The Effect of Different Finishing Techniques of Ceramic Materials on the Bacterial Adherence

تأثير طرق الانهاء المختلفة للمواد السيراميكية على التصاق البكتريا

Master Thesis Submitted to the Faculty of Oral and Dental Medicine, Cairo University for Partial Fulfillment of Requirements for Master Degree In Fixed Prosthodontics

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Dedication

*To the memory of my dear **mother**, who I miss so much and I was always wishing to share me this occasion.*

*To my great **father**, who was the reason for where I am today.*

My dearest brother Mohamed because he is always There for me.

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INTRODUCTION

Introduction

Interest in Ceramics has held the attention of the dental profession for over two hundred years. In spite of the intrinsic hard and brittle nature of these materials, their unsurpassed esthetic and good biocompatibility have encouraged their multitude application.

Glazed dental ceramic has long been considered to give the best surface finish, however experimental studies have shown that with proper choice of polishing methods a surface smoothness similar to that obtained by glazing can be achieved.

Sometimes ceramic restoration requires adjustment after insertion in circumstances that preclude reglazing. Some surface modifications can be essential for correcting occlusal interference, inadequate contour, finishing the margins of ceramic restorations, improving the esthetic appearance and surface smoothness of it.

The rough surfaces created by the adjustment or corrective grinding must be smoothed to avoid; plaque and stain accumulation and subsequent bacterial activity where the host response to this may result in gingivitis, preiodontitis and dental caries. Other problems associated with rough surface include physical irritation of the surrounding tissues and immediate loss of esthetic quality or it may lead to wear of antagonist and adjacent teeth.

Some of the dental ceramics available today are intended for use without any glazing, for example, inlays and onlays made of ceramic

blocks manufactured from the CAD / CAM technique are not glazed, but it is possible to polish them intra-oraly to a satisfactory finish.

Although the amount of plaque accumulation is minimal on porcelain, compared to other dental materials, the surface roughness significantly affect plaque accumulation.

Several studies, on polishing dental ceramics, have been published but still there is lack of information regarding the efficiency of different polishing systems and techniques on decreasing surface roughness and plaque accumulation. Consequently this study aimed to investigate the effect of different finishing techniques, on the surface roughness of dental ceramics and its relationship with bacterial adherence.

Review of Literature