



## MANAGEMENT OF FLABBY RIDGES USING WINDOW TECHNIQUE AND POLYVINYLSILOXANE IMPRESSION MATERIAL IN COMPLETE DENTURE: A CASE REPORT.

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**ABSTRACT** Flabby ridge is a common clinical finding affecting the alveolar ridges of the maxillary or mandibular arches. The anterior region of maxilla is the most affected area in edentulous patients. Dentures on flabby ridges have compromised stability, support, and retention. During the process of making an impression, these mobile tissues get compressed and tend to recoil back to their original form thereby making it a challenge to deal with flabby ridges in fabrication of denture. Methods applied for flabby ridge management, include surgical removal and augmentation, special impression techniques. The purpose of this article is to manage these flabby tissues using a "window technique".

**KEYWORDS :** Flabby Ridges, Fibrous tissue, Window Technique, Polyvinylsiloxane Impression Material, Complete Denture

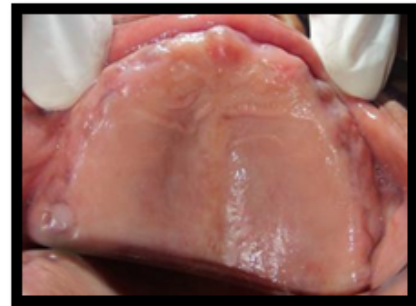
### INTRODUCTION:

Flabby tissue means excessively mobile tissue.<sup>1</sup> Published studies indicate that prevalence of flabby ridge can vary occurring up to 24% of edentulous maxilla, and in 5% of edentulous mandible, and in both jaws most frequently in the anterior region.<sup>2</sup> Flabby ridges has also been believed to occur in cases with a maxillary complete denture opposing mandibular anterior natural teeth, without proper posterior occlusal support. This arises because of unplanned dental extractions that result in maxillary complete dentures opposing mandibular anterior natural teeth, without proper posterior occlusal support. Kelly<sup>3</sup> in 1972 suggested the term 'combination syndrome' describe the change in patient wearing a maxillary complete denture opposed by mandibular anterior teeth and a distal extension removable partial denture. Ridge resorption as well as flabby ridges that are a sequel of long term denture wearing influence denture retention and stability.

Displacement of flabby tissues during impression making step is always a concern while fabricating complete denture. Hypermobile tissues which are displaced during impression making tend to return to their undistorted form, making fit of prosthesis difficult for patient. Also results in loss of retention, stability, support and occlusal disharmony of the prosthesis.<sup>4</sup> Several impression techniques have been suggested to rule out this difficulty caused by flabby ridges. In the window technique, two separate impression materials such as zinc oxide eugenol impression paste for the normal tissues and impression plaster or low viscosity elastomeric impression material for the flabby tissues are used. Impression plaster is a mucostatic impression material and produces little or no pressure, but it is difficult to handle and to pour also it offers little advantage over low viscosity polyvinyl siloxane impression materials.<sup>5</sup> Light body polyvinyl siloxane is a mucostatic material. It is dimensionally most stable, elastic material and records undercuts. The purpose of this article is to describe an impression technique for flabby ridges that makes use of low viscosity polyvinyl siloxane impression material. This article presents an impression technique used to record flabby tissue in an undisplaced form using Window technique. 'Window' impression technique was described by Watson.<sup>6</sup> Light body polyvinyl siloxane is also a mucostatic material. It is dimensionally most stable, elastic material and records undercuts. The purpose of this article is to describe an impression technique for flabby ridges that makes use of low viscosity polyvinyl siloxane impression material.

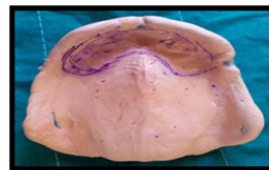
### CASE REPORT:

A 55 years old male patient reported to the Department of Dentistry at Pt. J.L.N.G.M.C.H Chamba with the chief complaint of ill fitting maxillary complete denture and want to fabricate a new denture. On intra-oral examination, an edentulous maxillary arch with severely displaceable anterior flabby ridge was observed (Fig.1). Patient gave the history of wearing denture for the past 8 years and complained that it gradually became loose. It was decided to fabricate a new complete denture using window impression technique using polyvinyl siloxane impression material to record the flabby tissue in mucostatic form.

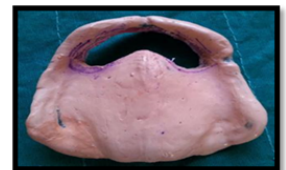


**Fig.1 Intraoral image of the maxillary flabby ridge**

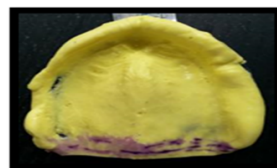
Primary impression of maxillary and mandibular edentulous arches was made with alginate impression material to ensure minimal distortion of the flabby tissue (Fig.2). Both the impressions were poured and primary casts were obtained. Special trays were fabricated for both maxillary and mandibular arches. In the maxillary special tray, corresponding to the marked area (Fig.3) a window was created (Fig. 4) in order to record the flabby tissue. Border molding was done with green stick compound and final impression was made using zinc oxide eugenol impression paste.



**Fig.3 Final impression with window marking**



**Fig.4 Window created in the tray**

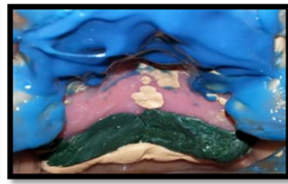


**Fig.2 Primary impression of maxillary and mandibular arch**

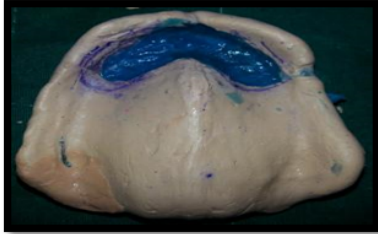
The tray with window was adjusted in the patient mouth (Fig.5). Apply adhesive on the tray in the area of window opening and inject polyvinyl siloxane impression material over the window opening (Fig.6). Impression was evaluated carefully for defects and any excess material on the periphery was removed. Maxillary impression with polyvinyl siloxane impression materials (Fig.7).



**Fig.5 Tray with window tried in mouth**



**Fig.6 Final impression made in mouth**



**Fig.7. Maxillary impression With PVS impression materials**

A master cast was poured from the impression and occlusion rims were fabricated. Jaw relation were made and try in was done. Denture were invested and packed in conventional manner. Final dentures thus obtained were placed in the patient mouth. Intraoral view of complete prosthesis Frontal view (Fig.8) Right lateral view (Fig.9) and Left lateral view (Fig.10)



**Fig.8 Frontal view**



**Fig.9 Right lateral view**



**Fig.10 Left lateral view**

#### DISCUSSION:

An accurate impression of the edentulous ridge is very important for a stable and retentive denture. Flabby ridge when recorded using a conventional method are compressed during impression. The elastic recoil of flabby fibrous soft tissue during function result in instability and loss of denture retention and dislodgement.<sup>7</sup> 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 other.<sup>8</sup>

Excessive forces by unstable occlusal condition can lead to the formation of flabby ridge in an edentulous arch which provides poor support for a denture. This is caused by replacement of underlying supporting bone by fibrous tissue and is associated with marked fibrous inflammation.<sup>9</sup> Flabby ridges can be successfully treated with proper prosthodontic approach, either alone or in interdisciplinary combination with surgery. Surgical removal of flabby tissue is possible if there is adequate bone height. However, it results in short sulcus depth that further needs a small surgical intervention i.e. vestibuloplasty.

Conventional impression techniques used to record such flabby tissues often results in unretentive and unstable dentures. Creating windows

decreases the pressure while impressing flabby areas, thus minimizing the distortion or displacement of hyper mobile tissues. Utilizing these alternatives while making secondary impression can be useful in recording flabby tissues in their anatomic or undistorted form<sup>10</sup>. This case report discusses the window impression technique to minimally displace the flabby tissue recording it in its undistorted form. This favours the health of oral tissues along with providing adequate retention, stability and support for the prosthesis<sup>11</sup>. While in use, loosening of prosthesis is the most commonly observed complaint from the patients with flabby ridges. Usually it can be corrected with chair-side relines, but the viscous relines material further displaces the flabby tissue. The displaced tissues again recoil back to its previous form making dentures loose. This difficulty encountered is solved by using the window impression technique, in which the flabby area is recorded in minimally displaced or anatomic form and rest of the tissues are recorded in functional form. Elastomeric impression materials are more preferred over zinc oxide eugenol impression paste or impression plaster, as they are less brittle and less messy to use. However, there is no significant difference in retention and stability obtained from both, zinc oxide eugenol impression paste and polyvinyl siloxane material<sup>12</sup>. Those patients in which medical conditions don't allow dental implant therapy or those who deny undergoing invasive surgical intervention for correction of flabby tissues can be successfully treated by window impression technique.

#### CONCLUSION:

For flabby ridge impression, light body impression materials produce minimal tissue displacement however uniform and controlled application is important for good impression of flabby ridge. A modified window technique described in this case report demonstrates an effective way for controlled application of light body polyvinyl siloxane impression material, for a non-displacing final impression of flabby ridge. But with modified window impression technique one can overcome this problem and prevent it from hindering in the success of denture fabrication, thereby providing adequate retention, stability, support and patient satisfaction with the functioning of the denture.

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