Salwa Akl

بسم اللّه الرحمن الرحيم

مركز الشبكات وتكنولوجيا المعلومات

قسم التوثيق الإلكتروني

Salwa Akl

جامعة عين شمس

التوثيق الإلكتروني والميكروفيلم

قسم

نقسم باللّه العظيم أن المادة التي تم توثيقها وتسجيلها

علي هذه الأقراص المدمجة قد أعدت دون أية تغيرات

Salwa Akl

بعض الوثائق الأصلية تالفة
وبالرسالة صفحات لم ترد بالأصل

EVALUATION OF SHEAR BOND STRENGTH AND MARGINAL ADAPTATION OF CASTABLE VERSUS SHRINK – FREE CERAMICS

Thesis

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In

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By

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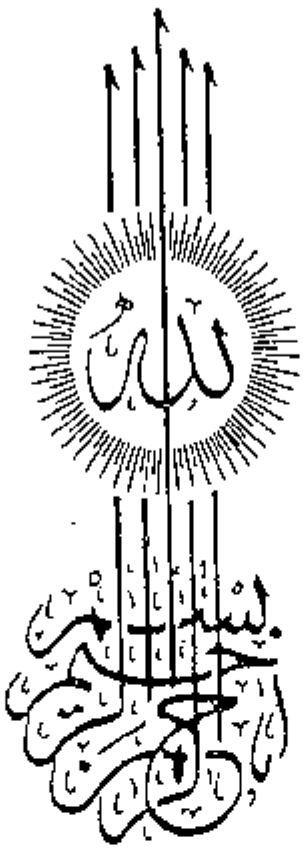

وما أوتيتم من العلم

إلا قليلا

صدق الله العظيم

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DEDICATION

TO

** MY PARENTS **

** MY HUSBAND **

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The aim of restorative dentistry is to substitute the decayed parts of the teeth with a material that matches natural enamel in appearance and physical characteristics. The process must also ensure an effective seal to protect the underlying tooth as well as to restore and maintain occlusal anatomy to promote proper oral function (Grossman, 1985).

The use of aesthetic materials is becoming more popular due to the increased interest in tooth appearance. Patients are looking forward for improved aesthetics even in the posterior regions of the mouth (Gemalmaz, et al., 1997). One of the most aesthetic material is ceramic restorations. Ceramics are well known for being aesthetically pleasing and bicompatible and should therefore be viable alternatives when the appropriate case selection for their clinical use are applied (Milleding, et al., 1995).

All-ceramic inlays can provide esthetic pleasing restorations currently available in posterior teeth. They can match natural tooth structure accurately in terms of colour, surface texture, and translucency. Well-made all-ceramic restorations can be virtually indistinguishable of unrestored natural teeth. In conclusion with growing demand of patients for esthetic restorations, interest in ceramic inlays has recently been re-aroused (Rosenstiel, 1995).

However, many of problems as marginal inaccuracy and decreased strength with conventional porcelain restorations still persist. These problems are related to one property of the dental porcelain, namely, the shrinkage that occurs from the build up (green state) to the fired state. In an attempt to overcome the shrinkage problem , the alumina ceramic developed. Alumina ceramic formulation is such that on firing, chemical and crystaline transformation occur to compensate for the decrease shrinkage volume ordinarily experienced with traditional dental ceramics. By controlling the time and temperature of the firing cycle minimal shrinkage of the ceramic from the unfired state to the fired state can be obtained (Sozio and Riley , 1983).

Castable glass ceramics are another attempt to control porcelain shrinkage. The recent introduction of cast glass ceramics and more accurate fabrication methods that bring together unique advantages for the dentist and the patient. Castable ceramic inlays made by lost wax technique, are a recent development of the all-ceramic inlay concept. Clinical acceptability of the castable ceramic system suggests that the castability and marginal fit of the restorations are excellent. (Kelsey, et al., 1995, Holmes, et al., 1992).

Previous studies were performed to compare marginal fit and microleakage between: castable ceramic and conventional ceramic inlays, castable ceramic and CAD/CAM (Computer-aided design/ Computer-aided manufacture) inlays, shrink-free and conventional ceramic inlays. However