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Perfecting Flabby Ridge Impressions: An Innovative Technique

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ABSTRACT

Flabby tissues refer to areas of loose, pendulous tissue that lack firmness and structure. These ridges are often observed in the maxilla and mandible and can occur as a result of the residual ridge becoming hyperplastic and fibrous following traumatic extraction of teeth. Flabby ridges in the oral cavity can impact the fit and stability of dentures, leading to challenges in providing effective denture retention `and stability. There are various methods in literature for management of flabby tissues, such as, surgical augmentation, implant therapy and modified/special impression techniques. The purpose of this technique report is to present a custom tray with modified window that is reinforced with stainless-steel mesh, to ensure complete passivity of the impression tray and to record the flabby tissue in its most relaxed position and least pressure using polyvinyl siloxane impression material.

KEYWORDS: stainless-steel mesh, mucostatic ,mesh technique, flabby tissue management

INTRODUCTION

Edentulism is an important global public health issue due to its high prevalence which exceeds 10% in adults aged ≥ 50 years and the associated disability [1, 2]. A flabby ridge becomes displaceable due to fibrous tissue deposition. It is developed when hyperplastic soft-tissue replaces the alveolar bone. It affects both maxillary and mandibular alveolar ridge ,commonly seen in the maxillary anterior ridge. Studies show that flabby ridge occurs in 24% of maxillary and in 5% of mandibular edentulous ridge. [3] Flabby ridge is also a common finding in long-term denture wearers due to trauma from denture bases or the result of traumatic dental extractions [2,5]. Perfecting a complete denture impression has been painstakingly difficult task, especially to record flabby mobile tissue. There are many techniques described throughout the years, such as watson's technique, devlin's technique, osborbe's technique, allan mack's splint method, new tunnel spacer technique and Filler's modified tray with mesh design.

Watson's (1970) described the "window technique" Here a custom tray is made with window over flabby tissue. The window minimized the movement of the flabby ridge tissue during function. [6] Zafarullah khan technique (similar to Watson's technique)

In 1964, Osborne advocated the use of two separate trays and impression materials to record the normal and flabby tissues. It has limitation that no clear method described to approximate the trays intra-orally.[4] A neat modification of this, was described by Devlin in 1985 in which a locating rod is positioned in the centre of the palatal tray, but proclined to allow the second special tray impression to be guided in an oblique upward and backward direction to envelope the palatal tray.[4]

Disadvantage of this technique is that, the second tray may rotate over the palatal rod, compromising stability and it required fabrication of two trays which is time-consuming. In Hobkirk technique in which a single custom tray is used, conventional Border moulding is done and vent holes were made on the custom tray all over the ridge area and impression is made with light bodied polyvinyl siloxane impression material. Another technique is the new tunnel spacer technique: Custom tray was fabricated over this spacer leaving spacer over flabby tissue area uncovered. After performing border molding wax spacer was removed and impression was made with Zoe impression material, excluding the flabby area, once set light body impression material was injected onto the flabby region with tray seated on the ridge. Splint Method' By Allan Mack, It is used if tissues are very excessively flabby. Loosely fitting tray or a special tray made with heavy relief over the flabby area is taken. Plaster is mixed and applied over the flabby with a thickness of about 3 mm and is allowed to set, Tray is filled with second mix of plaster and the impression is made. The initial coating of the flabby areas acts as a 'splint'. It gets removed with the second impression. Filler's modified tray with mesh design, is one method which employs the use of an aluminum mesh to hold the material while recording flabby tissue. In this technique two trays have to be fabricated, one with

conventional method, having acrylic projections on either side and second tray with aluminum mesh and guiding holes for seating on the first tray. Though the technique ensures completely mucostatic recording of the flabby tissue , it has added inconvenience of fabricating two trays ,which is again time-consuming and leads to material wastage.

This article describes a new and simpler technique that requires less time, and is less technique sensitive, while ensuring complete mucostatic final impression. In this article we have demonstrated the technique for mandibular impression, the same procedure can be employed for impression in flabby region of maxillary ridge too.

TECHNIQUE

1.Adapted two uniform layers of spacer wax on the flabby ridge area on the primary cast (fig 1)

2. Adapted 1 layer of spacer wax on the rest of the ridge (fig 2)

3. custom tray made with auto polymerizing acrylic resin on entire ridge except flabby portion (fig 3)

4. Border molding done using the modified custom tray.(Fig 4)

5. Removed the entire spacer wax and Make Wash impression using light body polyvinylsiloxane impression material.(Fig 5)

6. Removed the excess material over the window part of custom tray and make a cut-out of stainless-steel mesh according to the size of the window. (Fig 5)

7. Reinforced the stainless-steel mesh on the tray using green stick compound and place the reinforced custom tray in place and injected different colored light body polyvinylsiloxane impression material through the access holes in the stainless-steel mesh. (Fig 7)

8. Final wash impression with the flabby ridge recorded. (Fig 8)

On Denture insertion, disclosing paste was used to further check for localized areas of tissue loading. Signs of tissue rebound were evaluated Occlusal discrepancies were eliminated.

DISCUSSION

The importance of recording mucostatic impression, especially for flabby tissues is very well documented, and is very crucial for ensuring proper fit of the denture and reducing trauma to the denture bearing mucosa in function. This technique has advantages over the other techniques such as, flabby region is recorded in 100% passive form even while recording other stress bearing areas of the ridge, and it requires an inexpensive and readily available material such as a stainless-steel mesh. This is relatively easy and less technique sensitive and less time consuming as opposed to other techniques which require fabrication of two trays, leading to unnecessary wastage of material or requires use of impression materials that are difficult to handle such as impression plaster. There are no known disadvantages of this technique.

SUMMARY

The use of light body polyvinylsiloxane with stainless-steel mesh reinforcement created a space between the flabby ridge and the custom tray thereby eliminating any sort of pressure on the flabby tissue and hence recording the ridge in a completely static state, to counter tissue rebound during function, surpassing the accuracy of alternative methods ultimately delivering superior accuracy, stability, and patient satisfaction.

DECLARATIONS OF INTEREST: None

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