EFFECT OF DIFFERENT IMPRESSION TECHNIQUES ON ADAPTATION AND VERTICAL MOVEMENT OF DISTAL EXTENSION PARTIAL DENTURE BASES

Thesis

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INTRODUCTION

Management of patients with free end saddles edentulous areas are usually challenging because lack of posterior abutment and different in compressibility of supporting structure. (1)

This difference in resiliency of supporting structure led to rotation of denture base under occlusal load around fulcrum line passing through main occlusal rests. Rotation of denture base transmits destructive forces to abutments and residual ridge. (2)

This problem is more significant in mandibular arch due to limited area of supporting structure in comparison to maxillary arch.

The occlusal load should be distributed properly between abutment and residual ridge. To achieve maximum support from residual ridge the denture base should be adapted over residual ridge. (3)

Denture base movement should be minimized to control torque over abutment teeth. Different impression theories and techniques were suggested to control and equalize forces between abutment and residual ridge.

Altered cast impression technique was recommended by many authors as it drives better support from residual ridge and equalizes stresses between residual ridge and abutments. (4), (5)

However altered cast impression technique are considered time consuming, many technicians are not familiar with it.(6)

Several studies found no clinical significant between altered cast impression technique and anatomical impression technique regarding denture base movement under occlusal load. So this study compare altered cast impression technique with anatomical form im-

pression technique and another one piece cast functional impression technique “Hindle impression technique” as regard denture base adaptation over residual ridge and denture base movement under occlusal load. [6], [7]

REVIEW OF LITERATURE

Free end saddle removable partial dentures rehabilitating distal extension edentulous areas are defined as "A removable dental prosthesis that is supported and retained by natural teeth only at one end of the denture base segment and in which a portion of the functional load is carried by the residual ridge". [8]

Patient with bilateral distal extension ridges may be treated by removable partial denture, cantilever type of fixed partial denture distal extension, or implant supported partial denture according to clinical and radiographic evaluation. However removable partial denture is the most common and conventional treatment approach. [9],

The main objective of removable partial denture is to preserve remaining structure rather than restoring missing structures. An incorrectly designed removable partial denture may be considered a potentially destructive appliance. So Treatment with distal extension removable partial denture necessitates precise framework construction and proper partial denture design following biomechanical principles and considerations. [10], [11]

In clinical study patients were evaluated after ten years of wearing removable partial dentures without supervision or servicing. high extraction rate of abutment and non-abutment teeth was found. In addition, the periodontal condition of the remaining teeth deteriorated. However, this deterioration was higher in the abutment teeth farther than in the non-abutment teeth. In order to eliminate the periodontal damages caused by the removable partial dentures a regular recall system is strongly recommended. [12]