

Case Report

Tooth supported overdenture: A concept not yet forgotten!

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ABSTRACT

The tooth retained overdenture treatment is simple as well as cost effective when compared with the implant overdenture treatment option. When firm teeth are present, they can be retained and used as abutment for overdenture fabrication. This helps to improve the retention and result of better patient acceptance.

Bone is a dynamic tissue. The extraction of teeth results in initiation of the bone resorption pattern. However, when tensile stress is received by the bone, additional bone formation take place. Such stresses occur when the occlusal forces are transmitted to the alveolar bone by the periodontal ligament. Moreover it gives the patient the satisfaction of having prosthesis with his natural teeth still present. In this case report, an overdenture with cast metal copings and conventional maxillary complete denture followed by extraction of mobile teeth wrt 17, 18.

INTRODUCTION

Overdenture is an important preventive prosthodontics treatment modality. A complete denture patient goes through a sequel of events like loss of tooth proprioception, loss of alveolar bone and the most depressing sequel is the loss of patient's self-confidence.

An overdenture slows the process of resorption, and increases masticatory efficiency. DeVan golden statement: "Perpetual preservation of what remains is more important than the meticulous replacement of what is missing" still rings true.

According to GPT 8, overdenture is a removable partial or complete denture that covers and rests on one or more remaining natural teeth, roots, and/or dental implants; a dental prosthesis that covers and is partially supported by natural teeth, tooth roots, and/or dental implants. It is

also called as overlay denture, overlay prosthesis and superimposed prosthesis.

Overdenture is indicated in patients with few remaining retainable teeth in an arch. It is also preferred in patients with malrelated ridge cases; patients requiring single denture; patients with unfavorable tongue positions, muscle attachments, and high palatal vault, which render the stability and retention of the prosthesis difficult.

Overdentures are contraindicated in patients with questionable oral prophylaxis, systemic complications, and inadequate interarch distance.

CASE REPORT

A 45 year old male patient reported to the department of prosthodontics in Dasmesh Institute of Research & Dental Sciences, Faridkot to get his missing teeth replaced. He had partially edentulous maxillary and

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mandible arch. 17, 18, 35, 43 were present. The 17, 18 were mobile and conventional maxillary denture was planed followed by extraction of these mobile teeth. The patient gave history of loss of his teeth over a period of 15 years due to periodontal problems. He had worn removable partial denture during that time period. The patient wanted a prosthesis with good retention and stability as compared to his previous prosthesis.

Treatment plan

Thorough oral prophylaxis was done. A tentative jaw relation of the diagnostic cast was recorded to assess the inter-arch space. It was found to be sufficient for an overdenture with short copings but less for a bar supported overdenture. After intentional root canal of 34 and 44, they were prepared with tapered round end diamond point for chamfer finish line. A supragingival finish line was prepared. The copings were prepared in dome shaped and extra pattern resin was trimmed off.

The copings obtained were checked for fit in the patients' mouth and finally cemented with glass ionomer cement. The thickness of the copings should not be more than 1 mm. Primary impression for the maxillary arch was made with Impression compound (Kerr Impression compound) and with alginate for the mandibular arch. The impressions were poured and special trays were fabricated with self-cure acrylic resin.

Border molding was done for both the arches with low fusing compound. Final impression for the maxillary cast was made with zinc oxide eugenol (ZOE) impression.

Mandibular final impression made with regular body elastomer.

Master casts were prepared by pouring the impressions in Type IV gypsum. Occlusal rims were fabricated; maxillomandibular relations recorded.

Teeth setting was done, evaluated in the patient's mouth for phonetics, vertical and centric relation and finally esthetics. Patient's approval was taken, and the curing of the final denture was done in heat-cure acrylic resin.

DISCUSSION

Losing teeth can be very disturbing for a patient. In such conditions, overdenture as preventive prosthodontic treatment modality should be regularly imbibed in our dental practices.

Crum and Rooney graphically demonstrated in a 5 years study an average loss of 0.6 mm of vertical bone in the anterior part of the mandible of overdenture patients through cephalometric radiographs as opposed to 5.2 mm loss in complete denture patients.

Miller in his study concluded that alveolar bone resorption depends upon three variables which are:

1. The character of the bone.
2. The health of the individual.
3. The amount of trauma to which the structures are subjected. Overdenture helps reduce shrinkage of surrounding bone

PRE-OPERATIVE VIEW



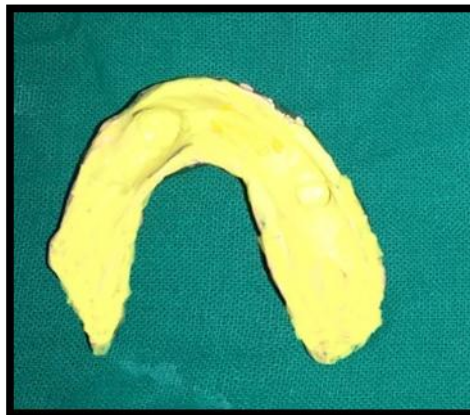
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FINAL IMPRESSION





POST OPERATIVE VIEW

Rissin et al. in 1978 compared masticatory performance in patients with natural dentition, complete denture and over denture. They found that the over-denture patients had a chewing efficiency one - third higher than the complete denture patients.

In the case reports described above, customized small coping was selected for a case with limited inter-arch space. These days implant treatment has become the norm, thus tooth supported overdentures have taken a backseat as a result of competitive commercialization of implants. The success of the tooth-supported overdenture

treatment depends upon the proper attachment selection for the particular case.

Various factors for attachment selection include available buccolingual and inter arch space, the amount of bone support, opposing dentition, clinical experience, personal preferences, maintenance problems, cost and most important being patient's motivation.

CONCLUSION:

Careful selection of the strategic abutment is important. The decision must first be made to retain the teeth as overdenture abutments and then the attachments should be planned. The attitude of the patient to the treatment

should be assessed. Only those who understand the limitations and benefits of attachments should be treated with attachment retained overdentures. Hence, patient selection is critical to the success of the treatment.

A tooth supported Overdenture is very much at the forefront as the treatment modality incorporating Preventive Prosthodontics concepts.

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