MANAGEMENT OF ANTERIOR FLABBY RIDGE USING THE WINDOW IMPRESSION TECHNIQUE: A CASE REPORT

Dr Sakshi[1], Dr Padmaja S[2], Dr Neelanjali Matapathi[3], Dr Sharon Abraham[4], Dr Ruyina Asma[5], Dr Naini Gupta[6]

[1.]Post-Graduate Student, [2.]Professor, [3.]Senior Lecturer, [4.]Senior Lecturer, [5.]Senior Lecturer, [6.]Post-Graduate Student, Department of Prosthodontics and Crown & Bridge, Sri Siddhartha Academy of Higher Education (SSAHE), Sri Siddhartha Dental college and hospital, Tumkur.

Abstract

Flabby or hypermobile ridge tissue presents a challenge during complete denture fabrication, as conventional impression techniques often lead to tissue distortion and compromised denture stability. This condition is frequently seen in long-term denture wearers, particularly in the anterior regions. This case report describes a conservative window impression technique for managing flabby ridges involving both the maxillary and mandibular arches in a completely edentulous patient. A custom tray with a window was used to selectively record the firm denture-bearing areas under functional pressure, while the flabby tissue was recorded in a minimally displaced form using light-body polyvinyl siloxane impression material. The technique resulted in improved denture retention, stability, and patient satisfaction, offering a simple and non-invasive alternative when surgical intervention is contraindicated or declined

Key words : Flabby ridge; Window impression technique; Complete denture; Selective pressure impression; Hypermobile tissue; Edentulous arch

Introduction

The residual ridge of an edentulous patient serves as the foundation for complete denture fabrication. A stable denture must effectively resist functional forces that may alter its positional relationship with the underlying osseous support. However, a 'fibrous' or 'flabby' ridge, characterized by mobile soft tissue, is commonly found in the maxillary or mandibular alveolar ridges of long-term denture wearers, particularly in the upper anterior region. This condition arises when hyperplastic soft tissue replaces alveolar bone, often complicating denture stability and retention.[1]

The prevalence of flabby ridges has been reported in up to 24% of edentulous maxillae and 5% of edentulous mandibles, most frequently in the anterior regions.[2] The displaced mobile tissue under functional forces can lead to compromised denture positioning, loss of peripheral seal, and distortion during impression-making, resulting in patient dissatisfaction due to denture instability. Furthermore, improper management may exacerbate tissue degradation, affecting both function and aesthetics of the prosthesis.

Numerous impression techniques have been described in the literature for managing flabby or hyperplastic tissue in completely edentulous patients, particularly in geriatric and medically compromised individuals. This case report presents a simplified and innovative technique for

Address for Correspondence:
Dr. Sakshi
Post-Graduate Student,
Department of Prosthodontics and Crown & Bridge, Sri Siddhartha Dental College and Hospital, Sri Siddhartha Academy of Higher Education (SSAHE),Tumkur-572107
Email id: v.sakshi63@gmail.com

the management of flabby ridges in the maxillary and mandibular anterior regions, aiming to improve denture stability and patient outcomes.

Case Report

A 65-year-old female patient visited the Department of Prosthodontics and Crown and Bridge, Sri Siddhartha Dental College, Tumkur, with the chief complaint of ill-fitting complete dentures. The patient had been edentulous since last 15 years, and had been wearing dentures for 12 years. Existing dentures were ill-fitting when checked intraorally. She reported difficulty in speaking as well in eating the food with the existing set of dentures. History of any past medical or systemic illness was absent as discussed with the patient. On intraoral examination, an area of flabby tissue was observed in the maxillary anterior region that was extending from the canine region from one side to the other. Intraoral view of the maxillary anterior region, showing tissue displacement on gentle manipulation with an instrument, indicative of hypermobile mucosa (Figure 1). Treatment options like implant-supported dentures, pre-prosthetic surgical excision of flabby tissue, etc., were given to the patient. But, the patient denied for the options explained to her and was more interested for the conventional approach of denture construction. Therefore, other options were ruled out and the final treatment plan included the use of window impression technique for the maxillary arch. Final treatment plan was discussed with the patient and an informed consent was obtained from her.

Figure 1. Intraoral view showing flabby tissue in the anterior maxillary region extending bilaterally from canine to canine.

Technique

A preliminary impression of the maxillary edentulous arch was made using an irreversible hydrocolloid impression material and was poured in dental plaster to obtain a primary cast. Extension of flabby area was marked with the help of marking pencil on the maxillary primary cast. After that, proper wax spacer was adapted such that there were four tissue-stops to stabilize the tray in maxillary arch. Over it, a special tray was fabricated using auto-polymerizing acrylic resin and the borders were reduced to 2 mm short of the sulcus. Border moulding was performed with the help of low-fusing impression compound (DPI Pinnacle, Tracing Sticks Dental Products of India, Ltd). Window was prepared in the custom tray in the area of flabby tissue (Fig.2).

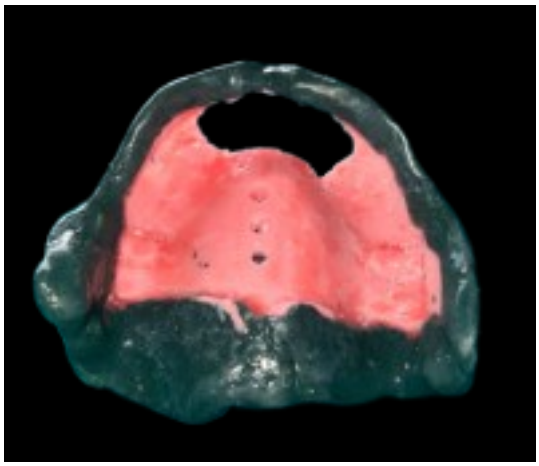

Figure 2. Custom impression tray with a window prepared in the anterior maxillary region corresponding to the flabby tissue.

This was done using round and fissured bur. After this, the definitive impression was made in zinc oxide eugenol impression paste. The excess material over the window cut off with sharp scalpel blade and the flabby area was recorded using light-body polyvinyl siloxane impression material. The flabby area was recorded with light body polyvinyl siloxane. This was injected with syringe on to the flabby area exposed through the window made in the special tray (Fig. 6).

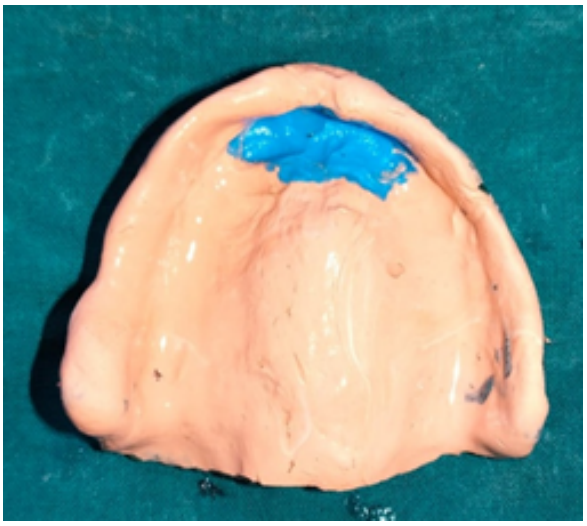

Figure 3. Definitive maxillary impression showing selective recording of the anterior flabby tissue using light-body polyvinyl siloxane through the window in the custom tray, while the remaining denture-bearing areas were recorded in their functional form

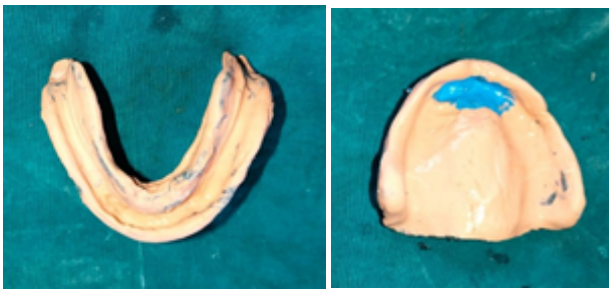

Figure 3. Definitive wash impressions of the maxillary and mandibular edentulous arches

The placement of the light body elastomeric material was in such manner so that it would prevent the distortion of the soft hypermobile tissue. After adequate disinfection of the impressions and beading/boxing procedures, impression can be poured in type III dental stone to obtain the master cast. Record bases and occlusion rims were fabricated on the master casts, and maxillomandibular jaw relations were recorded using conventional clinical methods. The recorded jaw relations were transferred to a semi-adjustable articulator, following which the trial dentures were fabricated. Try in was done. After patient approval, the dentures were processed, finished, and polished. Final insertion was carried out (figure 4), and post-insertion instructions were given to the patient.

Figure 4. Pre- and post-insertion views following complete denture rehabilitation.

Discussion

The management of flabby ridges remains a significant clinical challenge in prosthodontics due to the hypermobility of the tissue and its impact on denture stability and retention. Both surgical and prosthodontic approaches can be employed, either independently or in combination, depending on patient-specific factors. Surgical excision of flabby tissue can be a viable option when sufficient alveolar bone height is present; however, this often results in a reduction of sulcus depth, necessitating secondary procedures such as vestibuloplasty to restore adequate vestibular space.[1] Ridge augmentation procedures may also be considered, but these carry potential risks including bone resorption, graft rejection, and compromised long-term outcomes.[3]

A more conservative alternative involves the use of sclerosing agents, such as sodium morrhuate, injected into the flabby tissue to induce fibrosis and improve tissue firmness. This approach aims to stabilize the tissue without resorting to invasive surgical intervention, offering a less aggressive option for patients in whom surgery is contraindicated or undesirable.[2,6] Nevertheless, potential drawbacks, including patient discomfort, loss of tissue firmness over time, and rare anaphylactic reactions, must be carefully considered when planning this therapy.[6]

Prosthodontic management of flabby ridges relies heavily on accurate impression techniques to capture the tissues in their undistorted form. Conventional impressions frequently lead to unstable and unretentive dentures due to displacement of hypermobile tissue during tray seating.[4] Several modifications have been described to overcome this issue, including the use of tray perforations, wax reliefs, and window techniques, which help reduce hydraulic pressure on the flabby areas during impression-making, thus preserving the tissue in its anatomical form.[5,7] The window impression technique is particularly effective in recording flabby tissues with minimal displacement. This approach preserves tissue health while contributing to improved stability, retention, and support of the final prosthesis.[8,12] Loosening of dentures is a common complaint among patients with flabby ridges, and chair-side relining may not always be effective, as viscous reline materials can displace the hypermobile tissue, resulting in recurrent instability once the tissue recoils.[12]

Elastomeric impression materials are recommended for recording flabby ridges, as they provide flexibility, ease of handling, and reduced mess compared to zinc oxide eugenol or impression plaster. While some studies suggest no significant difference in retention and stability between these materials, elastomeric materials offer greater precision and patient comfort during the impression process.[4,11]

For patients with systemic health conditions precluding dental implant therapy or those who decline invasive surgical interventions, the window impression technique provides a reliable, minimally invasive alternative. This method allows precise recording of flabby tissues without displacement, enhancing prosthesis stability and patient comfort.[12] Multiple case reports have demonstrated its efficacy in the management of maxillary anterior and posterior flabby ridges, highlighting its value as a conservative prosthodontic solution.[8-11]

Conclusion

In conclusion, the management of flabby tissue in completely edentulous patients presents a unique challenge, particularly when surgical excision or dental implant therapy is not feasible due to medical conditions or financial constraints. By implementing modifications in traditional impression techniques and utilizing advanced materials with superior physical and handling properties, flabby ridges can be effectively treated without the need for multiple visits. These materials are readily accessible in most dental clinics, allowing even general dentists to successfully manage such cases in primary healthcare settings. This approach provides a practical, non-invasive solution for improving denture stability and patient satisfaction.

References

1. Crawford RW, Walmsley AD. A review of prosthodontic management of fibrous ridges. Br Dent J. 2005;199:715–719.
2. Lynch CD, Allen PF. Management of the flabby ridge: Using contemporary materials to solve an old problem. Br Dent J. 2006;200:258–261.

3. Hobkirk JA. Complete Dentures: A Dental Practitioner's Handbook. Bristol: Wright; 1986. p. 44–45.
4. Khan Z, Jaggers JH, Shay JS. Impression of unsupported movable tissues. J Am Dent Assoc. 1981;103:590–592.
5. Kelly E. Changes caused by a mandibular removable partial denture opposing a maxillary complete denture. J Prosthet Dent. 1972;27:140–150.
6. Allen F. Management of the flabby ridge in complete denture construction. Dent Update. 2005;32:524–528.
7. Singh RK, Patil N, Datta A, Pattedar A, Billesh NK. Impression techniques for management of flabby ridges in complete denture patients: A review of literature. Int J Appl Dent Sci. 2022;8(1):31–36.
8. Eswaran B, Rohit M, Soniya H. Prosthodontic management of flabby ridge with a modified window impression technique – A case report. Indian J Forensic Med Toxicol. 2021;15(2):2328–2332.
9. Gurung S, Pathak B, Devkota D. Management of flabby maxillary anterior ridge: A case report. J Nepalese Prosthodontic Soc. 2023;6(2):101–104.
10. Yee A, Tew IM, Goo CL. Impression techniques on the management of fibrous maxillary ridge. Indonesian J Prosthodontics. 2021;2(0):47.
11. Chandra D, Chairunnisa R, Nasution ID. Modification of closed mouth functional impression technique for flabby and flat ridge: A case report. Indonesian J Prosthodontics. 2021;2(2):39.
12. Deogade S, Gupta P. Window impression technique: A prosthetic approach to flabby ridges. IP Ann Prosthodont *Restor Dent*. 2017;3(4):132–135.

How to cite this article:
Dr. Sakshi et al
Management Of Anterior Flabby Ridge Using The Window Impression Technique: A Case Report
JDSR. 2026 Sep; 17(II): 15-19