Efficiency of Er:YAG LASER versus Er;Cr:YSGG LASER in Veneers Debonding with Two Materials & Thicknesses
-An in vitro study-

Thesis

In Partial Fulfillment of Requirements of the Masters Degree of Science in Fixed Prosthodontics, Crown and Bridge Department Faculty of Dentistry, Ain shams university

By

Heba Shawky Zaki Eid

B.D.S Faculty of Dentistry, Ain Shams University (2013)

Supervisors

Prof Dr. Tarek Salah Morsi

Professor, Head of Fixed Prosthodontics Department
Faculty of Dentistry, Ain Shams University

Prof Dr. Rami Maher Ghali

Professor of Prosthodontics
Vice Dean of Community Service and Environmental Development
Faculty of Dentistry Ain Shams University

Dr. Maged Mohammed Zohdy

Associate Professor of Fixed Prosthodontics,
Fixed prosthodontics Department,
Faculty of Dentistry, Ain Shams University

Faculty of Dentistry - Ain Shams University
2019

Dedication

First and foremost, I'd like to express my deepest gratitude to ***ALLAH*** *Almighty, who gave me constant strength, faith and persistence to complete this study successfully. His continuous grace, mercy and guidance in my life and during the entire research time is a blessing that without, it would have been impossible to finish.*

I Revere the patronage and moral support extended with love, by my parents whose support and endless sacrifices made it possible for me to complete this thesis.

My beloved husband, a very special word of thanks for his passionate encouragement, love, support and for always showing how proud he is for me.

Acknowledgment

I would like to show my deep appreciation and reverence to my supervisor, the remarkable, ***Dr. Tarek Salah Morsi,*** *Professor and Head of Fixed Prosthodontics department, Faculty of Dentistry, Ain Shams University, for his trust, warm encouragement, insightful guidance and valuable advises with constructive contributions and suggestions that were crucial for the completion of this research.*

I submit my heartiest gratitude to my respected ***Dr. Rami Maher Ghali,*** *Professor of Prosthodontics and Vice Dean of Community Service and Environmental Development, Faculty of Dentistry Ain Shams University for his endless support, patience, care and efforts. I am deeply indebted to his unwavering devotion and ingenious educational remarks provided for the execution of this work.*

Special thanks and gratitude goes to ***Dr. Maged Mohammed Zohdy,*** *Associate Professor of Fixed Prosthodontic Department, Faculty of Dentistry, Ainshams University, for his wholehearted cooperation, valuable inputs and benevolence to offer his precious time, enlightening knowledge and visionary opinions whenever needed.*

I hold in high regard the inspiration and knowledge they bestowed on me to attain my goals and accomplish my work. One is very fortunate with such unique, exceptional supervisors.

I am truly thankful to all staff members of fixed prosthodontic department. I value very much the time and support they offered.

Heba Shawky Zaki Eid

List of Contents

List of Tables

List of Figures

List of Figures (Cont…)

List of Figures (Cont…)

INTRODUCTION

Minimally invasive treatment options have become vastly used in restorative dentistry; solely depending on adhesive properties of cement and bonding systems in their retention thus, featuring a defect oriented approach rather than subtractive methods for achieving means of retention.

Patients undergoing this type of treatment require that the ceramic laminates offer clinical longevity. Nowadays, there are variety of materials that can be used in manufacture of laminate veneers, clinicians should choose a material and technique that allows the most conservative treatment; satisfies the patient's aesthetic, structural, and biologic requirements; as well as mechanical requirements to provide clinical durability.

Generally, the restoration removal process is performed by sacrificing or grinding the restoration using rotary burs rather than potentially painful and disturbing mechanical crown bridge removers. However, this process carries a risk of exceeding the restoration, and damaging underlying tooth structure, because of the lack of color contrast between tooth, adhesive resin interface, and the restoration. Also, integrity of the restoration is another matter of concern, in cases of removing the restoration a short time after the cementation because of misalignment during cementation, unexpected inflammatory pulpal responses, or veneering ceramic chipping, keeping the integrity of the restoration becomes critical to avoid re-manufacturing the restoration, and with