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Management of Flabby Maxillary Anterior Ridge by Modified Hobkirk Technique: A Case Report

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Abstract

A fibrous or flabby ridge is a superficial area of mobile soft tissue affecting the maxillary or mandibular alveolar ridges. It is caused when the hyperplastic soft tissues replaces the alveolar bone particularly in the maxillary anterior region of long term denture wearers. While making complete dentures, the presence of displaceable denture bearing tissues poses a challenge .Unless properly managed, such flabby ridges have an adverse effect on the support, retention and stability of complete dentures. This case report depicts a modified Hobkirk technique for the management of a flabby ridge in the maxillary arch.

Introduction

The aim of complete denture prosthodontics is to restore function, esthetics and comfort by replacing the missing dental and alveolar structures with a stable prosthesis. Flabby ridge can be defined as a mobile soft tissue which is located on the superficial aspect of the alveolar ridge.1 The reported prevalence has varied, but has been demonstrated in upto 24% of edentulous maxillae and 5% edentulous mandibles.2 Flabby ridges primarily appear when an edentulous ridge opposes natural teeth and when it occurs in the anterior part of the maxilla is considered a characteristic of the combination syndrome.3 Based on the observations of six patients followed up over a three year period. Each patient wore a complete maxillary denture opposed by mandibular teeth and a distal extension removable partial denture. His observations included alveolar bone resorption in the anterior maxilla, enlargement of the tuberosities and bone resorption underneath the mandibular denture bases.

Flabby ridges are easily displaced under occlusal forces due to poor support, resulting in compromised denture retention as a consequence of loss of peripheral seal.1 Forces exerted during the act of impression taking can result in distortion of the mobile tissue. The resulting stability of the denture can be poor and both function and appearance can be heavily compromised. Typically these 'flabby ridges' are composed of mucosal hyperplasia and loosely arranged fibrous connective tissue as well as more dense collagenised connective tissue. In the soft tissue, varying amounts of metaplastic cartilage and/or bone have been reported.4

This article presents case report for prosthodontic rehabilitation of patient with flabby ridge using Modified Hobkirk impression technique.

Case Report

A 65 year old female patient reported to the Department of Prosthodontics Crown and Bridge with a chief complaint of loose dentures. On intra-oral examination, an edentulous maxillary arch with severely displaceable anterior flabby ridge was observed (Fig. 1). Fabrication of new complete dentures was planned for the patient with recording of flabby tissue in undisplaced condition using Modified Hobkirk technique. The technique is as follows :

- The maxillary preliminary impression was made using irreversible hydrocolloid (Tulip Alginate Impression Material, Cavex Holland BV, Holland) in perforated edentulous tray and the primary cast was poured [Figures 2a and 2b].
- Special tray was fabricated using double spacer over the flabby tissue area and in the region of mid palatine raphe. After checking the proper tray extensions, border molding was done in conventional manner using green stick impression compound (DPI Pinnacle Tracing Sticks) [Figures 3a and 3b].
- Spacer wax was removed and impression was made with zinc oxide eugenol impression (DPI Impression Paste).
- 4. The tray was then removed from the mouth and impression material was removed in the region of flabby tissue using a scalpel. Relief holes were made and tray was loaded in this region with light body elastomeric impression material (Elite HD+ light body, Zhermack, Germany) to record flabby tissue. [Figures 4a and 4b].
- 5. A master cast was poured from the impression (by using boxing and pouring) and record block was fabricated for jaw relation procedure. [Figure 5]
- Following try-in, a maxillary conventional complete denture was completed with good retention and stability. [Figure 6a and 6b].

Discussion

An accurate impression of the edentulous ridge and functional sulcus is critical to the provision of a stable and retentive denture. Flabby tissues when recorded using any conventional method are compressed amid impression. An impression technique is required which will compress the non flabby tissues to obtain optimal support and at the same time, will not displace the flabby tissues. During function, the elastic recoil of flabby fibrous soft tissue results in instability and a loss of denture retention and dislocation.1 Due to the obvious difficulties in analysis of the success of prostheses constructed using the various impression techniques described, the clinical choice has fallen mainly to personal preference, based on analysis of theoretical principles. Various techniques have been recommended. However, there is no evidence to support that one particular impression technique will provide a stable and retentive denture on flabby ridges as compared to others.5 This report presents a modified Hobkirk technique for the impression of anterior maxillary flabby ridge using Zinc Oxide eugenol and PVS impression material. A window technique is used for impression of flabby ridge using a close fitting custom tray with a window.6

It has been proposed in the window technique to make the final impression followed by preparation of a window and recording the flabby tissue with a mucostatic impression material.5 Others have proposed to make a custom tray with a window prior to the impression making and recording the movable tissue through the window after the final impression is made.7 Using both these techniques, a mucocompressive impression is made with zinc-oxide eugenol or regular body PVS and a custom tray followed by painting the flabby tissues with a low viscosity impression material.

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In our modification, we used Zinc Oxide eugenol to provide compressive impression in the area other than flabby ridge and also to provide stable replacement of impression during light body PVS application, this modified window technique allows for controlled application of low viscosity materials in addition to the minimal exertion of pressure to the flabby ridges due to the presence of vents. Therefore the authors recommend clinical application of this modified window technique using Zinc oxide Eugenol and PVS impression material for final impression of flabby maxillary ridge in the fabrication of complete dentures.

Conclusion

The complete denture should fulfill its basic objectives of stability, retention, support, aesthetics and preservation of tissues. Flabby tissues gets displaced during conventional impression making procedures causing instability of the denture. Managing a patient with flabby maxillary ridge can be a challenging problem. Standard mucocompressive impression techniques are likely to result in an unretentive and unstable denture as the denture will be constructed on a model of the flabby tissue in a distorted state. Light body impression materials for flabby ridges produce minimal tissue displacement however there uniform and controlled application is sensitive to operator technique. A modified window technique described in this report demonstrates an effective way for controlled application of light body PVS impression material, for a non-displacing final impression of flabby ridge. With this modified impression technique, these ridges can be managed effectively without any additional clinical visits.

Legends Figures



Figure 1: Flabby anterior maxillary ridge



Figure 2 A: Primary Impression



Figure 2B: Primary cast with flabby segment marked



Figure 3 A: Double spacer adapted



Figure 3B: Border moulding with low fusing compound



Figure 4 A: final impression with ZOE impression paste



Figure 4B: B] PVS light body impression of the flabby tissues



Figure 5



Figure 6

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