

Oral rehabilitation of patient with access-post retained overdenture denture.

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Abstract: Loss of teeth at any age, either due to periodontal or endodontic problems may cause imbalance in stomatognathic system leading to occlusal disharmony, impaired function and esthetic disfigurement. Therefore, modern dentistry provides many options to improvise the overall prognosis through preventive prosthodontics. It highlights the importance of any procedure that can delay or eliminate future prosthodontic problems. Preventive prosthodontics philosophy is an alternative to the conventional removable dentures, to minimize the complete denture problems. Overdenture therapy is essentially a preventive prosthodontic concept attempting to prevent extraction of natural teeth or root and indirectly preventing extensive residual ridge resorption.

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I. Introduction

The prosthodontic treatment is based on the sound principles of preventive prosthodontics. According to M.M De van's dictum, preserving what exists is more important rather than replacing the missing structures in the patient's oral cavity. Most common problems associated with geriatric patient are attributed to loss of teeth resulting in compromised aesthetics as well as function. As prosthodontist, promoting conservation gives dual advantage of getting additional retention for prosthesis as well as avoiding psychological and physiological transition of patient from partially dentate to completely edentulous state.^{1,2}

Overdentures are indicated in patients with poor prognosis for complete denture after extraction of remaining teeth. Choosing overdenture as treatment modality over other treatment options may provide advantages as preservation of alveolar bone, lesser trauma to supporting tissues, proprioception, enhanced stability and retention and maintenance of vertical dimension of occlusion. Overdenture can be easily converted to complete denture over a period of time. However some of the disadvantages of overdenture include caries and periodontal disease of abutment teeth if the meticulous oral hygiene is not maintained by the patient. The overdenture tends to be bulkier and over-contoured if inter-occlusal distance is inadequate. More number of appointments and patient cooperation is required. Nevertheless the patient has the psychological benefit of having his own teeth which outweighs all the disadvantages stated.¹⁻³

This clinical report describes rehabilitation of patients with bar and clip attachment retained maxillary and mandibular overlay denture.

Clinical report:

A 56 years old patient reported to department of prosthodontics with the chief complaint of inability to chew food. Patient revealed no significant medical history. Temporomandibular examination revealed tenderness on palpation in pre-auricular region and was due to overclosure of mouth. Extraoral examination showed diminished facial contour, thin lips with narrow vermilion borders, drooping commissures with over closure and mandibular prognathism. (Figure 1) Patient's phonetics was affected. Intraoral examination revealed only few remaining teeth without any occlusal stop between opposing arches. (Figure 2) Teeth present were: 11, 12, 13, 14, 15, 16, 23, 24, 25, 31, 32, 33, 42, 43. Out of these 16 was grade III mobile and rest were also periodontally compromised. (Figure 3)

Treatment Procedure:

Pre-Prosthetic phase: (Figure 4)

Periodontal status of 16 was compromised so it was extracted. RCT was performed on remaining teeth to preserve all possible teeth for conservation of residual alveolar bone. Access Post was planned on 13, 23, 33, 43 and rest of teeth were covered with metal coping to minimize chances of caries.

Prosthetic phase:(Figure 5)

Metal based denture was planned for both the arches to avoid chances of fracture. Upper CD with Horse Shoe Shaped Major Connector was planned to reduce weight as retention was not the limiting factor in this case and sufficient coverage over ridges and slopes were found ideal for support under occlusal load.

Lower CD with lingual bar in anterior region with ladder shaped minor connector over alveolar ridge inside the acrylic resin was planned for future scope of relining tissue surface if needed.

Nylon caps were incorporated by direct method with self-cure resin after complete fabrication process of the denture and occlusal adjustments for getting orientation of attachments in harmony with tissue compressibility.

Final prosthesis checked for occlusion and esthetics intra-orally. (Figure 6) Oral hygiene instructions were briefed for cleaning both root stumps and dentures. Final treatment outcome was satisfying all basic principles of overdenture (Figure 7) and patient was satisfied with the results. (Figure 8)

II. Discussion

The aim of overdenture is to preserve what is remaining and utilize it in avoiding future destructive changes in oral environment. In this present case the factors incorporated to achieve this goal were: preservation of all possible roots to avoid alveolar ridge resorption, after performing endodontic therapy to avoid infections in future, reduction of these root stumps to gingival level to avoid destructive eccentric forces on them during oral functions and covering with metal copings to minimize plaque accumulation and caries risk.^{3,4,5}

Retention of overdenture can be very well catered with use of denture attachments, however selection of an attachment is very important and it depends upon the availability of inter-arch space, position of the abutments, clinical experience and cost. Access post system is operator friendly with many advantages hollow tube design which not only facilitate easy escape of excess cement through central vent but also make retrievability easy in case of failure. Owing to these advantages the access posts are very much in use for various treatment modalities.⁶⁻⁸

Other disadvantage of overdenture is fracture under occlusal load. The reasons are: retained roots and post act as fulcrum, moreover denture in this area is hollowed out to accommodate nylon cap and lastly the occlusal forces are high in overdenture compared to conventional dentures. The incorporation of metal design in this case was to avoid such future problems.^{9,10}

III. Conclusion

Conventional complete denture usually presents with compromised retention and stability as it takes majority of support from mucosal tissues over alveolar bone. On the other hand, with increasing advances and success in implantology, implant supported fixed/removable prosthesis are most successful treatment options to rehabilitate missing teeth. However, some factors like systemic health, financial issues and also anatomical limitations may restrict patient from getting implant as a treatment of choice. Tooth retained over denture is a feasible alternative to implants for many patients.

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Figures:

Figure 1: Pre-operative Extra-oral view



Figure 2: Pre-operative Intra-oral view



Figure 3: Pre-operative OPG



Figure 4: Pre-Prosthetic Phase



Figure 5: Prosthetic Phase



Figure 6: Post-operative Intra-oral view



Figure 7: Post-operative OPG

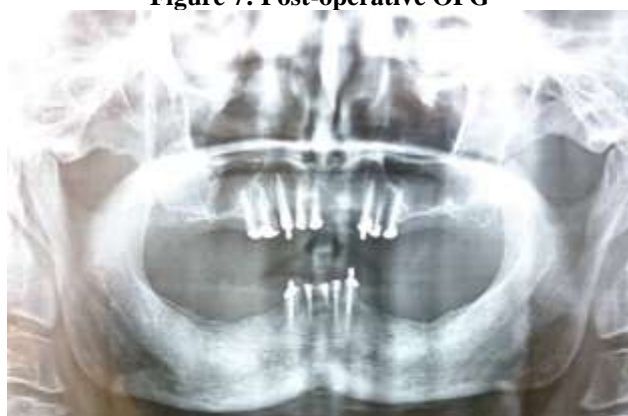


Figure 8: Post-operative Extra-oral view



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