**OVER DENTURE WITH ACCESS POST SYSTEM: A CASE REPORT**

Neha Gupta, Dhawal Goyal, Manoj Agarwal, Priyanka Gupta, Meetu Mathur

**ABSTRACT**

Preservation of alveolar bone is the main aim of conventional tooth-retained overdenture. Preservation of teeth for overdenture can improve retention and stability. In this case report, partial edentulous patient was treated with a tooth supported overdenture using Access Post System. The final restoration was stable, well retained and esthetic, serving as a conservative approach to root preservation.

**Keywords:** Access Post System; Overdenture; Retention.

**Introduction**

Complete edentulous state can substantially affect oral and general health as well as overall quality of life. Patient satisfaction with dentures is influenced by various factors including denture quality, the available denture bearing area, the quality of dentist-patient interaction, previous experience with dentures, patient’s personality and psychologic well-being. Replacing the lost tissues by means of complete dentures is challenging both for the dentist and the patient. Nevertheless, some people do not succeed in acquiring new skills with their dentures and thus suffer psychologically because of impaired function, comfort, self-image and social interaction. Mandibular complete overdenture treatment has been available for decades, this treatment, however, is currently experiencing more popularity than ever before. Dentistry may be experiencing a philosophical shift, in which mandibular implant overdenture treatment may become the new standard of care for the treatment of the edentulous mandible. Practitioners are looking for simplified treatments that can provide cost-effective alternatives to more complex implant-prostodontic procedures. Bone maintenance is the most significant advantage of a tooth borne overdenture because the maintenance of bone volume and vertical height can produce increased prosthetic retention and stability. It also gives patient better function and control because of intact proprioception.

The shortened crown improves the crown-to-root ratio, thereby decreasing the mobility of the abutment teeth under an overdenture. In a 4-year-study, Renner et al showed that 50% of roots, used as overdenture abutments remains 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. 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 providing superior retention. Attachments are often used in overdenture construction by either connecting the attachments to cast abutment copings or connecting into the prepared post space of the abutment teeth. This article reports a conservative approach to root preservation followed by replacement of missing teeth using Access post attachment mandibular overdenture.

**Case report**

A healthy 60 years old man with few remaining natural teeth reported with a chief complaint of difficulty in chewing. Clinical examination revealed completely edentulous maxillary arch and partially edentulous mandibular arch. Periodontal findings were significant with moderate amount of calculus and stains present along with gingival recession but no pocket formation. Teeth present in lower arch were 32, 33, 34, 37 and 42, 43 and 47. (Figure 1, Figure 2) Loss of teeth had occurred due to decay, mobility and lack of oral hygiene practice in earlier life. His home oral hygiene regimen on presentation was poor. As remaining teeth were periodontally compromised, RDP would not restore function and esthetics to optimum. It was concluded that mandibular canines can serve as abutments for an overdenture thus providing required retention and stability. Diagnostic mounting revealed adequate interarch distance for necessary components and esthetic and functional placement of acrylic teeth. Treatment plan was divided into three phases: Phase 1: Extraction of 32, 34, 37 and 42, 47, Phase 2: Endodontic treatment of 33 and 34, Phase 3: Prosthodontic rehabilitation.

After endodontic treatment the mandibular canines were prepared followed by primary impression taken in alginate. Border molding was done, secondary impression was made using medium body addition silicone and master cast was obtained. Face bow transfer was done and casts were mounted on semi adjustable articulator using jaw relation records (Figure 3). Following teeth arrangement try-in was done, vertical dimension verified and centric and eccentric contacts were evaluated. Facial and functional harmony was studied and patient’s approval was obtained. Denture was then waxed and flasked for processing. After curing lab remounting and selective grinding was done. Finally dentures were finished and polished.

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inspected for any sore areas and final corrections were done. The designed prosthesis served as an esthetic and functional solution in the management of this patient (Figure 7 and Figure 8).

Discussion
Preventive prosthodontics emphasizes the importance of any procedure that can delay or eliminate future problems. The basic overdenture concept requires preservation of residual hard and soft tissues. Tallgren concluded that anterior mandible height resorbed four times faster than maxillary ridge with conventional dentures. It was concluded in a 5-year study that retention of mandibular canines for overdentures led to preservation of alveolar bone. The overdenture patients had a chewing efficiency which was one-third higher than that of complete denture wearers. The use of teeth as overdenture abutments is beneficial to patients. The psychological aspect of patients losing teeth should not be underestimated and this has been well documented. Tooth-borne overdenture attachment therapy is a treatment option rarely chosen in today’s aggressive marketing of implant treatment. The success of the overdenture treatment depends upon the proper attachment selection for the particular case. Attachment selection is based on available buccolingual and inter arch space, amount of bone support, opposing dentition, clinical experience, personal preferences, maintenance problems and cost. Access posts are stud attachments that work well with overdentures, as they are the simplest of all. They occupy a small vertical space and the male units on the different roots do not require parallelism. The ball and socket attachment of Access post allows rotation of the denture attachment. Small head of the attachment limits the amount of material that has to be removed from the denture. The nylon cap provides 3-5 pounds of retention. The technical work required is minimal and can be carried out at chairside, thus making it cost effective. Access post overdenture is superior to any other passive overdenture because flange and second tier dissipate functional stresses and prevents “bottoming out” eliminating the high apical stresses under function common to other passive posts.

Lack of retention of complete mandibular dentures is a common complaint among the complete denture patients. With the inception of osseointegrated implants, the concept of overdentures has become more popular, but not all patients are able to afford the treatment costs. A tooth-borne overdenture may be advised whenever a few teeth remain in the arch. The concept of overdentures, though not a complete answer, provides a positive means of delaying the process of resorption of denture foundation. Although it is a feasible alternative, it is not often used to its full potential. The incorporation of attachments in overdentures into everyday dental practice will open up another dimension in dental treatment planning and patient satisfaction.

Conclusion
In conclusion to obtain successful overdenture rehabilitation the dentists must be careful during case selection and abutment preparation and a proper periodic follow-up.

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Authors Affiliations
1. Neha Gupta MDS, Senior Lecturer, Department of Prosthodontics, Government Dental College and Hospital, Jaipur, Rajasthan, 2. Dhawal Goyal MDS, Assistant Professor, Dept. Of Oral & Maxillofacial Surgery, Rajasthan Dental College and Hospital, Jaipur, Rajasthan, 3. Manoj Agarwal MDS, Senior Lecturer, Department of Conservative Dentistry and Endodontics, Government Dental College and Hospital, Jaipur, Rajasthan, 4. Priyanka Gupta BDS, Jaipur, Rajasthan, 5. Meethu Mathur MDS, Senior Lecturer, Department of Conservative Dentistry and Endodontics, Rajasthan Dental College and Hospital, Jaipur, Rajasthan, India.
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Address for Correspondence
Dr. Neha Gupta MDS, Assistant Professor, Department of Prosthodontics, Government Dental College and Hospital, Jaipur, Rajasthan, India.
Email: hineha_05@yahoo.com

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