

Prosthetic management of completely edentulous patients with flabby ridge by three different impression techniques: A case report

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ABSTRACT

Flabby ridge is a commonly occurring condition in edentulous patients, which cannot be treated in a conventional manner, may cause irritation or inflammation of the ridge and instability of the denture. Modification in treatment procedure is required to fulfill patient's esthetic and functional desires. This article describes three such clinical cases and the use of a suitable impression technique for the same.

Key words: Double spacer technique, Flabby ridge, Palatal split tray, Window technique

INTRODUCTION

A “flabby” ridge is an area of mobile soft tissue affecting the maxillary or mandibular alveolar ridges. It develops when hyperplastic soft tissue replaces the alveolar bone. These “flabby ridges” are composed of mucosal hyperplasia and loosely arranged fibrous connective as well as more dense collagenized connective tissues.^[1] The flabby ridge is predominantly seen in the upper anterior region and is commonly associated with features of combination syndrome, as mentioned by Kelly.^[2] During recording an impression, the flabby tissue may get distorted. After fabrication of the denture conventionally, masticatory forces may displace flabby tissue resulting in loss of peripheral seal and ultimately the lack of stability of the denture.^[3]

Management of flabby ridge includes surgical removal of hyperplastic tissue; implant retained prostheses and modified impression technique followed by conventional complete denture. However, because of prevailing medical conditions or medical treatment surgical intervention is not possible in most of the

elderly patients and implant retained prostheses are not affordable for some patients, impression techniques are modified to improve the stability of the denture and to preserve the health of the tissue.^[4]

Three different impression techniques for recording flabby ridges to improve the stability of the complete denture are described here. These three completely edentulous patients reported to Vinayaka Missions Sankarachariyar Dental College, Salem, to get their missing teeth to be replaced with a common complaint of the ill-fitting denture. Medical history of these patients revealed no underlying systemic disorder. Intraoral examination showed flabby ridge in the maxillary anterior region while the mandibular ridge was completely edentulous in one case and two cases with the flabby ridge in relation to maxillary anterior as well as mandibular anterior region (Figures 1 and 2). In these following cases, we have used various modified impression techniques to achieve maximum stability and retention and minimum displacement of denture during the function.

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CASE REPORTS

Case report 1: Double spacer technique

The patient was seated comfortably in the dental chair, and preliminary impression of maxillary and mandibular arches was recorded in a stock tray with irreversible hydrocolloid impression material. These impressions were poured with dental stone, and the displaceable tissues were identified on the cast. A custom tray was fabricated using auto polymerizing acrylic resin (RR self-cure acrylic resin, Dentsply, India) with a double spacer in the anterior flabby region and single spacer in posterior region for both maxilla and mandible (2 mm). The double spacer provides space to record impression of mobile tissue in undisplaced position (Figures 3 and 4). Border molding was performed with the putty material. Then, the spacer was removed, and multiple holes were drilled in the anterior region of the custom tray. Placement of multiple relief holes ensures prevention of pressure build up in the flabby area thereby leading to inadvertent

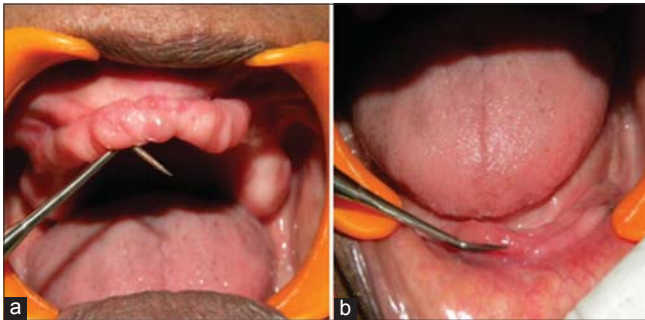


Figure 1: (a and b) Displaceable areas identified on the maxillary and mandibular anterior region

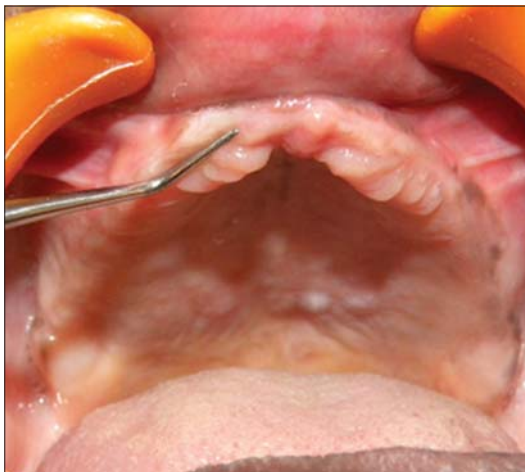


Figure 2: Displaceable areas identified on the maxillary anterior region

tissue compression. Tray adhesive was applied, and an impression was recorded with polyvinyl siloxane impression material (Figure 5).

Case report 2: Window technique^[5]

The custom tray with a wax spacer was fabricated from the primary cast. A window is cut in the

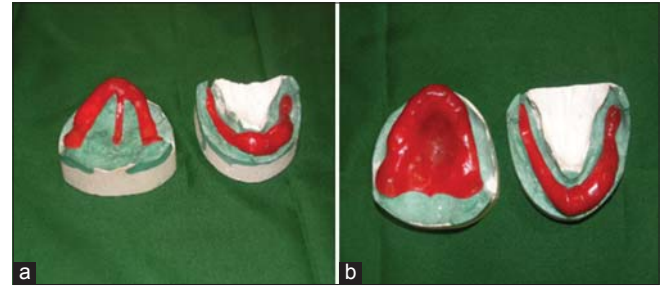


Figure 3: (a and b) Double wax spacer over flabby maxillary and mandibular ridge



Figure 4: Maxillary and mandibular custom tray



Figure 5: Completed maxillary and mandibular impression with polyvinyl siloxane impression material

custom tray which corresponds to the flabby part of the ridge (Figure 6). Border molding was performed with low fusing impression compound. The impression was recorded with zinc oxide eugenol impression material, and impression plaster was applied over exposed flabby tissue with a sterile cement spatula. Separating medium was applied over the plaster part of the impression and poured with dental stone (Figures 7 and 8) so as to separate the master cast from the impression.

Case report 3: Palatal splinting using a two-part tray system^[6]

The two-part tray was fabricated over primary cast. A palatal tray was fabricated with a spacer adapted over a palatal aspect of the mobile area and extending to the ridge crest around the arch. A locating rod

is positioned in the center 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 (Figure 9). A second tray fabricated over the palatal tray with perforations to allow escape of the excess material (Figure 10). In the palatal tray, a low viscosity zinc oxide paste impression was recorded of the palatal portion only. Once this has set, a second special tray impression was recorded completely encompassing the first tray with polyvinyl siloxane impression material (Figure 11).

DISCUSSION

For the success of complete denture, an impression technique and recording an accurate impression plays a major role in the fabrication of complete denture.



Figure 6: Custom tray with window preparation



Figure 8: Zinc oxide eugenol impression with impression plaster impression over window preparation



Figure 7: Zinc oxide eugenol impression with impression plaster impression over window preparation



Figure 9: Maxillary custom tray



Figure 10: Second tray with holes



Figure 11: Maxillary (palatal) master impression with zinc oxide eugenol impression paste, second impression with polyvinyl siloxane impression material

Recording an impression for flabby ridge tissues is very difficult and it requires special technique and skill of the operator.

Standard muco-compressive techniques are likely to result in an unretentive and unstable denture as the impression of flabby tissue is recorded in the distorted state. Mucostatic impression techniques may not make the best use of the available tissue support. The use of selective pressure or minimally displacive impression techniques should help to overcome some of these limitations.^[7]

Window technique is commonly used for flabby ridges where a custom tray is made with window over the flabby tissue. The muco-compressive impression is first made of normal tissues using the custom tray and zinc oxide eugenol impression paste. Moreover, the flabby tissue is recorded with a low

viscosity mix of dental plaster through the window. Manipulation of impression plaster is easier than polyvinyl siloxane and also working time is under control of the operator.

The double spacer impression technique can be accomplished relatively quickly. The advantage of this technique is that it ensures that the pressure exerted by the tray does not cause distortion of the mobile tissues.

Using the palatal splinting technique, it is conceivable that a degree of distortion, although minimal, may occur by anterior distortion during the first stage and compression of the ridge at second impression stage. The two-stage technique is the closest of the described techniques to recording the fibrous ridge in its undisplaced position and would appear to have the highest number of advocates in the literature reviewed.^[8]

The above-modified impression techniques help in providing the support to the denture from firm tissues and relieve the flabby region.

CONCLUSION

The complete denture should fulfill its basic objectives of stability, retention, support, esthetics, and preservation of tissues. As conventional complete dentures do not provide stability in flabby ridges, modified impression techniques are used.

The impression techniques described in this paper does not require additional clinical visits as required for the fabrication of the conventional complete denture. The time required for recording impressions is not excessive. The materials are also readily available in contemporary clinical practice and can be efficiently carried out by any dental practitioner.

All the patients were satisfied with the new denture, and the impression techniques can be easily carried out which results in success of the complete denture.

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