

MANAGING FLABBY TISSUE WITH DIFFERENT IMPRESSION TECHNIQUES: A CASE SERIES

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ABSTRACT

Making of final impression of flabby tissue with minimal or no displacement of tissue and better stability of denture. Fibrous or flabby ridge is a mobile or extremely resilient alveolar ridge which becomes displaceable due to fibrous tissue deposition. Inadequate support, stability and retention of complete denture are the problems encountered in these patients. This article presents a case series of different impression techniques for managing cases with flabby tissue. These impression techniques helped in recording flabby tissue with minimal displacement and hence enhanced the stability, support and retention of the denture.

KEYWORDS: Flabby ridge, impression techniques; hobkirk's technique; massad's technique; lynch and allen's technique

INTRODUCTION

A flabby ridge is one which 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 but it is most commonly seen in maxillary anterior ridge. Studies have shown that flabby ridge occurs in 24% of maxillary and in 5% of mandibular edentulous ridge.^[1] When the edentulous maxillae is opposed by natural mandibular teeth in anterior region, these teeth cause trauma to maxillary anterior ridge as all occlusal forces are directed to this area, resulting in severe bone loss and fibrous hyperplastic tissue formation. E Kelly^[2] described this condition as "combination syndrome". Flabby ridge is also a common finding in long term denture wearers due to trauma from denture bases,^[3] or result of unplanned and uncontrolled dental extractions.^[4] Impression making of flabby ridge results in

displacement of fibrous tissue which later on recoils to its original position and dislodges the denture. Unless managed properly by special techniques, flabby ridge adversely affects support, retention and stability of denture. Various impression techniques have been described to overcome the problem of flabby tissue. This article describes three different impression techniques for recording flabby resorbed ridges, viz Hobkirk Technique,^[5] Massad's Technique,^[6] Lynch and Allen's technique.^[7]

CASE REPORT 1

A 65 year old patient who has been a denture wearer for last 7 years, reported to the Department of Prosthodontics, Manav Rachna Dental College, Faridabad, with the complaint of ill fitting denture since last 3 years. On intraoral examination, the patient had completely edentulous maxillary and mandibular ridge with an area of flabby tissue in the left maxillary anterior region (Fig. 1). It was planned to rehabilitate the patient with a new set of denture using "Hobkirk's technique" for recording flabby tissue in an un-displaced condition. The diagnostic impression was made using alginate impression material (Zelgan, Dentsply, Delhi, India). A 3-4 mm spaced custom tray was fabricated on the diagnostic cast. This tray was used to make primary impression with impression compound (Y-Dents, Delhi, India) using selective composition flaming technique.⁸ The flabby region was outlined and the impression overlying the firm denture bearing area was softened with flame, and tray was seated under heavy pressure to record the load bearing area in displaced state. The maxillary cast obtained was used to fabricate a custom tray with Boucher's spacer design⁹ of 1mm thickness and four tissue stops of 2×4mm were made in cuspid and molar regions by using auto polymerising resin (DPI-RR cold cure,



Fig. 1: Flabby tissue in maxillary anterior region

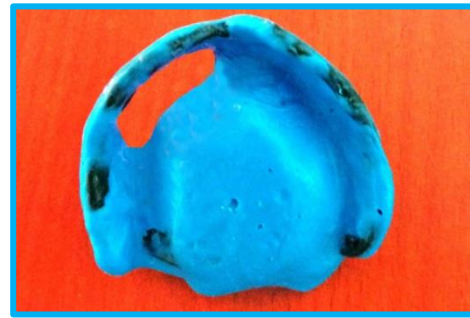


Fig. 2: Creation of window in the region of flabby tissue

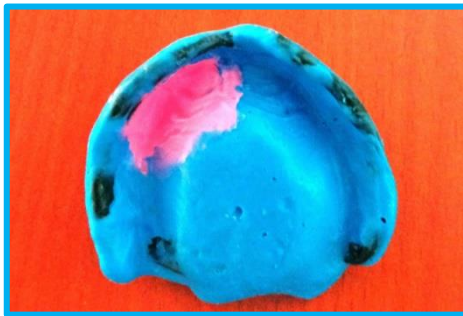


Fig. 3: Final impression of maxillary arch



Fig. 4: Flabby tissue in maxillary anterior region



Fig. 5: Flabby tissue in mandibular anterior region



Fig. 6: Tissue stops and border molding using putty impression material (maxillary arch)



Fig. 7: Tissue stops and border molding using putty impression material (mandibular arch)



Fig. 8: Final impression of maxillary arch

Maharashtra, India). The borders of the tray were kept 2 mm short of the vestibular depth. Border moulding was performed using green stick compound (Pinnacle, DPI, Maharashtra, India). After completion of border moulding spacer wax was removed, relief holes were drilled, and impression was made with medium body vinyl polysiloxane elastomeric impression material

(Reprosil, Dentsply, Delhi, India). The displaceable tissue was then marked in intraoral region and transferred on the impression and window was created by cutting the marked area to expose the flabby tissue (Fig. 2). The tray was painted in this region with light body elastomeric impression material (Betasil, Muller-Omicron Dental, Germany) to record flabby tissue.



Fig. 9: Final impression of mandibular arch



Fig. 10: Flabby tissue in maxillary anterior region

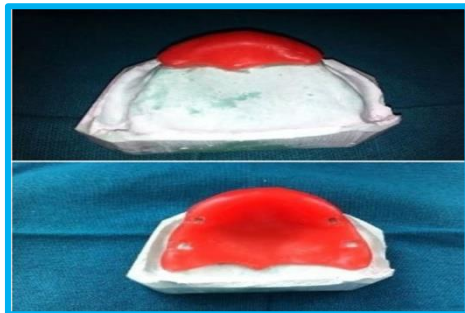


Fig. 11: Modification of spacer design in maxillary anterior segment



Fig. 12: Spacer removed after border molding

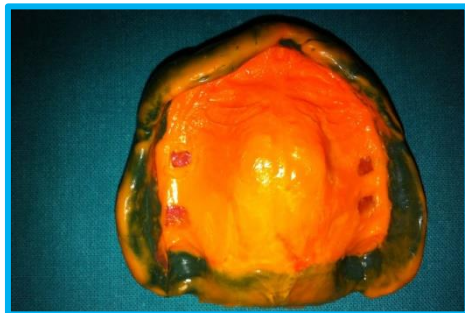


Fig. 13: Final impression of maxillary arch

Beading and boxing of the final impression (Fig. 3) was done and master cast was poured with dental stone (Type III Gypsum). Thus in this way flabby tissue was recorded using Hobkirk's technique⁵. Denture fabrication was then continued in usual manner. The denture was delivered and patient was recalled after 2 weeks, he was comfortable using the denture.

CASE REPORT 2

A 63 year old female patient reported to the Department of Prosthodontics, Manav Rachna Dental College, Faridabad to get her missing teeth replaced. History revealed that she had undergone unplanned dental extractions. On intraoral examination the patient was found to be completely edentulous with bilateral flabby tissue in both maxillary (Fig. 4) and mandibular (Fig. 5) arches in the anterior segment. Keeping all treatment modalities in mind it was decided to

provide a maxillary and mandibular complete denture with modification in Massad's impression technique⁶ to achieve minimum displacement of fibrous tissue. The Massad's technique makes final impression in single visit by eliminating the need to fabricate custom tray from cast obtained from preliminary impression. In this case Massad's technique had been used to obtain a final impression in single appointment using stock metal tray (edentulous, perforated). The impression tray was selected in accordance with the size and shape of patient's ridge. Using heavy viscosity impression material (Aquasil, Dentsply, Delhi, India) tissue stops were created in both maxillary (Fig. 6) and mandibular (Fig. 7) tray. Spherical pieces of material were placed in each tray- one in anterior region, one in each posterior region, and one in palatal area (maxillary tray). The tray was then placed in patient mouth allowing for 2-3 mm of space. The stops were allowed to set in patient mouth. Border molding of the impression was now done using heavy viscosity impression material (Reprosil, Dentsply, Delhi, India). After border molding impression was allowed to set, removed and examined to evaluate the extension of the border details. Final impression of maxillary ridge was then made using medium body impression material (Reprosil, Dentsply, Delhi, India) in tuberosity region and light body impression material

(Reprosil, Dentsply, Delhi, India) of the remaining tissue surface while final impression of mandibular ridge was made using light body impression material (Reprosil, Dentsply, Delhi, India). Different viscosities of impression material were selected so as to record the load bearing area in the functional state and the other areas that is flabby tissue and relief areas, under minimal displacement. The border molding movements were repeated, and the material was allowed to set completely. Once set, impression was removed from patient's mouth. The final impressions (Fig. 8 & Fig. 9) were examined for border extension and integrity. The impressions were then boxed and poured with dental stone (Type III Gypsum) to obtain the master casts. Denture was fabricated in the conventional manner and inserted in the patient's mouth. The patient was happy with new set of dentures.

CASE REPORT 3

A 53 year old male patient reported to the Department of Prosthodontics, Manav Rachna Dental College, Faridabad. He reported that he had recently been provided with a denture and has difficulty in chewing and mastication. On intraoral examination patient had completely edentulous maxillary and mandibular arch. It was noted that extensive area of flabby tissue was present bilaterally on anterior region of maxillary denture bearing area (Fig. 10), so it was decided to fabricate a complete denture using Lynch and Allen's technique^[7] to manage the unfavourable status of the patient. A preliminary impression of the maxillary and mandibular arch was made with alginate impression material (Zelgan Dentsply, Delhi, India). The impression was poured in dental stone (Type III Gypsum). The flabby area was marked on the cast and three layer thickness of modeling wax (Fig. 11) was placed as a spacer over the marked area and one layer thickness of dental wax over the remaining non-displaceable area. The custom tray was fabricated in usual manner using auto polymerizing resin (DPI-RR cold cure, Maharashtra, India). The borders of the tray were kept 2mm short of the sulcus. At the chair side custom tray was inserted into patient's mouth and border molding was done with green stick compound (Pinnacle, DPI, India). Using a scalpel wax was removed from the border molded custom tray (Fig. 12). Multiple relief holes were made to ensure prevention of pressure build up in

the flabby area. The custom tray was filled with light body vinyl polysiloxane impression material (Reprosil, Dentsply, Delhi, India) and placed in the patient's mouth. Once set, the impression was removed from the patient's mouth and inspected (Fig. 13). The impression was poured in dental stone (Type III Gypsum) and fabricated in the usual manner. The denture was delivered and on recall visit patient was satisfied with the denture.

DISCUSSION

Impression making plays an important role in complete denture fabrication. Flabby ridge is a common difficult situation which challenges the dentist. Various impression techniques have been described in literature to record flabby tissue. Liddlelow^[10] described a technique where two separate impression materials are used in a custom tray using plaster of paris over flabby tissue, and zinc oxide eugenol over normal tissue. Osborne described a technique where two separate impression trays and impression materials are used separately to record the flabby and normal tissue. Watson described the window technique where a custom tray is made with window over flabby tissue. A mucocompressive impression is first made of normal tissues using the custom tray and zinc oxide eugenol impression paste. A low viscosity mix of plaster of paris is then painted over flabby tissue through the window. Each technique has its own advantages and disadvantages. The Hobkirk's technique and Lynch and Allen's technique described in this article does not involve extra clinical steps in construction of complete denture. The impression materials used in this technique are widely used. The use of window and wax minimize the displacement of flabby tissue thus increasing the stability of the denture. In Massad's technique, final impression making is performed with a special stock tray specifically designed to meet the patient's requirement. Case described in this article uses alternate stock metal trays (edentulous, perforated) to record the flabby tissue using Massad's impression technique. Different viscosities of impression materials were used to record final impression of normal tissue in compressed and flabby tissue in undisplaced position. Using these modified impression techniques, flabby tissue can be managed effectively.

CONCLUSION

The complete denture should fulfill its basic objectives of stability, retention, support, aesthetics and preservation of tissues. Flabby ridge gets displaced during conventional impression making procedures and results in instability of the denture. Treatment options for management of flabby ridge include: surgical excision, Implant retained prosthesis or conventional complete denture. This article presents a case series of different impression techniques for managing cases with flabby tissue which are cost effective, easy, time saving procedures. This led to better end results and better patient compliance.

CONFLICT OF INTEREST & SOURCE OF FUNDING

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