

Tooth-Supported Overdenture with Short Copings - A Case Report

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Abstract: *Prosthetic management of edentulous patients is still a major challenge in dentistry. Use of concept of conventional tooth supported overdenture in patients having few firm teeth, helps to improve retention, stability and support of prosthesis. This article describes a method of fabricating tooth-supported overdenture with short copings. This is a cost effective treatment compared to prefabricated attachments for increasing retention of tooth supported overdentures*

Keywords: Edentulous, copings, retention, overdenture

1. Introduction

The concept of preventive prosthodontics is to eliminate or delay the future problems. As De Van stated "Perpetual preservation of what remains is more important than the meticulous replacement of what is missing". Overdenture is one of the treatment modality which follow the concept of preservation. An overdenture delay resorption process, improve denture foundation and thus increase masticatory efficiency.¹

Some of the indications of overdenture are presence of few remaining teeth in an arch, in single denture cases, unfavourable tongue positions and muscle attachments, and certain other conditions in which it is hard to render retention and stability.^{2,3}

In this paper, a case of tooth supported overdenture with short copings is presented.

2. Case Report

A 58 year old patient reported to Primary Health Centre, Jassur to get his missing teeth replaced. Intraoral examination revealed completely edentulous maxillary arch and partially edentulous mandibular arch (kennedy class I modification 1), 33 and 43 were present.(fig.1)

History revealed that patient had worn removable partial denture in past and was unsatisfied with the same. Patient wanted a prosthesis with good retention as compared to previous one. Past medical history revealed no systemic illness.

Available treatment options for patient were extraction followed by conventional denture, implant supported overdenture, and tooth supported overdenture. Because of economical reasons and need of surgery in implant supported prosthesis, patient opted for overdenture.



Figure 1: Pre-operative view of mandibular arch with 33 and 43

3. Technique

A tentative articulation of diagnostic cast at anticipated vertical dimension of occlusion was done to assess the available inter arch space. Space was adequate for overdenture with short copings but inadequate for bar supported overdenture. After careful planning, tooth supported overdenture with short copings was planned for the patient.

Intentional root canal treatment of 33 and 43 (abutments) was carried out, and teeth were prepared with dome shape rounded in all dimensions. Custom posts using direct pattern of acrylic resin were casted along with dome shaped copings. Copings obtained were checked for fit and then cemented with glass ionomer cement. Thickness of coping was approximately 1 mm. (fig.2)



Figure 2: Copings cemented over 33 and 43



Figure 3: Final mandibular impression

Primary impression was made using impression compound for maxillary arch and alginate for mandibular arch, and then custom trays were fabricated. Low fusing compound was used for border molding. For maxilla, final impression was made with zinc oxide eugenol and for mandible, elastomer was used. (fig.3)

Master casts were prepared and record bases were fabricated after applying separating media; copings were covered with wax. Occlusal rims were made and maxillomandibular relations recorded and transferred with facebow. Teeth setting was done and checked in patient's mouth for vertical and centric relations, as well as phonetics and esthetics. Trial dentures were invested, dewaxed, cured and polished. Complete maxillary denture and tooth supported mandibular overdenture replaced in patient's mouth (fig.4). Patient was frequently recalled for monitoring the success of overdenture.



Figure 4: Intraoral frontal view of patient



Figure 5: (a&b) Pre and post operative view

4. Discussion

Overdenture has numerous advantages as compared to conventional complete denture: increased support and stability, maintained proprioception and tactile sensitivity, enhanced self esteem and decreased rate of resorption of adjacent alveolar bone.^{4,5} A successful overdenture depends upon careful case selection and proper selection of strategic abutment. Short copings decrease chances of fracture of overdenture base compared to high copings; also in remaining teeth stress distribution is less in short copings.⁶

Now a days implant treatment has become the norm but tooth supported overdenture is a treatment modality which preserve the remaining structure and thus follow the concept of preservation to the core.

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Author Profile



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