CASE REPORT

MANAGEMENT OF FLABBY RIDGE- DUAL TRAY TECHNIQUE

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ABSTRACT

The displaceable denture bearing tissues or flabby ridges is a common finding in prolonged edentulous patients. Flabby ridges compromise the retention, support and stability of the denture. Modifications in impression techniques have been proposed to physiologically record these tissues. In this case report two different impression techniques namely, one part impression technique and dual tray technique to record flabby ridges is discussed. Record bases obtained from master cast of two different techniques where compared and dual tray technique showed less blanching of tissues than one part impression technique. Dual tray technique may be used to treat & prevent further deterioration of the existing condition.

WORDS: Flabby ridge, Impression technique, Dual Tray technique

How to Cite This Article:. Tamizhesai Balavadivel, Venkateshwaran Rajendran, Ponsekar Abraham Anandapandian Management of Flabby Ridge- Dual Tray Technique. Int J ProsthoRehabil 2021; 2: 2:1-5

Received: 06-07-21; Accepted: 18-08-21; Web Published: 13-10-21

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INTRODUCTION

The performance of a complete denture is often a reflection of its support and retention [1]. A master impression for a complete denture should 'record the entire functional denture-bearing area to ensure maximum support, retention, and stability for the denture during use [2]. However, difficulties arise when the quality of the denture bearing areas are not suitable for this purpose. A fibrous or flabby ridge is a superficial area of mobile soft tissue affecting the maxillary or mandibular alveolar ridges.

It can develop when hyperplastic soft tissue replaces the alveolar bone. It occurs when natural teeth oppose an edentulous ridge, unplanned extraction. Commonly seen in anterior region of maxilla in combination syndrome [3,4], in cases of mandibular alveolar ridge when extensive bone resorption has occurred [5]. Masticatory forces can displace this mobile denture-bearing tissue, leading to altered denture positioning thereby leading to loss of peripheral seal, soreness & pain. Forces exerted during the act of impression making can result in distortion of the mobile tissue[6]. 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 havebeen reported [6,7]

The three main approaches to the management of the flabby ridge are:

1. Surgical removal of fibrous tissue prior to conventional prosthodontics
2. Implant retained prosthesis
   - Fixed
   - Removable
3. Conventional prosthodontics without surgical intervention.

In this article we describe a different impression technique for making impressions of denture bearing areas containing flabby ridges, which uses a simplified technique and more widely used impression materials.

CASE REPORT

A 52-year-old female patient reported to department of prosthodontics for replacement of missing teeth in upper & lower arches. The patient had a history of wearing complete dentures for four years. Her chief complaint was poor fit of the denture & felt loose while eating. On examination the patient was completely edentulous maxillary & mandibular arches. The anterior canine to canine region in maxillary ridge was flabby obliterating the buccal vestibule (Figure 1 & 2). A treatment plan was formulated to fabricate a complete denture with the modification in the impression technique to achieve minimum displacement of denture during function and maximum retention and stability.

Procedure:

Preliminary impression was made in stock tray with Impression compound, primary cast was poured. The displaceable areas were identified on the cast. In this article we use two technique and compare the efficiency of the two. The two techniques are

- One part impression technique (Selective perforation tray)
- Dual tray technique

One part impression technique (selective perforation tray)

It has been suggested that if the degree of mucosal displacement is minimal, then this conventional technique may be considered[8]. Preliminary impressions are taken in stock trays using impression compound. A spaced special tray is fabricated from the primary cast. Pressure on the unsupported, displaceable soft tissue can be minimized further using perforations in the tray overlying these areas (Figure 3&4). Tray adhesive was applied. A final impression with polyvinyl silicone was made (Figure 5). Subsequently, record base was made using clear acrylic resin.

DUAL TRAY TECHNIQUE

In 1964, Osborne described an impression technique involving two overlying impression trays used for recording maxillary arches with displaceable anterior ridges[9]. The aim of this technique is to maintain the contour of the easily displaceable tissue while the rest of the denture bearing area is recorded. Preliminary impressions are taken in stock trays using impression compound.

Using the master cast, the palatal tray is fabricated with Shellac baseplate on the palatal aspect, relieving the flabby ridge region with the handle. A handle is positioned in the centre of the palatal tray (Figure 6), but proclined to allow the second special tray impression to be guided in an oblique upward and backward direction to envelope the palatal tray. The palatal tray accurately locates the second part special tray using a stop, thereby allowing for a pre-planned even thickness of impression material. Second tray is fabricated involving the flabby ridge region. Border moulding done in the palatal tray (Figure 7). Secondary impression made with monophase in the palatal tray & light body impression in the second tray covering flabby ridge region (Figure 8). Subsequently, record base was made using clear acrylic resin.

Both the record bases were checked for blanching in the tissues. Record base fabricated with one part impression technique (Figure 9) (selective perforation tray) showed more blanching of tissues when compared to record base of dual tray technique (Figure 10). Dual tray technique is less tissue displaceable technique. Subsequent procedure was carried out for fabrication of complete denture. Finished prosthesis was given. On follow up visit, (6 month) there was sufficient retention, no redness or pain, patient was satisfied and comfortable.

DISCUSSION

Dentures constructed on flabby ridges without any special care for the same, may cause discomfort to the patient and failure of the prosthesis. Surgical excision of flabby tissue is one of the treatment options. But, however, in majority of the cases it reduces the sulcus depth and arises a need of vestibulopathy. Ridge augmentation is an invasive treatment option, as it has the risk of rejection of graft material along with the need for additional surgery for graft harvesting [10].

The surgical intervention in the form of fibrous tissue removal or placement of implant retained prosthesis causes their own disadvantages of medical condition of elderly patients, shallow ridge, treatment time, cost, etc. A conventional prosthodontic solution may avoid problems associated with surgery. Prosthodontic management of such conditions is a feasible and non-invasive option. Impression techniques used for recording the ridge has paramount [11]. The conventional mucocompressive impression techniques result in an unstable denture. For these cases a selective pressure or a minimally displacive impression technique should be chosen [12].

CONCLUSION

In conventional complete denture, there are different impression techniques to solve the problems caused by flabby tissue during denture fabrication. The criteria's like extent of flabby tissue, Importance of optimizing other design factors and patient requirement should be considered for selecting the impression techniques. When

surgical management of flabby maxillary residual ridge is not an option, accurately recording this tissue using a custom double tray, is an alternative method for successful management. In this technique, consideration has been given to the choice of impression material as well as to the design of the impression tray to minimize the amount of pressure exerted on flabby tissue. If planned and executed systematically, dual impression technique gives a good result.

ACKNOWLEDGEMENT
None.

CONFLICT OF INTEREST
The authors declare there are no potential conflicts of interest.

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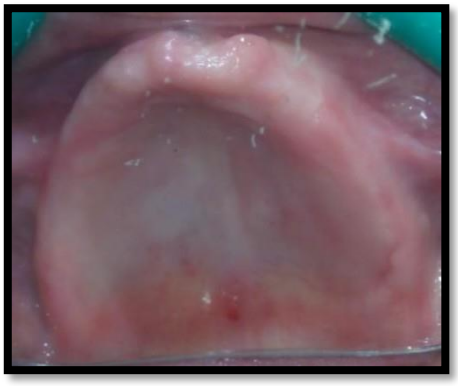

Figure 1&2: Anterior canine to canine region in maxillary ridge was flabby obliterating the buccal vestibule

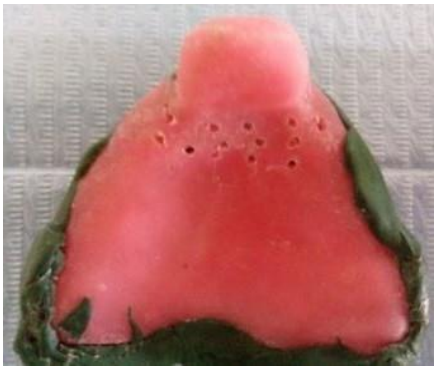

Figure 3 & 4: Pressure on the unsupported, displaceable soft tissue can be minimized further using perforations in the tray overlying these areas

Figure 5 : Final impression with polyvinyl silicone

Figure 6: A handle is positioned in the centre of the palatal tray

Figure 7: Border moulding done in the palatal tray

Figure 8: Secondary impression made with monophase in the palatal tray & light body impression in the second tray covering flabby ridge region

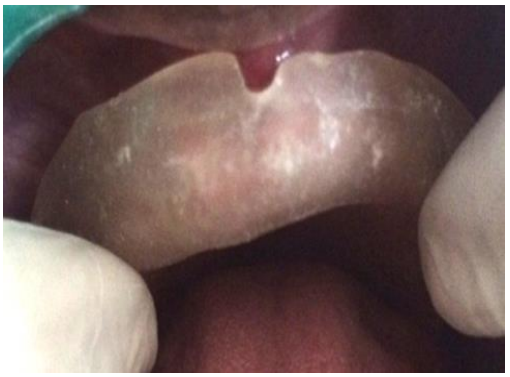

Figure 9& 10: Record base fabricated with one part impression technique (selective perforation tray) showed more blanching of tissues