Resin Composites

(An In-Vitro Study)

Thesis
submitted to the Department of Operative Dentistry, Faculty of Dentistry, Ain Shams University, in partial fulfilment of the requirements of Academic Master's Degree in Operative Dentistry.

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Dedication

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Introduction

Introduction

Development of dental materials that have good mechanical properties, accepted longevity as well as excellent esthetic outcome has been the interest of the researchers of dentistry and dental materials. Resin composite is one of the most widely used restorative materials in the recent decades. Continuous research and modifications on resin composite made it the material of choice on both anterior and posterior restorations. Resin composites can reproduce the lost tooth structure with excellent esthetic outcome, with accepted material longevity when exposed in the oral environment.[1] One of the most factors that have impact on the longevity of composite resins, being functionally, biologically and esthetically accepted is the material composition.[2,3]

Surface texture of composite resin is an important factor that affects esthetics, color stability and longevity of the restoration. Surface roughness promotes bacterial adherence, plaque accumulation and staining violating both biological and esthetic prospective of restoration. A smooth surface depends not only on composite type but also on finishing and polishing systems used in removing excess material and restoring morphology to achieve optimum function.[4] The search for ideal finishing and polishing system for resin composites has resulted in significant improvements in both the material aspect and the used techniques. Several systems have been invented and available in the market which have variant protocols and incorporate different materials. Some of them have been introduced as multi-step, two-step or one-step finishing and polishing systems with the ultimate goal of achieving smooth surface with fewer steps and reduced application time.

Presence of so many varieties and continuous innovations in both the resin composite material and the finishing/polishing systems are very challenging to the operator in selection of the best system that gives superior

polishability and surface smoothness.[5,6] Currently, many attempts have been made to determine which abrasion system provides the most polished surface for resin composites, and several methods have been introduced without reaching a consensus that verifies which is the best. The abrasive wear of contemporary resin composites is also material dependent, and cannot be deducted from its category.[7] Accordingly, the objective of this study was to evaluate the in vitro surface roughness of differently filled resin composite categories subjected to different polishing protocols.