



Liquid Support To Flabby Ridges – A Case Series

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Abstract

Important aspect of a preventive prosthodontics is the concept of ridge preservation. The residual ridge resorption is an inevitable phenomenon that occurs with age and aggravates with co-morbidities. Prolonged edentulism leads to faster resorption of alveolar ridges which occurs at an increased rate in maxilla as compared to mandible. Unemployed ridges when subjected to unstable forces and pressures it leads to replacement of underlying alveolar bone by soft and resilient fibrous tissue. These fibrous tissues have a tendency to bounce back under pressure exerted by the dentures , thus in turn affecting the denture retention , support and stability. Viable treatment options include surgical and non surgical treatment for the management of flabby tissue. In this case series we have explained two cases of flabby ridge management in the maxilla , in two different female patients, one with the conventional window technique in final impression and the other with the usage of liquid dentures.

Keywords: Dual impression , Flabby ridge. , Liquid denture , Window technique

Introduction

Excessive soft tissue accumulation in an edentulous area , leads to a displaceable ridge the resiliency of which hinders the seal between the denture and the ridge , leading to its dislodgement during function. Evidence suggests an occurrence rate of 5% in mandible and 25% in maxilla approximately[1]. Fibrous tissues are mostly a result of combination syndrome, wherein an edentulous maxilla has been prolonged subjected against a mandibular distal extension partial denture and also can be a result of irregular chewing forces exerted by few remaining mandibular anterior teeth against completely edentulous maxilla[2]. Surgical intervention is not a viable treatment option for all patients hence different impression making techniques have been proposed. Conventional prosthodontic impression techniques have a tendency of tissue recoil under loading from

the dentures. Hence , improvised technique making use of two different impression material have been followed for one patient[3,4]. Ideally , a flabby ridge demands a flexible denture base to adapt to the edentulous tissues but the teeth should also have a rigid base to function well. Hence, literature suggests that a prosthesis be made with a provision of incorporating liquid within it, combining the characteristics of both flexibility and stability, which has been exactly replicated for our second patient.

Case Report 1

A 54 year old female patient reported with complaint of loose dentures which she discontinued using since a year. No report of any relevant medical history and on examination flabby tissue was present in the maxillary anterior region from canine to canine

which showed blanching on pressure application [Figure 1A & B]. Maxillary treatment options discussed were – surgical excision of the soft tissue followed by bone grafting in the resorbed area, implant supported fixed prosthesis and removable prosthesis and conventional complete dentures with modified impression technique. The patient rejected the first two options because of the related expenditure, hence a conventional complete denture for the lower arch and denture with modified impression technique was planned for the upper arch.

Primary impression of both arches were made using impression compound. A window was cut out in the area of flabby tissue and border molding was done using low fusing impression compound conventionally for both the arches. Final impression was made using zinc oxide eugenol impression paste after spacer removal. Excess material was removed from the area of flabby ridge and an impression was made using impression plaster following mucostatic impression technique. The material was removed as a single impression after setting [Figure 2A]. Master cast was fabricated using type 3 dental stone, record bases were adapted, jaw relation recorded, followed by trial and denture insertion. The patient was reviewed after 24 hours, 7 days and 1 month post-operatively.

Case Report 2

A 62 year old female patient with prolonged edentulism reported with difficulty in mastication and speech. No relevant medical history reported and on examination flabby tissue was present in the maxillary anterior region and also in the maxillary right posterior teeth region extending from premolars upto the molars [Figure 3A], which exhibited blanching on pressure application. Maxillary treatment options discussed with the patient were similar to the previous patient. Surgical and fixed treatment options were rejected due to the added expenditure, so we planned for a dual impression technique alongwith adaptation of polyethylene sheet on the tissue surface of denture with glycerine injection.

All the steps were similar till the trial of the dentures [Figure 3B]. Next a polyethylene sheet of 2mm in diameter was adapted on to the maxillary master cast using a vacuum heat pressed machine [Figure 4A]. Conventional packing, flasking

was carried out with the polyethylene sheet in place. The finished and polished dentures were then inserted onto the patients mouth and was allowed to adapt to the tissues for 2 weeks. After 2 weeks, an addition silicone impression of tissue surfaces of upper denture was made to fabricate master casts [Figure 4B]. Now, a polyethylene sheet of 0.5mm diameter was heat pressed and was carefully readapted to the denture creating a gap of 1.5 mm between the tissue surface and the sheet [Figure 4C]. Two small holes were carefully drilled through the palatal surface of the denture and glycerine was injected. Final adjustments were done and the denture was delivered [Figure 4D]. Review was done after 24 hours, 7 days and 1 month post-operatively.

Discussion

Impression making is the first and the most critical step in denture fabrication. Watt D et al had described a window technique for impression making, by cutting out windows in the area of flabby ridge [5], and dual material for impression making had been described by Liddlelow, to record the flabby displaceable tissues in a static state [4]. In severe cases, the modified impression technique alone might not help. So, usage of a flexible sheet on the tissue surface of dentures come to rescue in such cases, as done in our second patient. The polyethylene sheet are biocompatible and act as soft liners when the tissues are at rest [6]. Glycerine is an inert, colourless, odourless and tasteless liquid, which by the action of liquid hydrodynamics, allow for the proper force distribution under loading pressures from denture [7]. Hence, these were chosen for our second patient, with severe flabby edentulous maxillary ridge.

Conclusion

“Change is the only constant”, hence residual ridges are no exception to this. The duty of the Prosthodontists are to deliver dentures which not only provide adequate support, retention and stability but also enhance the functionality in action. Flabby ridges pose a serious threat which can be easily managed in a conservative approach, without surgical intervention, by usage of the above discussed techniques.

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Figure 1A & B : Presence of flabby tissue in maxillary anterior region

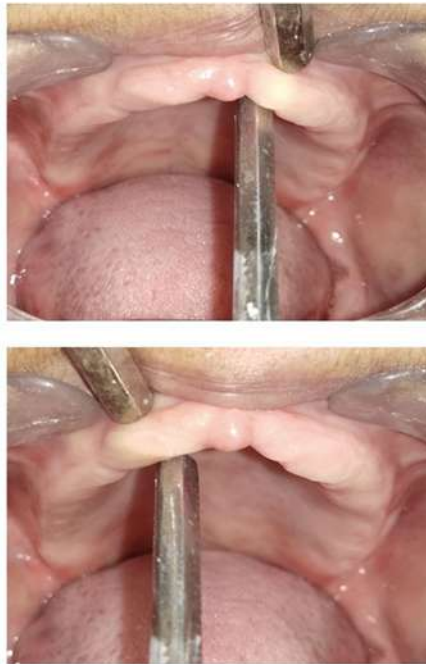


Figure 2A : Final impression made using window technique

2 B : Finished prosthesis after insertion

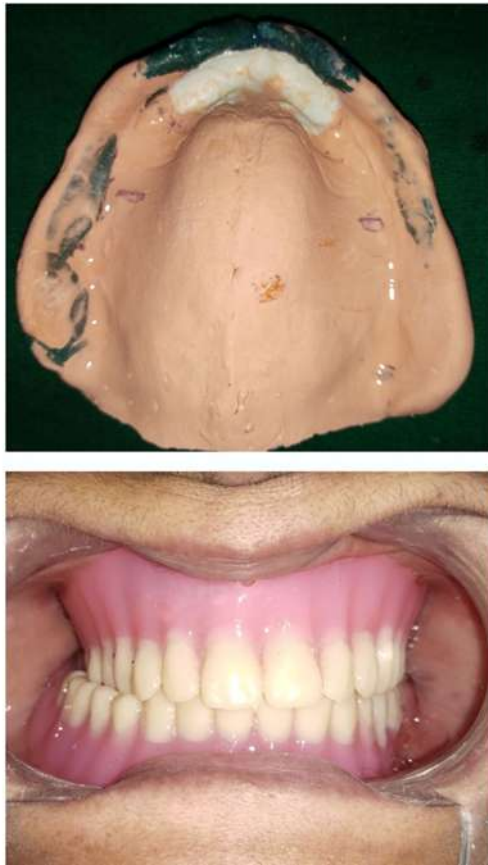


Figure 3A : Presence of flabby tissue in maxillary anterior and posterior region

3 B : Final impression made using window technique



Figure 4A : Polyethylene sheet vacuum pressed onto master cast

4B : Addition silicone impression of tissue surface

4C : Glycerine injected between the sheet and denture tissue surface

4D : Finished prosthesis after insertion

