

## Rehabilitation of the vertical dimension with fixed and removable prosthesis: Case Report

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### Abstract

Loss of vertical dimension of occlusion can occur when enough teeth are lost that the remaining teeth and supporting alveolar bone are unable to withstand even normal biting forces, and begin to tip sideways. The causes of multiple tooth loss are many, resulting in over-closure of the jaws which requires complex rehabilitation to correct.

This clinical case report describes the management of a 50-years-old female patient with a worn out anterior upper teeth opposing mildly attrited anterior lower teeth with a loss of maxillary and mandibular posterior teeth.

The case was treated by restoring the lost of vertical dimension by prosthetic rehabilitation.

**Keywords:** rehabilitation, teeth loss, deep bite, vertical dimension

### 1. Introduction

Losing of the teeth in the adult is not an inevitable part of the aging process. For some, trauma, severe periodontal problem or illness will unfortunately mean that tooth loss is a reality, in many situations, there exists a combination of these processes. A long term multiple teeth loss leads to loss of vertical dimension resulting in a compromised appearance, alteration in phonetics, and the patients would be very unhappy and their ability to masticate their food probably would be destroyed.

Management of loss vertical dimension using fixed and removable prostheses is complex and among the most difficult cases to restore. Assessment of the vertical dimension is important, and careful comprehensive

treatment plan is required for each individual case.

### 2. Case presentation

A 50-years-old female reported with a chief complaint of several missing teeth, reduced chewing efficiency, and discomfort due to over closure.

Patient was in good general health, her medical and dental histories were not contradictory for dental treatment. Extra oral examination reveals no asymmetry and any muscle tenderness.

Intra oral examination reveals worn out anterior teeth, partially edentulous maxillary and mandibular arches with reduced VD [Figure 1, 2, 3]



Fig 1: upper view



Fig 2: lower view



Fig 3: frontal view

VD rehabilitation of the mouth was planned to restore the function, esthetics, speech, and comfort of the patient.

Patient was informed of the diagnosis, the treatment planning and her consent was obtained.

### 3. Treatment Procedure

1. The patient was treated with the oral prophylaxis and final restoration in carious teeth were done followed by orthopantomograph to assess the level of alveolar bone,

2. Removal of the retained root stump of #12, 27 was done, after the healing of the extracted site, the patient was taken for the prosthodontic procedures.

3. Maxillary and mandibular impressions were made with irreversible hydrocolloid impression material and diagnostic casts were made for execution of the treatment plan. The cast were analyzed, diagnostic wax-up was performed (figure 4,5)



**Fig 4:** upper cast



**Fig 5:** lower cast

The assessment of vertical dimension was done and accordingly a removable partial denture was fabricated and the patient was instructed to wear it for 4 weeks to improve the (VD) and TMJ discomfort

4. The Root canal treatment was carried out in maxillary anterior (13, 11, and 21).
5. then the casted post was fabricated and then cemented in #21 (figure 6)



**Fig 6:** cast cementation

6. teeth preparation for metal ceramic restoration were done to maxillary anterior teeth, and the Final impressions were made using polysiloxane impression material and poured using die stone. The patient was sent back home with provisional restorations until the

7. In laboratory, wax patterns were invested and casted in metal ceramic prosthesis (figure 7). All the bridge and crown were then cemented.



**Fig 7:** Metal Ceramic Prosthesis

8. Finally the occlusion was checked and selective grinding was performed intraorally. Oral hygiene

Instruction were given and regular reviews were scheduled. (Figure 8, 9, 10)



**Fig 8:** Right side

**Fig 9:** Left side

**Fig 10:** final smile

#### 4. Discussion

Whenever a patient is provided VD rehabilitation, the prime goal will be to restore the function keeping in mind the TMJ.

This patient was presented with a several missing of the posterior upper and lower teeth, and worn out anterior teeth. The patient has not undergone any intervention for this problem, resulting in a loss of vertical dimension.

For the restoration of the posterior upper and lower teeth, group function occlusion is the choice of occlusion.

It was planned resulting in decreases in stress on part of the distal extension RPD. Group function refers to the distribution of lateral forces to a group of teeth rather than assigning all forces to one particular tooth.

In this case the patient has moderate to severe bone loss so the best type of the removable prosthesis is the acrylic RPD.

This case reports that a satisfactory clinical result was achieved by restoring the vertical dimension with an improvement in esthetics and function.

#### 5. References

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