Journal of Advanced Medical and Dental Sciences Research

@Society of Scientific Research and Studies

Journal home page: www.jamdsr.com doi: 10.21276/jamdsr UGC approved journal no. 63854

(e) ISSN Online: 2321-9599; (p) ISSN Print: 2348-6805

Case Report

Management of flabby ridge using window technique: A case report

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ABSTRACT:

Fabrication of denture on a flabby ridge is a testing situation for a prosthodontist. The use of conventional impression techniques on flabby ridge can lead to an unstable and unsatisfactory denture. Modified impression techniques when used in this condition can record the fibrous tissues in undistorted form and thus help to fabricate a stable and functionally satisfying denture.

Keywords: Flabby, Ridge, Window

Received: 1 February, 2019 Revised: 20 February, 2019 Accepted: 23 February, 2019

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This article may be cited as: Gupta R, Luthra RP, Sharma A, Sharma N. Implant loading protocols. J Adv Med Dent Scie Res 2019;7(2):92-94.

INTRODUCTION

Complete denture prosthodontics remains an important part of dental education and practice.[1] The performance of a complete denture often depends on basic principles of impression making, i.e. maximum coverage of supporting area, peripheral seal without interference with functional movements and accurate adaptation to the tissues without injurious displacement. Recording the entire functional denture-bearing area ensures maximum support, retention and stability for the denture during use.[2] However, difficulties arise when the quality of the denture-bearing areas are not suitable for this purpose. Flabby ridge gives rise to complaints of pain or looseness relating to a complete denture that rests on them.[3] When hyperplastic tissue replaces the bone, a flabby ridge develops which is often seen in long-term denture wearers and clearly related to the degree of residual ridge resorption. The reported prevalence for this condition also varies among investigators, but it has been observed in up to 24% of edentulous maxilla, and in 5% of edentulous mandible, and in both jaws most frequently in the anterior region.[4,5] Kelly, in 1972, suggested the term 'combination syndrome' to describe the changes in patients wearing a maxillary complete denture opposed by mandibular anterior teeth and a distal extension removable partial denture.[6].Flabby tissues get compressed during conventional impression making, and later tend to recoil and dislodge the overlying denture. Surgical excision techniques or use of dental implants has provided clinicians with methods of addressing this particular difficulty. Even if surgical elimination of the flabby ridge is a logical treatment in many situations, care must be used when the ridge is extremely reduced. Although the flabby ridge may provide poor retention for the denture, it may still be better than no ridge at all.[4,7]

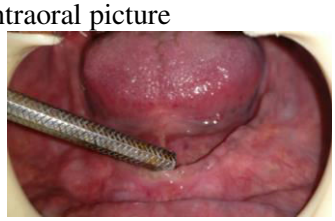
CASE REPORT:

A 75 year old male patient reported to Department of Prosthodontics, H.P. Government dental college and Hospital, Shimla, with a chief complaint of inability to chew properly since 2 years due to an ill-fitting lower denture. The patient was a denture wearer for the past 30 years; within this span his denture was replaced twice.

Figure 1: Frontal profile of patient

On Intraoral examination a completely edentulous mandibular arch with flabby tissue existing in the anterior region was observed.

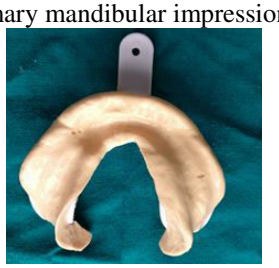
Figure 2: Intraoral picture



Hence, it was decided to provide him with a new maxillary and mandibular complete denture, paying special attention to the impression technique for flabby areas to achieve minimum displacement of denture during function and maximum retention and stability.
Preliminary impression were made in a stock tray with irreversible hydrocolloid impression material alginate, which minimally distorts the mobile tissue. (Fig 3 and Fig 4).

Figure 3: Primary maxillary impression

Figure 4: Primary mandibular impression



After the cast were poured the flabby ridge was marked on the cast and a modified tray with a spacer of 1 mm thickness was made with auto-polymerising resin. A window was made on the tray over the flabby ridge area. The peripheral extension of the tray was decided and adjusted so that it was 2mm short of functional sulcus. Border molding was done with softened green stick tracing compound till functional sulcus was recorded. Final impression was made with zinc oxide eugenol impression paste. The impression was taken out and the material that had escaped through the window in the tray was trimmed back. The impression was positioned back in the patient's mouth and impression plaster was applied on the flabby ridge exposed through the window using a brush. Once it was set the impression was carefully removed, separating medium was applied to the plaster area and the cast was poured with dental stone. In this technique the flabby ridge was recorded in minimally displaced form and rest of the tissue in functional form. This technique was first discussed by Osborne in 1964.[14] (Fig. 5).

Figure 5: Final mandibular impression with window technique

Jaw relation was recorded and final casts were mounted on a mean value articulator. Teeth arrangement was done. The final denture was acrylized in heat cure acrylic and the denture was finished, polished and inserted. (Fig. 6 and Fig. 7) The patient was followed up after 24 hours, one week and one month after prosthesis insertion.

Figure 6: Final profile of the patient

Figure 7: Final prosthesis delivery

DISCUSSION

The main objectives of complete denture therapy are the restoration of function, facial appearance and the maintenance of the patient's health. It is essential that the mouth is in an optimal state of health prior to commencing prosthetic treatment and failure to achieve this may well produce an unsatisfactory treatment result. Managing a patient with flabby maxillary ridge is a challenging problem. The three main approaches to the management of the flabby ridge are surgical removal of flabby tissue prior to conventional prosthodontics, implant retained prosthesis, fixed or removable conventional prosthodontics without surgical intervention. Surgical removal of flabby tissues is mainly of historical significance nowadays. The rationale behind its use was that removal of flabby tissues would result in a 'normal' compressible denture bearing area on which a mucocompressive impression technique could be used.

Some of the difficulties caused by this approach include the fact that many complete denture patients are elderly or have complex medical histories, for which any form of surgery is contraindicated. Furthermore, the excision of flabby tissues and resultant 'shallow' ridge may provide little retention or resistance to lateral forces on the resultant denture. One is reminded of the concept that Prosthodontic therapy should be concerned with the 'conservation of what remains, rather than the meticulous replacement of what has been lost. The use of dental implants in this scenario is also not without difficulty. It is clear that if there has been excessive bone resorption and replacement by flabby tissues, then there will be little bone remaining into which dental implants can be placed. While it would be technically possible to augment the remaining ridge with bone grafts, the prognosis of such treatment would be questionable. Furthermore, there are a group of patients who for a variety of clinical or medical reasons are unsuited for dental implant treatment. A number of other impression techniques have also been described in the past for overcoming the problem of flabby ridges.

McCord JF (2000) and Ahmad F (2008) described window technique. This technique ensures peripheral molding resulting in peripheral seal because window, holes or vents are prepared after final impression is made. The displaceable tissue is then recorded in minimally displaced position and, on setting of plaster of paris, the peripheral seal is re-established which is lost due to the window prepared.

Allen F (2005) and Polychronakis N (2010) claimed to improve the functional stability of complete denture through the use of special tray presenting window opening over displaceable tissues. The advantage of window tray design is that the appropriate peripheral tracing can be undertaken & checked around the sulcus before recording the displaceable tissue in static condition.

The two part impression technique as suggested by Khan Z (1981) and Crawford RWI (2006) is used, when the patient do not have sufficient labial sulcus area for complete peripheral impression tray. The final peripheral tracing in the anterior region is formed by digital manipulation of the lip. The run handle design helps preventing falling of the unset impression material back in mouth, when patient is in supine position. This article describe the impression technique to minimally displace the flabby tissue and reproduction of maximum details. Choice of treatment modality is made by keeping in mind that the requirement of stability and retention of the prosthesis must be balanced along with the preservation of the health of oral tissues for every patient.

CONCLUSION

There are certain compromised conditions, like flabby ridge or resorbed ridge, where a good impression is mandatory for a good prosthetic outcome. The skill and knowledge of a prosthodontist is relentlessly tested in such cases. In this article a window impression technique was described which compresses the non-flabby tissues to obtain optimal support and at the same time records flabby tissue in undisplaced form.

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