

# Handling the Hyperplastic Tissue with Special Impression Techniques - A Case Series

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## ABSTRACT

Flabby ridge is a common clinical finding affecting the alveolar ridges of the mandibular or maxillary arches. The anterior region of the maxilla is the most affected area in edentulous patients. Dentures on flabby ridges have compromised stability, support, and retention unless adequate measures for its management are employed. The purpose of this case series is to present techniques for the impression of anterior maxillary flabby tissues for improved and controlled application of impression materials that are routinely available in dental practice.

**Keywords:** Hyperplastic tissue, Flabby tissue, Impression Techniques, Maxillary anterior region.

## INTRODUCTION

'Fibrous' or 'flabby' ridge is a superficial area of mobile soft tissue affecting the maxillary or mandibular alveolar ridges. It can be developed when hyperplastic soft tissue replaces the alveolar bone and is a common finding, particularly in long-term denture wearers.<sup>1</sup> Studies have reported, approximately 5% of the edentate mandibles and 24% of the edentate maxillae have flabby ridges. According to MacEntee, support for the complete dentures is significantly compromised if the flabby ridge has more than 2 mm displacement under pressure.<sup>3</sup> Retention, support, and stability of complete dentures is compromised by flabby ridges unless the tissue is appropriately managed and manipulated by special impression techniques. Such ridges are reported to be caused due to trauma from denture bases. In the edentulous patient, it is found more commonly in the anterior region. Prosthetic rehabilitation in these

patients can be challenging. Major problems encountered in these patients are loss of stability and inadequate retention of the dentures. These problems occur because of the easily distorted flabby tissue during impression-making. Treatment options for these patients include surgery, implant retained prosthesis or conventional prosthodontics without surgical intervention. Treatment modality has to be chosen depending on the patient's state of health and need, the extent of flabby tissue, financial capacity and skill of the dentist. In most situations, surgical intervention or use of implants is not possible and conservative management is the treatment of choice.

## CASE SERIES

### CASE 1:

A 58-year-old female patient reported to the Department of Prosthodontics and Crown and Bridge, GDCH Ahmedabad for the fabrication of upper and lower complete

dentures. On examination, flabby tissue in the maxillary anterior and posterior region extending from the first molar to the first molar region was found. Tissue blanching was also noticed on pressure application. Fabrication of new complete dentures was planned for the patient with a recording of flabby tissue in un-displaced condition using the double spacer technique. The maxillary preliminary impression was made using irreversible hydrocolloid (IMPRINT Alginate dental impression material, DPI, Uttarakhand, India) in the perforated edentulous tray, and the primary cast was poured. A special tray was fabricated using a double spacer over the flabby tissue area and palatal area (fig 1a, b). After checking the proper tray extensions, border moulding

was done in a conventional manner using green stick impression compound (DPI Pinnacle Tracing stick, DPI, Uttarakhand, India). Spacer wax was removed and the impression was made with zinc oxide eugenol paste (DPI). The tray was then removed from the mouth and impression material was removed in the region of flabby tissue using a scalpel. Relief holes were made and the tray was loaded in this region with light body elastomeric impression material to record flabby tissue. Beading and boxing of the final impression was done using the plaster pumice method and the master cast was poured. The denture was fabricated, and it had good retention and stability with proper recording of flabby tissue.

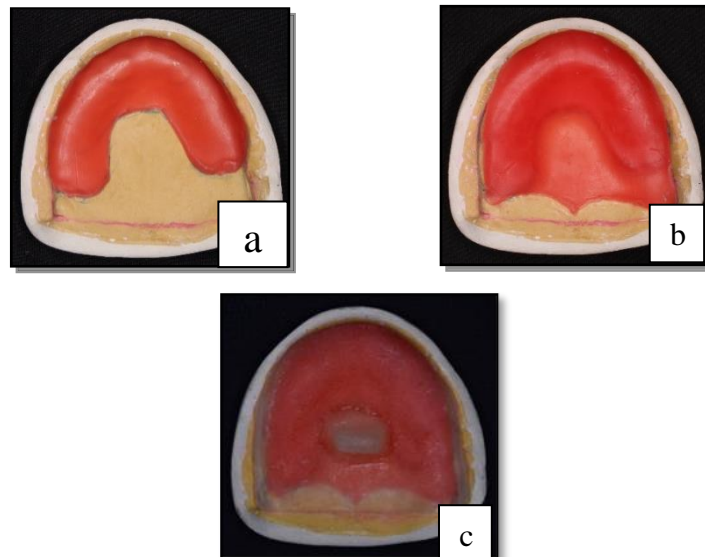


Figure 1: a) & b) Double spacer technique c) Fabrication of custom tray

### CASE 2:

A 65-year-old male patient reported to the Department of Prosthodontic and Crown & bridge GDCH Ahmedabad, with a complaint of ill-fitting maxillary complete denture for 1 year. A Clinical examination revealed a maxillary and mandibular edentulous ridge with a flabby ridge on the maxillary anterior region. The treatment was planned to provide the patient with a new maxillary conventional complete denture. Zafrulla Khan's Window tray technique was used for this patient to record the Maxillary flabby ridge. Zafrulla Khan has described a

commonly used technique in the impression-making of flabby tissue. A preliminary impression was made in a stock tray with irreversible hydrocolloid impression material. (IMPRINT Alginate dental impression material, DPI, Uttarakhand, India). Spacer wax of 1mm thickness was adapted over the cast and additional relief with double thickness spacer wax of 3mm was given in the flabby area, the custom tray was fabricated conventionally. The border moulding was done with low-fusing modeling plastic impression compound (DPI Pinnacle

Tracing stick, DPI, Uttarakhand, India). The window was created in the custom tray in the Flabby Ridge area. A secondary impression was made with zinc oxide eugenol (Zinc oxide eugenol Dental Impression Paste, DPI Impression paste, Uttarakhand, India) (Fig 2c), and Dental plaster material (Gypsum type 2) was

injected over the window corresponding to the flabby ridge area (fig. 2d). Once the material was set, the impression was removed from the patient's mouth. Subsequently, conventional treatment procedures were done to deliver a complete denture prosthesis.

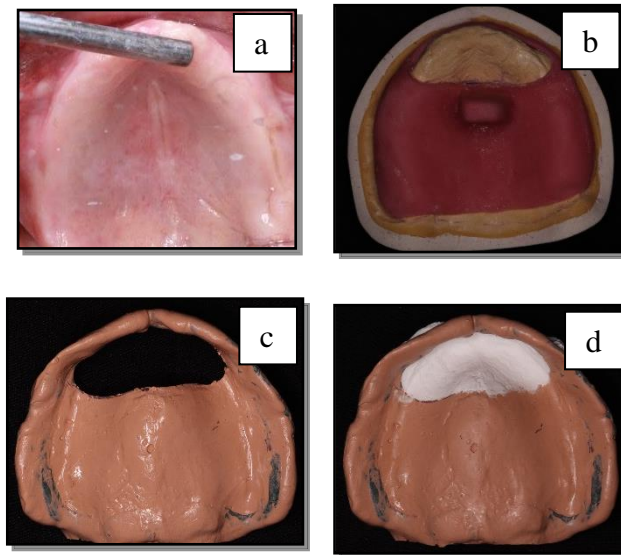


Figure 2: a) Flabby tissue in the maxillary anterior region b) Zafrulla khan technique of making custom tray c & d) Final impression using dental plaster (Gypsum type 2)

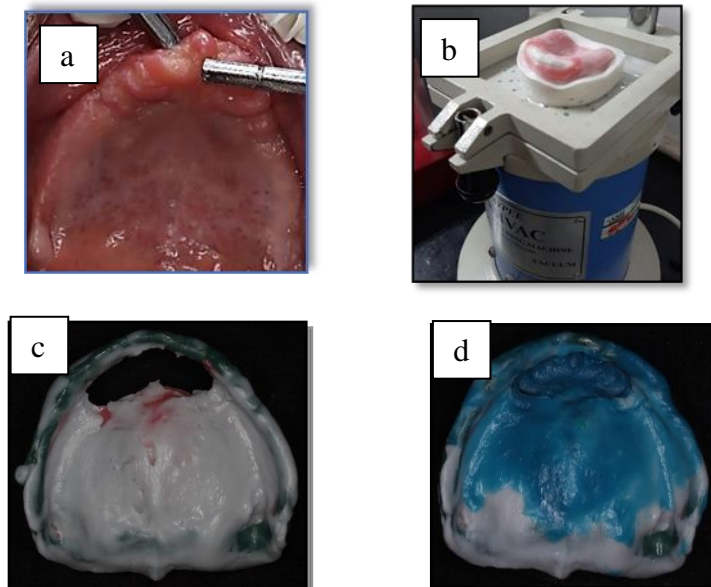
### CASE 3:

A 60-year-old male patient reported to the Department of Prosthodontics and Crown & Bridge, GDCH Ahmedabad for replacement of missing teeth. His chief complaint was difficulty in chewing food in the last 2 years. By intraoral examination, a completely edentulous maxillary and mandibular arch with flabby tissue existing in the maxillary anterior region was observed. (Fig3a) It was decided to give a conventional complete denture using Modified Window Technique for impression making. The primary impressions were made with alginate (IMPRINT Alginate dental impression material, DPI, Uttarakhand, India) to ensure minimal distortion of the displaceable (flabby) tissues. A maxillary cast was poured and the flabby ridge area was marked. (Labstone, Dental stone, Type III, Kalabhai, Uttarakhand, India) followed by the fabrication of a custom tray [spaced (2 mm), tissue stops] (DPI RR cold cure,

acrylic repair material, DPI, Uttarakhand, India) with two posterior handles. A vacuum heat-pressed polyethylene sheet of 1.5 mm thickness was adapted on the tray. (Fig 3b). The window was removed and three holes of similar dimensions were placed on the polyethylene sheet in the window area. Border moulding was performed using the conventional green stick impression compound (DPI Pinnacle Tracing stick, DPI, Uttarakhand, India). Following this a maxillary impression was made using medium body PVS impression material (Aquasil, Dentsply). (Fig 3c) The impression material in the area of the flabby ridge was carefully removed using a scalpel blade. The impression was re-seated in the patient's mouth and a light body PVS impression material (Aquasil, Dentsply) was injected starting from one of the side holes and passing through the middle of the polyethylene sheet until some excess material poured from the holes. (Fig 3d). The final impression was then completed.

Subsequently, conventional treatment procedures were done to deliver a complete

denture prosthesis.



**Figure 3: a) Flabby tissue in maxillary anterior region b) vacuum pressed custom tray using thermoplastic sheet c & d) Final impression using medium body and light body elastomeric impression material**

## DISCUSSION

An accurate impression of the edentulous ridge and functional sulcus is critical to provide a stable and retentive denture. Flabby ridges when recorded using a conventional method are compressed during impression. The elastic recoil of flabby fibrous soft tissue during function results in instability and loss of denture retention and dislodgement. Several impression techniques and methods have been described in the literature for recording flabby tissue during impression-making. However, there is no evidence to support that one particular impression technique will provide a stable and retentive denture on flabby ridges as compared to others.

A window technique is used for an impression of a flabby ridge using a close-fitting custom tray with a window (Watt et al., 177 1986). In the window technique, studies have proposed to record the impression along with the peripheral seal followed by the preparation of the window and recording of displaceable tissues with a low-viscosity impression material (impression plaster). The modified window technique allows for the controlled

application of low-viscosity materials in addition to the minimal exertion of pressure on the flabby ridges due to the presence of vents. The initial marking of the tray using a sharp blade before curing allowed for easy removal of the window. Moreover, the vents in the polyethylene sheet were appropriately sized to allow for the application of light-body PVS. Furthermore, the clear polyethylene sheet in this technique performed as a stent for holding and preventing the low-viscosity material from dropping away from the tissue (allowing control and uniform application). In addition, the visibility from the clear tray helps clinicians to see the adaptation of impression material to the flabby tissue.

## CONCLUSION

For making of a good impression is not a mechanical job, but involves a sound knowledge of oral anatomy, physiology, and dental material sciences. No doubt presence of highly displaceable denture-bearing tissue presents a difficulty in complete denture fabrication; with modified impression techniques these ridges can be managed effectively by conventional

prosthodontics without any additional clinical visits like the patients with normal edentulous ridges. The techniques described in this case series do not involve extra clinical stages in the construction of a complete denture, thereby keeping clinical time to a minimum.

#### **Declaration by Authors**

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**Conflict of Interest:** The authors declare no conflict of interest.

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