



Preservation Is More Important Than Replacement: A Case Report

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INTRODUCTION

As Devan Said "Perpetual preservation of what remains is more important than the meticulous replacement of what is missing" still holds true. Overdenture is one of the most practical measures used in preventive Prosthodontics. Preventive prosthodontics emphasizes the importance of any procedure that can eliminate or future prosthodontic problems. A complete denture patient goes through a sequel of events like progressive loss of alveolar bone, loss of proprioception, transfer of all occlusal forces to the underlying structures and the most depressing sequel is the loss of confidence in patients. An overdenture delays the improves denture bearing area , process of resorption, and increases efficiency of mastication. ¹

According to GPT 9th edition, overdenture can be defined as any removable dental prosthesis that covers and rests on one or more remaining natural teeth, the roots of natural teeth, and/or dental implants; a dental prosthesis that covers and is partially supported by natural teeth, natural tooth roots, and/or dental implants. They can also be termed as overlay denture, overlay prosthesis and superimposed prosthesis. ²

Overdenture can be indicated in patients with few remaining retainable teeth in an arch. It is also preferred in patients with mal related ridge cases; patients needing single denture; patients with unfavorable tongue positions, muscle attachments, and high palatal vault, which render the retention and stability of the prosthesis difficult. ³⁻⁵. Overdentures are contraindicated in patients with, systemic complications, questionable oral prophylaxis and inadequate inter arch distance.

Advantages these over-dentures include proprioception, preservation of alveolar bone, enhanced retention and stability as well as maintenance of vertical dimension of Occlusion.⁶⁻⁹ It is also useful for patients with congenital defects such as oligodontia, cleft palate, cleidocranial dystosis and Class III occlusion. It can be easily converted to complete denture over a period of time. The most important advantage is that the patient has the psychological benefit which outweighs all the disadvantages stated. Retentive devices like precision, semi precision attachments, rings included into denture teeth result in improved retention as well as support.

Disadvantages include meticulous oral hygiene maintenance to prevent periodontal disease and caries. The over-denture tends to be over contoured and bulkier with encroachment of inter-occlusal distance. This treatment modality is an expensive approach with frequent recall check-ups of the patient than a conventional removable complete denture.

In overdenture treatment, the teeth are included as part of the residual ridge. An important periodontal requisite with over denture abutment is adequate zone of attached gingiva.^{3,6,7} Tooth-supported Overdenture treatment options are boundless and there are innumerable options to choose from for different cases. This article depicts two case reports which emphasize the importance of preventive prosthodontics as Devan Stated.

CASE REPORT

A 65 year old female reported to the department of prosthodontics for the replacement of multiple missing teeth without extraction of existing teeth present. She had a partially edentulous maxillary(11, 12, 21 and 24) and mandibular arch (33 and 44) (Figure 1). The patient gave a history of tooth loss for the past 2 years. She had no history of previous denture. No dental caries, mobility and periapical pathology was noticed in clinical and radiographic examination other than gingival recession in all the existing teeth. The patient wanted a prosthesis with good retention and cost effective.

Treatment plan

A tentative jaw relation of the diagnostic casts was done to assess the interarch space. It was found to be sufficient for an overdenture with short copings. Tooth preparation was done on 11,12,21 and 24 (Figure 2A) followed by two stage putty wash impression (Figure 2B) made

for the fabrication of metal ceramic crown from 12 to 24 with ball attachment like a semi precision attachment (Figure 2C). Then temporary prosthesis was cemented from 12 to 24 and denture base along with occlusal rim was fabricated for the replacement of missing teeth.

An intentional root canal was done irt 33 and 44, they were prepared with tapered round end diamond point with chamfer finish line made subgingivally and sealed with coronal acces with the miracle mix (Figure 3A). Two stage putty wash impression was made for the fabrication of metal short coping (Figure 3B). After the cementation of metal short coping using type 1 GIC , an alignate impression was made to fabricate preliminary cast. On the preliminary cast, custom tray was fabricated for border moulding and secondary impression followed by definitve cast was fabricated (Figure 3C & 3D). The occlusal rims was fabricated on the mandibular definitive cast.

Maxillo mandibular relations recorded and transferred in to semi adjustable articulator with the help of the facebow (Figure 4A). During wax try in the maxillary FPD prosthesis was cemented using temporary cement (Zinc oxide Eugenol). Teeth setting evaluated in the patients mouth for retention, support , stability, phonetics, vertical and centric relation and finally esthetics. Vertical dimension was verified and centric as well as eccentric contacts checked (Figure 4B-4D). Patients approval was taken and the curing of the final denture was done in heat cure acrylic resin.

After the cementation of maxillary FPD using type 1 GIC, then maxillary denture on the ball attachment area was trimmed for attaching the o ring (black color coded) to the prosthesis (temporary partial denture /TPD) using self cure acrylic resin. Then the mandibular tooth supported overdenture was inserted and checked of all the aspects same like waxtry in stage (Figure 5). Post prothetic instructions was given to the patient. Patient recalled after 24 hours for the first review and recalled after one week time for the second review (Figure 6).

DISCUSSION

Saving natural teeth and using them as abutments for attachments is a viable alternative for those patients who cannot have implants due to various reasons such as medical contraindications, cost factors, etc., The use of attachments can redirect occlusal forces away from weak supporting abutments and onto soft-tissue, or redirect occlusal forces toward

stronger abutments and away from soft tissues. They act as shock absorbers and stress redirectors as well as provide superior retention.

The key to success of an overdenture is the selection of strategic roots or teeth for retention. The shortened crown improves the crown-to-root ratio, thereby decreasing the motility of the abutment teeth under an overdenture. 10 In a 4-year-study, Renner et al. showed that 50% of roots, used as overdenture abutments remained immobile. In addition, 25% of roots that were initially mobile became less mobile. Hence, they suggested, that teeth that are generally compromised can be used for overdentures after root canal therapy and decoronation.^{11,12,13}

Semi precision attachment has exceptional feature of being a removable prosthesis with improved aesthetics, less postoperative adjustments and better patient comfort. 14 They are mostly indicated in long edentulous spans, distal extension bases and nonparallel abutments. Criteria to choose one system or the other is based on the principle of forces distribution in order to maintain the health of the remaining teeth and alveolar ridges and improving patient comfort and function. 15 Comprehensive care with focus on the entire mouth, stomatognathic system, and whole body should be considered rather than looking and solving patients immediate complaints.

CONCLUSION

Although prosthodontics has evolved as a specialized field in the replacement of missing teeth and associated structures, the involvement with other aspects of preventive dentistry cannot be ignored. Careful case and abutment selection, patient motivation and periodic recall are the keys to successful prosthetic rehabilitation.

FIGURES:

FIGURE 1: Pre Operative Photographs

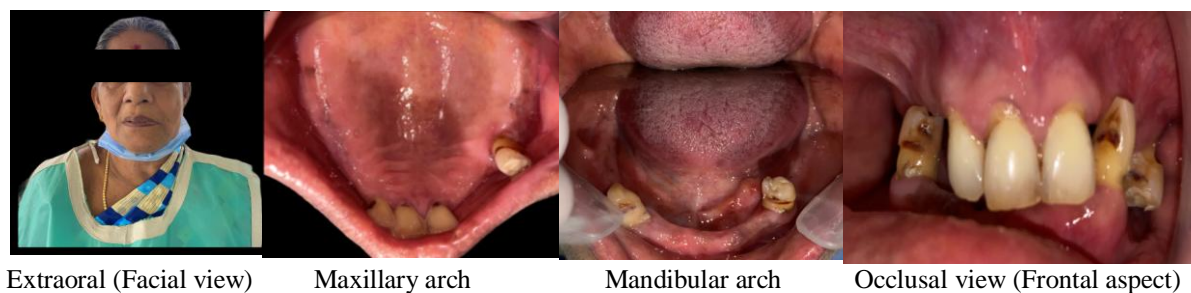
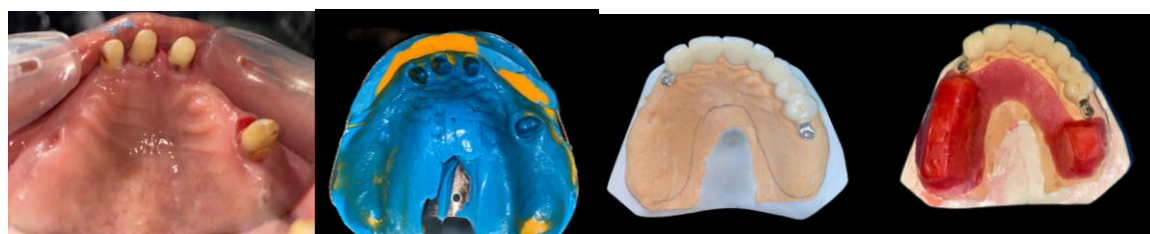


FIGURE 2:



Preparation of 11, 12, 21 and 24 (2A) followed by two stage impression using putty and light body (2B) fabrication of fixed partial denture from 12 to 25 with ball and socket attachment for the TPD (2C) Temporary denture base with occlusal rims (2D)

FIGURE 3:



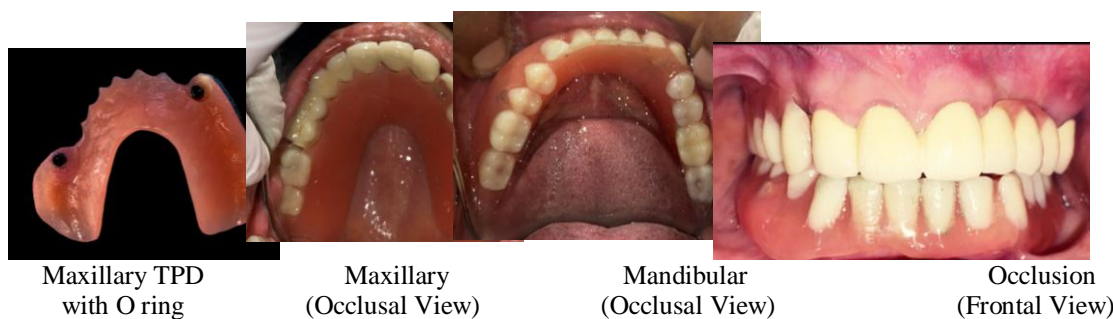
Preparation of 33 and 44 after RC treatment with miracle mix corneal seal(3A) followed by fabrication of short metal coping (3B) fabrication of special tray over the coping(3C) border moulding with definitive secondary impression (3D)

FIGURE 4:



Jaw relation (4A) Waxtry in (Left Lateral - 4B) Waxtry in (Frontal- 4C) Waxtry in (Right Lateral- 4D)

FIGURE 5:



Maxillary TPD with O ring

Maxillary (Occlusal View)

Mandibular (Occlusal View)

Occlusion (Frontal View)

FIGURE 6:



PRE PROSTHETIC

POST PROSTHETIC

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