

MODIFIED IMPRESSION TECHNIQUE FOR  
MAXILLARY FLABBY RIDGE

## ABSTRACT:

Fibrous or flabby ridge is a mobile or extremely resilient alveolar ridge which becomes displaceable due to fibrous tissue deposition. It is more prevalent in anterior maxillary region. Conventional impression making leads to compression of the flabby ridge which tends to recoil and result in inadequate support, stability and retention of complete denture. This article presents a case report of modified impression technique for managing flabby tissue in anterior maxillary region which helped in recording flabby tissue with minimal displacement and hence enhanced the stability, support and retention of the denture.

Key words: Flabby ridge, Kelly syndrome, Window technique

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## Introduction

Edentulous ridges that are mobile or resilient with little evidence of underlying supportive bone, may give the appearance of being "flabby".<sup>1</sup> Fibrous or flabby ridge is a superficial area of mobile soft tissue affecting the maxillary and mandibular ridges. Such a situation arises in some complete denture wearer where alveolar bone has been replaced by fibrous tissue. It is particularly evident in maxillary anterior region especially when only the natural mandibular anterior teeth remain, a so called combination or Kelly syndrome.<sup>1</sup>

The reported prevalence has varied, but has been

demonstrated in up to 24% of edentulous maxillae, and in 5% of edentulous mandibles. In the edentulous patient, it is found in the anterior region more commonly in both arches. It is often related to the degree of bone resorption and in severe cases this can be to the level of the anterior nasal spine.<sup>2</sup>

Masticatory forces can displace this mobile denture-bearing tissue, leading to altered denture positioning and loss of peripheral seal. If the flabby tissue is compressed during conventional impression making, it will later tend to recoil and dislodge the resulting overlying denture. Clearly, an impression technique is required which will compress the non-flabby tissues to obtain optimal support, and, at the



Fig. 1



Fig. 2



Fig. 3



Fig. 4



Fig. 5

same time, will not displace the flabby tissues. Thus this case report presents a modified impression technique for flabby tissues in the anterior maxillary region.

#### Case Report

A 65 year old male patient reported to the department of Prosthodontics and Crown and Bridge of Sri Guru Ram Das Institute of Dental Sciences and Research with a chief complaint of replacement of missing teeth in upper and lower arches. The patient was a denture wearer for the last 6 years and described the existing dentures as "loose." On examination the patient was completely edentulous in upper and lower arches. The anterior canine to canine region in maxilla was flabby. (Fig 1)

All the treatment options including implant supported prosthesis and surgical removal of the flabby tissue was suggested to the patient but patient was not willing for the same. So it was decided that upper and lower complete dentures will be fabricated with a different impression technique.

#### Technique

- 1) A primary impression of the upper and lower arches was taken with irreversible hydrocolloid and the primary casts were generated and the displaceable tissues were identified on the cast.
- 2) On the maxillary cast, dental wax was applied as an "I" shaped spacer along the mid palatine raphe using modelling

wax with additional wax relief of two uniform thicknesses given in the flabby area from canine to canine region. (Fig 2)

3) A maxillary custom tray was fabricated using autopolymerising acrylic resin covering the tissues except the area that was flabby. Over the "open" area of the tray another "supporting tray" of acrylic was made thus covering the flabby ridge.

4) Handle of the tray should be placed on the centre so that relief holes can be drilled in the region of flabby tissue. (Fig 3)

5) The maxillary borders were recorded by border moulding using green stick compound. The relief wax was removed and multiple holes were drilled in the "supporting tray". Placement of multiple relief holes was done to ensure prevention of pressure build-up in the flabby area thereby leading to inadvertent tissue compression. (Fig 4)

6) A final impression was made with light body silicone impression material.<sup>3</sup> (Fig 5)

#### Discussion

The flabby ridge occur as a result of a maxillary complete denture opposing mandibular anterior natural teeth leads to anterior hyperocclusion resulting in excessive forces in the anterior region. Excessive anterior forces can also result when porcelain anterior teeth are used in same denture with acrylic posterior teeth. The low wear resistance of acrylic resin teeth result in hyperocclusion of anterior porcelain teeth. It may also arise due to unplanned or uncontrolled

dental extractions.

The treatment options available in such cases are surgical removal of flabby tissue, bone grafting or placement of dental implants. Surgical debulking of flabby tissue has some of the difficulties as many complete denture patients are elderly or have complex medical histories for which any form of surgery is contraindicated. It may also result in shallow ridges which hampers the retention of the resultant complete denture. Surgical removal of tissue is contraindicated where little or no bone is available.

Similarly implant placement is also not without risks. It is clear that if there has been excessive bone resorption and replacement by flabby tissues, 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. Furthermore, there are a group of patients who for a variety of clinical or medical reasons are unsuited for dental implant treatment. There are also some patients who do not wish to have surgically invasive procedures such as placement of dental implants.<sup>4</sup>

In Conventional Prosthodontics, various techniques have been recommended and there is controversy as to whether a mucodisplacive technique which compresses the mobile tissue aiming to achieve maximum support from it or whether a mucostatic technique with the aim of achieving maximum retention should be employed. This case report describes a simple technique to record flabby tissues in their undisplaced state using readily available clinical materials like low viscosity silicone impression material.

A multitude of impression techniques have been described for overcoming the problem of the flabby ridge. Liddlelow 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). Osborne described a technique whereby two separate impression trays and materials are used to separately record the 'flabby' and 'normal' tissues, and then related intra-orally. Watson described the 'window' impression technique where a custom tray is made with a window or opening over the (usually anterior) flabby tissues. A mucocompressive impression is first made of the normal tissues using the custom tray and zinc oxide and eugenol. Once set, it is removed, trimmed, and re-seated in the mouth. A low viscosity mix of 'plaster of Paris' is then painted onto the flabby tissues through the window. Once set, the entire impression is removed. Each of these techniques might be considered cumbersome, and the difficulties associated with their manipulation could lead to inaccuracies. Watt and McGregor — recently revisited by

Lynch and Allen — described a technique where impression compound is applied to a modified custom tray. The thermoplastic properties of this material are then manipulated to simultaneously compress the 'normal tissues', while avoiding displacement of the 'flabby tissues' using the same material and impression tray. The problem with all these techniques is that they rely on materials such as 'plaster of Paris', impression compound, and zinc-oxide and eugenol.<sup>4</sup> Crawford and Walmsley mentioned controlled lateral pressure technique for fibrous posterior ridge with light body silicone impression material.<sup>2</sup>

Many general dental practitioners now rely on 'newer', more 'easy-to-use' materials, such as low viscosity silicone elastomer used particularly for fixed prosthodontics. The materials used in this technique are commonly used in general dental practice. This technique does not require additional clinical visit. It doesn't require extra time for the specialised impression technique as compared to the conventional impression procedures. Thus, it can be easily performed by general dental practitioner.<sup>2</sup>

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