



Flabby Ridge Management Using Paint on Technique - Meticulous Review

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Abstract

Geriatric patients who become completely edentulous at early age present very often with flabby residual alveolar ridge due to use of multiple complete dentures. Non surgical management of such tissue condition requires a different approach while making definitive impressions. We present a case of a 72 year old patient who presented with a wide area of the flabby maxillary anterior ridge. A paint - on impression technique using a window was used to record the flabby tissue at rest. The principles governing such objectives are discussed mainly in relation to the impression material used and the technique employed.

Keywords: complete edentulism, mucostatic principle, impression theories, window technique.

Introduction

Flabby in literal English means soft, loose and fleshy and when this tissue is present in the completely edentulous patients, it poses clinical challenges in long term successful rehabilitation with complete denture prosthesis. Scientifically, flabby tissue is defined as excessive movable tissue.¹ The major impact of flabby tissue is its undesirable effect on the retention and stability of the prosthesis and impairment of oral stereognosis.² Depending on the extent and severity, the management can be either surgical or non-surgical.³ Within the scope of non-surgical methods, modification in impression procedure includes recording the displaceable tissue 'at rest' and has remained consistent over the decades. The various static methods over the years have included the use of spacers or perforations in the impression trays, use of detachable impression trays, scraping of

impression trays or multiple perforations in the special trays.⁴⁻⁷ Same principles are applicable if impressions are made in other areas of the body like ear, face, fingers, etc. where the principal aim is to record the displaceable tissue at rest.⁸ The choice of impression material has also varied with the use of elastomeric impression materials.^{9,10} The use of two impression materials was popularized by Liddlelow¹¹ while the window technique was later introduced by Watson.¹²

We argue that these two impression techniques satisfy most of the principles of impression making in flabby ridges while most other techniques fall short in fulfilling all criteria. This article in the form of a case report of managing flabby tissue presents a case following which a microscopic analysis of the impression technique is discussed.

Case Report and Technique

An elderly male patient aged 72 years reported to the department of prosthetic dentistry with a chief complaint of loose old maxillary complete denture fabricated 3 months back. Medical history was noncontributory while dental history revealed patient having used four sets of complete dentures in the past. Extra oral examination did not reveal any abnormal features while intra oral examination disclosed the presence of a flabby tissue over the maxillary anterior residual ridge that extended circumferentially to an area of 2 square centimeters. After a thorough clinical and radiographic examination, the treatment plan presented to the patient included implant supported prosthesis and a conventional complete denture prosthesis. The patient consented to the latter. Routine complete denture fabrication procedures were employed except during the final impression making which is described as below:

Step 1: Isolate and mark the flabby tissue on the patient's residual alveolar ridges (**Fig 1 A, B**). Transfer these marks on the custom tray and create a window according to these markings. Perform border molding (custom tray border molding technique) of the impression tray.

Step 2: Mark 2 to 3 mm of normal tissue immediately adjacent to flabby tissue without marking the flabby area and insert the impression tray and transfer the markings on the tray (**Fig 1 C**). Trim this area further, thus enlarging the window circumferentially by another 2 to 3 mm.

Step 3: Complete the impression using zinc oxide eugenol impression material of the entire arch except the area indicated through the existing window

Step 4: Remove the impression tray and remove any excess zinc oxide eugenol that is unsupported within the window of the tray. Place the tray back onto the ridge and then place a mixture of plaster of Paris or impression plaster onto the area of the flabby tissue as indicated by the marking within the red line [**Fig 1 E**]. Allow the material to set. There should be no contact between the impression plaster and the tray window. Wait for tissues to rebound. The entire plaster will assume the position at rest

only after the tissue rebounding is completed. Once the tissues have rebounded, add the plaster between the window and the rebounded flabby area as indicated by the area between the blue line and the red line (**Fig 1 E**).

Step 5: Remove the entire impression and observe the details, especially the area where two impression materials meet. There should be no evidence of any step formation within the impression nor should any plaster flow onto the zinc oxide eugenol impression paste.

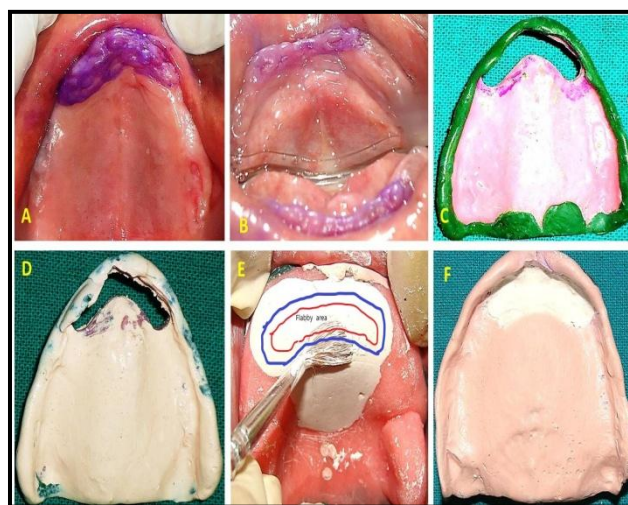


Figure 1 : (A,B) Flabby tissue area highlighted in blue area (C) Custom tray modified and border molded (D) Zinc oxide eugenol impression made except within the window (E) Window area filled with impression plaster (F) Completed definitive impression.

Discussion

Consistency and flow, setting reaction, associated setting expansion and manipulation are the most significant properties that affect recording of the flabby tissue at rest. The consistency and flow of the plaster are comparable to that of water, since water is the only material which cannot displace mucosa when brought into contact with mucosa.³ The other impression material that has a somewhat similar flow and effect on mucosa is the light body consistency of addition silicone¹³ and the impression plaster (or plaster of paris). The setting reaction and associated setting expansion of plaster has important implications and is the basis for modification of the technique as mentioned in this article. When we apply plaster on the flabby area, through the window and extend this plaster to the

acrylic tray, then once the material starts setting, it hardens from outside while the flabby tissue that is in contact with the overlying impression plaster has yet not rebounded. Since the setting of the plaster makes the tray a closed object, further setting expansion of the plaster within the plaster occurs in only one direction which is the direction of the flabby tissue. This expansion of the plaster, thus is at the expense of flabby tissue displacement, thus violating the recording of tissues at rest. However, the technique mentioned in this article does not allow that since the first increment of plaster is allowed to set and rebound in a direction away from the tissues (first increment of plaster placed on the ridge as indicated by red mark in **Fig 1 E**). Once the tissues have rebounded, the remaining area between the plaster and the tray is then filled thus minimizing chances of flabby tissue compression.

The consistency of the mixed impression material is directly dependant on the setting time of a particular impression material¹⁴. If the impression material is inserted at a time when its consistency is no longer soft, the already setting impression material in such a case displaces the tissues and thus violates the principle of recording tissues at rest. Therefore, a clinician should have a thorough understanding of the setting mechanism of impression material and should time the impression making during the initial setting of the material when the material flow does not impede tissue compressibility. Impression plaster offers the added advantage than light body elastomeric impression material in terms of prolonged setting time.

Conclusion

The flabby ridge management depends using non surgical methods depend on the ability of the tissues to be recorded at rest. Paint on technique using impression plaster within a window configuration is ideal in achieving such objective.

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References

1. Glossary of Prosthodontic Terms. J Prosthet Dent 2005;94:10-92
2. Singh V, Mattoo KA. Oral Stereognosis pattern in patients with dental prosthesis in the elderly population. Int J Clin Exp Physiol, 2014; 1(2):211-5.
3. Desjardins RP, Tolman DE: Etiology and management of hypermobile mucosa overlying the residual ridge. J Prosthet Dent 1974;32:619-638
4. Boucher CO: A critical analysis of mid-century impression techniques for full dentures. J Prosthet Dent 1951;1:472- 491
5. Appleby RC: Mandibular impression technique for displaceable tissues. J Prosthet Dent 1954;4:335-345
6. Lytle RB: Soft tissue displacement beneath removable partial denture and complete denture. J Prosthet Dent 1962;12:34-42
7. Hyde P, Craddock H: The effect of seating velocity on pressure within impressions. J Prosthet Dent 2008;100:384-389
8. Lakshya Kumar L, Saloni S, Rao J, Mattoo KA and Yadav A. Finger prosthesis with an alternative approach. J Coll Phys Surg Pak 2012; 22 (01):184-87
9. Chase WW. Tissue conditioning utilizing dynamic adaptive stress. J Prosthet Dent 1961;11:804-15
10. Saraf VR, Kalantri SS, Toshniwal DG, Vikhe DM Management of Flabby Tissue with Reinforcement of Metal Mesh in Custom Tray
11. Liddelw KP. The prosthetic treatment of the elderly. Br Dent J 1964;117:392-4.

12. Watson RM. Impression technique for maxillary fibrous ridge. Br Dent J 1970;128:552.
13. Lynch CD and Allen PF. Management of the flabby ridge: using contemporary materials to solve an old problem. British Dental Journal 2006; 200: 258–261.