

## FULL MOUTH REHABILITATION OF A SEVERELY WORN OUT DENTITION; WITH LOSS OF VERTICAL DIMENSION IN A MALE PATIENT.



### Prosthetic Dentistry

**KEYWORDS:** Full mouth rehabilitation, vertical dimension of occlusion, bite raising, occlusal wear

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### ABSTRACT

*Dental problems are one of the many problems faced in the old age. Most of the problems arise from age related occlusal wear, loss of posterior support due to loss of teeth, periodontal and endodontic involvement of teeth. Restorative dentistry has created new dimensions in providing esthetic and functional rehabilitation of patients with severely worn-out dentition. This clinical report demonstrates successful multidisciplinary approach to a full mouth rehabilitation of a patient whose dentition has been esthetically and functionally restored.*

### INTRODUCTION

Full mouth rehabilitation implies the restoration of the impaired occlusion, enhancement of esthetics, preservation of the remaining teeth and maintenance of healthy periodontium. Rehabilitating of the senile patient is an interesting challenge. As the life span is increasing, the durability of the final restoration should be proportionate to the longevity of the individual. Full mouth rehabilitation with mutilated dentition in senile patients demands a perfect amalgamation of achieving the primary goals of occlusal rehabilitation that are:-

- Optimum health maintenance
- Occlusal functional harmony
- Comfort and esthetics.

In general severe occlusal wear can be attributed to <sup>[1,2]</sup>:-

1. Congenital abnormalities. (Where tooth structure is weak)
2. Attrition
3. Abrasion
4. Erosion
5. Para functional habit

Aggravating factors that exemplify the problem can be enlisted as <sup>[1,2]</sup>

1. Loss of posterior support
2. Wear from opposing restorative material
3. Stress

Further more if the rate of the wear exceeds that of the eruptive process, this occlusal wear may be associated with loss of vertical dimension. Turner and Missirlian <sup>[2]</sup> classified the patients with occlusal wear as follows:

1. Excessive occlusal wear with loss of vertical dimension but with space available to restore the vertical height.
2. Excessive occlusal without loss of vertical dimension but space available
3. Excessive wear without loss of occlusal vertical dimension but with limited space

### CASE REPORT:

#### Case history

A male patient, 53 yrs of age, came with a chief complain of difficulty in mastication, his poor dental appearance along with desire to replace his missing teeth. Patient gave history of chewing upon betelnut and paan since 25 yrs. Patient was aware of his bruxing habit, which, along with his habit, was the chief cause of the occlusal wear,

#### Clinical findings:

Patient was of average built, normal gait and stature and showed characteristic feature of a reduced vertical dimension like drooping

of commissure, deepened mentolabial fold and decreased facial height of the lower third of face.

#### Extra-oral examination:

On examination of the TMJ, slight clicking was evident bilaterally and the patient also complained of intermittent pain over the region, especially experienced only in the morning.

#### Intra oral examination:

Revealed severe loss of tooth structure; to such an extent that anterior teeth, both maxillary and mandibular teeth showed incisal tables instead of incisal edges and posterior teeth were flat occlusally. 24,32,37 and 47 were missing. Evaluation of the vertical dimension revealed a Silverman's closest speaking space about 3mm and a freeway space of 5mm. On the basis of clinical examination a conclusion of reduced vertical dimension was made attributing it to the patient's para-functional habit, stress factor and paan eating and betelnut chewing habit. The patient characteristically came under category I of the Turner & Missirlian classification of patients with severe loss of teeth, where patients present following features:-

- Unstable posterior occlusion
- Excessive wear of anterior teeth
- A closest speaking space of 3mm and interocclusal distance of 6mm
- Some loss of facial contour which includes drooping of the corners of the mouth.

It was planned to restore the worn out dentition by increasing the vertical dimension of occlusion by 2mm. A diagnostic wax was done on the study casts mounted at the new vertical dimension. The mock preparation revealed need to intentionally treat the mandibular left lateral and central incisors and mandibular and maxillary posteriors with root canal treatment to relieve the patient of sensitivity and to correct the occlusal plane.





### Treatment plan:

#### Immediate treatment:-

This phase included motivating the patient to stop habit immediately.

#### Intermediate treatment:-

Highlights of this phase were the multidisciplinary approach that involved the use of combined skills of prosthodontic, periodontic and endodontic procedures to rehabilitate the mutilated condition. Thorough oral prophylaxis was done initially. To stop the bruxism and simultaneously evaluate the patient's acceptance of the increased vertical dimension, a hard bite splint in acrylic was fabricated such that it also increased the patient's vertical dimension of occlusal by 2mm. Endodontic treatment was then done in 31,32,14,15,16,17,24,25,26,27,,34,35,36,37,44,45,46 & 47 teeth to facilitate the restoration of the worn out dentition and to relieve the patient's complain of sensitivity and pain during mastication. Gingivectomy was carried out in the upper and lower anterior region to surgically increase the crown length.

#### Definitive treatment:

Following gingival healing, preparation of teeth was commenced. Posterior preparations were commenced first and provisional restorations were fabricated by indirect technique and adjusted to acceptable vertical. Anteriors were then prepared keeping in mind the esthetic and phonetic needs of the patient. This was a very crucial step of the treatment. Temporary restorations were fabricated keeping in mind that 'Group function' occlusal scheme would be incorporated in the final restorations. The temporary restorations were adjusted to a harmonious occlusal relationship.

The patient was kept under observation with periodic recalls for approximately 4 weeks to evaluate patient's comfort with regards to teeth, muscles, TMJ and esthetics and phonetic acceptance.

#### iii) Definitive treatment:-

There were many options available as far as the choice restorative material was concerned. For this patient it was decided to restore maxillary right central to second molar, maxillary left central to second molar, mandibular right central to second molar and mandibular left central to second molar with porcelain fused to metal restorations. The final impression was made following gingival retraction using addition silicone of putty & light consistency by double phase technique.

Maxillary left first premolar was replaced using an implant placed in a two stage procedure

After fabrication, the metal try-in and a bisque trial was done subsequently. At the bisque trial stage, the anterior crowns were adjusted to achieve the desired esthetics and the anterior guidance. The crowns were then glazed and cemented.



### DISCUSSION:

Every patient has a unique treatment requirement. In senile patients with occlusal wear may require extensive restorative treatment to regain appropriate function, esthetics, comfort and maintain the health of the temporomandibular joint<sup>[3,4]</sup>. The decision whether to increase the vertical dimension or not is crucial and requires careful monitoring at intermediate stage. The temptation to jump to increase the vertical directly using the final restorations should be avoided. The detrimental effects of bite-raising are usually insidious. Increase in the vertical dimension of occlusion is usually done for following reasons:

- To relieve temporo-mandibular joint syndrome
- To restore lost vertical dimension.
- To get rid of facial wrinkles.

None of the reasons are valid and it is almost always contraindicated.

Landa<sup>[5]</sup> felt that great caution should be exercised before any "bite raising" procedure is undertaken as it directly affects the interocclusal rest space, the temporomandibular joint and the periodontium of the remaining teeth.

According to Sicher<sup>[3]</sup> gradual tooth wear is compensated by continuous eruption of teeth. Clinical evidences indicate that even severely worn occlusion do not lose vertical dimension. Hence proper evaluation and right diagnosis for need of increase of vertical dimension is mandatory.

#### **CONCLUSION:-**

To conclude let us realize that the increasing number of today's population comprises of the elderly, many of who require complex medical and dental care. With the increasing awareness with regards to dentistry, the treatment demands of these patients has changed from just being able to eat properly to the need to look good our profession should be prepared to meet this challenge.

The aim of full mouth rehabilitation is to transfer seemingly compromised dental scheme into a structurally comprehensive rehabilitation and to satisfy all these requirement of the patient's masticatory apparatus, the principles of oral rehabilitation must be properly followed.



**PRE-TREATMENT**



**POST-TREATMENT**

#### **REFERENCES:**

1. Dawson, D.E. Evaluation, diagnosis and treatment of occlusal problems. St. Louis; C.v. Mosby Co, 1974.
2. Kenneth A. Turner, Donald M. Missirlian; Restoration of the extremely worn dentition. JPD 1984; vol 52:467-474.
3. Sicher H. Temporomandibular joint articulation. JADA 1948, vol 36:131
4. River-Morales et al. Relationship of the vertical dimension of occlusion to the health of masticatory system. JPD 1991; vol 65:547-53
5. Joseph S Landa. The freeway space and its significance in the rehabilitation of masticatory apparatus. JPD 1952; vol 2:756-779