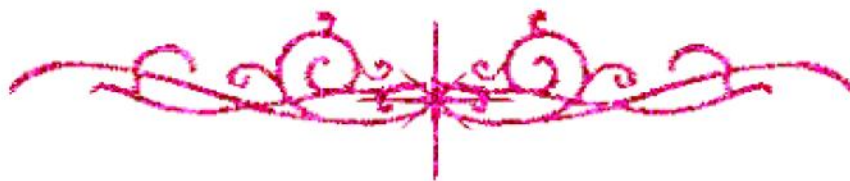


بسم الله الرحمن الرحيم





شبكة المعلومات الجامعية التوثيق الالكتروني والميكرو فيلم



جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

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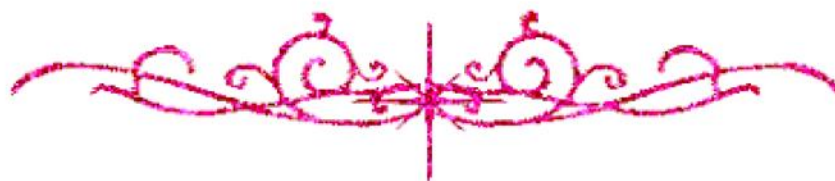


بعض الوثائق الأصلية تالفة





بالرسالة صفحات
لم ترد بالأصل





Effect of Different Bleaching Protocols on Flexural Strength and Surface Hardness of Two Ceramic Materials (In Vitro Study)

Thesis submitted to
Faculty of Dentistry, Ain Shams University
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By:
Nourhan Wagdy Reda
B.D.S (2013)
Future University

Faculty of Dentistry
Ain Shams University
2020

SUPERVISORS

Dr. Amina Mohamed Hamdy

Professor of Fixed Prosthodontics

Faculty of Dentistry, Ain Shams University

Dr. Ghada Abd El Fattah

Lecturer of Fixed Prosthodontics

Faculty of Dentistry, Ain Shams University

Dr. Mohammed Nasser M. Anwar

Lecturer of Restorative Dentistry

Faculty of Dentistry, Ain Shams University

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Dedication

This work is dedicated to **My Grandmother** (may **God** rest her soul in peace), **My Mother** for her continuous sacrifice; who taught me to trust in **God** & believe in hard work. **My Father** for being my first teacher, who believed in me since I was a little kid.

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Introduction

Aesthetic is the ‘art and science of dentistry’ and nowadays everyone is seeking for a perfect smile. For such purpose, trends for aesthetic dentistry are in a constant renewal. The simultaneous application of technical and artistic competencies allows a practitioner to achieve top notch aesthetic and functional results. The importance of diagnosis and treatment planning prior to any procedure can’t be over-emphasized, remembering that oral health and function are vital to a successful aesthetic dentistry. Additionally, the understanding of the various aesthetic materials available; clinical indications and limitations in practice, in conjunction with patient satisfaction and the avoidance of unrealistic expectations. All these types of elements are of paramount importance to ensure that the goals of aesthetic dentistry are achieved.

Bleaching, composite and ceramic restorations are all tools to attain such goal. However, bleaching and ceramics have become more frequently used compared to composite restorations. Since carbamide peroxide home bleaching was introduced in the 1980s, this treatment has been received by the public as a conservative, economical and effective alternative for patient seeking aesthetics improvement in a relatively short period of time.⁽¹⁾ The “over-the-counter” (OTC) bleaching agents were first launched in the United States, containing lower concentrations of hydrogen peroxide or carbamide peroxide and sold directly to consumers for home use. Finally, the current in-office bleaching technique typically uses different concentrations of hydrogen peroxide, between 15% and 40%, with or without light.

Introduction

On the other hand, The popularity of all ceramic dental restorations has raised in recent years due to their superior aesthetics appearance and metal free structure⁽²⁾ increasing their use in a variety of restorative situations.

When mentioning Zirconia re-inforced lithium silicate “Celtra® Duo”, the inclusion of 10% zirconium oxide ensures particularly high strength. The crystallites formed are 4-8 times smaller than crystals of conventional lithium disilicates. The result is an ultra-fine microstructure that combines high average flexural strength with a high glass content. This has positive effects on the light-optical and mechanical properties of the material.

On the other hand, Polymer-infiltrated ceramic “VITA ENAMIC®” is a “Dual Network” material, the dominant ceramic network is reinforced by a polymer network with each network penetrating the other creating a hybrid material that exhibits the positive characteristics of both a ceramic and a composite. The result is a material that mimics the strength and toughness of dentin and enamel.

On bleaching, the whitening agent may lead to alterations in the surface morphology as well as in the chemical and mechanical properties of the existing dental restorative materials ^(3, 4) Many studies are highlighting the effect of bleaching on the clinical success of different restorative materials. And since most patients who seek bleaching might already have some kind of restorations in their mouth, more studies are still needed specially with the introduction of new materials.