

Case Report

Rehabilitation of an Edentulous Patient with Flabby Ridge Using Modified Window Technique - A Case Report

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Abstract

Masticatory forces can displace the fibrous or flabby ridge which is mobile denture-bearing tissue, leading to loss of peripheral seal. Forces exerted during impression making may result in distortion of the mobile tissue. If the conventional technique is followed in such cases retention and stability and support of complete dentures adversely affect. Hence modification in conventional technique is must. The purpose of this paper is to present a case of rehabilitation of edentulous ridges containing flabby areas using a simplified technique and more widely used impression materials.

Keywords: Edentulism; Fibrous or flabby ridge; Modified window technique

Introduction

A fibrous or flabby ridge may be a superficial area of mobile soft tissue affecting maxillary or mandibular alveolar ridges [1]. It develops when hyperplastic soft tissue replaces the alveolar bone and may be a common finding particularly within the upper anterior region of future denture wearers [2]. The reported prevalence has wide-range, but has been shown in up to 24% of edentulous maxillae and 5% edentulous mandibles [3]. Masticatory forces can displace this mobile denture-bearing tissue during impression making and may result in distortion of the mobile tissue. Because of this loss of peripheral seal in complete denture is seen. To prevent this distortion, impression technique should be modified so that it can compress the non-flabby tissues to get optimal support, provide retention and stability to complete dentures [4]. The purpose of this paper is to explain a technique for making impressions of denture bearing areas containing flabby ridges, which uses a simplified technique and more widely used impression materials.

Case Presentation

A 63-year-old male patient reported to the Department of Prosthodontics with the chief complaint of difficulty in chewing food due to loose previous dentures. On intraoral examination, flabby tissue in the maxillary anterior region extending from right 2nd premolar to left canine region was found. Tissue blanching was also noticed on pressure application (Figure 1).

The treatment plan for managing such flabby ridges includes:

1. Surgical removal of fibrous tissue prior to conventional Prosthodontics,
2. Implant retained prosthesis (i) fixed, (ii) removable,
3. Conventional Prosthodontics without surgical intervention

There comes out a consensus in the literature that surgical removal of the fibrous areas often results in a greater Prosthodontic challenge. Implant retained prostheses may offer an answer to the issues of

stability and retention in fibrous ridge cases. However, they are not without disadvantages such as surgery, treatment time, and cost. A conventional prosthodontic solution may avoid these problems associated with surgery [1]. Therefore, conventional removable denture with modified window technique using zinc oxide eugenol paste and Poly Vinyl Sialoxane (PVS) impression materials for final impression of flabby maxillary ridge was adapted in the present case.

Procedure

A primary impression was made with reversible hydrocolloid (Zelgan, Dentsply) impression material using edentulous stock trays (Figure 2). The maxillary impression was poured and the flabby ridge



Figure 1: Pre-rehabilitation extraoral and intraoral view with flabby tissues in the maxillary anterior region.

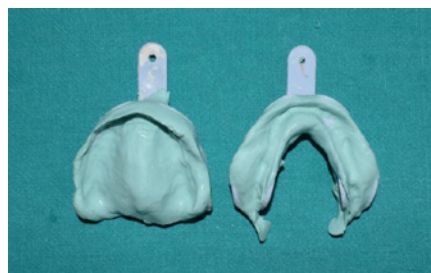


Figure 2: Maxillary and mandibular primary impression using reversible hydrocolloid impression material.



Figure 3: Border molding followed by removal of spacer wax and creation of escape holes.

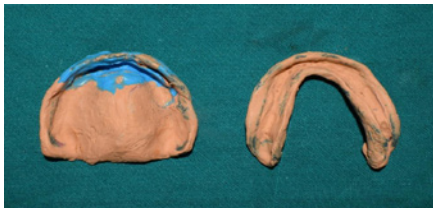


Figure 4: Maxillary and mandibular final impression.



Figure 5: Maxillomandibular relation and Try-in.

area was marked on the cast, followed by the fabrication of special tray (2 mm shorter), with handle in palatal region. A window was made in the anterior maxillary area of the special tray. Spacer wax was adapted in the window region of the special tray and border molding was performed. Border molding was performed using the conventional technique with green stick impression compound (DPI Pinnacle) following which the spacer was removed and escape holes were made (Figure 3). The maxillary final impression was made using zinc oxide eugenol paste (DPI impression paste) for the non-flabby area. The impression was re-seated in the patient's mouth and a light body PVS impression material was injected in the window area and was allowed to set (Figure 4).

Master casts were obtained from the final impression and denture bases along with occlusal rims were made. Maxillomandibular relation were recorded mounting was done on a semi-adjustable articulator followed by teeth arrangement and try-in (Figure 5). Processing of the trial bases was done using short curing cycle at 74 degree for approximately 2 hours then boiling at 100 degree for 1 hour. The final prosthesis was finished, polished and delivered to the patient (Figure 6) and on recall he was found to be satisfied and comfortable with the prosthesis.

Discussion

The present case report demonstrates a modified window technique for the impression of the anterior maxillary flabby ridge using zinc oxide eugenol paste and PVS impression material. A multitude of impression techniques are described in the literature for making impression of the flabby ridges. Liddlelow, [5] described



Figure 6: Post-rehabilitation intraoral and extraoral view.

a way whereby two separate impression materials were utilized in a custom tray (using 'plaster of Paris' over the flabby tissues, and zinc and eugenol over the 'normal' tissues). Osborne, [6] described a way whereby two separate impression trays and materials were used to separately record the 'flabby' and 'normal' tissues, which were then joined intra-orally. Watson, [7] described the 'window' impression technique where a custom tray is made with a window or opening over the (usually anterior) flabby tissues. A mucocompressive impression is first made from the zinc oxide and eugenol. Once set, it is removed, trimmed, and re-seated within the mouth. A low viscosity mixture of 'plaster of Paris' is then painted onto the flabby tissues through the window. Once set, the entire impression is removed. Each of those techniques could be considered cumbersome, and therefore the difficulties related to their manipulation could lead on to inaccuracies. Watt and McGregor, [8] recently revisited by Lynch and Allen, [9] described a technique where impression compound is applied to a modified custom tray. Over this manipulated impression compound, a wash impression with zinc-oxide and eugenol is formed. Above described methods this final impression technique is clearly less complex. The problem with all four techniques is that they rely on materials such as 'plaster of Paris', impression compound, and zinc-oxide and eugenol. Many general dental practitioners now believe in 'newer', and more 'easy-to-use' materials, such as polyvinylsiloxanes (silicones) for flabby tissues.

Apart from modifying the impression technique, there are other treatment options such as surgical removal or implant retained prosthesis for such cases. However, because of accompanying medical conditions, many of the elderly edentulous patients are unsuited for surgical procedures such as removal of flabby ridges, bone grafting, or placement of dental implants. The technique used in the present case describes how the management of poor denture-bearing areas can be accomplished by expanding on the basic principles of complete denture construction without having to recourse to surgical invasive procedures [2]. The advantage of this technique is that it doesn't involve extra clinical stages during the construction of the denture, thereby keeping clinical time to a minimum. The impression technique is quick and uses materials with which the dentist is already familiar. The material used is less brittle than impression plaster and do not need to be handled as carefully [2].

However, there are some other factors too which affect the success of a complete denture in case of flabby tissues that include the correct orientation of the occlusal plane with an appropriate occlusal scheme, and proper balancing contacts in excursive movements as any discrepancy in these will further destabilize the denture that is relying on the poor quality denture-bearing tissues [2].

Conclusion

A modified impression technique used to record the flabby edentulous ridge in an undisplaced state to avoid compression and rebounding of the mobile tissue gave a satisfactory outcome. This technique is simple to execute and follows the principles of preventive prosthodontics at every step of fabrication. Regular recall visits were maintained and the patient was very comfortable, happy, and confident with new dentures.

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