

## CASE REPORT



# Management of flabby ridge using metal occlusal - A case report

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### Abstract

To make definitive impression of displaceable tissues with minimum displacement, using window impression technique to prevent progression of resorption. Flabby tissues are usually seen in the anterior edentulous maxilla opposing mandibular anterior natural teeth or in alveolar ridge. This technique uses two custom trays one over the other with a window over mobile tissues in one of the tray. It makes a mucostatic impression to reduce distortion of tissues. Later on modification of acrylic teeth is done after try-in to cast metal occlusion. This technique maintains the contour and records the detail of the tissues without displacing the flabby tissues. Furthermore, metal occlusion prevent further progression of hyperplastic tissue by providing stable posterior stop as the acrylic denture teeth wears off with due course of time. Improves the prognosis of denture.

**Keywords:** Double tray technique, flabby ridge, metal occlusal

### Introduction

A “flabby” ridge is the region having mobile soft tissue affecting the alveolar ridges. This can be explained as a sequel to tooth loss i.e., residual alveolar ridge resorbs and is replaced by mobile fibrous tissue and is a common finding if there are anterior teeth remaining in either of arch. This can also be found in long-term denture wearers with worn out posterior denture teeth in anterior maxilla.<sup>[1]</sup>

The basic objective of impression making in such cases would be to achieve: (a) area to be recorded, (b) border seal, (c) valve seal, and (d) intimate adaptation to the tissues without displacement.

Management of flabby (highly displaceable) ridge poses a challenge to the operator. The clinically significant problems associated with flabby maxillary ridge are that of insufficient retention/stability of the maxillary complete denture, leading to discomfort, and occlusal discrepancy which is due to tissue rebound in the flabby ridge area.<sup>[2,3]</sup>

The primary approaches to the management of the flabby ridge are: Implant retained or supported prosthesis, surgical management of fibrous tissue, and conventional prosthodontics.

### Conventional prosthetic management

The three approaches for impressions of complete dentures could be categorized as follows:

1. The mucostatic technique (nondisplacive)
2. The mucocompressive technique (displacive)
3. The selective pressure impression technique where denture bearing tissues are selectively displaced and relieved.

Many authors have proposed selective pressure impression techniques for flabby ridge impressions by modifying custom tray by window cut through, vent holes, and spacer or combination.

Liddelow used two separate impression materials in a custom tray (using zinc oxide and eugenol over the “normal” tissues and “plaster of Paris” over the flabby tissues).<sup>[4]</sup>

Osborne described a technique in which two separate impression material and tray were used to record the “flabby” and “normal” tissues separately and then related both intraorally.<sup>[5]</sup>

Watson’s “window” impression technique used a custom tray with a window over the flabby tissues. A mucocompressive impression was first made of the normal tissues using the custom tray and zinc oxide and eugenol. Once set, it was removed, trimmed, and resealed in the mouth. “Plaster of Paris” with low viscosity is then painted over the flabby tissues through the window. Once set, the entire impression is removed.<sup>[6]</sup>

Zafarullah Khan impression making technique was planned for this patient. The maxillary preliminary impression was made using irreversible hydrocolloid in with perforated edentulous tray, and primary cast was made. Except in the region of flabby tissue, spacer was adapted over the primary cast. A window was

fabricated in the special tray in the region of flabby tissue. Border molding was done using green stick compound. Spacer wax was removed, and impression was made with zinc oxide eugenol impression material. With the zinc oxide eugenol impression (DPI Impression Paste) in the mouth, flabby tissue was painted with impression plaster. Master cast was poured after applying soap solution as separator over impression plaster.<sup>[7]</sup>

In these techniques the non flabby tissues are compressed to obtain optimal support, and at the same time, the flabby tissues will not be displaced.

### Case Report

A 65-year-old male patient reported to the Department of Prosthodontics, Babu Banarasi Das College of Dental Sciences, Lucknow to get a new set of dentures. History revealed that he was using complete denture for 5-year which was loose with worn out posterior acrylic teeth. Examination of the dentures depicted that only the occlusal surfaces had severe wear pattern as opposed to the denture base which was normal. The patient also had an extensive area of flabby ridge on the maxillary anterior region [Figure 1].

Furthermore, it was observed that the patient was having coarse, non-vegetarian diet and habit of tobacco chewing. Clinical evaluation of dentures revealed with an excessive occlusal wear, resulting in contact of anterior teeth due to sliding and anterosuperior positioning of the mandible due to loss of posterior stops.

The treatment plan suggested to the patient was that of dentures with metallic occlusal surfaces considering his economic status and noncompliance regarding the dietary habits.

To treat the abused tissue patient was advised to discontinue the use of old denture for a week. Once the tissue comes to a healthy state the impression procedure was started.

### Procedure

On examination, the maxillary anterior region was found flabby. Double tray technique for impression making was decided for this patient. The primary maxillary impression was made using irreversible hydrocolloid (3M Alginate Impression Material) in perforated edentulous tray, and primary cast was made. Double spacer was adapted over the primary cast in the region of flabby tissue.

Two special trays one over other were used to record final impression of maxillary arches with flabby anterior ridges. Overlying sectional tray was held in position with the help of orientation rod over the other one [Figure 2]. The aim of this technique was that while making impression the contour of the displaceable tissue is maintained and is recorded in undisplaced form at rest position. Border molding was done, and two different impression materials were used for both the part of tray. In acrylic resin palatal tray with orientation rod, a low viscosity zinc oxide paste impression (DPI Impression Paste) was used to make impression of the palate. Impression was removed and



Figure 1: Flabby ridge

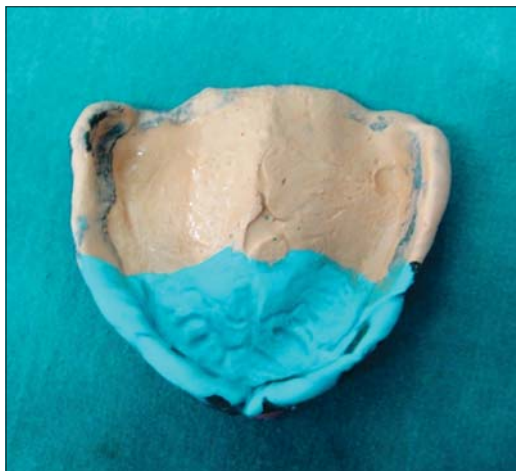


Figure 2: Pick up tray covering the first part of the special tray with guiding rods

inspected for any voids or bubbles. Extra material was removed from anterior hollow part of the first tray. Once this has set, a second impression using another special tray to be seated on palatal tray was made using light body [Figure 3].

It should be inserted from in front then backward, thus, the presence of the supporting zinc oxide prevents backward displacement of the mobile ridge. An orienting rod guides the second special tray impression to cover the palatal tray. The palatal tray accurately locates the second part special tray using orientation rod, thus allowing an even thickness of impression material. Then, the master cast was obtained.

Temporary denture bases and wax rims were made to record face bow transfer and Jaw relation. It is transferred to the semi-adjustable articulator (Hanau H2). Teeth arrangement was done using cross-linked acrylic teeth (Acryrock, Italy) and try-in was done. Then, the maxillary and mandibular posterior occlusal surface of teeth were reduced by 2 mm using carbide trimming bur so as to create a 4 mm interocclusal clearance [Figure 4]. The



**Figure 3:** Definitive impression with the light-body polyvinyl siloxane (arrows) recording the anterior Flabby ridge



**Figure 4:** Teeth trimmed for creating space for metal maintaining the desired occlusion plane.

articulator was moved into eccentric positions to verify the space sufficiency. The teeth were reduced slightly more centrally than the cusps to gain mechanical retention of the casting.

Then, the inlay wax (Blue Wax, MDM Corp., India) was added on the prepared denture teeth and the occlusal surface of the individual teeth was contoured. Secondary anatomic details were carved, and the waxed occlusion was checked in centric and eccentric positions with the help of stone index of occlusal surface of acrylic teeth before trimming. Wax pattern was removed carefully from the teeth invested and casted. Polished castings were positioned on the denture teeth ensuring that each casting was completely seated. The occlusion was checked in centric and eccentric positions. Finished and polished castings were cemented with resin-modified glass ionomer cements [Figure 5]. The dentures were cured using heat cure acrylic resin in the conventional manner. The dentures were then finished, polished, and delivered to the patient. During insertion, complete denture was checked for border extension,



**Figure 5:** Finished and polished castings were cemented with resin-modified glass ionomer cement



**Figure 6:** Denture delivered

proper adaptation, retention and occlusion in centric, lateral, and protrusive positions [Figure 6]. The patient was satisfied with the chewing efficiency and esthetics of the denture. Post denture insertion was done. The patient was re-evaluated after every 3 months for 2 years to solve any problem associated with the denture. The functional efficiency of the denture was also evaluated.

## Discussion

Management of flabby maxillary ridge can be a challenging problem. The impression of denture bearing area and occlusal surface detail is given utmost priority in managing it and thus, these are modified accordingly. In this case report, double tray impression technique was utilized for obtaining the maxillary cast.

Fabrication of metal occlusal surface for denture teeth is not a widespread practice considering that it has rare indications as depicted in this case. The need for such kind of modification is quite subjective and has its own sets of implications. An esthetic concern for all techniques that advocate the use of metal occlusal surfaces is the display of metal while smiling and speaking.<sup>[8]</sup>

Not only the forces of occlusion transferred to the bone, but also they cause the wearing of the denture teeth thus maintaining equilibrium.<sup>[9]</sup> However in the case of metal occlusion, bone would bear the brunt of forces and eventually resorb at a faster rate. Furthermore, correction of occlusion in such cases may be very tedious if the precautions are not carried out at the time of cementation of castings.

The technique described in this article is unique in many ways. Metal occlusion in flabby ridge helps to stabilize and maintain the vertical posterior stops unlike acrylic that wears off. Maintenance of posterior stop will minimize further progression of formation of hyperplastic tissues.

In addition, individual units, not fused units of metal castings to provide metal occlusion to acrylic teeth were fabricated. Improved access to casting margins was provided so that the final finishing and polishing can be completed to near perfection. Moreover, while preparing the acrylic occlusal surface a small post space is also prepared to enhance the retention of the cemented casting. Fabrication of customized metal occlusal for denture teeth is not a widespread practice considering that it has rare indications as depicted in this case.

However in the case of metal occlusion, bone would bear the brunt of forces and eventually resorb at a faster rate. Furthermore, correction of occlusion in such cases may be very tedious if the precautions are not carried out at the time of cementation of castings.

## Conclusion

Establishing metal occlusal surface for dentures remain to be very subjective and needs a judicious treatment planning. This technique is useful in maintaining the vertical relation of jaws, thus there is no displacement of the flabby zone even in long-term denture wearers.

## References

1. Crawford RW, Walmsley AD. A review of prosthodontic management of fibrous ridges. *Br Dent J* 2005;199:715-9.
2. Basker RM, Davenport JC. *Prosthetic Treatment of the Edentulous Patient*. 4<sup>th</sup> ed. Oxford: Blackwell; 2002.
3. Lytle RB. The management of abused oral tissues in complete denture construction. *J Prosthet Dent* 1957;7:27-42.
4. Liddelow KP. The prosthetic treatment of the elderly. *Br Dent J* 1964;117:392-4.
5. Osborne J. Two impression methods for mobile fibrous ridges. *Br Dent J* 1964;117:392-4.
6. Watson RM. Impression technique for maxillary fibrous ridge. *Br Dent J* 1970;128:552.
7. Khan Z, Jagers JH, Shay JS. Impressions of unsupported movable tissues. *J Am Dent Assoc* 1981;103:590-2.
8. Schneider RL. Custom metal occlusal surfaces for acrylic resin denture teeth. *J Prosthet Dent* 1981;46:98-101.
9. Winkler S. *Essentials of Complete Denture Prosthodontics*. 2<sup>nd</sup> ed. St. Louis: Ishiyaku Euro America; 1994.

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