

Rehabilitation of a Patient Having Few Natural Teeth with Maxillary Over denture –A Clinical Report

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Abstract

The over denture, a complete or partial denture prosthesis constructed over existing teeth or root structure is not a new concept in a technical approach to a prosthodontic problem. Today with the stress on preventive measures in prosthodontics, the use of over dentures has increased to the point where it is feasible alternative to most treatment plan outlines in the construction of a prosthesis for patients with remaining teeth. Here a 54 years male patient is rehabilitated with fabrication of maxillary over denture with copings and mandibular removable partial denture.

Key words: *Over denture, Cast metal copings, Maxillary arch*

Introduction

Over dentures have also been described as hybrid dentures or teeth supported or assisted complete dentures. The retained teeth abutments may be few or numerous, coronally modified or restored and frequently endodontically prepared. The objective is to distribute stress concentration between retained teeth abutments and denture supporting tissues. Most prosthodontic educators and researchers now recognize that the technique helps reduce the impact of some of complete denture wearing consequences residual ridge resorption, loss of occlusal stability, undetermined esthetic appearance and compromised masticatory function. The technique has also been regarded as a gentle transition to the completely edentulous state.

Specific critical factors that influence the selection of abutment teeth include periodontal status, mobility, location and endodontic and prosthodontic considerations, with costs an ever present and often overriding consideration.^[1] Since natural teeth and teeth roots are preserved in these prosthesis proprioceptive mechanism increases chewing efficiency.

A significant problem has been the increased susceptibility of over denture abutments to dental caries (Hong et al. 2003, Roumanas et al. 2003). The wearing of over dentures may be associated with caries and progression of periodontal disease of abutment teeth, even if preventive measures are introduced .In well controlled patients, using cast copings , the caries rate was reduced to 6% (Scotti et al. 2002, Dalkiz et al. 1992)

Case Report

A 54 years old male was reported to the department of Prosthodontics, crown and bridge and oral implantology with chief complaint of difficulty in eating .He was working in Govt. Medical College as ward man. His economic status was poor. Medical history was found to be insignificant. On intraoral examination, teeth present were 11,12,21,33,34,35,36,37,43,44,45,47 (fig.1&2). The oral hygiene of the patient was poor.



Figure-1 Pre-Operative Front View of Patient



Figure-2 Preoperative Intraoral View



Figure-3 Teeth Preparations to Receive Metal Copings



Figure-4 Metal Copings Cemented



Figure -5 Maxillary Secondary Impression



Figure-6 Post-Operative Intraoral View



Figure-7 Maxillary Over denture

Cervical abrasions and recessions were found most of the teeth. Patient was not willing for any extraction and wanting best possible treatment. Hence maxillary over denture and mandibular removable partial denture were planned. First of all, oral prophylaxis was instituted and he was referred to department of conservative dentistry and endodontics for restoration of teeth and intentional root canal treatment in 11,12 and 21.

Procedure- Impressions of both arches were made using alginate in stock trays. Diagnostic casts were made. Reduction of teeth 11,12 and 21 was done for coping. (fig.3) Then impression was made using addition silicone material (monophase) and poured in die stone. Wax patterns were fabricated in dome shape to provide vertical support. They were mounted on the surveyor along with the cast and the relative parallelisms were verified. Casting was done. Finished metal copings were then tried for the fit in the patient's mouth and then cemented using glass ionomer luting cement (fig.4). Maxillary impression was made using alginate and a special tray was fabricated with full spacer. Next day, border molding was done followed by secondary impression using addition silicone impression material (fig.5). Master cast was prepared, occlusal rims were made and jaw relations were recorded. Teeth arrangement was done. Try in for maxillary complete denture and mandibular partial denture was done. Prefabricated metal mesh was incorporated during processing of maxillary complete denture. Acrylisation of mandibular removable partial denture was done in usual manner. Finished and polished dentures were inserted and occlusion was adjusted (fig.6,7&8). Post operative instructions were given to the patient and the patient was called for follow-up at 24hrs, 48hrs, one week, one month and three months.

Discussion

It is a documented fact that after the loss of the teeth the residual alveolar ridges undergo rapid loss in all dimensions. The phenomenon of residual ridge



Figure-8 Post-Operative Front View of Patient

resorption following removal of teeth been well observed and documented in literature.^[2-3] While the bone loss following the removal of teeth is stated to be rapid, progressive, irreversible and inevitable, it is equally well observed that bone is maintained around standing teeth and implants.^[3-4]

Over denture therapy constitutes essentially a preventive prosthodontics concept as it endeavors to preserve the few remaining teeth and the supporting structures.^[5-6]

Over denture mainly helps in preservation of the residual alveolar bone along with an increase in retention and stability of the denture. It also helps the psychologic well being of the patients his natural teeth will not be extracted.^[7]

There are some disadvantages of over denture like difficulty in teeth arrangement due to lack of interocclusal space, time consuming, and fracture of denture and expensive. Metallic over denture is better than acrylic over denture because of decreased chances of denture fracture. But metallic over denture is cost-effective. Therefore, keeping all these factors in mind, metal mesh was incorporated in acrylic denture to avoid fracture.

The over denture status of the prosthesis and its benefits to the patient depend solely on the continued retention of the underlying abutments, it becomes obligatory to periodically monitor their health and institute necessary steps to prolong their useful span.^[8]

Conclusion

The tooth supported over denture is one solution to the problem created by an edentulous maxilla and mandible. Complete diagnosis and treatment planning are most important for the success of overdentures. This alternative treatment to extraction of natural teeth and complete denture provides the patient with greater retention, stability and comfort and improved function, esthetics and phonetics.

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