Telescopic crown versus Extra-coronal attachment as retainer for Kennedy class I with anterior modification area

(Strain gauge analysis)

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By

Ahmed Atef El Mahdy

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Ain Shams University

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Supervisors

Dr. Ingy A. Talaat

Professor of prosthodontics and Chairman of prosthodontic department Faculty of dentistry

Ain shams university

Dr. Magdy Eid Mahamed

Associate professor of prosthodontics

Faculty of dentistry

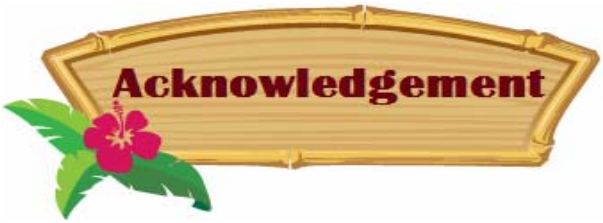
Ain shams university

بسم الله الرحمن الرحيم

﴿قالوا سبحانك لا علم لنا إلا
ما علمتنا انك أنت العليم الحكيم﴾

صدق الله العظيم

سورة البقرة ﴿٣٢﴾



First of all I thank God for his guidance and support all over my path.

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Dedication

I wish to dedicate this work to

MY GREAT PARENTS,

MY LOVELY WIFE

MY CUTE SONS

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INTRODUCTION

Introduction

Removable partial dentures restoring free-end saddles are subjected to vertical, horizontal and torsional forces that may become an adverse during functional and parafunctional activities. The addition of an anterior segment to this distal extension partial denture results in teeter-tooter action with inevitable torque and damage to the denture supporting structures.[1]

Biomechanically, it is better to replace missing anterior segment with fixed restoration rather than being included in the partial denture. However, in some situations it is necessary to replace the missing anterior teeth with a removable partial denture rather than the fixed restoration due to the length of the edentulous span, loss of large amount of the residual ridge by resorption, accident or surgery resulting into much vertical space preventing the use of fixed restoration or in which esthetics requirements can be better met through the use of teeth added to the denture framework.[2]

Different removable partial denture retainers have been introduced to control stress distribution transmitted to abutment teeth. An effective type of retainers, possessing

retention, support and splinting action between multiple abutment teeth are telescopic retainer.,and extrocoronal retainers They also provide functional stability, acceptable esthetic and oral comfort.(3)

Telescopic crowns have also been used successfully in removable partial dentures end fixed partial dentures.

These crowns consist of an inner or primary telescopic coping, permanently cemented to an abutment tooth and a congruent detachable outer or secondary crown which is anchored in the detachable prosthesis. The secondary crown engages the primary coping to form a telescopic unit and serves as an anchor for the remaining of the dentition.(4)

Telescopic crowns provide direct and indirect retention and axial loading of the abutment teeth. They are also more hygienic, provide good esthetics and cross arch stabilization .(5)

The use of precision or semi precision attachments is well documented removable partial denture. They provide good direct and indirect retention, transmit the functional load down the long axis of the abutment teeth and more esthetically acceptable. (6)

Extra -coronal attachment having part or all of their mechanism outside the crown of the abutment tooth are used mainly in distal extension prostheses. Most of these attachments allow certain amount of movement between the two sections of the prosthesis. [7]

Many experimental stress analysis methods have been employed to evaluate biomechanical loads. These techniques compromise photo- elastic stress analysis, strain gauge analysis, holographic iterferromtry and finite element stress analysis. [8]

The several advantages listed in the literature for both telescopic crown and extracoronal attachment made the appropriate selection of either of them difficult.

Accordingly, this study was conducted to assess and compare the effect of telescopic crown and extracoronal attachment on stresses induced on the abutments in long span bilateral distal extension cases with the anterior modification area.[9]