



TELESCOPIC OVERDENTURE FOR REHABILITATION OF MANDIBULAR ARCH WITH INTACT THIRD MOLARS.

Prosthodontics

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ABSTRACT

A 75 year old male patient reported with difficulty in chewing due to missing teeth. The patient had intact third molars and wanted to preserve them. After considering all factors, it was advisable to resort to mandibular complete denture with telescopic attachments and maxillary removable partial denture.

SUMMARY :-Telescopic dentures have better retention, stability, support and chewing efficiency than the conventional dentures with decreased rate of residual ridge resorption.

KEYWORDS

Overdenture; Telescopic Denture; Telescopic Attachments;

INTRODUCTION :

Telescopic crowns were initially introduced as retainers for removable partial dentures (RPDs) at the beginning of the 20th century. They are also known as a double crown, crown and sleeve coping (CSC), or as Konuskrona, a German term that described a cone shaped design. These crowns consist of an inner or primary telescopic coping, permanently cemented to an abutment, and a congruent detachable outer or secondary telescopic crown, rigidly connected to a detachable prosthesis. The secondary crown engages the primary coping to form a telescopic unit and serves as an anchor for the remainder of the dentition [1,2].

A telescope crown was patented in 1873 by Dr. J. B. Beers. Telescoped bridgework was reported in The American System of Dentistry 1887 and F. A. Peeso published in 1894 his system of removable bridgework which was supported by telescope crowns [3,4]. Telescopic crowns are widely used in some European countries such as Germany and Sweden [5], and in the East of Asia.

Many types of telescopic attachments have been introduced to fulfill the specific requirements of clinical cases:

- 1- Cylindrical crowns.
- 2- Conical crowns.
- 3- Resilient designs.
- 4- Modified designs[6]

The aim of this paper is to present a case with partially edentulous mandible with only third molars on both right and left side and fabrication of overdenture with telescopic attachments for his functional needs.

OUTLINE OF THE CASE :

A 68 year old male patient reported to the Department of Prosthodontics, Crown & Bridge and Implantology, Army College Of Dental Sciences, Secunderabad, with the chief complaint of difficulty in chewing and poor aesthetics due to missing teeth in the upper and lower jaw.

On intraoral Examination, the teeth present were 11, 12, 13, 14, 15, 21, 24, 25, 38, 48. GIC restorations had been done on teeth with cervical abrasions. The edentulous span had favorable ridge with firmly attached keratinized mucosa. Radiographic examination of the teeth revealed that teeth had good bone support.

PROSTHETIC MANAGEMENT

All the possible treatment options, including implant therapy, were suggested to the patient. The patient was interested in preserving his remaining natural teeth. After considering all the factors involved, maxillary and mandibular arch were planned to be restored with

conventional removable partial denture and overdenture with telescopic attachment respectively. Endodontic treatment of 38 and 48 was done to use them as abutments for mandibular telescopic attachment overdenture.



Pre-op maxillary arch

Pre-op mandibular arch

Primary impressions of the maxillary and mandibular arches were made using irreversible hydrocolloid impression material and diagnostic casts were made with Type III gypsum product. Temporary denture bases and wax occlusal rims were fabricated on the diagnostic casts. The occlusal rims were used to determine the vertical dimension of occlusion and occlusal plane, prior to tooth preparation.

In mandibular arch, tooth preparation was done in 38 and 48. Teeth were prepared in cylindrical shape for thimble shaped copings. After preparing the abutments, impression was made using polyvinyl siloxane elastomeric impression material (putty and light body) by single step double mix technique. Primary copings were fabricated on the master cast obtained and the fit of the copings were evaluated in the patient's mouth, after which they were cemented on the abutments with glass ionomer cement.



Addition silicon impression and primary copings of left and right prepared thimble shaped abutments

Cemented primary copings

Impression of primary coping was made with polyvinyl siloxane impression material for secondary copings. Again impressions were made with irreversible hydrocolloid impression material, followed by border moulding and secondary impressions.

Master cast was poured from the secondary impression and then

abutments (38 and 48) were relieved with 1mm thickness of modeling wax followed by fabrication of trial denture and teeth setting try-in. Secondary coping was embedded in the final denture during curing.

doi:10.2174/1874210601812010246.



Try in: frontal view

Telescopic copings embedded in final denture

After retrieval of the denture it was trimmed, finished and polished. Denture insertion was done and was checked for snug fit. Follow up was done after 6 month and 1 year.



Final insertion : Frontal view

Final insertion: Right occlusal view

Final insertion : Left occlusal view

DISCUSSION

Overdenture is one of the preventive prosthodontic concept which helps to preserve the few remaining natural teeth and the supporting structures. The teeth which are periodontically weak and cannot support a fixed partial denture or a removable partial denture can at times be conserved and be used as abutments under over dentures. The telescopic denture which was supported by the natural teeth gained popularity as an alternative to the conventional dentures during 1970s and 1980s [6].

The telescopic denture is a unique type of prosthodontic treatment. Several designs of double crowns were developed. The selection of the design depends on the clinical situations and the dentist preference about using rigid or resilient type.

Several materials (and combinations of materials) were used for making telescopic crowns such as precious and non-precious metal alloys, zirconia, and PEEK. Further long-term studies are needed to evaluate the success of these materials and to develop new materials and designs of telescopic crowns [8].

In the above case telescopic attachments were planned as third molars were remaining in the mandibular arch which were strong abutments to support the overdenture and to bear the telescopic attachments.

CONCLUSION

Telescopic denture should be kept in mind during treatment planning of cases requiring prosthodontic rehabilitation [7]. It has been found that telescopic dentures have better retention, stability, support and chewing efficiency as compared with the conventional complete dentures and also there is a decrease in the rate of the residual ridge resorption because of proprioception, better stress distribution and the transfer of compressive forces into the tensile forces by the periodontal ligament, which effects the rate of bone remodeling. A clinical study that was conducted by Bergman et al. on conical crown-retained dentures concluded that most of the patients were very satisfied with the restorations, both functionally and esthetically, and it found their chewing comfort to be better after the treatment with the conical crown-retained dentures.

Conflicts of interest: The authors deny any conflict of interest.

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