

Say 'No' To Bounce...

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ABSTRACT

Background: In the field of rehabilitative Prosthodontics, impressions are the basis and starting point of any form of treatment to be rendered to patients. The accuracy of the recorded impression forecasts the outcome of the advocated treatment procedure and prostheses. The elderly who seek denture therapy for restoration of function and aesthetics, often present the 'not so ideal' oral tissue picture. This may add to the growing dilemma of clinicians and puzzles them to choose the appropriate steps in confronting such cases. The hypermobile/flabby tissues have a bouncy character owing to loss of underlying bony support and fixation. When recorded by conventional techniques of impression making, the tissues repel the dentures and prevent their stable seating during rest and especially during function. This article discusses an impression technique employed to prevent this tendency of rebound of fibrous tissues. This will ensure best possible stability for dentures giving due regard to the physiology of such oral tissues.

Keywords: Flabby, recoil, rebound, mucostatics.

INTRODUCTION

The long continuing phase of edentulism brings with it many age changes of which residual ridge resorption is of prime concern to Prosthodontists. The ridges with marked bone loss often show an overlay of unsupported oral tissues which lack firm attachment and foundation. These tissues are susceptible to rebound even under normal function. Dentures fabricated on such tissues get displaced as the rebounding tissues repel them owing to their fragile condition of lacking adequate firmness and tone^{1,5,6,7}. The success of complete denture prostheses to achieve retention, stability and support; depends upon the qualitative and quantitative states of the entire denture bearing area. Multiple impression techniques have been enlisted and practiced over the years to circumvent these problems associated with treating flabby ridge conditions^{8,9,10,11,12,13}. The management however ranges from the most noninvasive procedures of special impression making

techniques to invasive procedures like injecting sclerosing agents and surgical excision.

Resorting to extreme invasive procedures reduces the mean available denture bearing area, which compromises the above-mentioned factors for a favorable prosthetic outcome. As Prosthodontists, and abiding by De Van's dictum we first aim at preserving that which remains and, in such cases, the edentulous ridges and tissues presented before us. By applying selective impression techniques to such compromised tissues, we better enable them to withstand the forces of occlusal loading without giving way during rest and at function.

CASE REPORT

The patient 63 year old female reported to the department of Prosthodontics with the chief complaint requesting replacement of all her missing teeth. On clinical examination it was observed that there was presence of flabby tissue in the maxillary and mandibular anterior regions, extending between the canine to canine areas. Radiographic

Received: Jan. 27, 2018: Accepted: Mar. 13, 2019

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examination confirmed increased levels of bone loss underlying flabby tissues. To record these areas of hypermobile tissue with minimum exertion of pressure, it was decided to adopt the concept of mucostatics¹⁴.

Application of theory of mucostatics was in the form of modifying the special tray assembly design such that the flabby tissue state was recorded in its static form during function and at rest. A two-tray (custom tray) technique was employed. Indelible copying pencil was used to locate the flabby tissue extent intraorally and was transferred in the primary impressions made with Alginate (DPI, Imprint Alginate dental impression material). The retrieved primary casts clearly depicted the scribed flabby tissue areas. The two-tray design consists of a flabby component tray and a non flabby component tray made in tray material (50% clear autopolymerizing acrylic resin and 50% french chalk). To fabricate the non flabby tray component first, a 1mm thickness of modeling wax was adapted on the non flabby tissue areas (areas outside the marked zone) (Fig 1. Non flabby component maxillary tray, Fig 3. Non flabby component mandibular tray). Tray securing mechanisms were used in both maxillary and mandibular non flabby component trays to lock the flabby component trays when seated together with the non flabby component trays. The non flabby component tray acts as a positive stop to prevent the compression of the displaceable flabby tissues. Finger rests were made to ensure better ergonomic control during impression making.

For the maxillary arch, a dove tail retaining design was cut with an acrylic bur into the mid palatal portion of the non flabby component tray. 1mm thickness modeling wax spacer was adapted on the flabby tissue area and the flabby component tray was fabricated (Fig 2. Flabby component maxillary tray). For the mandibular arch, two metal studs were placed in the non flabby component tray during fabrication perpendicular to the impression surface. 0.5 mm thickness of spacer wax was used to block out the metal studs from getting completely engaged in the flabby component tray which was fabricated by adapting a 1mm thickness modeling wax spacer over the flabby tissue area (Fig 4. Flabby component mandibular tray). After set, the trays were disengaged and re-oriented to ensure proper

fit and ease of path of insertion and removal. The completed trays were tried in the patient's mouth for stability and precision of fit. Border moulding was done using non flabby component trays and the final impression was made using medium bodied polyether material (3M ESPE, Impregum medium body). Relief holes were made in the flabby component tray to prevent chances of recording tissues under undue stress. The final impression of the flabby tissue area was recorded by accurately fitting the flabby component tray over the non flabby component tray with light bodied polyether material (3M ESPE, Impregum light body). After impression making the trays were removed and impressions were evaluated for presence of tissue detail (Figure 5. Maxillary final impression two-tray, Fig 6. Mandibular final impression two-tray). The Jaw relation records were made at an acceptable vertical dimension and a verified centric relation was obtained. Facebow record was taken and transferred to the Hanau H2 semi-adjustable articulator. Teeth arrangement was done and trial dentures were inspected for adaptability to basal seat tissues at rest and during function. The phonetics, aesthetics and patient comfort were also optimally checked in the trial phase of denture therapy. Processed heat cured acrylic complete dentures were inserted and instructions for care and maintenance were given.

DISCUSSION

In literature several procedures have been practiced to manage the hypermobility character of tissues in patients anticipating dentures or in pre existing denture wearers. The procedures range from the less invasive modified impression making techniques to the comparatively invasive surgical excision and tissue sclerosing techniques. Flabby tissues have a rebounding nature owing to the lack of adequate attachment to the underlying bony architecture. In comparison to techniques like the window technique of impression making, this two-tray technique prevents over compression of tissues and no uncontrolled force is applied during recording the flabby tissues in particular. The locking tray mechanism provides for steady hand control over the trays while the impression is being recorded.

CONCLUSION

Dentures fabricated with this technique of impression making were found to be stable at rest and during function. Patient was comfortable and satisfied with the denture insertion at periodically scheduled recalls. She reported of no episodes of denture rebounding as anticipated with most denture therapies when tissues are not given due regard to their pre-existing physiology. Such improvised techniques are a definite aid in treating patients with such tissue limiting conditions. As Prosthodontists, abiding by De Van's dictum of preserving that which remains; we implement sound practice to better able and condition the elderly to receive denture therapy more effectively.



Fig 1: Non flabby component maxillary tray.

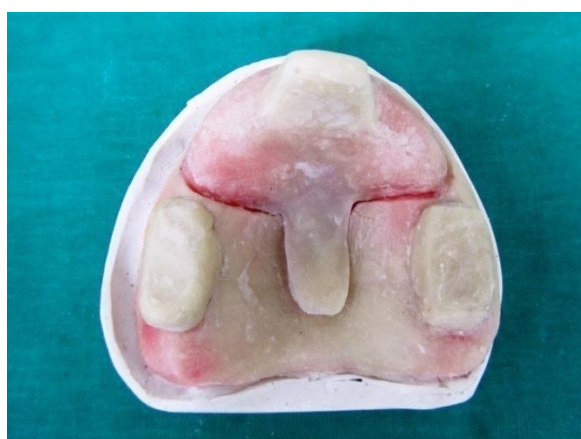


Fig 2: Flabby component maxillary tray.



Fig 3: Non flabby component mandibular tray

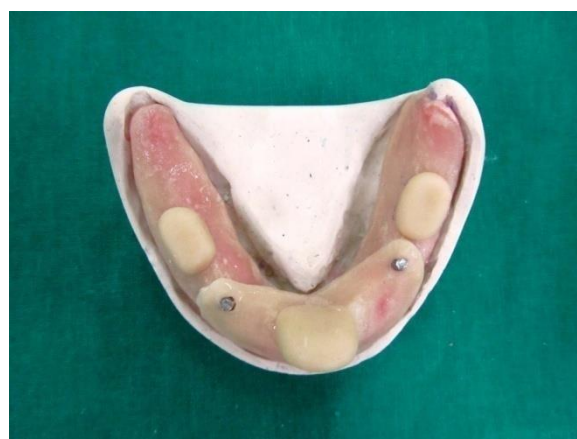


Fig 4: Flabby component mandibular tray.



Fig 5: Maxillary final impression in two-tray.



Fig 6: Mandibular final impression in two-tray.

CONFLICT OF INTEREST

No potential academic conflict of interest relevant to the above article was reported.

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