

# Management Of An Edentulous Patient With Severely Resorbed Mandibular Ridge: A Case Report

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## Abstract

The loose and unstable complete denture is one of the most common problems faced by denture patients. The problem increases, many folds in cases of highly resorbed mandibular ridges. This case report present various steps of conventional denture which has been modified for treating and providing a successful complete denture to a patient with highly resorbed mandibular ridge.

**Key Words:** Admix Technique; Neutral Zone Technique; Monoplane occlusal scheme

## Introduction

Giving complete denture to patients with highly resorbed mandibular ridges is a difficult task. Modification in every step of making a conventional denture is needed to be done while fabricating denture for patients with highly resorbed mandibular ridges. MC cord and Tyson in 1997 wrote that viscous admix of impression compound and tracing compound removes any soft tissue folds and smoothes them over the mandibular bone; this reduces the potential for discomfort arising from the 'atrophic sandwich', i.e the creased mucosa lying between the denture base and the mandibular bone<sup>1</sup>. Watt and MacGregor in 1976 told that the vertical dimension may be further reduced in order to place the occlusal table closer to the alveolar ridge and create a more stable lower denture by a reduction in the height of the denture<sup>2</sup>. However a denture which is completely in coordination with neutral zone forms the key to a stable denture in resorbed ridge cases, as this is the zone where the forces from the tongue and the

cheek comes into equilibrium<sup>3</sup>. M.Kothavade in 2001 stated that zero degree or nonanatomic teeth are used to eliminate horizontal forces and give greater comfort to the patient.<sup>4</sup>

This article describes every step of fabricating a complete denture for a patient with highly resorbed mandibular ridge.

## Case Report

A male patient aged 77 reported with complete edentulous upper and lower arches. The lower edentulous arch was severely atrophied on examination. (Figure 1) Primary Impression for both upper and lower edentulous arches were made with impression compound and models were poured. Custom trays for taking final impression were made on these primary casts.

For recording final impression of atrophied mandibular ridge, McCord and Tyson technique was used. In this technique Impression compound and green tracing stick in the ratio of 3:7 parts by weight is placed in a bowl of water at 60°C and kneaded to a homogenous mass that provides a working

time of about 90 s. Wax spacer from custom tray is removed, this homogenous mass is loaded and impression and border molding is done for the atrophied lower ridge. After this a uniform amount of material (approximately 0.5mm) is scrapped all over and a wash impression with Zinc oxide eugenol paste is made (Figure 2).

A master cast was retrieved from this impression. Upper arch border molding and final impression were done in a conventional way.

Next during Jaw relation step, After taking orientation jaw relation, the vertical dimension was reduced so as in order to place the occlusal table closer to the alveolar ridge and create a more stable lower denture by a reduction in the height of the denture & The casts were mounted in centric relation in the Hanau semi adjustable wide view articulator.

On the articulator, another pair of upper and lower denture bases with impression compound occlusal rims was made. Also acrylic stops were made so as to maintain the vertical of the patient during functional movement inside the mouth (Figure 3).

Latter upper and lower impression compound rims were placed inside the patient's mouth, lower occlusal rim was first tempered in hot water and was then placed inside the patient's mouth and patient was asked to perform functional movements so as to record the neutral zone (Figure 4).

Latter plaster index was fabricated around the lower molded impression compound rim on the master cast (Figure 5).

This was followed by pouring molten wax into the space inside the index previously occupied by impression compound (Figure 6).

The monoplane occlusal scheme was used for teeth arrangement and during teeth arrangement, it was kept in mind to arrange mandibular teeth strictly following the limits of plaster index both buccally and lingually (Figure 7).

Try-In was done and the teeth position was checked for there position in neutral zone area (Figure 8). during try in the polished surface of denture was molded using light body addition silicone impression material , by asking patient to do functional movements (Figure 9) and latter the denture was processed.

## Summary

Following article presents step by step procedure to fabricate a denture in a patient whose mandibular ridge is severely resorbed.

## References

References are available on request at [editor@healtalkht.com](mailto:editor@healtalkht.com)



**Figures**



Figure 1: Intra oral view of mandibular ridge

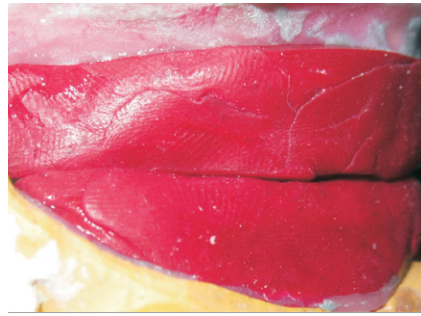


Figure 2: Admix secondary impression



Figure 3: Impression compound occlusal rims

Figure 4: Patient doing functional movements for recording the neutral zone



for recording the neutral zone

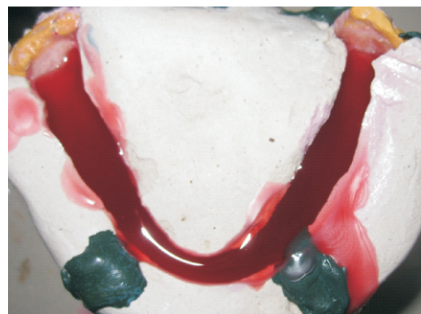


Figure5: Plaster index made

Figure6: Molten wax poured into the plaster



index

Figure 7: Teeth arrangement done to follow the



contours of plaster index

Figure 8: Intra oral view showing teeth in



neutral zone

Figure 9: Polished surface molded using light body addition silicone impression material