



REVIEW ARTICLE

MANAGEMENT OF FLABBY AND RESORBED MANDIBULAR RIDGE: A PROSTHODONTIC ENIGMA

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ABSTRACT

Flabby and resorbed ridge is a common finding in edentulous patients. They adversely affect the support, retention and stability of complete dentures. Many impression techniques have been proposed to help overcome this difficulty. A careful consideration and application of the principles of complete denture construction for such condition can provide a palliative form of treatment. The present case report describes the prosthodontic management of a flabby and resorbed mandibular ridge with a combination of impression techniques.

Key words:

Flabby, Resorbed, Retention, Stability.

INTRODUCTION

Flabby ridge is a superficial area of displaceable soft tissue that develops when hyperplastic soft tissue replaces the alveolar bone. It is commonly seen in the maxillary anterior region of long term denture wearers. It poses significant problems for the provision of stable and retentive dental prosthesis. Masticatory forces and impression making can displace this mobile denture-bearing tissue, leading to altered denture positioning and loss of peripheral seal.^{1,2} This in turn results in poor stability of the denture, leading to compromised function and appearance. Invasive techniques including surgical excision or use of dental implants have provided clinicians with methods of addressing this difficulty.³ Different non-invasive techniques like modified impression techniques have also been described to overcome the problem of flabby tissue. Residual ridge resorption is a chronic, progressive and irreversible disease encountered in completely edentulous patients which is an inevitable and natural physiologic process.⁴ Optimum denture stability is difficult to achieve specially in the mandibular dentures due to less surface area covered by the denture base and altered muscle activity. The success of the complete denture treatment depends upon the proper positioning of the teeth on the denture. Fish and other researchers emphasized on the concept of neutral zone, the goal of which is to place the

teeth such that the forces exerted by the tongue and the cheek muscles are nullified, and the teeth remain in a safe, protected zone.⁵ The present case report describes the prosthodontic rehabilitation of a patient with a mandibular flabby and resorbed ridge with complete denture prosthesis using a combination of modified impression techniques.

CASE REPORT

A 64 year old male patient reported to the department of Prosthodontics, ITS Dental College, Muradnagar with a chief complaint of missing teeth since 2 years (Figure 1). Intra-oral examination revealed an edentulous maxillary ridge and a resorbed mandibular ridge with flabby tissue in its anterior region (Figure 2). The primary impressions were made using impression compound (Y-Dents, MDM Corporation, Delhi, India) for the maxillary arch and irreversible hydrocolloid material (Algitek Dental products of India, Mumbai, India) for the mandibular arch. Maxillary custom tray was made in the conventional manner and mandibular custom tray with a double spacer in the anterior region so that the flabby tissues could be recorded in a minimally compressed state (Figure 3). Border molding was done using low fusing impression compound and wash impression was made with zinc oxide eugenol impression paste for the maxillary arch. Sublingual crescent technique was used to record the resorbed mandibular arch using impression compound. For the mandibular final impression, spacer wax was removed and impression was made with medium body elastomeric impression material.

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Figure 1. Extraoral Frontal and Lateral View

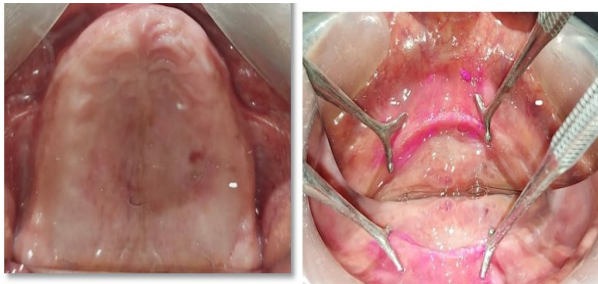


Figure 2. Intraoral View of Maxillary and Mandibular Arch



Figure 3. Double Spacer for Flabby Ridge

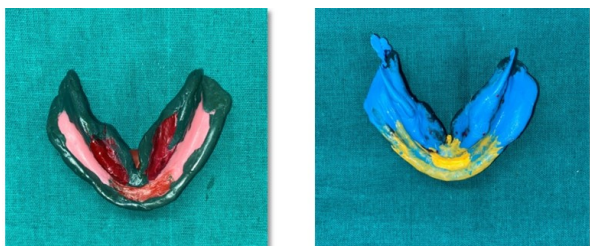


Figure 4. Impression with Sublingual Crescent Technique



Figure 5. Maxillary and Mandibular Master Casts



Figure 6. Jaw relation and Facebow transfer

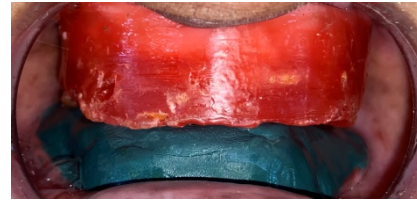


Figure 7. Neutral Zone Record



Figure 8. Try in



Figure 9. Denture Placement

The tray was then removed from the mouth and impression material was removed in the region of flabby tissue using a scalpel. Relief holes were made and tray was loaded in this region with light body elastomeric impression to record flabby tissue(Figure 4).Impressions were poured(Figure 5) using Type III dental stone (Kalrock, KalabhaiKarson Private Ltd., Mumbai, India). Record base was made with self-cure acrylic, and occlusion rims were prepared using modeling wax. Facebow transfer was done and maxillary mandibular relations were recorded wherein height of the mandibular rim was reduced to enhance the stability of the denture, following which the casts were mounted on a semi-adjustable articulator (Figure 6). The neutral zone was recorded by removing the mandibular wax occlusion rim onto which an acrylic shim was fabricated. Low fusing impression compound was adapted onto the mandibular record base which was placed in the patient's mouth. The patient was asked to carry out different functional movements like swallowing, sucking, whistling, smiling, licking the lips, and pronouncing vowels (Figure 7). Excess compound was trimmed away till the level of the acrylic shim. The resultant molded occlusion rim was the recorded neutral zone of the patient.

An index of this recorded zone was made using putty consistency of polyvinyl siloxane impression material. The acrylic shim and low fusing impression compound was removed. The putty index was again placed on the cast and melted wax was flown to obtain a wax rim in the neutral zone area. Monoplane teeth (Acry Rock Ruthinium Group Dental Manufacturing Spa, Ruthinium Products Pvt Ltd. India) were first arranged on the mandibular rim within the neutral zone area. Consecutively the maxillary teeth were arranged. Try in was done and an impression of the polished surface was made using light body impression material (Figure 8). Following this, the denture was processed, finished and inserted (Figure 9). Patient was recalled after 7 days for denture adjustment.

DISCUSSION

Impression making plays a critical role in complete denture fabrication of a patient with compromised edentulous ridge. The success of prosthesis depends mainly on the patient acceptance and willingness to use the prosthesis. Managing a patient with a flabby ridge can be a challenging problem and taking care to consider the influence of the impression surface is of utmost paramount. Standard muco-compressive techniques result in unretentive and unstable dentures especially when the ridge is also resorbed. The use of selective pressure or minimally compressive impression techniques should help to overcome some of these limitations. To overcome these limitations, support in the lower complete denture is derived from the labial and buccal flanges that provide a good peripheral seal. Recording sublingual crescents in the lower denture provides effective peripheral seal in the vulnerable anterior part of the alveolo-lingual sulcus, resulting in excellent retention in ridges with normal or medium ridge height and satisfactory retention in severely resorbed ridges. Another technique to overcome these limitations is the neutral zone technique that aims to construct a denture that is shaped by muscle function and is in harmony with the surrounding oral structures is advised.⁴ The advantages of arranging teeth in the neutral zone is that it will improve the stability and retention of complete denture by correctly positioning the posterior teeth, allowing sufficient tongue space, and also reduces the food trapping adjacent to the molar teeth. This technique also provides good aesthetics due to facial support.⁶ The present case report described the use of Hobkirk's impression technique which did not displace the flabby tissues. Since the patient had a resorbed mandibular ridge, neutral zone technique was employed. Low fusing impression compound was used as it was easy to handle, could be added incrementally and had sufficient working time to register all the functional movements.⁶ Height of the mandibular rim was decreased and teeth arrangement was done using monoplane teeth in order to increase the stability of the denture.

CONCLUSION

It is a challenge to manage patients with a ridge that is both flabby and resorbed. Muco-compressive impression techniques result in an unretentive and unstable denture as the flabby tissue gets recorded in a compressed state. Muco-static techniques may result in movement of denture base relative to support tissue as they cannot make the best use of available tissue support. The best is to use selective pressure impression techniques, as the patients can be given dentures with good retention and stability without any additional clinical visits as compared to normal conventional dentures. Recording of the neutral zone can be done in conjugation with the impression techniques to improve the stability of the denture in patients with resorbed ridges.

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