

# Full Mouth Rehabilitation of Worn Dentition: A Case Report

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**Abstract:** *Generalized attrition and collapsed vertical dimension can affect the aesthetics and functions adversely. It demands rehabilitation which is physiologically and functionally harmonious to the stomatognathic system. This case report describes treatment protocol of 45 year old lady who came with pain in temporomandibular joint, attrited dentition, partial edentulism, collapsed bite and lost anterior guidance. The case was treated by restoring vertical dimension followed by prosthetic rehabilitation through a multidisciplinary approach which improved the quality of life of the patient.*

**Keywords:** attrited dentition, vertical dimension, full mouth rehabilitation

## 1. Introduction

Rehabilitation of patients with collapsed bite and generalized attrition is becoming a vigorous challenge to the restorative dentist. Appropriate case selection and comprehensive treatment planning are critical for long time prognosis. Achieving success in full mouth rehabilitation requires a multidisciplinary approach. The ultimate goal of full mouth rehabilitation is to provide optimum oral health<sup>1</sup>. Full mouth rehabilitation seeks to convert all unfavourable forces on teeth which invariably leads to periodontal breakdown, to favorable forces which permit normal function and therefore induce healthy condition<sup>2</sup>. Thus it entails the performance of all the procedures necessary to produce a healthy, aesthetic, well functioning, self maintaining masticatory function. This clinical report describes the treatment protocol followed by rehabilitation of worn dentition of a 45 year old female patient who reported to the department with chief complain of pain in right TMJ during eating. Rehabilitation of mutilated dentition attempted successfully with fixed and removable prosthesis after increasing vertical dimension.

## 2. Case Presentation

A 45 year old female patient reported to the department of prosthodontics with chief complain of pain in right temporomandibular joint region since 6 - 7 months while biting on hard food. General examination revealed no significant systemic history. Temporomandibular joint had no clicking sound and showed no deviation from normal movement. Intraoral examination revealed missing 25 26 35 36 44 and 45 with generalised attrition and presence of anterior deep bite (Fig: 1). This was a case of attrition with Turner's category 1 of occlusal wear<sup>3</sup>, loss of incisal guidance and reduced vertical dimension. Treatment plan was formulated with multidisciplinary approach in various phases after raising vertical dimension with occlusal splint. The lost vertical dimension was determined following three methods - Niswonger's method, Silverman's closest speaking method and facial measurement method and found it to be 4mm.

Preliminary impressions were made for maxillary and mandibular arch with irreversible hydrocolloid (Algioplast, Heraeus Kulzer, south bend, India) and casts were fabricated using type III dental stone (Lab stone, Kalabhai, Mumbai, India). Face bow transfer was done (Fig: 3) and interocclusal record were made to mount the casts in centric relation (Fig: 2) on semi adjustable articulator (Hanau Wide view. waterpik, FortCollins, USA). Patient was given occlusal splint which was fabricated using self cure acrylic resin (DPI, RR cold cure, India) with increased vdo of 3 mm at the centric relation position (Fig: 4). The patient was asked to wear the splint for maximum possible time in a day except while eating and in the night for a period of 6 weeks and asked to report after 6 weeks. Meanwhile endodontic treatment were performed where required after through oral prophylaxis. Once patient was comfortable with restored vertical dimension with the help of occlusal splint diagnostic mock up was done in that increased height (Fig: 5). Tooth preparation was done quadrant wise with minimal occlusal reduction for metal and pfm crown (Fig: 6). Impression of the prepared teeth were made with polyvinyl siloxane (Reprosil, Densply, USA). Definite maxillary and mandibular casts were formed, mounted on an articulator with trimmed dies of the prepared teeth. Maxillomandibular relationship record was made with silicon putty at raised vertical dimension of occlusion. Provisional restoration was given (Temporo; GCcorp, TokyoJapan) for six weeks (Fig: 8) and adjusted to achieve anterior guidance in harmony with posterior guidance. Then occlusal plane was established. Provisional restoration was given in a sequential manner i, e: restorations of lower anterior teeth in harmony with anterior guidance followed by the restoration of the posterior teeth. Bisque trial was done for final restoration which enabled final occlusal refinement. The final prosthesis were cemented with GIC (GCfuji, GC Corporators, Tokyo, Japan) in group function occlusion. PFM crowns were fabricated in lower anterior region and bridge in relation to 2425 26 27. Rests were metal crowns. A cast partial denture was fabricated for the mandibular edentulous region. Rest seats were prepared in the final restoration of 34 37 46 (Fig: 13 & 14).

The vertical dimension was carefully monitored during the period of provisionalisation and throughout the completion of restoration. Patient was followed up for 1 year. She had no symptoms of pain during chewing and was satisfied with aesthetics (Fig 15 &16).

### 3. Discussion

Reconstruction of severe worn dentition has been a challenge to dentists skill and capabilities. Restorative dentist should carefully plan and execute it accordingly. Optimum health should be prime objective of the rehabilitation procedure. There are so many philosophies to follow for an occlusal rehabilitation. Hobo's philosophy and PankeyMann's philosophy are followed widely among them. Treatment plan for this case also inspired by Pankey Mann's philosophy. In this case subject had severe attrition with collapsed vertical height and difficulty in chewing. Lost vertical height was regained with occlusal splint and patient was well adapted to the increased vertical height. Rehabilitation was carried out in this increased vertical height which was harmonious with the stomatognathic system of the patient. Patient got good functional occlusion with no further problems during two years follow up.

### 4. Conclusion

Occlusal rehabilitation can provide successful treatment outcome with the dentist choice of treatment based on his

knowledge of various philosophies and clinical skills. A combination of precise diagnosis and treatment planning help to achieve the desired results of harmonious occlusion, aesthetics and function through multidisciplinary approach. This case not only provided relief to the complaining patient but also psychological gratification.

### References

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**Figure 1:** Preoperative intraoral view



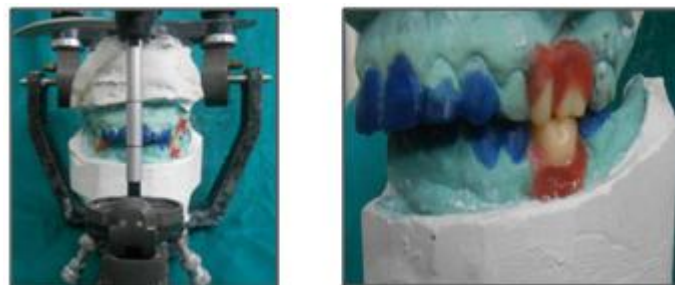
Figure 2: Recording of orientation jaw relation with face bow



3 (a) 3 (b)  
Figure 3: Centric and protrusive record



Figure 4: Bite raised with occlusal splint



5 (a) 5 (b)  
Figure 5: Wax mock up done in increased vertical height



6 (a) 6 (b)  
Figure 6: Tooth preparation done in relation to 16 17 24 27 31 32 33 34 41 42 43





Figure 7: Provisional restoration

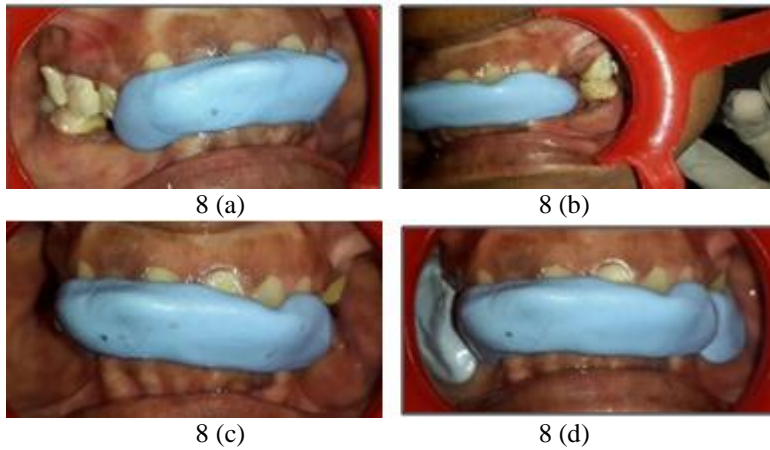


Figure 8: Record taken for mounting the casts with increased vertical dimension

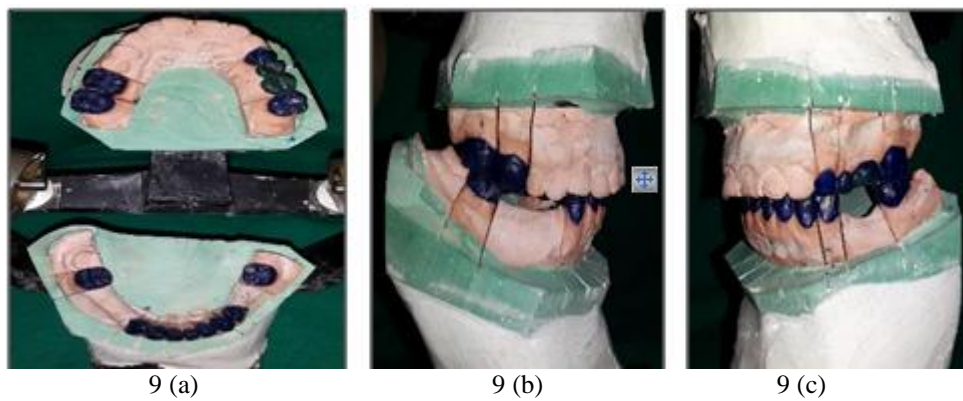


Figure 9: Wax pattern fabrication

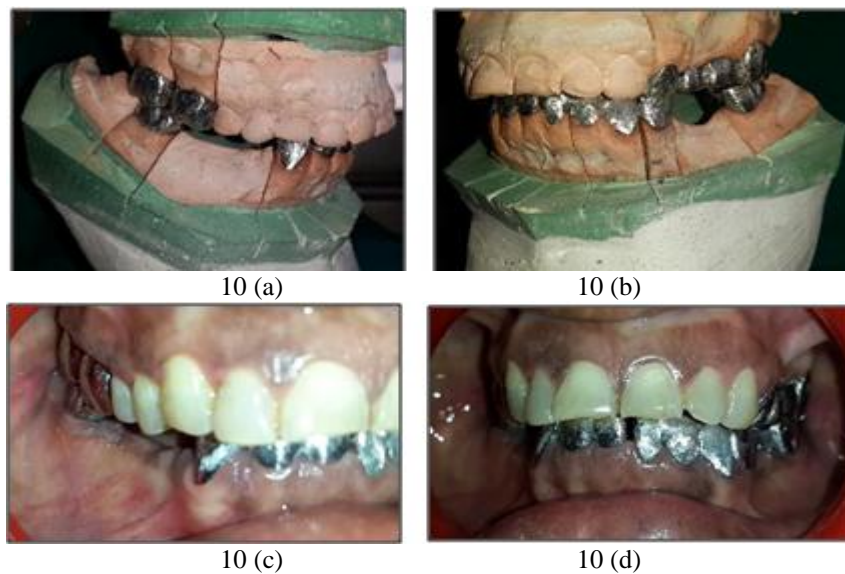


Figure 10: Metal try in



11 (a)



11 (b)



11 (c)



11 (d)

**Figure 11: Final fixed restoration**



**Figure 12: Wax pattern fabrication for lower cast partial denture**



13 (a)



13 (b)



13 (c)



13 (d)

**Figure 13: Try in of cast partial denture**



14 (a)



14 (b)



14 (c)



14 (d)

**Figure 14:** Insertion of cast partial denture in lower arch



15 (a)



15 (b)

**Figure 15:** Pre and post operative intraoral view



16 (a)



16 (b)

**Figure 16:** Pre and post operative view of patient