بسم الله الرحمن الرحيم

∞∞∞

تم رفع هذه الرسالة بواسطة / مني مغربي أحمد

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

ملاحظات: لا يوجد

Influence of Implant Position on Occlusal Distribution in Implant-Assisted Distal Extension Removable Partial Dentures using T-Scan system

Thesis Submitted To Faculty of Dentistry, Ain-Shams University for Partial Fulfillment of the Master Degree in Oral and Maxillofacial Prosthodontics

Submitted by

Al-Insan Ismail Mohammed

B.D.S,
Ain Shams University
2010

Faculty of Dentistry
Ain Shams University
2022

Supervised by

Prof. Dr. Ingy Amin Talaat

Professor of Removable Prosthodontics

Prosthodontic Department

Faculty of Dentistry

Ain Shams University

Dr. Yasmine Galaleldin Thabet

Associate Professor of Prosthodontics

Prosthodontic Department

Faculty of Dentistry

Ain Shams University

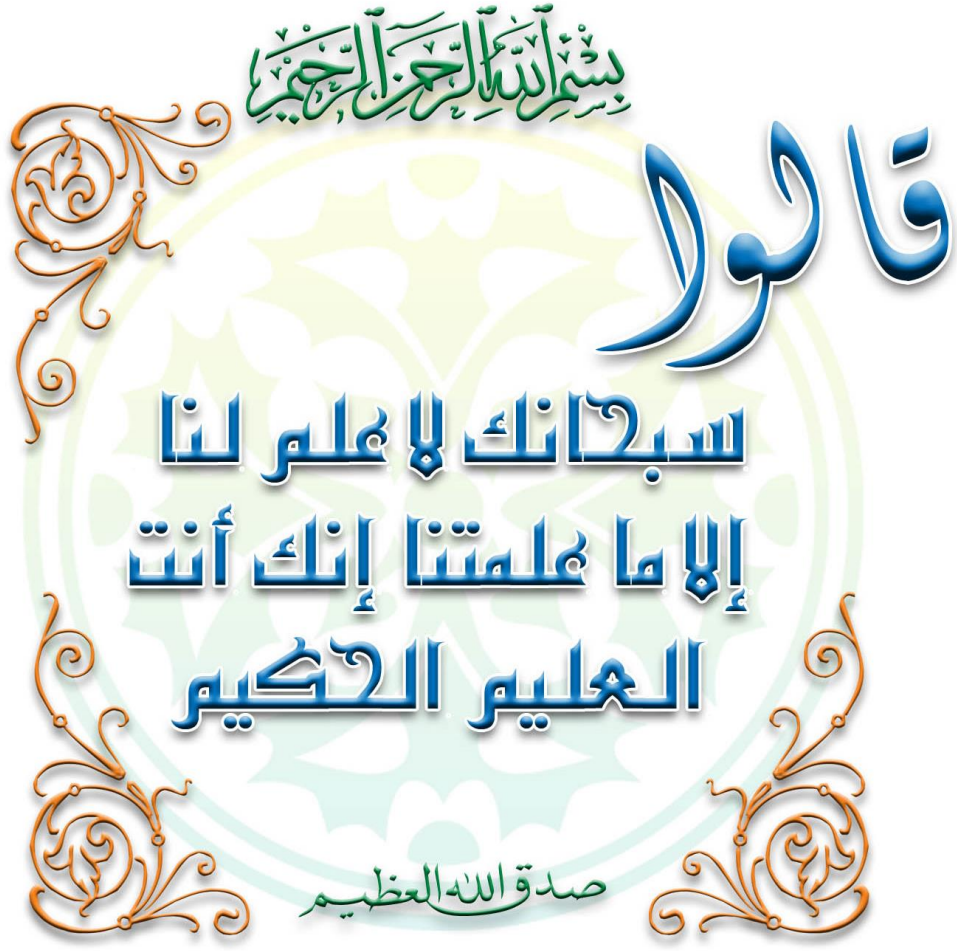
Dr. Mohamed Shady Nabhan

Associate Professor of Prosthodontics

Prosthodontic Department

Faculty of Dentistry

Ain Shams University



سورة البقرة الآية: ٣٢

Acknowledgment

First and foremost, I feel always indebted to **ALLAH,** the Most Kind and Most Merciful.

I'd like to express my respectful thanks and profound gratitude to **Prof. Dr. Ingy Amin Talaat,** Professor of Removable Prosthodontics, Prosthodontic Department, Faculty of Dentistry, Ain Shams University for her keen guidance, kind supervision, valuable advice and continuous encouragement, which made possible the completion of this work.

I am also delighted to express my deepest gratitude and thanks to **Dr. Yasmine Galaleldin Thabet,** Associate Professor of Prosthodontics, Prosthodontic Department, Faculty of Dentistry, Ain Shams University**,** for her kind care, continuous supervision, valuable instructions, constant help and great assistance throughout this work.

List of Contents

List of Tables

List of Figures

List of Figures Cont...

Introduction

Removable partial denture (RPD) is an essential prosthetic consideration in many oral reconstructions, especially upon restoring edentulous ridges posterior to a patient's remaining teeth. A wide range of prosthetic treatment options including simple conventional removable partial denture, over denture, fixed partial denture or implant assisted removable partial dentures can be used for rehabilitation of partially edentulous patients.(1)

Most of the problems in distal extension cases are attributed to disparity of support, and the difference in the (viscoelastic response) (elastic behavior) of supporting structures, the abutment teeth and the ridge to loading. Consequently, when functional load is applied to the removable partial denture with distal extension base, this difference in support results in rotation of the denture and heavy torsion stresses on the abutment teeth and traumatization of the ridge.(2)

Several techniques have been introduced to provide proper load distribution and to control the harmful stresses of RPD, among which is using an osseointegrated implant as a posterior abutment. Implant location depends primarily on the dimensions of the residual ridge. Theoretically, the implants should be located as distally as possible to provide maximal support and stability and modify unfavorable arch configurations.(3)

Implant assisted removable partial dentures RPDs provide considerable advantages over conventional RPDs. Implants are used to improve the removable partial denture support, enhance retention and

stability, preserve the residual ridge underneath the denture base and to reduce the stress applied on the abutment teeth. The use of a posterior implant underneath a removable partial denture, can help establish stable occlusal support which might prevent bone remodeling in the TMJ, as well as, the residual ridge resorption.(4)

However, dental implants may deteriorate under excursive overload and higher bite forces, eventually leading to bone loss and implant failure. Therefore, assessment of the occlusion is of utmost importance to relief these occlusal issues.(5)

Recently, computer-guided occlusal adjustments using T Scan occlusal analysis system is employed to alter a poorly contacting tooth sequence into multiple equal-intensity contacts occurring throughout the arches bilaterally. (6)

The T Scan III is an occlusal analysis system that records occlusal contact force distribution from the first tooth contact till maximum intercuspal position. It readily identifies the very first contact point that precedes numerous other contact points that occur during maxilla-mandibular functional movements. The T-Scan III determines the contact time-sequencing, and the percentage of relative occlusal force between various occlusal contacts, and then displays them all for dynamic analysis.(7)

T-Scan III analyzes the order of the occlusal contacts while simultaneously measuring the force percentage changes of those same contacts, from the moment the teeth first begin making occlusal contact,