

Prosthetic Rehabilitation of Severely Attrited Dentition with Removable Overlay Denture – A Case Report

Dr. Dipankar Pal

MDS, Associate Professor, Department of Prosthodontics, North Bengal Dental College & Hospital, Sushrutanagar 734012, Darjeeling

Abstract: *The purpose of prosthodontic treatment should be aimed at perpetual preservation of that what remains and not the meticulous replacement of that which has been lost. (Muller de Van 1952). Often, there are some atypical situations where we are unable to solve the existing clinical milieu by a conventional prosthesis due to certain hindrances. Overlay denture is an unconventional but predictive method of restoring such situations. An overlay denture comprises of a complete or partial denture that is supported by soft tissues along with natural teeth that have been altered to permit the denture to fit over them. The altered teeth should be modified, non carious and the patient should have a fairly good oral hygiene. This clinical report highlights the prosthetic rehabilitation of a patient with a removable overlay denture.*

Keywords: Preservation, Rehabilitation, Attrition, Unconventional, Overlay denture

1. Introduction

An over denture is more advantageous as compared to conventional complete or a removable partial denture. The roots of the teeth offer best available support for occlusal forces. It increases the patient's manipulative skill in handling the denture as periodontal membrane is preserved which helps in retaining the proprioceptive impulse of myofascial complex. Support, stability, retention are significantly improved. There is better patient acceptance, functionally as well as physiologically and as remaining teeth are preserved and no extraction is required. The cost affectivity is also less than fixed partial denture or implant supported prosthesis. This clinical situation describes the fabrication of an overlay denture to restore lost facial aesthetics in a severely worn out dentition.

2. Case Report

A 51 year old male patient reported to the department with missing lower front teeth, worn out posterior teeth, inefficiency of chewing and tongue and cheek biting, (Fig 1, 2).

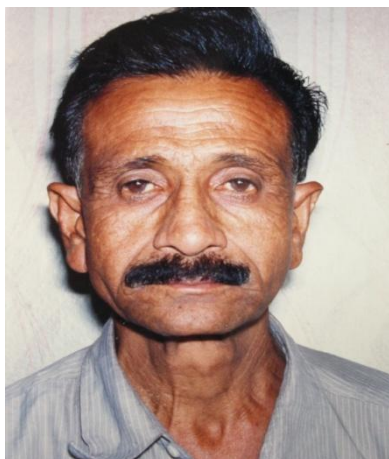


Figure 1: Pre-Op Frontal View of Patient



Figure 2: Intraoral view of the Dental Arches

On clinical examination it was found that there was missing lower anterior teeth, generalised attrition, traumatic ulceration in cheek and tongue, reduced vertical dimension of occlusion with decreased lower facial height, (Fig 3,4,5). There was positive results in pulp vitality tests in the remaining natural teeth. The patient refused to undergo full mouth rehabilitations with fixed prosthesis due to economic stringencies. Therefore it was decided to fabricate removable overlay prosthesis which would best meet his aesthetic and functional needs.

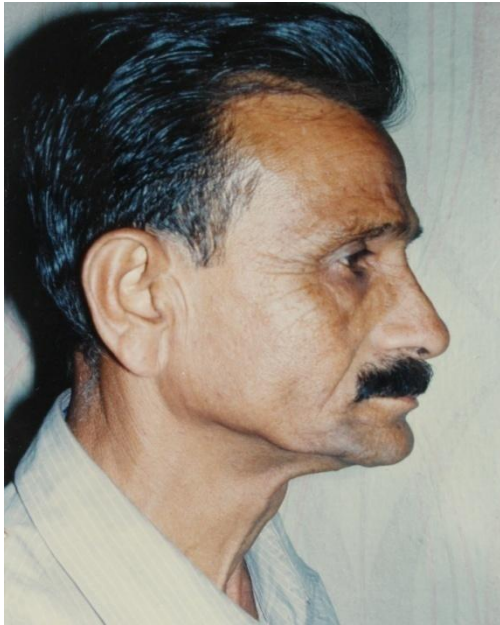


Figure 3: Pre-Op Profile View of the Patient with reduced VDO

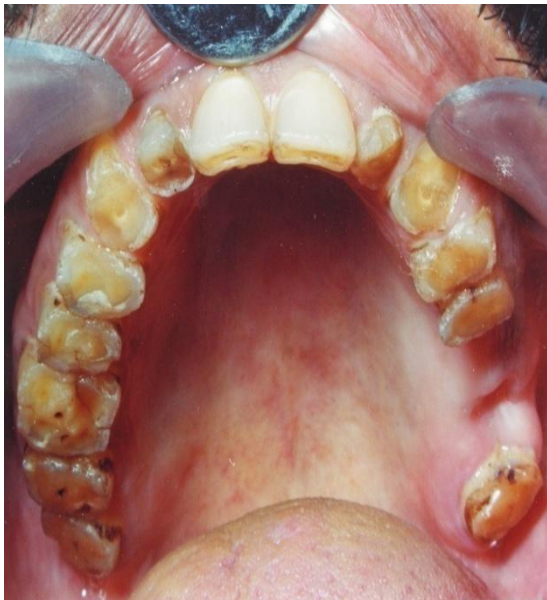


Figure 4: Intraoral view of the Upper dental arch



Figure 5: Intra-oral view of teeth in occlusion

3. Clinical Procedure

Investigations

Routine radiographic evaluation was done followed by full arch primary alginate impressions and fabrication of

diagnostic casts. Surveying and evaluation of the casts was performed.

Mouth Preparation

Thorough oral prophylaxis was performed. Sharp cuspal edges and overhanging enamel margins were removed by enameloplasty. All existing undercuts were removed and the supporting teeth were smoothed following standard protocols.

Treatment

Secondary impressions were made in rubber-base impression material and final working casts were prepared with Type III gypsum product.

The lost vertical dimension of occlusion was assessed and centric relation was recorded at an established and increased vertical dimension.

Selection of teeth was done followed by teeth setting and a try-in was checked in the patient's mouth.

The dentures were processed, finished and polished following routine procedures. (Fig. 6).

The prosthesis was inserted in the mouth with the teeth in occlusion to correlate centric relation to centric occlusion. (Fig. 7)

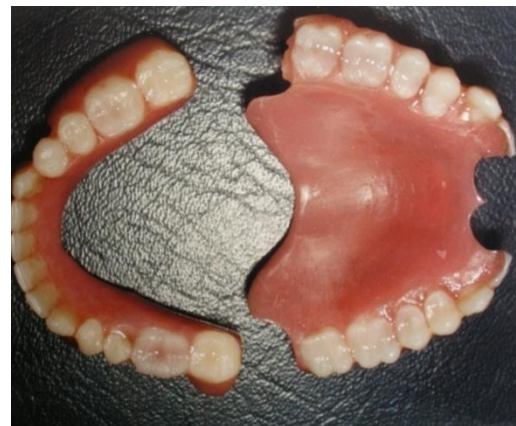


Figure 6: Processed Overlay Dentures



Figure 7: Prosthesis inserted with teeth in Occlusion

Post-insertion Advice:

Regular brushing of the existing natural teeth, denture hygiene maintenance, fluoride application and use of

chlorhexidine mouth rinse were the instructions given to the patient.

4. Discussion

Decreased vertical height due to severe attrition of the existing natural dentition, compromised aesthetics and chewing inefficiency was the chief complain of this patient. . Tentative jaw relation was re-established and recorded at desired vertical height, which was within 3mm of the pre-existing vertical dimension of occlusion, keeping in mind the prevention of incidence of TMJ dysfunction. Restoration of lost vertical height was clearly distinguished. (Fig. 8, 9). Aesthetic restoration of smile was distinctly noticeable, (Fig. 10), along with better chewing efficiency. The retained proprioceptive response, coupled with better neuro-muscular co ordination resulted in greater patient acceptance in this particular case.

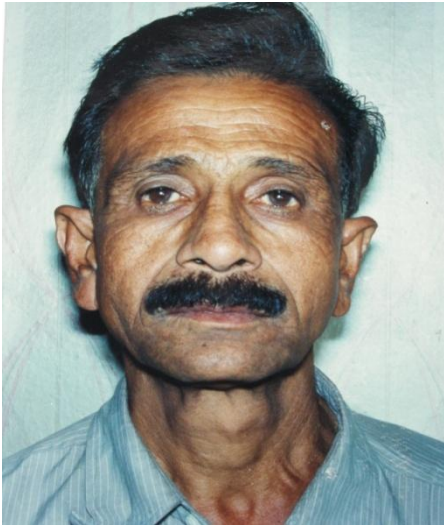


Figure 8: Post Op. Frontal View of the patient

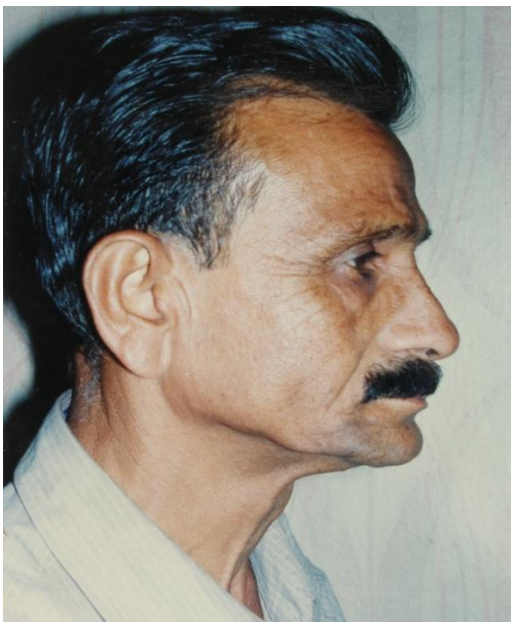


Figure 9: Post Op. Profile view with increased VDO

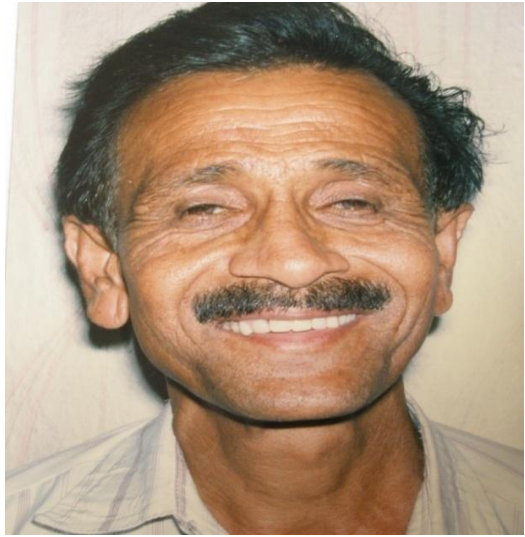


Figure 10: Patient in smiles after receiving the prosthesis

5. Conclusion

Rehabilitation of this case by an unconventional method was a challenging task. The overlay dentures here played a dual role of a super imposed prosthesis as well as a modified bite raising appliance, with economic feasibility keeping more latitude in design concept like endodontic treatment with fixed reconstructions later on. A conventional removable partial denture was not indicated here due to severe attrition and loss of vertical height. Complete denture prosthesis following total extraction would lead to more bone resorption. The better retention and stability achieved with preservation of natural teeth led to broader distribution of functional and para-functional forces with fewer adjustments.

Manufacturer's Details

Tropicalgin, Zhermack, Italy. Reprosil, Dentsply, USA, Type III Dental Stone, Kalabhai, Karson , DPI Heat Cure Acrylic Resin Material, Mumbai, Maharashtra

References

- [1] A H Fenton, Removable Partial Prosthesis for the Elderly, Journal of Prosthetic Dentistry, 1994 – thejpd.org
- [2] Brewer, Morrow R M, Over Dentures. 2nd edn. St. Louis: Mosby; 2nd edn. 1980
- [3] C.Bataglion, T H Hotta, W. Matsumoto, Reestablishment of Occlusion through overlay removable partial dentures : a case report , Brazilian Dental journal, 2012- SciELO Brasil
- [4] J Fonseca, P Nicolau, T Daher, Maxillary overlay removable partial dentures for the restoration of worn teeth, Compend Contin Educ Dent 2011 – cdeworld.com
- [5] JB Farmer, ME Conelly, Treatment of open occlusions with onlay and overlay removable partial dentures, Journal of Prosthetic Dent, 1984- thejpd.org
- [6] MR Ganddini, M Al-Mardini, GN Graser, Maxillary and mandibular overlay removable partial dentures for the restoration of worn teeth, The journal of Prosthetic Dent, 2004, Elsevier

- [7] MB Patel, S Bencharit, A treatment protocol for restoring occlusal vertical dimension using an overlay removable partial denture as an alternative to extensive fixed restorations- a case report, The open dentistry journal, 2009 ncbi.nlm.nih.gov
- [8] R Del Castillo, F LaMar Jr, C.Ercoli, Maxillary and mandibular overlay removable partial dentures for the treatment of open-occlusal relationship: a clinical report, The journal of Prosthetic Dent, 2002, Elsevier
- [9] S.Ghodsi, S. Rasaeipour, M Vojdani, Oral rehabilitation of a patient with amelogenesis imperfect using removable overlay denture: a clinical report- J Contemp Dent Pract, 2012, researchgate.net
- [10] TR Jackson, Removable partial overdentures with natural root structures and osseo integrated fixtures, Dental clinics of North America, 1990- europepmc.org