

## CASE REPORT

**Prosthodontic Rehabilitation using Overdenture: A Case Report**Vishakha bhandare<sup>1</sup>, S.P. Dange<sup>2</sup>, Arun Khalikar<sup>3</sup>, S.A.Khalikar<sup>3</sup>**ABSTRACT**

**Introduction:** As teeth are lost, jaw bone resorbs. So the functioning ability of natural teeth and complete denture differs. Complete denture wearer can not function well as compared to the one who have natural teeth. As more people are living longer, dentists in the 1970s attached more importance to keeping teeth. The concept of overdenture developed as a simple and economic alternative to extraction of all teeth and using complete denture. Preservation of teeth for overdenture provides proprioception, prevents residual bone resorption, improves retention and stability which enhances the masticatory efficiency which ultimately gives satisfaction to the patient.

**Case report:** This article, intends to describe where edentulous upper arch opposes partially edentulous lower arch. The treatment involved upper complete denture and preservation of lower canines to receive a tooth supported overdenture using short copings.

**Conclusion:** Using simple technique, a way of fabrication of overdenture is described. So that final restoration will be stable, well retained and esthetically pleasing, serving as a conservative approach

**Keywords:** Overdenture, proprioception, retention

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**INTRODUCTION**

Though the use of implants are increasing nowadays,

preservation of teeth that are present is more important. As Devan stated that “perpetual preservation of what remains is more important than the meticulous replacement of what is missing”.<sup>1-5</sup> With the increasing stress on the preventive prosthodontics, the use of overdenture has reached a point where now it is a feasible alternative to complete denture. From that intentionally preserving roots under dentures began to receive consideration. The landmark articles that described simplified overdenture treatments were published in 1969 by Morrow et al.<sup>6</sup> and Lord and Teel.<sup>7</sup>

Overdenture is a removable partial denture or complete denture that covers and rests on one or more remaining natural teeth, the roots of natural teeth, and or dental implants. Instead of using uncovered tooth, copings can be used as they offer various advantages like additional retention, increases the efficiency of tooth supported over-denture and gives the patient a sense of excellent satisfaction by increasing retention.<sup>8,9</sup> The close proximity of the prosthesis and abutment leads to gingivitis around the retained tooth root, but it can be manageable<sup>10,11</sup> with excellent home care and professional assistance.<sup>1</sup> The preservation of supporting teeth for overdenture abutments provides an efficient prosthetic treatment.<sup>2</sup> However, tooth preservation requires proper diagnosis and planning to ensure acceptable long-term performance, with the remaining roots used to maintain sufficient bone height and periodontal support.<sup>3</sup>

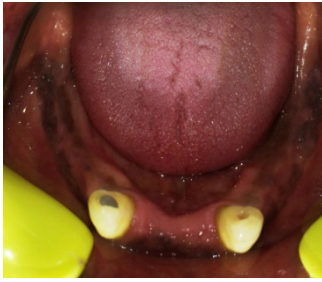
In this clinical report, we have planned upper complete denture and lower overdenture, so the prosthetic rehabilitation will be possible with simple but yet effective treatment approach.

**CASE REPORT**

A 50 year old male patient reported to the department of prosthodontics, Govt. Dental College And Hospital, Aurangabad, with the complaint of inability to masticate and unpleasing esthetic. Upper arch was edentulous and in lower arch both canines were present. (Fig No.1).

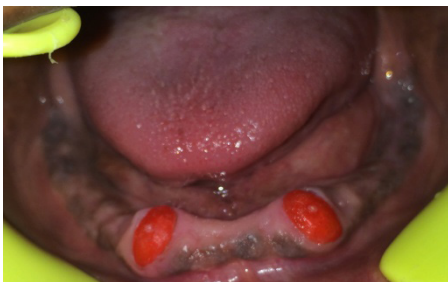
After examination of diagnostic casts and radiographs, the treatment plan was to preserve both canines and

give tooth supported lower overdenture using short copings and upper complete denture.



**Figure-1:** Intraoral pictures of Lower arch

With the start ,as a routine conventional denture, tentative jaw relation was recorded to check the inter arch space. After observation, we planned to give short copings on 43 and 33 as there was insufficient space . So, Root canal treatment was performed on 43,33 and teeth were reduced to cervical level to dome shape. Gutta percha was removed to required length with apical seal maintenance and post space was prepared and using pattern resin (Duralay ) posts patterns were made. Core were fabricated in dome shape ( Fig no.2) then casted and then cemented intra orally( Fig no.3.)



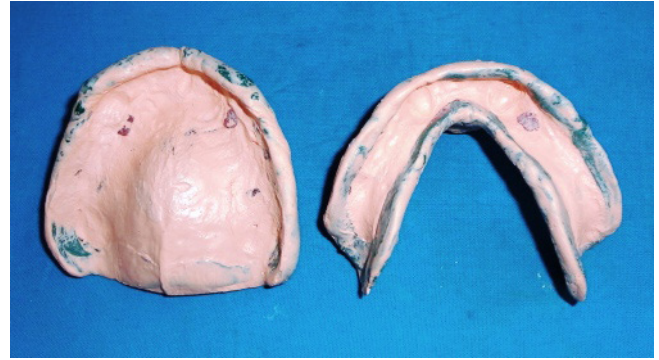
**Figure-2:** patterns in position



**Figure-3:** castings in position

Preliminary impression was made in irreversible hydrocolloid impression material of both the arches .Final impression was made in custom tray using zinc oxide eugenol paste(Fig No.4).

Upper cast was mounted on articulator using face bow and then jaw relation was recorded.



**Figure-4:** Final impression

Teeth setting was carried out in conventional manner. Processing of denture was done. The denture will have depressions on the intaglio surface for the corresponding copings. The prosthesis was stable, retentive and esthetically pleasing and patient was satisfied.(Fig No.5).



**Figure-5:** Patient with dentures

## DISCUSSION

As stated by DeVan, it is always better to preserve teeth whenever possible. Preserving teeth helps to reduce bone loss and proprioceptive impulses of patient are not lost helping the patient to give a sense of chewing.<sup>9</sup> Over-denture is the best option for treatment as an alternative for the extraction of teeth and placement of implants. Motivation of patient for this treatment is primarily important as he has to maintain good oral hygiene as the chances of abutment failure endodontically or periodontally are more. By preservation of teeth and bone ,the physiological dimension and proprioception of patient can be maintained.<sup>5,8</sup> The retained roots that support overdentures preserve bone and minimizes the downward and forward settling of a denture, which otherwise occurs with alveolar bone resorption.<sup>4</sup> Rather than extracting all compromised teeth, the crowns and pulpal tissue of selected teeth are removed, root projecting through the mucosa is restored .The root has less mobility, and its retention retards bone resorption. Overdentures patients can chew better than with dentures supported on residual alveolar bone and mucosal

tissue alone. For some patients, keeping even a few teeth has a strong psychological value. Patients who have lost teeth, adjacent tissue, and bone need replacement of more oral structures than tooth crowns alone can provide. Short copings, long copings, and various attachments are available for overdenture abutments. In this case report, we used short copings as there was insufficient inter-arch space, remaining bone and tissue support was good, so no need of using any attachment. Short copings provided stability, needed retention and efficient mastication with utmost important patient's satisfaction.

## CONCLUSION

Despite recent developments in dental implantology, the conservative approach to root preservation is still valid. The alveolar process remaining after the teeth are lost is not the best foundation upon which a denture can be considered. This biologically functionless bone will inevitably be lost whether a prosthesis is fitted or not. Since the integrity of the alveolar process is dependent upon the presence of teeth, it follows that the preservation of the latter will ensure that of the former. Overdentures supported by natural teeth generated a decade of excitement and interest in prosthodontic circles. They are the last line of defense that successfully kept patients from becoming edentulous.

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