MASTICATORY EFFICIENCY OF FLEXIBLE ACRYLIC RESIN ON ABUTMENT SUPPORTING COMPLETE OVER DENTURE

Thesis

Submitted To Faculty Of Oral And Dental Medicine, Cairo University, In Partial Fulfillment Of The Requirements Of Master Degree In Removable Prosthodontics.

By

Ahmed Mohammed Ali Hassaan

(B.D.S)

Faculty of Oral and Dental Medicine

Cairo University

2012

Supervisors

Prof. Dr. Mohammed Ali Ali Salah

Professor, Prosthodontic Department,

Faculty of Oral and Dental Medicine

Cairo University

Dr. Ahmed Mohamed Fahmy

Lecturer in Prosthetic Department,

Faculty of Oral and Dental Medicine,

Cairo University

بِنِّ مِ ٱللَّهِ ٱلرَّحْمَٰزِ ٱلرَّحِيمِ

وقل ربي زدني علما

صدق الله العظيم

Aknowledgment

AKNOWLEDGMENT

First of all I would like to thank **God** who paved the way and only by his will everything can be achieved.

I would like to express my deep gratitude to **Prof. Mohammed Ali Ali Salah,** Professor, Prosthodontic Department, Faculty of Oral and Dental Medicine, Cairo University, Whose guidance, encouragement and support were invaluable to me.

I would like to extend my sincere gratitude to **Dr**. **Ahmed mohammed Fahmy**, Lecturer in Prosthetic Department, Faculty of Oral and Dental Medicine, Cairo University. His directives and valuable criticism were extremely helpful to progress of this work.

Dedication

TO MY PARENTS TO MY LOVELY DAUGHTER HLA TO MY BROTHERES AND SISTER

LIST OF CONTENTS

Item	page
Introduction	1-2
Review of literature	3-48
Aim of study	49
Material and Methods	50-74
Results	75-79
Discussion	80-88
Conclusion and Summary	89-90
References	91-110

List of figures

Figure	Page
Figure 1: Showing the selected overdenture patient.	61
Figure 2: Showing dome shaped preparation of the abutments	61
Figure 3: Showing rubber base impression of the metal coping	62
Figure 4: Showing metal coping on cast	62
Figure 5: Showing metal coping cemented in patient mouth.	63
Figure 6: Showing alginate upper and lower primary impression	64
Figure 7: Showing Zinc /oxide and eugenol upper and lower secondary impression	65
Figure 8: Showing occlusion blocks mounted on a semi adjustable articulator.	66
Figure 9: Showing the setting up of teeth on a semi adjustable articulator.	67
Figure 10: Try in patient mouth.	67
Figure 11: Ditching around gingival margins of two canines	68
Figure 12: Hard acrylic resin packing over spacer covering canines.	68
Figure 13: Laboratory kit content	69
Figure 14: Versacryl in fitting surface of canines area	70
Figure 15: denture delivered in patient mouth.	71
Figure 16: Plastic tube parts contain sieves	72

Figure 17: Showing sieve I in the a plastic tube	73
Figure 18: Showing sieve II	73
Figure 19: Showing sieve I,II together.	73
Figure 20:Showing sieves I (coarse particles)	74
Figure 21: sieve II (medium size particles	74
Figure 22: The digital scale	74
Figure 23: Mean weight with different consistencies in versacryl group.	77
Figure 24:Mean weight with different consistencies in hard acryl group.	78
Figure 25:Mean weight in the two groups	79

List of Tables

Table 1: The main, standard deviation (SD) values and results of	
reported measures ANOVA for comparison between	
weights of different consistencies in versacryl group	
Table 2: The mean, standard deviation (SD) values and results of	77
repeated measures ANOVA for comparison between	
weights of consistencies in hard acrylic group	
Table 3: The main and standard deviation (SD) values and	79
results of student's t-test for comparison between the	
two groups	

Introduction

Introduction

The problem of edentulism is considered from the worst problems in dentistry, solving this problem using complete dentures is not really a good modality of treatment because of the difficulties associated with such dentures.

Patients with complete dentures suffer from difficulties in retention and stability especially with the lower denture, also there is excessive ridge resorption that needs future relining procedures. So overdentures are suggested as a modality of treatment to solve the previously mentioned problems.

Although, it is impossible to eliminate all adverse effects, the use of overdentures makes it possible to regain a high degree of the tactile discrimination. It was reported that overdenture helps to preserve the bone as the remaining natural teeth withstand most of the occlusal load. Therefore the future loss of the alveolar ridge is going to be minimized; additionally it can improve the chewing efficiency and provides excellent stability and good retention.

Versacryl is a consistency controllable thermo-elastic acrylic with memory. The material that most people compare Versacryl thermo-adjustable liner with is Molloplast B. Molloplast B is rubber while Versacryl is acrylic.

A rubber liner acts like a spring; it compresses under occlusal load and springs or return back to its processed shape immediately when occlusion is disengaged. The perception of being soft is giving little or no resistance to pressure. Tissue reacts differently when compressed; it returns to its shape slowly. Tissue has a slow reaction time. What Versacryl offers can best be described as a compressive or cushioning

action. When a denture is under occlusal load, the tissue will compress first, then loading will continue and the Versacryl liner will yield under that load. When occlusion is disengaged, the tissue along with the Versacryl liner will start to return to their previous shape, maintaining intimate contact between denture and mucosa. The Versacryl thermoadjustable liner should not be viewed as a substitute for Molloplast B, but rather as an aid in achieving a better fitting and more comfortable denture. A Versacryl repeatable thermo-adjustable reline should not be prescribed as a soft-liner. As denture providers, the most desirable features of the Versacryl thermo-adjustable reline are: It is a cross-linked acrylic; Chemically bonds to other acrylics and itself; The polished fitting surface and salivary action achieves adhesion; and Denture can be re adapted by warming and reinserting (by the denture provider or patient, after instruction.

At First Denture was fabricated with flexible acrylic resin (versacryl) in the canine area,

After two month the same denture was modified by chair side acrylic resin in the canine area.

Review Of

Literature