

Over Denture using Access Post System: A Novel Treatment Approach

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ABSTRACT

Lack of retention and stability of prosthesis coupled with poor masticatory effectiveness is one of the most frequent problem faced by edentulous patients. In the Present case, using a "Access post over denture system" is preferable than using overdentures that are supported by teeth in the past. A conservative strategy for root preservation was used in the fabrication of the access post overdenture, which was both well-retentive and aesthetically pleasing.

Keywords: Overdenture, Complete denture, Ridge resorption, Stud-attachment, Access post system.

INTRODUCTION

Any removable dental prosthesis that covers and rests on one or more remaining natural teeth, natural teeth's roots, and/or dental implants is referred to as an overdenture^[1]. The retention of the remaining tooth structure while maintaining its proprioception, the maintenance of the alveolar bone, and additional support for the dentures other than the mucosa are benefits that an overdenture has over traditional dentures^[2]. It has also gained recognition for its efficiency and adaptability in the improvement and restoration of facial contour^[3]. By utilising different attachment systems, it is possible to improve the retention of an overdenture and the patient acceptance.

CASE REPORT

A 57-year-old male patient was reported to the Prosthodontics Department at Peoples Dental Academy, Bhopal with the chief complaint of missing tooth and inability to chew food. It was observed that the lower arch is partially edentulous while the upper arch is completely edentulous. 33, 35 and 45 teeth were present in the lower arch (Fig. 1).



Fig 1:- Preoperative Photographs

A conventional denture in the maxillary arch and an access post retained over denture with access posts in the 35 and 45 teeth, along with metal coping in 33 was the proposed treatment plan.

TREATMENT PROCEDURE

There were three stages to the treatment process:

Phase 1: Oral prophylaxis

Phase 2: Endodontic therapy

Phase 3: Prosthodontic rehabilitation

Scaling and root planning was done with teeth no. 33,35 and 45, Then intentional root canal treatment was done. To create space for the Access ball post, teeth no. 35 and 45 had their height decreased to a point just 1 mm above the marginal gingiva and tooth no. 33 was prepared for metal coping. Pre-operative IOPA radiographs were taken after positioning the posts and appropriate sizes for the posts were determined. After choosing the proper post size, the post area was created in both teeth using a series of Gates Gidden drills and a color-coded primary reamer (peaso) that was included with the Essential Dental Systems Access post overdenture package and matched the post size exactly (Fig. 2).



Fig 2:-Drills , EDS post System and Rubber cap

After the radicular preparation in mandibular premolar, the post area was irrigated with saline to clear out any debris before being dried with paper points. To check the initial fit, the access posts were positioned in the post spaces of both mandibular premolars. This fit was then confirmed by taking an IOPA radiograph, after that the posts were luted using type-XI Glass Inomer cement (Fig. 3).



Fig 3:- Post luted with type- XI GIC

The fabrication of complete dentures required routine prosthodontic treatments for both the upper and lower arches. Primary impressions, border moulding, final impressions with light body addition silicone material, recording of the jaw relation, try-in and denture processing these all steps were done (Fig 4).



Fig 4: Final impression using silicone light body



Fig 5:- Nylon cover on 35,45 and metal coping on 33

The male portion of the posts was covered with nylon covers and secured with rubber bands and metal coping was luted with type XI GIC (Fig. 5). The mandibular denture's intaglio surface was marked with a disclosing paste, and the area was then eased just enough to allow the denture to passively fit over the nylon caps. In the 35 and 45 regions, a little amount of petroleum jelly was applied to the marginal gingiva.

At chair side procedure these nylon caps were attached to the denture right in the patient's mouth by filling the empty space when self-cure acrylic resin was in a dough stage. To maintain it in place until the acrylic hardens, the patient was told to bite in centric occlusion (Fig. 6).



Fig.6:-Bite in centric occlusion

The excess acrylic was finally taken out, and the denture was polished and finished. Final treatment outcome in Post operative photograph in Figure:7



(a) Patient wearing prosthesis



(b) Maxillary conventional denture



(c) Mandibular overdenture

Fig.7:- Post operative photographs

DISCUSSION

The focus of preventive prosthodontics is on any procedure that can prevent future problems. The preservation of hard and soft tissues in the mouth cavity is the fundamental idea behind an overdenture^[4,5]. Following tooth extraction, the occurrence of residual ridge resorption (RRR) is well-known and reported in the literature^[6]. The most important benefit of a tooth-supported overdenture is bone maintenance since it preserves bone volume and vertical height, which can boost prosthetic retention and stability and give the patient better comfort and mastication control^[7,8]. Overdenture attachments are shown to have a considerable favourable impact on tissue response, stability, and retention^[9,10]. The degree of retention needed, the position of the abutments, the opposing dentition, clinical experience, personal preference, and cost all play a role in the choice of attachment^[11]. A parallel-sided passive post with a thick-walled hollow tube design is part of the access post over denture system. In the event of a failed root canal, this design offers the strength of a strong shank post and easy retrievability to have access to the root's apex. Hydrostatic pressure during cementation can be released because to the hollow tube design. It resembles a stud attachment in that it takes up little vertical space,

doesn't require parallelism when inserted into various roots, and permits rotation of the denture. Standard nylon caps included with this system offer retention of 3-5 pounds and are inexpensively and replaceable as needed^[8].

CONCLUSION

Despite significant advancements in dental implantology, the cautious strategy of root preservation is still appropriate. In over denture therapy, proper case selection and treatment planning are crucial. However, in order to prevent failures brought on by dental caries and periodontal disorders, patient maintenance is also a crucial component of overdenture treatment.

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