

Attachment Retained Tooth Supported Overdenture- A Case Report

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Abstract

Overdentures are removable dentures used to replace missing teeth and cover or rest on one or more remaining natural teeth in the mouth. Preservation of the alveolar ridge is achieved with the treatment modality of overdenture. These overdentures can be either implant supported or tooth supported overdentures. Tooth supported overdentures made with the use of coping and precision attachments provides sensory response with further stability and retention to the dentures. This article presents a case report of tooth supported overdenture retained with Ball attachments over the naturally retained tooth.

1. Introduction

According to GPT 9 Overdenture is 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.¹

Overdentures can be either Implant supported or Tooth supported overdentures.

Implant supported overdentures requires surgical placements of implants which is an invasive procedure and also the patient is economically burdened.

Residual ridge resorption is a continuous process and the resorption is even at a faster rate without the natural tooth support. Tooth supported overdentures are considered as a part of Preventive Prosthodontics².

They are an alternative to Implant supported Overdentures and less invasive³. Tooth that can be preserved are retained and treated to provide a secular prosthesis to the patient. Indications of Tooth supported overdenture are few natural remaining teeth, high palatal vault cases, unfavourable prognosis of tongue patients and misrelated ridges⁴. The advantages of the Tooth supported overdenture includes a secured prosthesis support, economical, and good proprioceptive response^{5,6,7}. Periodontal receptors is important in the masticatory- salivary reflex. Zarb and Bolender stated that the overdentures improves the retention and stability of the dentures^{8,9}. Hence Tooth supported overdentures are favourable as they provide psychological, biological and functional advantages to the patient.

2. Case Report

A 62 years old male patient reported to the Department of Prosthodontics, Crown and Bridge and Implantology of Swargiya Dadasaheb Kalmegh Smruti Dental College and Hospital, Hingna, Nagpur with the chief complaint of inability to chew food. On Intraoral Examination, completely edentulous Maxillary arch was seen and in the Mandibular arch right and left anterior teeth 33,43 were present.(Fig 1) Both the teeth were sound without any mobility. Maxillary completely edentulous ridge had adequate ridge height and the firmly attached keratinized mucosa. On radiographic examination of 33 and 43 good bone support was seen. The patient did not wanted to undergo extraction and was insisting for the prosthesis where his natural tooth would not be extracted. All the possible treatment options of removable and fixed prosthesis were explained to the patient. In removable Conventional Complete Denture and Overdenture and in Fixed, Implant retained Fixed prosthesis were also explained. With all the pros and

cons of the treatment patient agreed for tooth supported overdenture.

Prosthetic Management

The treatment started with Intentional Root canal treatment of the teeth 33 and 43 so that a favourable crown root ratio could be managed. A thorough scaling and root planning of both the teeth were carried out.

Tooth preparation was done and equigingival chamfer finish line was obtained. 2/3rd of gutta-percha was removed using peso-reamers to provide space for attachment. The attachments were luted in the space created with flowable resin cement.(Fig 2)

Primary impression of the maxillary and mandibular arches were made using Medium fusing Impression compound and Irreversible Hydrocolloids respectively(Fig 3). Impressions were poured with Type II Gypsum products and custom trays were made. Border molding and Final Impressions were carried out(Fig 4) and poured with Type III Gypsum Products. Record bases were made on the Final casts and Jaw Relation was recorded (Fig 5). After Teeth arrangement Trial of the denture was done for esthetics, function and speech. Fabrication of the complete denture was done with the Conventional Compression molding technique. Denture was relieved around the ball attachments to avoid any gingival tissue injury and delivered with post insertion instructions to the patient.(Fig 6)

The patient was recalled after 7 days for pick up of the nylon caps(Fig 7) into the denture and relined with autopolymerizing resin.(Fig 8).

Patient was instructed and explained for maintenance of Proper oral hygiene and regular follow up for further evaluation.



Fig. 1- Preoperative Intraoral View



Fig. 2- Tooth preparation with 33,43 followed by Luting of Ball attachment



Fig. 3- Primary Impression of Maxillary and Mandibular Arch



Fig. 4- Final Impression of the Mandibular Arch



Fig. 5- Jaw Relation



Fig. -6 Fabricated Dentures



Fig. 7 - Attaching of the Resilient Caps over the Attachment



Fig. 8- Relined Mandibular Denture

3. Conclusion

Overdentures are a good and economic treatment option for patients who have healthy abutment teeth. Tooth supported overdentures with ball attachments are a simple and cost-effective alternative treatment to implant supported overdentures. The retained tooth provides dentures with good stability and support with slow rate of alveolar resorption.

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