

Overdenture with Preci-Clix attachment

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ABSTRACT:

Loss of teeth has a harmful effect on the masticatory function, esthetics and self image of an individual. Prosthodontic treatments aim at rehabilitating the individual's function, esthetics and self image. Over denture is such a milestone which has been successful in treating individuals. An over-denture is a complete/removable partial denture that has one or more abutment tooth or an implant to provide support.

An over-denture is a Preventive Prosthodontic concept with a multidisciplinary approach involving periodontic, endodontic and prosthodontic intervention. An over-denture improves retention, stability, maintains proprioception, prevents residual ridge resorption and improves patient satisfaction. This is a case report of a patient with few teeth remaining teeth, successfully treated with Preci-Clix overdenture attachments.

Key words: Overdenture, Preventive prosthodontics, Preci-clix attachments.

INTRODUCTION

An over-denture is defined as a removable partial denture or complete denture that covers and rests on one or more remaining natural teeth, the roots of natural teeth and/or dental implants; a prosthesis that covers and is partially supported by natural teeth, natural tooth roots and/or dental implants.¹ Various terms have been used to describe this treatment modality: overlay denture, telescoped dentures, tooth supported dentures, hybrid prosthesis, crown and sleeve prosthesis, and the superimposing dentures.²

Over-denture therapy fundamentally is a preventive prosthodontic concept since it attempts to conserve the few remaining natural teeth. There are two physiologic tenets related to this therapy: the first concerns the continued preservation of alveolar bone around the retained teeth³ while the second relates to the continuing presence of periodontal sensory mechanisms⁴ that guide and monitor gnatho-dynamic functions. Over-dentures help to partly overcome many of the problems posed by conventional complete dentures like progressive bone loss, poor stability and retention, loss of periodontal proprioception, low masticatory efficiency, etc.⁵

Tooth supported over-denture is a viable and time tested alternative technique for those who do not want/cannot afford implants. This clinical report describes prosthodontic rehabilitation of lower arch using

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tooth supported Preci-Clix (Preci-Clix, DFS Belgium) over denture system.

Case report

A 58 year-old female patient reported to the department of Prosthodontics and Crown & Bridge, Maratha Mandal's NGH Institute of Dental Sciences & Research Centre, Belgaum with chief complaint of difficulty in chewing due to missing teeth and she was also concerned with her appearance. Her medical history was non-contributory. On extra-oral examination, she had a concave profile. On intra-oral examination, she had completely edentulous and favourable maxillary arch and moderately favourable mandibular arch with retained 33 & 43, which were firm and had good soft tissue attachment. A routine clinical and radiographic evaluation was followed. Considering the patient chief complaint, background and condition of the oral cavity overdentures with attachments was planned out for her. Out of the available options Preci-Clix attachments were chosen.

A thorough oral prophylaxis was done, followed by intentional root canal treatment with 33 & 43 (**Figure 1**), Prosthodontic phase included step-by-step fabrication of overdenture as follows.

1. Canine teeth were reduced to the level of adjacent gingival margin followed by smoothing of sharp edges (**Figure 2**). Root-canals were prepared at slow speed with No. 1227 pre-drilling bur. Then No. 1228 cavity bur was used to prepare the canal (to facilitate countersinking) and finally with No. 1229 precision reamer (to calibrate the canal for the diameter of No. 1291 post). (**Figure 3**)
2. Post was sandblasted before cementation. Bonding resin composite (Flourocure 2+, Dentsply Caulk) was coated over the post and root canal surface and Preci-Clix post was seated in the prepared canal. Then at the surface of tooth the composite was cured with light curing unit. After the composite was set, the root surface was polished with the finishing burs. (**Figure 4**)
3. Primary cast was made using irreversible hydrocolloid impression material. Special tray was prepared on primary cast by placing two layer thick wax spacer around the posts. After this, border molding of the tray was done with green stick compound impression material, the

spacer removed and vent holes were made in the tray. Secondary impression was made with monophasic rubber base impression material. No. 1201D post analogue were re-indexed into the recess within the impression and master casts was made. (**Figures 5**)

- 4) Metal housing with retention caps were placed over the posts on the cast. Next, metal housing was blocked out with wax and record base was made. Occlusion rims were prepared and the jaw relation was recorded. Teeth arrangement was completed and try in of the denture was done to check for centric relation, vertical dimension and esthetics. After de-waxing the analogue were blocked out and denture was fabricated in conventional manner. (**Figure 6**)
- 6) Black rubber spacers supplied in the kit were placed over the posts. The female component-retention caps and metal housing were placed over the posts. The denture was placed over female components and rechecked for any interference. The prosthesis was relieved until there was no interference and there was proper occlusion with even tissue contact. It was made sure that the prosthesis had no contact with attachment or abutment. Small amount of self-cure resin was placed in relieved area of the prosthesis and seated in the mouth and was allowed to set. After the resin was set, the denture was removed out and now the intaglio surface of the denture had metal housing with retention caps deep buried within. The surface was then finished and polished. Black rubber spacer removed. The advantage of this system is the female retention caps can be easily changed in metal housing to adjust the retention. The denture was delivered (**Figure 7**) and instructions were given to the patient and recalled after 24 hrs for check-up.

Discussion:

Over-dentures have much better denture stability, improved retention, better patient acceptance, higher chewing performance, lesser post insertion sore spots, grossly reduced alveolar bone loss and shorter adjustment period in subjects provided with over-dentures as compared to those provided with conventional dentures.

The ball and socket type of attachment is seen to be user friendly for the patients. The snap fit of the denture in mouth makes the patient more

comfortable during functional movements. Tooth supported over-denture is a viable and tissue tested alternative technique for those who cannot have implants due to various reasons like medical contraindications, cost factors and also for patients who are not willing for the implants.⁶

Over-dentures are widely used in clinical practice and should be used whenever the clinical conditions suggest it. The psychological advantages resulting from the dental anchorage, which allows the patient to be more confident in social life, is also relevant. Finally, when the dental support is lost, converting over-denture into complete denture is simple and quick, and makes easier the longitudinal clinical maintenance of the denture.⁷

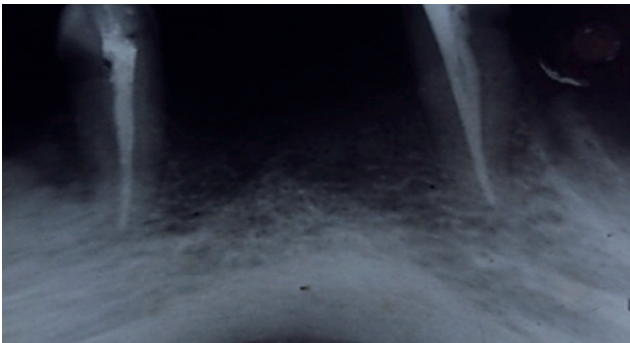


Figure 1: Intentional root canal treatment done with 33 and 43



Figure 2: Canine teeth reduced to the level of adjacent gingival margin



Figure 3: Root canals prepared for positioning of posts.



Figure 4: Cementation of posts into root canals of 33 and 43



Figure 5: Master cast

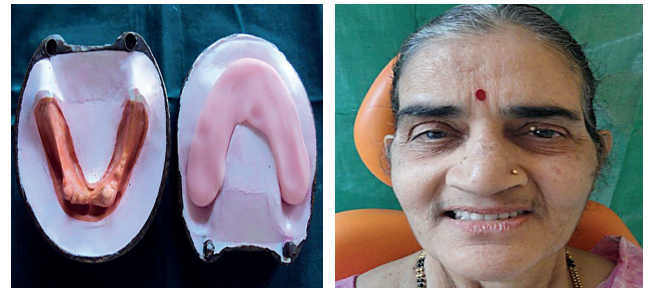


Figure 6: Denture was fabricated in conventional manner.

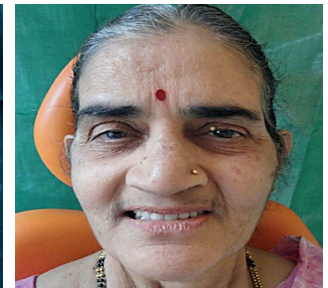


Figure 7: Extra-oral photograph after denture insertion

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