CASE REPORT

Rehabilitation for partially edentulous patient with anteriorly worn dentition

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Abstract

One of the major conditions faced for full mouth rehabilitation is the severely worn dentition. In the present era with increased life expectancy, improved dental care, increased retention of teeth and increased awareness about oral health number of patients with generalized worn dentition have increased. This case report presents management of a case of excessively worn anterior teeth as a result of missing mandibular posterior teeth leading to loss of vertical dimension of occlusion.

Key Words: Wear; Attrition; Vertical Dimension of Occlusion

Introduction

The wear of dental hard tissue is a natural and progressive phenomenon occurs in oral cavity which leads to the loss of the original anatomical form. Excessive wear results in unacceptable damage to the occluding surfaces and alteration of the functional path of masticatory movement. (1) Severely worn dentition is one of the prime indications for full mouth rehabilitation. (2, 3) This case report presents management of a case of excessively worn anterior teeth as a result of missing mandibular posterior teeth leading to loss of vertical dimension of occlusion.

Case Report

A 51 year old male reported to the Department of Prosthodontics Darshan Dental College, Udaipur with the complaint of poor esthetics and inability to eat. Medical history revealed no significant finding. Intraoral examination revealed that patient presented with partially edentulous state; maxillary Kennedy class III mod 1 (16, 25 missing) and mandibular class I (all molars and premolars missing). Maxillary premolars were abraded severely from buccal sides and had supraerupted below the occlusal plane. The anterior teeth (except 13) had sharp enamel edges, dentinal craters and severe attritional wear due to loss of posterior support (Fig-1). This resulted in loss of vertical dimension of occlusion (VDO). On clinical evaluation interocclusal space was found to increase to 5-6mm (normal value of 2-4mm). Patient’s oral hygiene was good. On extra oral examination wrinkles and drooping commissures around the mouth due to decreased VDO were seen. Patient had no history of temporomandibular disorders or muscle soreness. Radiographic examination revealed missing teeth, improper root canal treatment with 11, 31, 41 and attrition of anterior teeth (Fig-1b). The treatment plan for this patient included three stages.

First stage: Diagnostic impressions were made with irreversible hydrocolloid. Mandibular custom tray was fabricated with auto polymerizing acrylic resin and final impression was made by pick up impression technique. Orientation jaw relation was recorded with face bow. Mandibular occlusion rims were fabricated and centric relation was recorded with an increase of 2mm vertical dimension in premolar areas. Casts were mounted on semi adjustable articulator and arrangement of teeth done. Try in was done to evaluate increased VDO and verify centric relations. Wax-up was done and acrylic Removable partial denture (RPD) was processed with labial extension of buccal flange around anterior teeth. This provided additional support and retention; as direct retainer could not be used due to wear of remaining teeth.

Second stage: Once the tolerance to changes in VDO has been confirmed the maxillary arch is restored. It is one of the principles in full mouth rehabilitation that when one arch is to be restored by fixed prosthodontics and the other by removable; the one which has to be fixed is done first. During this phase mandibular RPD was used to maintain VDO. Prefabricated fiber posts were inserted after canal preparation, core build-up done
and tooth preparation was done to receive crown for 14, 12, 11, 21, 22, 23. Tooth preparation was done for 15, 17, 24 and 26 to receive three unit fixed partial dentures (FPDs). After teeth preparation final impressions were made with elastomers using putty reline technique. Coping try-in was done and definitive prosthesis was fabricated with indirect composites. Final prosthesis was cemented.

Third stage: After complete restoration of maxillary arch, mandibular anterior teeth were reduced till cervical part and rounded off. Root canal openings were filled with composite resin. Fluoride application was done. Primary impression was made. Border molding was done and final impression made with medium body elastomers. Jaw relations were performed maintaining the restored VDO. Try-in and processing of over denture was done with high impact acrylic resin. Over denture was inserted and occlusal adjustments done (Fig 2). Patient was instructed regarding use, maintenance of prosthesis and recall appointments.

Figure 2. Post-operative view

Discussion

Management of worn dentition using fixed or removable prostheses is complex. (4, 5) Assessment of the vertical dimension is important for the management and careful comprehensive treatment plan. (6) Vertical dimension is not lost in all cases with generalized wear. (7) In most instances, any reduction in the heights of natural teeth is compensated for by the stimulated growth of alveolar bone and tissue plus the continual eruption of the teeth. (8) In the present case there was excessive wear of anterior teeth following loss of posterior teeth. The VDO was evaluated to be decreased and it was increased in the patient by giving a trial RPD for 6-8 weeks. This period is required to adapt the patient to restored vertical dimension and check his tolerance.

The maxillary arch in the patient was restorable with post-core, crown and FPD. Mandibular arch was planned to be restored with an over denture without copings preserving mandibular anterior teeth. Over denture with copings could not be given due to lack of sufficient space. The decision to preserve mandibular anterior teeth was to maintain periodontal and alveolar bone integrity. The limitation in this case was that the maxillary occlusal plane could not be corrected much with fixed prosthesis as it required osseous recontouring in premolars. Patient was not willing for any surgical treatment. So the occlusion was developed from first molar to first molar.

Conclusion

Full mouth rehabilitation involves restoring the teeth, jaw muscles and self-esteem back to a natural looking condition. (5) This case report describes management of severe anterior attrition resulting due to loss of posterior teeth in a patient by mandibular over denture and maxillary fixed prosthesis.

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References


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