

A PREVENTIVE APPROACH IN PROSTHODONTICS

Dr. Angitha K

Kannur Dental College, Anjarakandy

ABSTRACT

Fabrication of denture for placement in between natural teeth is a treatment challenge for many clinicians. Preventive prosthodontics emphasizes the importance of any procedure that can delay or eliminate future prosthodontics problems. Overdenture treatment option is the simplest method for patient satisfaction. The purpose of maintaining the roots of one or more natural teeth in the oral cavity is to reduce the rate of ridge resorption, maintaining proprioception, providing alveolar bone support and achieve better stability of the denture apart from the psychological aspect of not being completely edentulous.

SUMMARY

The overdenture denture can be a viable treatment option for the patients with a reduced number of teeth and with limited finances. It has cost-effectively restored the aesthetics, function and social confidence of the described patient. However, long-term success depends on regular follow-up and meticulous oral and prosthesis hygiene.

KEYWORDS : Overdenture, Proprioception, Resorbed ridge.

INTRODUCTION

Muller DeVan (1952) stated that "the preservation of that which remains is of utmost importance and not the meticulous replacement of that which has been lost". Prolonged edentulism leads to excessive alveolar bone resorption and enlarged tongue dimensions making the mandibular complete denture difficult to wear compared to maxillary complete denture.

According to GPT 8 Overdenture is defined as 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 implants¹

The idea of retaining some teeth/roots and putting a denture over them is not new; it was first described over 150 years ago. In the 1950s, clinicians noted that when teeth were extracted, the residual alveolar bone resorbed and continued to resorb, which left very little support for complete dentures and made wearing them difficult. Analysis of several longitudinal studies of edentulous patients wearing complete dentures found that the resorption was progressive, irreversible, and cumulative.² The rate of resorption was greatest in the first six months after the extraction of the teeth, but the rate varied and was affected by a variety of biological and mechanical factors. However, the rate of resorption on the mandible was four times that of the maxilla, as described by Tallgren who found that after 25 years of denture wearing, the average bone loss in the mandible was 9 to 10 mm of vertical height compared to 2.5 to 3 mm on the maxilla.³ More bone loss was found in the anterior part of the jaws, especially in the mandible. Therefore, if teeth or roots could be maintained in the anterior region of the mandible, there would be significant benefit to the patient.

In 1958, Miller reintroduced the idea of maintaining tooth roots in the mouth and placing a denture over them². Morrow et al in 1969 published a notable paper which described the benefits of keeping roots as overdenture abutments and described the concept as "Preventive Prosthodontics". The present article describes a preventive approach by fabricating conventional overdenture over remaining natural teeth.

CASE REPORT

A 50 year old patient came to dental op with a chief complaint of difficulty in chewing due to missing tooth in upper anterior and posterior tooth region and missing lower anterior teeth region. Intraoral examination show that:-

Missing teeth seen in 12, 13, 14, 15, 16, 17, 22, 23, 24, 25, 26, 27, 28, 31,32, 41

Intrinsic stains are seen. The edentulous span had favourable ridge with firmly attached keratinized mucosa.



Fig. 1

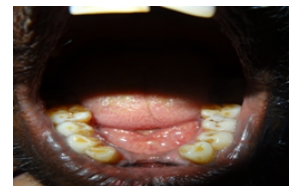


Fig. 2



Fig. 3

All treatment options were presented and discussed with the patient, which included total extraction and conventional denture or telescopic complete denture for maxillary arch and removable partial denture for mandibular arch. After considering the financial aspects and amount of time, the patient wishes to have telescopic maxillary over denture and removable partial denture. Treatment plan was discussed with patient and informed consent was taken.

TREATMENT

Maxillary and mandibular diagnostic impressions were made with irreversible hydrocolloid. Intentional root canal treatment is done in 11 and 21. Cast metal copings with respect to 11 and 21 were cemented using type I GIC luting cement (Fig. 3,4),

copings with a dome shaped surface and a chamfer finish line at the gingival margin.

Maxillary and Mandibular primary impressions were made with irreversible hydrocolloid. Border molding is done in upper arch with greenstick compound and secondary impression is done with zinc oxide eugenol paste (Fig. 5).



Fig. 3



Fig. 4

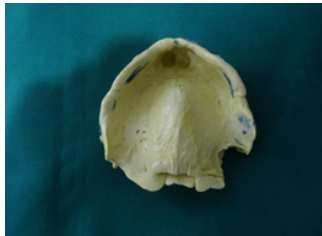


Fig. 5

After jaw relation, acrylic teeth were arranged and try-in was completed. After evaluating occlusion, phonetics and aesthetics, the final processing of the maxillary telescopic denture and mandibular removable partial denture was done.



The prosthesis was polished and placed. Occlusion was assessed and placement instructions were given. Post placement check up was done after 1 week and 1 month.

DISCUSSION

Various literature studies showed that elderly people are affected with loss of tooth due to periodontal condition and dental caries. Patient with poor oral hygiene is treated with complete conventional removable prosthesis. The preservation of remaining teeth preserves the residual alveolar bone around remaining roots (Preiskel, 1996). Over denture therapy constitutes essentially a preventive prosthodontics concept as it endeavours to preserve the few remaining teeth and the supporting structures.

One of the most important requirements to the success of overdentures is the patient's awareness of their need to improve oral hygiene of the remaining roots used for support and/or retention. The patient must be instructed to correct techniques of oral hygiene to improve considerably the longevity of the oral rehabilitation as long as possible. After the overdenture treatment planned, care should be taken by the patient to maintain plaque free oral health. Also dentist should check for pocket formation around the abutments. Failure leads to caries formation around the cervical region of

abutment tooth. Regular follow up visits are important for the longevity of the treatment. The patient was satisfied with his dentures in terms of function and aesthetics due to preservation of hard and soft tissues as well as proprioception⁽⁴⁾. Finally overdenture treatment provides excellent long-term success and survival, including patient satisfaction, improved oral functions and oral health related quality of life.

CONCLUSION

Tooth-supported overdentures provides substantial benefits to patients since they provide better retention, stability, support, stable occlusion and decrease in the forward sliding of the prosthesis. It also helps in better control of the mandibular movements because of the proprioception feedback which increases the chewing efficiency and even phonetics as compared to the conventional complete dentures.

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