Case Report
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Prosthodontic Management of Patients with Flabby Ridges Using Different Impression Techniques: A Case Series

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Abstract

Fabrication of complete dentures in clinically compromised cases such as "flabby ridge" is a challenging task for the dentist. A flabby ridge is a superficial area of mobile soft tissue which develops when hyperplastic soft tissue replaces the alveolar bone. During impression making using the conventional impression technique force is exerted resulting in distortion of the mobile tissue and thus leading to loss of retention, stability, and support of the denture. To overcome these difficulties many modified impression techniques have been proposed that help to record the fibrous tissues in undistorted form. This article presents three case reports for prosthodontic management of patients with flabby ridges using different impression techniques.

Keywords: Flabby Ridges, Fibrous Tissue, Impression Techniques

1. Introduction

A flabby ridge or fibrous ridge is a superficial area of mobile soft tissue which develops when hyperplastic soft tissue replaces the alveolar bone. These are composed of mucosal hyperplasia and loosely arranged fibrous connective tissue and are predominantly seen in the maxillary anterior region as opposed to mandibular anterior teeth commonly referred to as combination syndrome[1]. Construction of a complete denture on the flabby ridge is a difficult task as the force exerted during impression making using conventional impression technique can lead to recoil and dislodge the overlying denture[2]. Unless managed appropriately by special impression techniques, such 'flabby ridges' adversely affect the support, retention, and stability of complete dentures[3]. Thus, over the years, several impression techniques have been suggested for the impression of a flabby tissue ridge which will support the flabby tissue but at the same time will not displace it.

2. Case Report

2.1 Case 1

A 72-year-old male patient reported to the Department of Prosthodontics and Crown and Bridge with a complaint of loose dentures. On examination, the patient was completely edentulous in the upper and lower arches with flabby tissue in the maxillary and a mandibular anterior region extending from canine to canine (Figure 1). The treatment options of an implant-supported prosthesis and surgical excision of the flabby tissue were suggested to the patient. The patient was not willing to undergo any surgical procedures so it was planned to fabricate complete dentures with a single-step impression technique using monophase polyvinylsiloxane material[4].

A primary impression of the upper and lower arches was taken with alginate. On the maxillary cast, an "I" shaped spacer was prepared along the mid-palatine raphe

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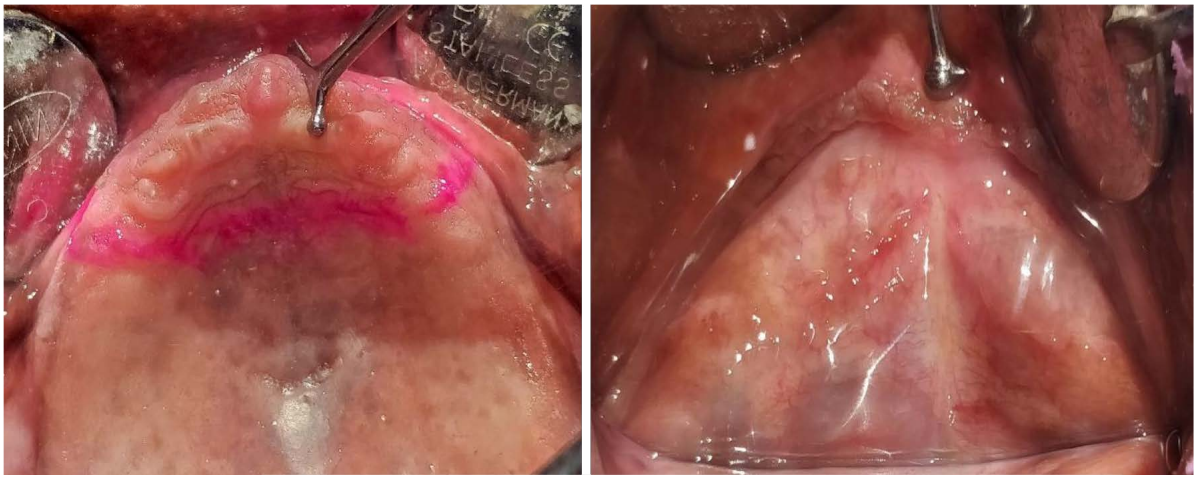


Figure 1. Flabby tissue seen on maxillary and mandibular ridge.

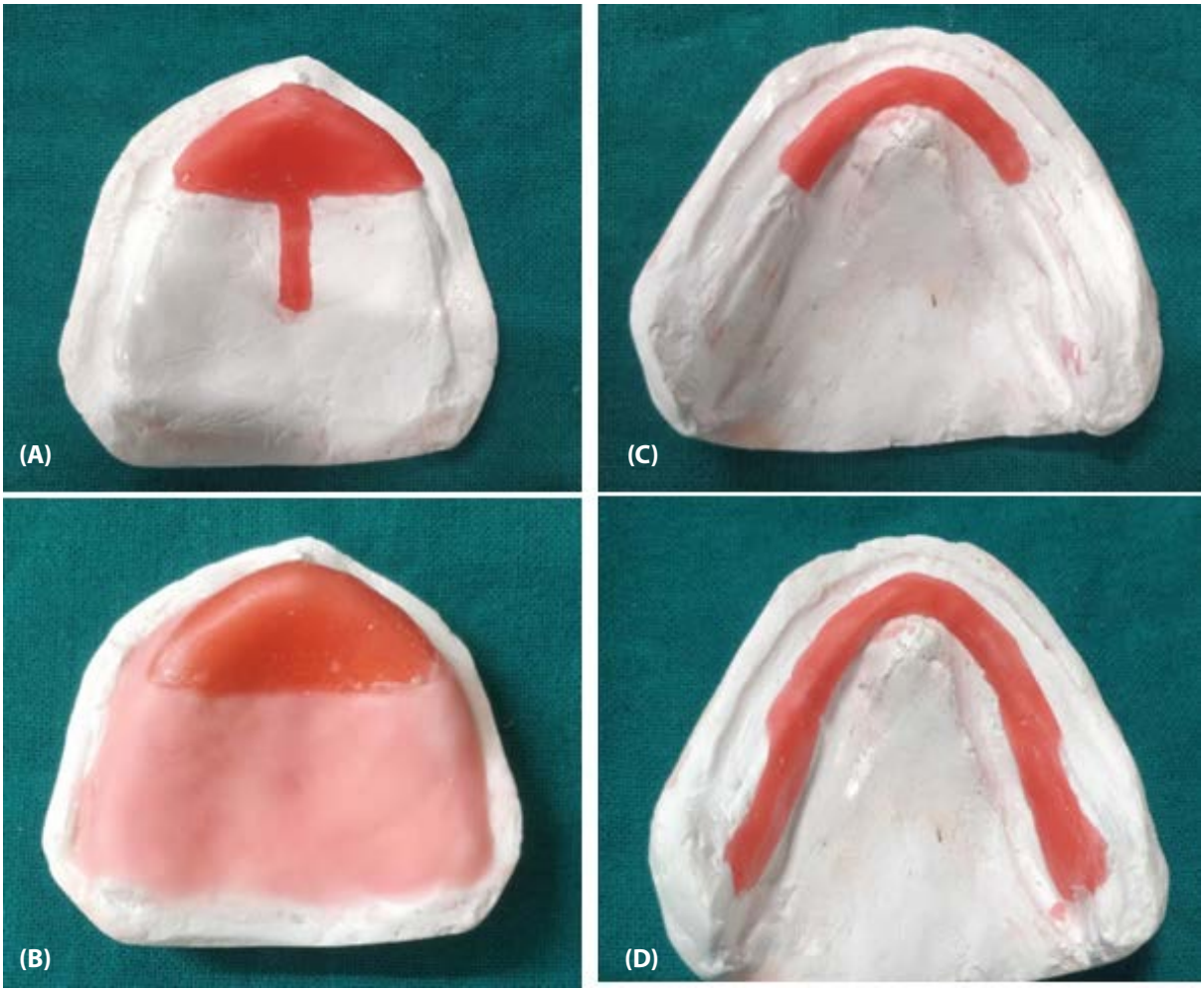


Figure 2. **(A)** I spacer with an extra spacer on flabby area adapted on the maxillary cast. **(B)** maxillary custom tray fabricated covering the tissues except for the area that was flabby. **(C)** Relief wax on flabby area adapted on mandibular cast. **(D)** Extra layer of wax covering the mandibular ridge except for buccal shelf area.

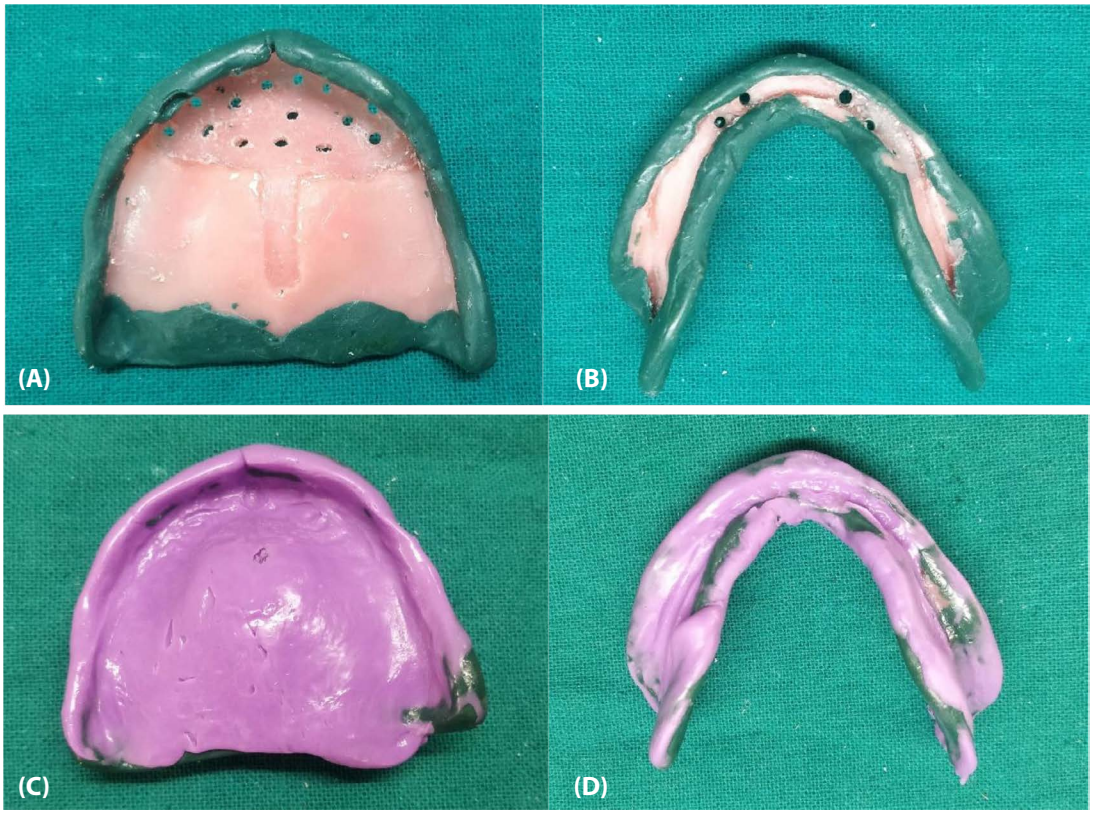


Figure 3. **(A-B)** Multiple holes created in the area with extra spacer. **(C-D)** Final impression made with monophase (medium body) addition silicon.



Figure 4. **A)** Pretreatment and; **B)** Post denture delivery

with additional relief given in the flabby region (Figure 2-A). A maxillary custom tray was fabricated covering the tissues except for the area that was flabby (Figure 2-B). In the mandibular cast, first, a layer of wax was adapted in the flabby region (Figure 2-C) to provide extra relief followed by the addition of one more layer of wax covering the ridge except for the buccal shelf area (Figure 2-D). Over the "open" area of the tray, another "supporting tray" was made thus covering the flabby ridge. Borders of impression were recorded by selective pressure technique using green stick compound.

The relief wax was removed from the special tray and multiple holes were drilled in the region with an extra spacer (Figure 3-A-B). The placement of multiple relief holes was done to ensure the prevention of pressure buildup in the flabby area thereby leading to inadvertent tissue compression. A final impression with monophase (medium body) addition silicone was made (Figure 3-C-D). A monophase impression material was preferred as it has the desirable thixotropic property thereby ensuring adequate flow under pressure. Subsequently, conventional treatment procedures were followed to deliver a complete denture prosthesis (Figure 4).

2.2 Case 2

A 60-year-old female patient reported to the Department of Prosthodontics and Crown and Bridge with a complaint of an ill-fitting denture. On examination, flabby tissue in the maxillary anterior region extending from the canine-to-canine region was found (Figure 5). Fabrication of new complete dentures was planned for the patient with a recording of flabby tissue without displacing the mobile tissue using the Hobkirk technique[3,5].

The preliminary impression was made using irreversible Hydrocolloid in the perforated edentulous tray and the primary cast was poured. A Special tray was fabricated using a double spacer over the flabby region and in the region of the mid-palatine raphe and a single spacer over rest areas (Figure 6 A-B). Tray extensions were checked and border moulding was done in a conventional manner using a green stick compound. Spacer wax was removed and the impression was made using medium-body elastomeric impression material. The tray was then removed from the mouth and impression material was removed in the region of flabby tissue using a scalpel (Figure 6-C). Multiple relief holes were made and the tray was loaded with light body elastomeric impression material in that region only to record flabby tissue (Figure 6-D). The master cast was poured using dental stone followed by the fabrication of dentures. The final denture (Figure 7) had good retention and stability with proper recording of flabby tissue.

2.3 Case 3

A female patient aged 56 years reported to the Department of Prosthodontics with a history of an ill-fitting maxillary denture and removable partial denture in the mandibular arch. Lower anterior was extracted 3 months ago. On examination, an area of flabby tissue in the maxillary anterior region was found. Tissue blanching was also noticed on pressure application (Figure 8-A). Window technique[6] for impression making was planned for this case. Zafarulla khan described this technique where the window is cut in the special tray where flabby tissue is present.

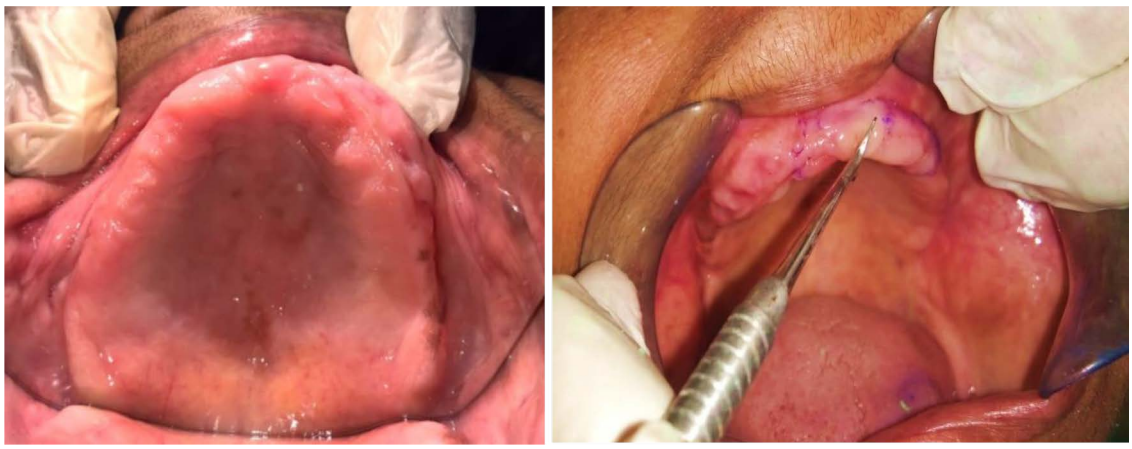


Figure 5. Edentulous maxillary ridge showing flabby tissue.

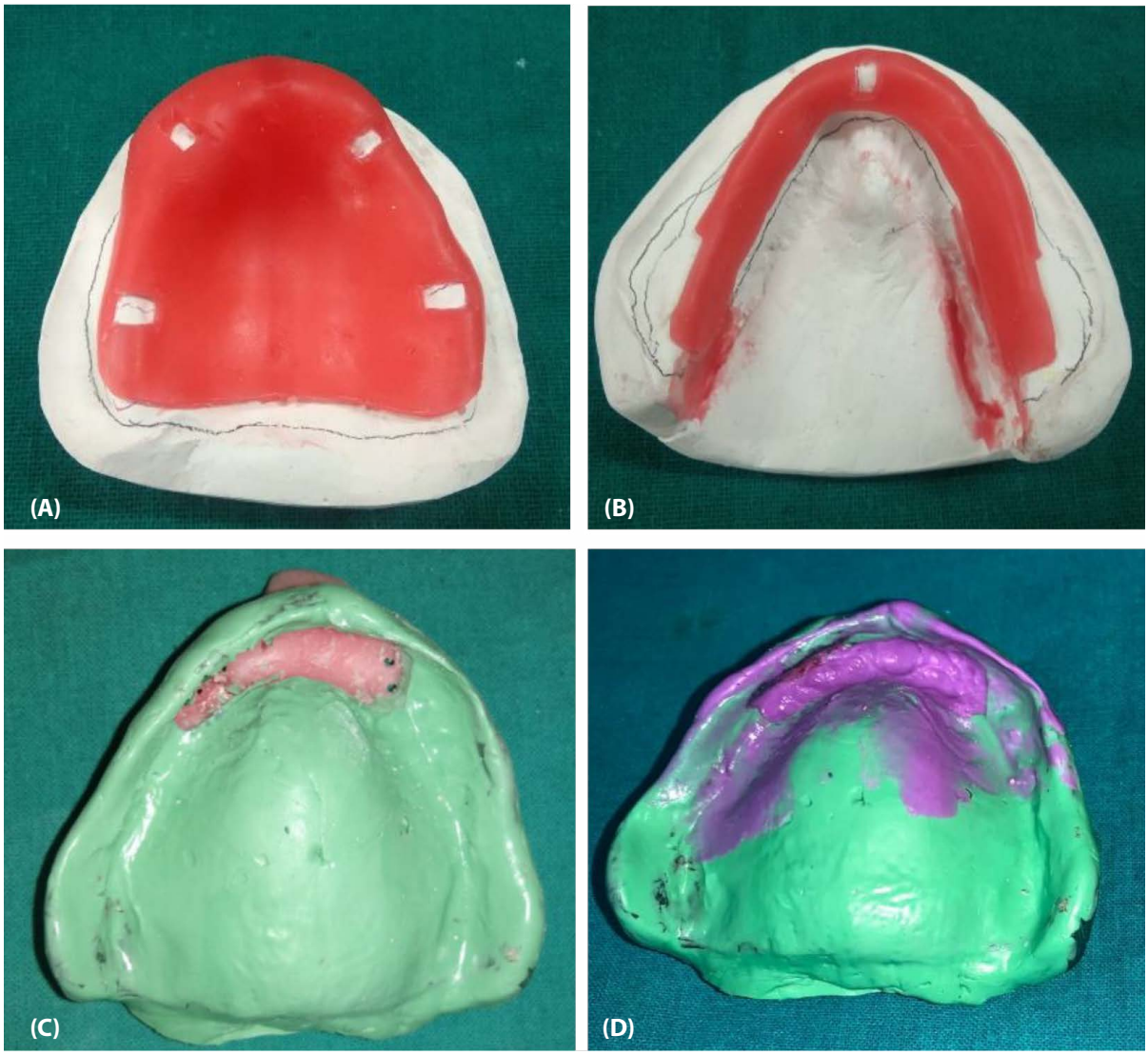


Figure 6. **(A-B)** Double spacer adapted on flabby region and mid palatine raphe and single spacer over rest areas. **(C-D)** Final impression with light body on flabby tissue region.



Figure 7. Intra-oral view of Final Denture in case 2.



Figure 8. **(A)** Tissue blanching noticed on pressure application over flabby tissue. **(B)** Special tray with a window in the region of flabby tissue. **(C)** light body impression material injected through the window created over the flabby. tissue.

The spacer was adapted over the primary cast except in the region of flabby tissue. A special tray was fabricated providing a window in the region of flabby tissue (Figure 8-B). Border moulding was done using a green stick compound. Spacer wax was removed and the impression was made with zinc oxide eugenol impression material. Once the impression is set light body elastomeric impression material was injected over the flabby region (Figure 8-C) and allowed to set. The impression was removed, the master cast was poured and followed by denture fabrication.

3. Discussion

Excessive forces by the unstable occlusal condition can lead to the formation of a flabby ridge in an edentulous arch which leads to a lack of retention, and support and an unstable denture. Impression-making plays a critical role in the fabrication of complete denture prostheses. In the conventional impression, technique force is exerted on fibrous tissues which can lead to recoil and dislodgement of the overlying dentures.

In 1964, Liddlelow[3,7] described a technique where two separate impression materials were used in a custom tray (Plaster of Paris was used over the flabby tissues and zinc oxide eugenol over the normal tissues). In 1964, Osborne[3,7] described a technique where two separate impression trays and materials were used to separately record the 'flabby' and 'normal' tissues and then related intra-orally. Watt and McGregor[3,7] in 1986 described a technique where an impression compound was applied to a modified custom tray and a wash impression with zinc-oxide eugenol was made.

Different impression techniques have been proposed so that the flabby ridge can be recorded with minimal distortion of the fibrous tissue. 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 others.[8] The current paper describes three different techniques to record flabby tissues in their undisplaced state using readily available clinical materials like polyvinylsiloxanes in varying consistencies. The advantage of choosing monophase impression material is that, due to the inherent nature of the material, different consistencies can be achieved by varying the pressure applied on the material during mixing[4].

4. Conclusion

With different modified impression techniques, flabby ridges can be managed effectively without any additional clinical visits as compared to patients with normal edentulous ridges[9]. The various techniques described as well as the different impression materials used help in providing accurately fitting as well as satisfactorily functioning dentures for the patient with a flabby ridge.

5. References

1. Kelly E. Changes caused by a mandibular removable partial denture opposing a maxillary complete denture. J Prosthet Dent. 1972; 27:140-50. https://doi.org/10.1016/0022-3913(72)90190-4 PMid:4500509
2. Crawford RW, Walmsley AD. A review of prosthodontic management of fibrous ridges. Br Dent J. 2005; 199:715-9. https://doi.org/10.1038/sj.bdj.4812968 PMid:16341179
3. Bansal R, Kumar M, Garg R, Saini R, Kaushala S. Prosthodontic rehabilitation of patient with flabby ridges with different impression techniques. Indian Journal of Dentistry Jun 2014; 5(2):110-113 https://doi.

org/10.4103/0975-962X.135296 PMid:25565737 PMCid: PMC4184326
4. Pai UY, Reddy VS and Hosi RN. A single step impression technique of flabby ridges using monophase polyvinylsiloxane material: A case report. Case Reports in Dentistry. 2014; 2014. p. 6. https://doi.org/10.1155/2014/104541 PMid:24872897 PMCid:PMC4020562
5. Hobkirk JA. Complete denturesda dental practitioner hand book. Bristol: Wright; 1986 p. 44-5. https://doi.org/10.1016/0300-5712(86)90104-1
6. Khan Z, Jaggers JH, Shay JS. Impression of unsupported movable tissues. J Am Dent Assoc. 1981; 103:590-2. https://doi.org/10.14219/jada.archive.1981.0292 PMid:7026644
7. Lynch CD, Allen PF. Management of the flabby ridge: Using contemporary materials to solve an old problem. Br Dent J. 2006; 200:258-61. https://doi.org/10.1038/sj.bdj.4813306 PMid:16528326
8. McCord, JF, Grant AA. Impression making. Br Dent J. 2000; 188(9):484-492. https://doi.org/10.1038/sj.bdj.4800516 PMid:10859847
9. Allen F. Management of the flabby ridge in complete denture construction. Dent Update. 2005; 32:524-8. https://doi.org/10.12968/denu.2005.32.9.524 PMid:16317885