

PROSTHODONTIC REHABILITATION OF MANDIBULAR RESORBED RIDGE: A DIFFERENT APPROACH

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ABSTRACT:

The treatment of edentulous patient is always a challenge for the Prosthodontist. It is connected with a lot of procedures aiming to reconstruct and replace the mandible and maxilla for the patients who have lost all their remaining teeth. Treating the highly resorbed mandibular ridge accompanied with an enlarged tongue, along with the average response of the patient to all the clinical procedures, is a tedious job. The aim of this article is the prosthetic treatment of a mentally challenged patient with asymmetry of alveolar ridges, macroglossia and the difficulties related with the treatment and the suitable techniques and approaches to overcome those difficulties.

KEY WORDS: *Residual ridge resorption, McCord's technique, Sectional tray technique.*

INTRODUCTION:

The basic objectives of Complete Denture Prosthodontics are the restoration of function, facial appearance and the maintenance of patient's health. As the age advances, the supporting bony tissues undergo resorption to a greater or lesser degree, with the potential for constant excessive atrophy due to less efficient osteoblasts, declined estrogen production, and overall reduction of calcium absorption from the intestine.¹ Also, when the new denture is placed and adjusted into the patient's mouth, the patient complains of pain caused by compression of soft tissues between the denture and the bone. Therefore, the tissue surface of the dentures or the pressure transmitting surface should have maximum possible area to reduce pressure on the oral mucosa. To compensate all these difficulties, this article presents relative impression techniques and procedures to gain maximum retention and stability in cases of severely resorbed ridges.

Case report

A 40 years male patient reported with a chief complaint of difficulty in eating due to loss of all his teeth. A review of medical history revealed that patient was diagnosed as a case of Down's syndrome. Past dental history revealed the presence of partial anodontia with few deciduous teeth which got exfoliated. Only right mandibular second molar (47) was present when the patient reported in the Department of Oral Surgery, which

got extracted 6 months back before coming to the Department of Prosthodontics. Extra oral findings were significant. Presence of flat broad bridge of the nose, almond shaped eyes with strabismus and brachycephaly were observed. The intraoral examination revealed edentulous resorbed maxillary and mandibular ridges with the enlarged tongue. The mobile tissues were also identified onto the highly resorbed mandibular ridge. A single midline fissure was seen on the tongue. Maxillary arch was smaller in size as compared to the mandibular arch due to the incomplete development of face (Fig. 1).

The treatment was planned according to the condition of the present maxillary and mandibular ridges. Different impression techniques and materials were used to get the maximum retention and stability of the dentures.

Procedure:

1. Primary impressions of both the maxillary and mandibular ridges were made with a viscous mixture of two varieties of softened impression compound (3 parts impression compound + 7 parts greenstick compound) [McCord's Technique] (Fig. 2).²
2. The impressions were washed and poured with the dental plaster.
3. The casts were retrieved and prepared for the fabrication of the custom trays. The custom tray



Fig.1. Intraoral view of edentulous resorbed maxillary and mandibular ridges with enlarged tongue.



Fig.2. Primary impressions of both the maxillary and mandibular ridges made with a viscous mixture of two varieties of softened impression compound [McCord's technique].

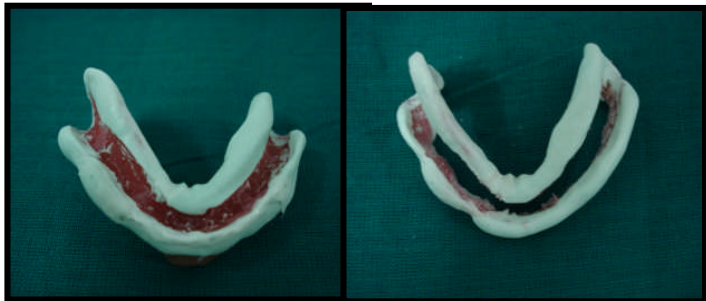


Fig. 3. The tray was border molded with putty consistency of polyvinyl siloxane in a single step. From the patient's mouth, the mobile tissues were identified and the special tray cut away from the identified mobile tissue areas [Sectional or Two tray technique].



Fig.4. Intraoral view of the Complete Dentures

4. outline was made. Undercuts were blocked with the modeling wax and the relief areas were relieved. Custom trays were then fabricated onto the casts.
5. For the maxillary ridge, border molding and secondary impressions were made with the conventional method i.e., border molding is done with the greenstick compound and secondary impression was made with the zinc oxide eugenol impression paste.
6. For the mandibular ridge, considering the dental history and present intra oral condition of the patient; a different approach in making final impression was used which is known as "the sectional or the two tray technique" (Fig. 3).³
7. The tray was carefully border molded with putty consistency of polyvinyl siloxane (Speedex, Coltene) in a single step.
8. From the patient's mouth, the mobile tissues were identified and marked onto the study cast and the special tray was cut away from that areas.³ An impression was made with light body polyvinyl siloxane (Speedex, Coltene).
9. The impression was removed, excess material was trimmed off and impression was resealed.
10. An outsize stock tray was then used to make an alginate impression over the impression tray in the mouth, so as to support the secondary impression.
11. The final impressions were boxed and poured. The stone cast was retrieved. An auto polymerizing resin base was made and occlusal rims were made onto the denture bases. The jaw relations were recorded. Face Bow transfer and jaw relations were then verified.
12. Articulation was done and teeth were arranged in lingualized occlusion. Patient was then called for try-in procedure. The denture was cured, finished and polished and inserted into the patient's mouth (Fig. 4).
13. Instructions for the maintenance of the denture and oral hygiene were given to the patient.

Discussion:

Treating the highly resorbed mandibular ridge accompanied with an enlarged tongue, along with the average response of the patient to all the clinical procedures, is a tedious job. The provision of dental services to the person with Down's syndrome who is severely/profoundly retarded presents unique challenges to the institutional

dental staff. A thorough knowledge of the unusual dental implications of the syndrome and an innovative problem solving approach to treatment planning and preventive procedures will do much to alleviate the dental effects of the condition.⁴

Here, in this case report, the simple impression procedures have been followed to get the maximum retention and stability of the complete dentures, especially on the mandibular ridges.

Explanations prior to treatment are education; those after treatment are excuses.¹ So, it is essential to stress on the patient's mental attitude; such that he/she not only desires the treatment but also willing to carry out instructions in the use and care of the dentures. The patient must understand and accept the limitations of denture performance prior to the treatment.

References:

1. Winkler S. Essentials of Complete Denture Prosthodontics. 2nd Ed. A.I.T.B.S. Publishers, New Delhi; 1996, pp. 22-38.
2. McCord JF. Contemporary Techniques for Denture Fabrication. J Prosthet Dent 2009; 18:106-111.
3. Ronald LE. Managing and treating the atrophic mandible. J Am Dent Assoc 1993; 124:234-241.
4. Sindoor SD. Down syndrome: A Review of the Literature. Oral Surg Oral Med Oral Pathol Oral Radiol Endod 1997; 84:279-85.

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