



SIMPLE MODIFIED IMPRESSION TECHNIQUE FOR MAXILLARY FLABBY RIDGE: A CASE REPORT

Prosthodontics

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ABSTRACT

When the edentulous maxilla is opposed by natural teeth in the mandibular anterior region the flabby ridge or mobile fibrous tissues are frequently seen in maxillary anterior region. Movable tissues that are displaced during impression making tend to return to their original form, and complete dentures fabricated from such impression will not accurately fit on the recovered tissues resulting in loss of retention, stability and occlusal disharmony the dentures. This article describes a modified impression technique for flabby ridges that makes use of low viscosity polyvinyl siloxane impression material. In this technique escape holes were prepared on the flabby tissue area with straight fissure bur so that the flabby tissues won't be compressed. This technique helps in maintaining the contour and recording the detail of the tissues without displacing the flabby tissues.

KEYWORDS

Flabby ridge, mobile fibrous tissues, mucostatic, light body, polyvinyl siloxane.

Introduction:

Displaceable, flabby or hyperplastic tissues are commonly seen in the anterior region of edentulous maxilla opposing mandibular anterior natural teeth or in the mandibular alveolar ridge when extensive bone resorption has occurred. Masticatory forces can displace this mobile denture wearing tissue, leading to altered denture positioning and loss of peripheral seal. Forces exerted during the act of impression taking can result in distortion of the mobile tissue.¹The presence of displaceable denture-bearing tissues often presents a difficulty in making complete dentures.

Displacement of such mobile tissues during impression making is always a concern. Soft tissues that are displaced during impression making tends to return to their original form, and complete dentures fabricated using this impression will not fit accurately on the recovered tissues. This results in loss of retention, stability discomfort and gross occlusal disharmony of the dentures².

Kelly³ in 1972, first described 'combination syndrome' which included alveolar bone resorption in the anterior maxilla, enlargement of the tuberosity and bone resorption underneath the mandibular denture bases. Mobile fibrous tissue in the anterior region of the maxillae may offer inadequate support for a complete denture and result in reduced stability and retention. This is normally caused by localized loading when the complete maxillary denture is opposed by natural anterior teeth and an absence of posterior natural or artificial teeth.

Liddlelow⁴ described a technique whereby two separate impression materials are used in a custom tray (using 'plaster of Paris' over the flabby tissues and zinc oxide and eugenol over the normal tissues.)

Osborne⁵ described the technique whereby two separate impression trays and materials are used to separately record the flabby and normal tissues and then related intraorally.

Watson⁶ described the 'window' impression technique where a custom tray is made with a window or opening over the (usually anterior) flabby tissues. A muco-compressive impression is first made of the normal tissues using the custom tray with zinc oxide and eugenol. A low viscosity mix of 'plaster of Paris' is then painted onto the flabby tissues through the window.

Different impression techniques have been suggested to circumvent the difficulty of making a denture to rest on a flabby ridge. While these may vary in approach, they are similar in their complexity, are often quite time-consuming to perform, and rely on materials not commonly in use in contemporary general dental practice. The purpose of this article is to describe a modified impression technique for flabby ridges that makes use of low viscosity polyvinyl siloxane impression material routinely available in general dental practice.

Case report:

A 63 yrs old male patient came to our clinic, to replace his old denture. Patient was wearing complete denture since 7 yrs. On intra oral examination patient was completely edentulous with an extensive area of flabby ridge on the maxillary anterior region (Figure 1). Patient was not willing for any surgical procedure. It was decided to fabricate a new denture, paying attention to impression technique for flabby ridge.

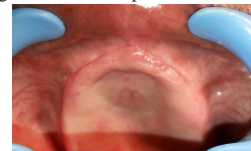


Figure 1: Maxillary anterior flabby ridge

Procedure:

Preliminary impression of the maxillary edentulous arch was made with Irreversible hydrocolloid impression material to minimize the distortion of flabby ridge. Impression was poured in type II gypsum product to obtain primary cast. Flabby ridge area was marked on the cast. The special tray was fabricated with chemically cured acrylic resin with three sheets of wax spacer in the flabby tissue area and single layer of wax spacer was given in the remaining areas (Figure 2).



Figure 2: Spacer

The border of the special tray should be kept 2mm short of the sulcus. Border molding was done with low fusing modeling plastic impression compound (green stick) the spacer was removed. Escape holes were prepared on the flabby tissue area with straight fissure bur so that the flabby tissues won't be compressed (Figure 3).



Figure 3: Border molded special tray

Tray adhesive was applied on the border and whole of the tissue surface of the tray. Impression tray was load with light body polyvinyl siloxane and immediately places the tray over the edentulous ridge and leaves it in mouth for 3-5 minutes (follow manufacturer's instructions). Impression tray was removed from the mouth and evaluates the impression carefully (Figure 4). Impression was poured in type III dental stone.

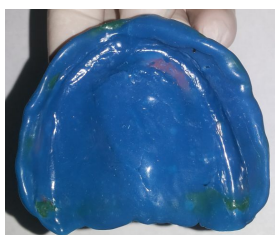


Figure 4: Wash impression made with light body (Polyvinyl siloxane)

Impression of polyvinyl siloxane can be poured immediately, after 1 day or even after seven days because it is dimensionally most stable material. Polyvinyl siloxanes are less brittle than 'Plaster of Paris' and do not need to be handled as carefully.

While manipulating polyvinyl siloxane, vinyl glove should be used instead of latex gloves because dithiocarbamates, sulfur and sulfur chloride 7 used in manufacturing of latex gloves inhibit setting of this material.

Discussion

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.⁸ The amount and position of displaceable tissue should be considered. Where distortion is minimal, the use of perforations of the special tray overlying the fibrous region may be all that is required. Where distortion is significant, either a compressive impression, such as the selectively flamed composition, or a passive technique, either through palatal splinting or two stages could be considered.⁹ The use of holes, windows and wax relieve reduces the hydraulic pressure and minimize the displacement of bearing tissues. If load is to be distributed evenly over the available denture bearing area, distortion of the tissues must be minimized during the impression making procedure.¹⁰

Due to poor health, medical condition/systematic diseases such elderly patients may be unsuited for surgical procedures such as removal of flabby ridges, bone grafting, or placement of dental implants. So the technique quoted can be successfully used for Prosthodontic management of these patients along with basic principles of complete denture fabrication without any invasive surgical procedures. Surgical removal of flabby tissues is mainly a historical concept nowadays. The rationale behind its use was that removal of flabby tissues would result in a 'normal' compressible denture bearing area. Bone loss, the excision of flabby tissues and resultant 'shallow' ridge may provide little retention or resistance to lateral forces on the resultant denture. The use of dental implants in such cases is very difficult because of excessive bone resorption and replacement by flabby tissues, and then there will be little bone remaining into which dental implants can be placed. While it would be technically possible to augment the remaining ridge with bone grafts, the prognosis of such treatment would be questionable. So these types of patients can be successfully managed by using this simple modified impression technique.

Conclusion

This article describes a simple modified impression technique for making impression of maxillary anterior flabby ridge with low viscosity polyvinyl siloxane impression material. Consideration has been given to the choice of impression materials as well as to the design of the impression tray to minimize the amount of pressure exerted on the flabby tissues during the impression-making procedure. The materials used are readily available and used in general dental practice. This technique can be readily completed by the general dental practitioner in dental clinic and does not require additional clinical visits.

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