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CASE REPORT

Displaceable Tissue: A Clinical Challenge treated with Palliative Approach

Shital Jalandar Sonune, Shivkumar Singh, Shankar Dange

ABSTRACT

Displaceable tissue on edentulous ridges may present a considerable clinical challenge to dental practitioners when providing complete dentures. Displaceable, or 'flabby ridges', present a particular difficulty and give rise to complaints of pain or looseness relating to a complete denture that rests on them. If the flabby tissue is compressed during conventional impression making, it will later tend to recoil and dislodge the resulting overlying denture.

A careful consideration and application of the principles of complete denture construction for such condition can provide a palliative form of treatment. This article describes reports of three such clinical cases, and demonstrates the use of a suitable impression technique.

Keywords: Complete denture prosthodontics, Flabby ridge, Impression techniques.

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INTRODUCTION

Complete denture prosthodontics will remain an important part of dental education and practice. 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.[1] 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. 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.[2]

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.[3]

Therefore, this article tries to discuss three different impression techniques for fabrication of a retentive and stabilized denture for cases of complete edentulism with flabby ridges, through palliative approach.

The patient's cases discussed in this article with flabby ridge had a common complaint of ill-fitting denture. Medical history of these patients revealed no underlying systemic disorder. Intraoral examination showed flabby ridge in pre-maxillary area while the mandibular ridge was completely edentulous. As a palliative approach, instead of removing the cause of ill-fitting denture, i.e. flabby ridge, in these following cases we had used various modifications in impression technique to achieve minimum displacement of denture during function and maximum retention and stability.

CASE REPORTS

Case 1

Zafrulla Khan's Window technique: In this case the primary impression was made with mucostatic material, i.e. alginate. A close fitting custom tray was prepared and border molding was done followed by final impression of the entire denture-bearing area with zinc oxide eugenol impression paste. The displaceable tissue was marked intraorally with indelible pencil and this marking was transferred on to the final impression (Fig. 1). A window was prepared and tray was

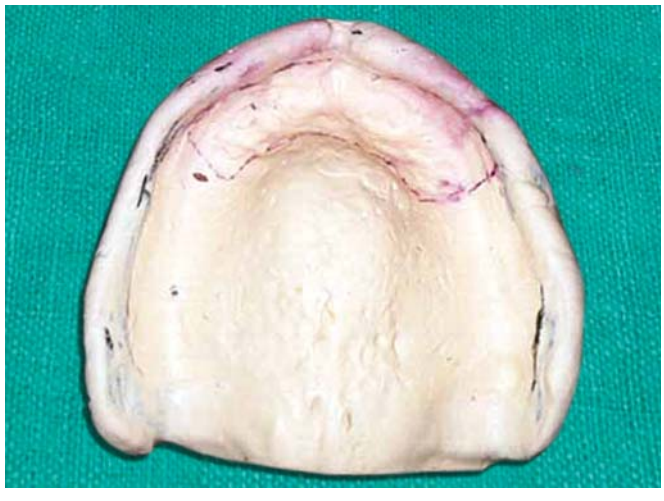

Fig. 1: Displaceable tissue marking transferred on final impression

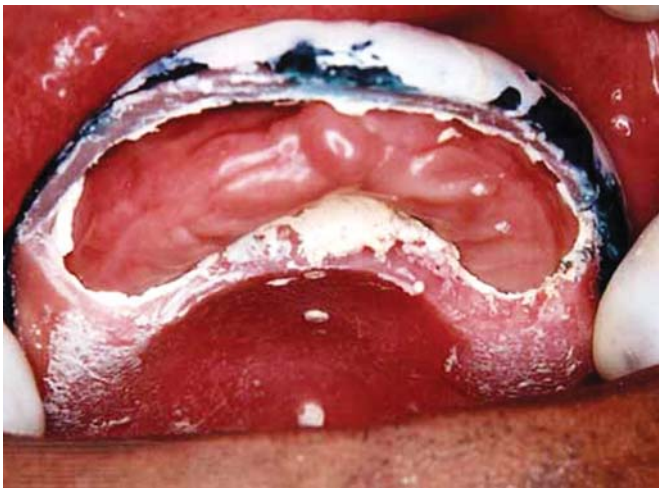

Fig. 2: Tray placed intraorally

Fig. 3: Displaceable tissue recorded with impression plaster

Fig. 4: Custom tray with a hole or 'window' in flabby ridge area

Fig. 5: Final impression made in zinc oxide eugenol impression paste

placed intraorally (Fig. 2). An impression of the displaceable tissue was recorded by painting a thin mix of impression plaster (Fig. 3).

Case 2

Window tray technique: In this case the primary impression was made in alginate impression material. The displaceable tissue was marked and transferred to the cast. A close fitting self-cure acrylic custom tray was constructed that has a hole or 'window' over the area corresponding to the flabby ridge (Fig. 4). After peripheral tracing, an impression was made in zinc oxide eugenol impression paste of the denture-bearing area (Fig. 5). Once the material has set it was left in place and light bodied material was painted over the flabby ridge through the window prepared (Figs 6 and 7).

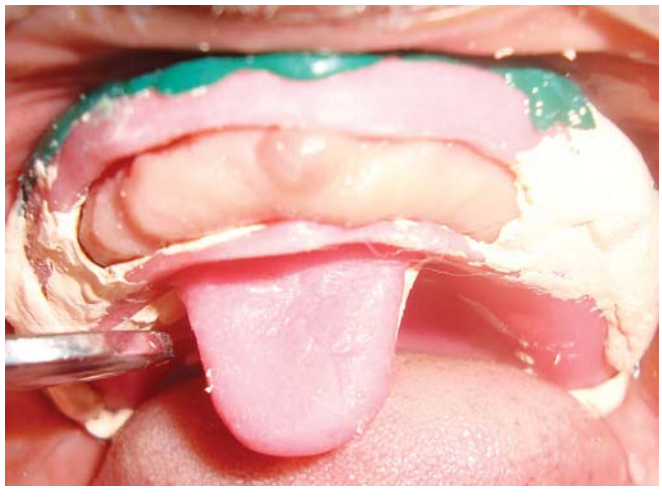

Fig. 6: Custom tray placed intraorally

Case 3

Two part impression technique: This procedure is a combination of mucostatic and mucodisplacive impression technique. This ensures that pressure exerted by the tray does not cause distortion of the mobile tissues. In this case, primary impression was made and cast was poured. The displaceable tissue was marked on the primary cast. A close fitting cold-cured custom tray was constructed so that the flabby ridge area is left uncovered. Appropriate border

Fig. 7: Flabby ridge area recorded in light body impression material

Fig. 9: Two part final impression

correction is then carried out before an impression of the firm, supported mucosa was recorded in light body impression material (Fig. 8). An impression of the displaceable mucosa was then recorded by painting a thin mix of impression plaster over the flabby ridge and allowed to set and removed as one impression (Fig. 9).

DISCUSSION

The basic objectives of complete denture prosthodontics are the restoration of function, facial appearance and the maintenance of the patient's health.[4] 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:[5]

- Surgical removal of fibrous tissue prior to conventional prosthodontics
- Implant retained prosthesis, fixed or removable

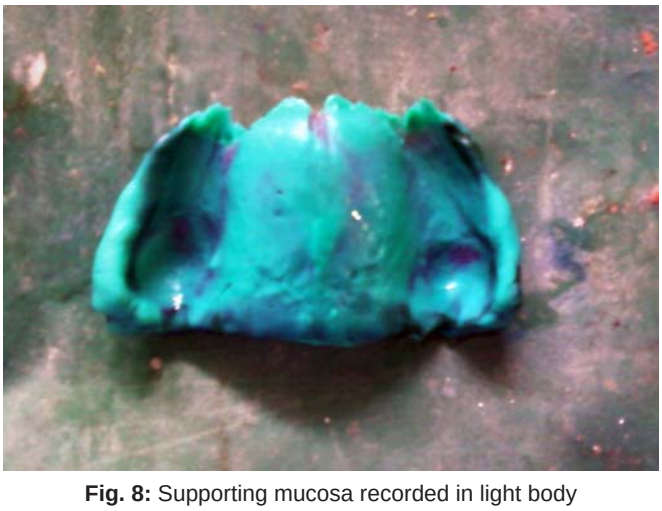

Fig. 8: Supporting mucosa recorded in light body impression material

- Conventional prosthodontics without surgical intervention.

The surgical intervention in the form of fibrous tissue removal or placement of implant retained prosthesis causes their own disadvantages of medical condition of elderly patients, shallow ridge, treatment time, cost, etc. A conventional prosthodontic solution may avoid problems associated with surgery.

As stated by DeVan,[6] 'Our objective should be the perpetual preservation of what remains rather than meticulous restoration of what is missing', hence in these series of clinical reports we opted for a palliative approach. In all three cases, the design of modified custom tray varied from a completely uncovered section of the arch to a window overlying the displaceable tissue.

McCord JF (2000)[7] and Ahmad F (2008)[8] 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)[9] and Polychronakis N (2010)[10] 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)[11] and Cawford RWI (2006)[5] 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 rim handle design (Fig. 10) helps preventing falling of the unset impression material back in mouth, when patient

Fig. 10: 'Rim handle' design

is in supine position. At subsequent 7 days, 12 weeks to 1 year follow-up appointments, the patients reported satisfaction with stability, function and esthetics.

The techniques described in this series of cases do not involve any extraclinical step in fabrication of complete denture and can be accomplished relatively quickly. Also, the materials used for recording flabby tissue in undisplaced condition are readily available in institutes and used in contemporary dental practice. Nevertheless, depending on patient's intraoral condition, material feasibility and operator's skill window tray technique, two part impression, multiple relief holes/vents or double spacers can be employed to record the displaceable tissue in static condition.

CONCLUSION

A good impression is mandatory for good prosthetic service. However, there are certain compromised conditions, like flabby ridge or resorbed ridge, where skill and knowledge of the dental practitioner is relentlessly tested. In this article three impression techniques were described that compresses the nonflabby tissues to obtain optimal support and at the same time records flabby tissue in undisplaced form.

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