OVERLAY DENTURE – A CASE REPORT

Nivedita Pachore, J. R. Patel, Vikas Bhakhar

Dept of Prosthodontics, Crown and Bridge, K M Shah Dental College and Hospital, Piparia, Vadodara - 391760 (GJ), India. Corresponding author: Dr. Nivedita Pachore, Oral and maxillofacial surgery, K.M. Shah Dental College, Email: nivi_201@yahoo.com, +91-7567549169

INTRODUCTION:
Tooth wear is a clinical problem that is becoming increasingly important in aging populations. Situations where tooth wear exceeds compensatory mechanism, loss of occlusal vertical dimension will occur. Collapse of anterior lower facial height needs an increase in vertical dimension to restore subject's original occlusal vertical dimension before tooth surface loss takes place. Overlay denture is designed to alter the shape and height of occlusal surfaces of teeth over which it fits. Sometimes it may be given as part of a conventional partial denture. In this case report an upper conventional denture with metal overlays was fabricated to correct the occlusal plane of the attrided teeth. These overlays were incorporated in the removable partial denture.

KEY WORDS: Attrition, overlay, removable partial denture

ABSTRACT:
Tooth wear is a clinical problem that is becoming increasingly important in aging populations. Situations where tooth wear exceeds compensatory mechanism, loss of occlusal vertical dimension will occur. Collapse of anterior lower facial height needs an increase in vertical dimension to restore subject's original occlusal vertical dimension before tooth surface loss takes place.1 Overlay dentures: A dental prosthesis that covers and is partially supported by natural teeth, natural tooth roots and or dental implants.2 Overlay denture is designed to alter the shape and height of occlusal surfaces of teeth over which it fits. It may form part of a conventional partial denture or be fitted in a mouth with no teeth missing. In this case report an upper conventional denture with metal overlays was fabricated to correct the occlusal plane of the attrided teeth. These overlays were incorporated in the removable partial denture.

CASE REPORT:
Patient aged 64 years, farmer by occupation, residing in Padra, Vadodara, reported to the Department of Prosthodontics, K. M. Shah Dental College and Hospital, Sumandeep Vidyapeeth with the chief complaint of loose maxillary complete denture. He gave history of being edentulous since 2 years and loss of teeth was due to periodontal reasons. He is being wearing his previous denture since 2 years which has become loose. On examination, he has a completely edentulous upper arch. Teeth present were 44, 45, 46, 47, 48. Teeth 47, 48 had recession, 44, 45, 46 had GIC fillings and 46, 47, 48 were attrited. Treatment option given to the patient was implant supported complete denture or a conventional denture in the upper and cast partial denture or an overlay partial denture in the lower. The patient opted for a conventional complete denture and overlay partial denture. So we planned to give an upper single complete denture with overlay in the lower partial denture. Primary impressions were made with irreversible hydrocolloid impression material (Alginex) using perforated metal stock tray, primary cast was poured in dental plaster. The final impression was made using custom tray made of auto-polymerizing resin (Asian acrylates), border moulding was done with low fusing compound (DPI) and the wash impression made with zinc oxide eugenol (DPI). Final cast was poured in dental stone and the denture base was constructed using auto-polymerizing resin (DPI) over which wax rim (DPI) was made and jaw relation was recorded. The record was transferred onto the semi-adjustable articulator. Another cast was poured in die stone for fabrication of the metal overlays. Wax pattern was fabricated [Fig.1 (a) (b)] and casted into metal [Fig.2]. Trial was done in the patient's mouth. Selection of artificial teeth was done according to SPA factors (Acryrock), arrangement was done and wax trial denture was approved by patient and his relative [Fig.3]. The metal overlay was incorporated in the partial denture during acrylicizing. Finishing polishing of the denture was done [Fig.4], during denture delivery [Fig.5] selective grinding was done to remove pre-mature contacts. Patient was given post insertion instructions for maintenance of the denture. Patient was recalled after 24 hours and then after 1 week for follow up. After 1 year of follow-up, patient was satisfied with the aesthetics, chewing efficiency and speech of the prosthesis.
DISCUSSION:
Tooth wear is common problem due to physiologic or pathologic causes. It can be in the form of attrition, erosion or abrasion. The reconstruction of a severely worn dentition is a very complex and difficult problem, representing a real challenge to the dentist. The best treatment for any type of wear depends on its early recognition.\(^3\)

Loss of vertical dimension of occlusion (VDO) caused by physiologic tooth wear is usually compensated by continuous tooth eruption and alveolar bone growth. In cases where tooth wear exceeds compensatory mechanisms, loss of VDO occurs. There are several methods to determine the VDO, such as phonetics, interocclusal distance, swallowing and patient preferences. In situations where loss of VDO has occurred, the cast overlay removable partial denture (CORPD) may be a treatment option. This treatment option has been suggested to be efficient and cost effective with the final outcome pleasing to the patient.\(^1\)
This clinical report demonstrated that the use of cast overlay removable partial denture (CORPD) can be a viable, relatively inexpensive, and non-invasive choice of treatment for a patient with a severely worn dentition who expresses concerns over treatment longevity, invasiveness, cost and long-term maintenance.

It is commonly believed that changes to the OVD should be conservative and that a trial period with an interim prosthesis is advantageous. Several techniques have been advocated for this purpose, including the fabrication of transitional removable partial dentures at the desired OVD, use of an acrylic splint and use of provisional restorations. Due to the cost and lengthy appointments, it is preferable to use a prosthesis that does not permanently change the dentition during the assessment period.

Overlay removable partial dentures (ORPDs), a subset of overdentures are often referred to as a removable partial denture (RPD) that has part of their components covering the occlusal surface of the abutment teeth to restore the worn out teeth into a functional occlusion. Unlike conventional overdentures in which only a few millimetres of coronal tooth structure of the abutment teeth are left supra gingivally, overlay removable partial dentures (ORPDs) have at least one-third or half of tooth structure remaining. This remaining tooth structure is often visually exposed contributing to aesthetic challenge compared to the conventional overdenture where the abutment teeth are completely covered.

ORPDs are most often used as interim prostheses preceding a fixed full mouth restorations or prior to a treatment combination of permanent fixed and removable prostheses. In addition to interim use of ORPDs, they can also be used as permanent prostheses. So in this case a permanent prosthesis was given to the patient.

CONCLUSION:
This case report shows the use of permanent overlay removable partial denture which is a viable, relatively inexpensive and non-invasive choice of treatment for a patient with worn dentition. In this type of prosthesis contingency management is also possible.

REFERENCES: