

# Access-post: An Answer to Compromised Retention in Fenestrated Denture around Single Standing Molar

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**Abstract** Edentulism is a combination of physiological and pathological process and complete loss of teeth at any age may cause imbalance in stomatognathic system leading to impaired function and esthetic disfigurement. Therefore, modern dentistry is mainly focused on preventive prosthodontics which is an alternative philosophy to the conventional removable dentures and is based on preservation of what is remaining in healthy state. Overdentures and fenestrated dentures are two best examples based on this principle. Fenestrated dentures are most of the times fabricated on the request of the patient because keeping a single or few natural teeth will cause compromised retention and difficulty in setting occlusion, so never a suggestion from the clinician. What if retention factor can be eliminated? This article is presenting a case series of prosthetic rehabilitation of few remaining teeth where periodontally compromised teeth were used for retention by aiding them with access-post and sound molars were retained with fenestration in denture.

**Keywords:** *overdenture, fenestrated dentures, preventive prosthodontics*

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## 1. Introduction

Most common problems associated with geriatric patient are attributed to loss of teeth like compromised aesthetics and function. However, the incorporation of dental implants in modern dental practice has completely taken care of these factors. But the problem exists where patient cannot afford this expensive treatment modality and in such scenario preventive prosthodontics is only promising option. Conservation of few remaining teeth give 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].

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 over-denture 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 [2,3,4].

A fenestrated denture on the other hand is less liked by the clinicians because of lack of air-seal leads to compromised retention in complete denture and also setting denture teeth against natural poses extra forces on residual ridges. However, if these fenestrated dentures are combined with attachment retained over-dentures then retention is not a limiting factor in their selection and a healthy, well aligned tooth can be saved. The extra advantages will be like preservation of facial fullness, more support to the prosthesis under eccentric forces so less damaging forces to underlying tissues and patient's acceptance is better due to preservation of sound tooth [5].

This clinical report describes rehabilitation of two patients with combination of access-post retained overdenture with fenestration.

## 2. Clinical Report

**Case 1:** A 58 years old patient reported to department of prosthodontics with the chief complaint of inability to chew food and unaesthetic smile. Patient revealed no significant medical history. Temporomandibular and

extraoral examination showed only relevant findings to edentulism. (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: 13, 14, 15, 18, 25, 33, 35, 37, 38, 48. Out of these 25,37,38 were grade III mobile, 13, 14, 15, 33, 35, 48 were grade I mobile and 18 was periodontally sound. (Figure 1).

## 2.1. Treatment Procedure

### 2.1.1. Pre-Prosthetic Phase

Teeth 25, 37, 38 were extracted and RCT was performed on remaining teeth to preserve all possible teeth except 18 for conservation of residual alveolar bone. In maxillary arch, access Post was planned on 13, 15 but there was no

tooth for cross arch stabilisation. In mandibular arch, access post was planned for 33, 35, 48.

### 2.1.2. Prosthetic Phase: (Figure 2)

Maxillary arch was having good ridge size and shape so palatless denture was fabricated. Casted metal frame minor connector was incorporated in acrylic based denture to avoid chances of fracture.

Lower complete denture with casted metal minor connector was fabricated. Tissue surface was kept in the acrylic resin for the 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.



Figure 1. Pre-operative Extra-oral & Intra-oral view



Figure 2. Prosthetic phase



Figure 3. Post-operative Intra-oral view



Figure 4. Pre and Post-operative Extra-oral view

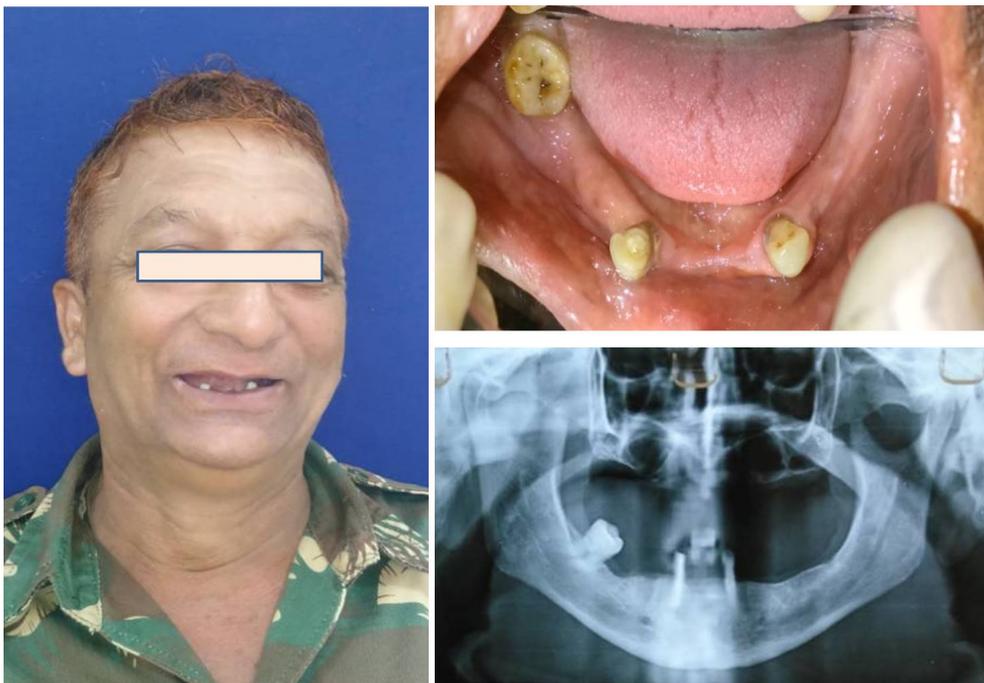


Figure 5. Pre-operative Extra-oral & Intra-oral view

Final prosthesis checked for occlusion and esthetics intra-orally. (Figure 3) Oral hygiene instructions were briefed for cleaning both root stumps and dentures. Final treatment outcome was satisfying all basic principles of overdenture (Figure 4) and patient was satisfied with the results.

**Case 2:** A 62 years old male patient reported with the chief complaint of inability to chew food. Patient revealed no significant medical history. Extraoral examination showed angular cheilitis which is a typical finding in edentulous patients due to overclosure of mouth and retention of saliva at corners of mouth. (Figure 5) Intraoral examination revealed only few remaining teeth (33, 43, 48). Teeth 33, 43 were grade I mobile and 48 was periodontally sound but mesially inclined. (Figure 5).

## 2.2. Treatment Procedure

Maxillary arch: a conventional complete denture was fabricated in fibre-reinforced heat cure acrylic resin.

Mandibular arch: RCT was performed on 33, 43 and access-posts cemented. 48 was given with metal crown with corrected mesial inclination and a mesial rest seat. (Figure 6) Mandibular complete denture with casted metal minor connector with occlusal rest seat over 48 was fabricated. Tissue surface was kept in the acrylic resin for the future scope of relining tissue surface if needed. (Figure 7).

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



Figure 6. Prosthetic phase



Figure 7. Post-operative Intra-oral view & final prosthesis



Figure 8. Post-operative Extra-oral view

### 3. Discussion

The aim of overdenture is to preserve remaining teeth after root canal treatment and reduce it in height so that dentures can get vertical support on them. Biomechanically, this way tooth keep on getting proprioception while chewing which gives patient a sense of satisfaction of having food. In addition, these are helpful in maintenance of alveolar bone around these preserved roots due to continuous bone remodeling process under occlusal load. [3,4,5] If denture attachments are also incorporated in these roots then they can be utilized for retention along with support. 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 like hollow tube design which not only facilitate easy escape of excess cement through central vent but also make retrievability easy in case of failure. [6,7,8] Disadvantage of overdenture is fracture under occlusal load. The reasons are: retained roots and post act as fulcrum, moreover denture in attachment area is hollowed out to accommodate tooth coronal portion along with its attachment and its counterpart nylon cap. Even the occlusal forces are higher in overdenture compared to conventional dentures. The incorporation of metal design in this case was to avoid such future problems. [9,10]

### 4. Conclusion

Conventional complete denture usually presents with compromised retention especially mandibular denture due to excessive residual ridge resorption after loss of teeth.

Though dental implants are a successful treatment option in such cases but they have their own limitations like systemic health, lack of adequate quantity or quality of bone or financial issues. Tooth retained over denture is a feasible alternative to implants for such patients.

### References

- [1] Kalpana C, Prasad KV. Seeing The Unseen: Preventive Prosthodontics: Use Of Overlay Removable Dental Prosthesis. *Annals and Essences of Dent.* 2010; 2: 44-9.
- [2] Tallgren A. The continuing reduction of the residual alveolar ridges in complete denture wearers: a mixed longitudinal study covering 25 years. *J Prosthet Dent.* 1972; 27: 120-32.
- [3] Schwartz IS, Morrow RM. Overdentures. *Principles and procedures.* *Dent Clin North Am.* 1996; 40: 169-94.
- [4] Toolson LB, Smith DE. A two year longitudinal study of overdenture patients, Part 1: Incidence and control of caries on overdenture abutments. *J Prosthet Dent.* 1978; 40: 486-91.
- [5] Wael M. Zakaria. Fenestrated Denture: A Grace Option To Edentulous Patient. *International Journal of Dental Sciences and Research.* 2017; 5( 2): 31-34.
- [6] Crum RJ, Rooney Jr GE. Alveolar bone loss in overdentures: a 5-year study. *The Journal of prosthetic dentistry.* 1978; 40(6): 610-3.
- [7] Bhushan Kumar, A Navin Kumar, Prabhdeep Kaur Sandhu. Management of Edentulous Patients with Excessive Lip Fullness due to Bulbous Alveolar Ridges by Giving Access Post Retained Gum-Fit Overdenture. *EC Dental Science.* 2018; 17(8):1445-1450.
- [8] Jain DC, Hegde V, Aparna I, Dhanasekar B. Overdenture with access post system: A clinical report. *Indian J Dent Res.* 2011; 22: 359-62.
- [9] Poornima Madalli, Ulhas Amasi, Bhushan K, Nivedita Mankani, Nagaraj. Overdenture with Access Post System of an Ectodermal Dysplasia: A Case Report. *IOSR-JDMS* 2015; 14(6): 65-67.
- [10] Rissin L, House JE, Manly R, Kapur K. Clinical comparison of masticatory performance and electromyographic activity of patients with complete dentures, overdentures, and natural teeth. *The Journal of prosthetic dentistry.* 1978; 39(5): 508-11.