Telescopio overdenture in mandibular class III Kennedy
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Abstract

Objective: Overdenture with retained precision attachment helps in distribution of masticatory forces, minimize trauma to abutments and soft tissue, minimize the ridge resorption, improve the esthetics and maintain the proprioception. When it is difficult to find a suitable path of insertion because unparallel abutment teeth, telescopic crown indicated.

Methods: A 66-years-old female patient visited Dental Hospital Hasanuddin University with mastication and aesthetic problems so that she wanted to make a denture. Patient had missing teeth as in 35 36 37 45 46 and 47, indicated for the fabrication of overdenture with telescopic crown in teeth 34 38 44 and 48. Fabrication of telescopic crown began by making of study model with preliminary bite record. Full crown preparation has done on teeth 34 38 44 and 48, and impression for fabrication of primary coping and metal framework with double impression technique. Primary coping has cemented on the abutment teeth, then reimpession. Secondary coping soldered with base metal framework denture was tried in the patient. Next, the determination of DVO, artificial teeth was arranged and tried to the patient, next processed the denture with acrylic and inserted it.

Results: Precision attachment that used in this case is a telescopic crown, which consists of 2 types of crowns, the primary crown that is permanently attached to the supporting tooth, and the secondary crown attached to the denture.

Conclusion: Many studies have done, and can concluded that telescopic overdenture is a unique and retentive type of prosthodontic treatment

Keywords: Overdenture, Precision attachment, Removable partial denture, Telescopic crown.


Introduction

Prosthetic rehabilitation in cases of partial loss of teeth has several treatment options. The most frequently chosen are tooth/implant-supported fixed dental prostheses (FDPs), removable dental prostheses (RDPs), and tooth/implant-supported overdentures. Overdenture therapy is basically a concept of preventive prosthodontics because it seeks to retain some of the remaining teeth and support structures. Overdenture is defined as partial dentures that can be removed or completed dentures that cover and depend on one or more remaining natural teeth, natural tooth roots and / or dental implants.

Overdenture increases retention, stability and support; increases chewing efficiency; maintains alveolar bone and muscle patterns; and maintains sensory receptors in the periodontal ligaments, which improves handling skills in prosthetic fabrication. The retention and stability of the overdenture can be increased by attachment or magnets.

The telescopic double crown system is a solution that allows the retention and stabilization of partially removable dentures. This system consists of the male component (internal crown) of the attachment or matrix that is cemented to the support tooth, and the female component (external crown) of the attachment or matrix, which is a part that can be removed from the restoration. Some indications of the telescopic crown, such as: in conditions where there are only a few support teeth with poor distribution, when the support teeth require crowns due to caries or poor contours, non-parallel abutment teeth that make it difficult to obtain the correct pathway of insertion and cases of occlusal reconstruction. Retention is achieved by matching the outer crown with the inner crown. Several types of telescopic attachment have been introduced to meet the specific requirements of clinical cases.

Cylindrical crowns

This type is the original form of a telescopic crown marked by a parallel internal crown. Retention is obtained from friction between internal and external crowns. The cylinder design has the advantage of good retention and aesthetics in the marginal region. In addition, as a result of constant friction, the wear rate of the metal surfaces increases and the action of the lever occurs. Therefore, this type can only be used on media with support networks when a lot of retention is needed.

Conical crowns

This type is a modification of the previous system. The inner crown has a conical shape. Therefore, the axial surface narrows to an occlusal angle called convergence (or taper).
obtained by wedge. The smaller the convergence angle, the greater the retention force. A convergence angle of 6° is recommended.5

Rugged designs

The Marburg double crown is a famous rugged design. This is based on an adjustment separation system in which only one third of the cervical internal crown is parallel to the external crown and provides space between the crowns. This space allows small lateral movements between the crowns and avoids stress. This design provides an elastic relationship between the abutments and dentures, aligns with the elasticity of the tissue and results in a better resistance distribution. Studies show that the rugged design is successful when used in implant-supported dentures.5

Modified designs

Some systems were developed with many modifications to the concept of a double crown. A lot depends on combining the telescopic system with other types of attachments: magnetic telescopic crown, toric ring attachments, prefabricated telescopic attachments.5

Case report

66-year-old female patient who attended the Dental Hospital drg. Halimah Dg. Sikati Hasanuddin University with complaints of impaired appearance and loss of masticatory function due to the loss of part of the maxillary front teeth and also to the lower jaw. The general condition of the patient is normal and there is no history of systemic disease. The patient does not feel comfortable and wants to make dentures. According to the clinical and radiological examination, the patient experienced a partial loss of the teeth 12 16 17 22 23 26 27 for the maxilla and the teeth 35 36 37 45 56 57 for the lower jaw figure 2 and figure 3. The diagnoses of the patients are partial modification of class III of the maxillary edentulous partial 2 Kennedy and modification of class III mandibular edentulous partial 1 Kennedy.

The treatment plan has been manufacturing of a metal framework partial denture for the maxilla and a telescopic overdenture for the mandibular.

The first treatment was impression the anatomical to make a model study with stock tray and alginate. The patient was referred to the periodontal department for scaling, then to the dental conservation department for the treatment of the root canal in the teeth 34 38 44 and 48.

The second visit, preparation teeth for the rest seat on the teeth 15 18 25 28 and full crown preparations for the telescopic crown on the teeth 34 38 44 48 figure 4A. Gingival retraction with cord threads and physiological impression using double...
coaping, and sends it back to the laboratory for the manufacturing process of secondary coping and base metal framework denture figure 4B.

The fourth visit, try-in the secondary coping and the base metal framework of the maxillary and mandibular. The maxillomandibular relationship has measured. Next fixation and arrangement of the teeth in the articulator figure 5A.

The fifth visit, try-in arranging artificial teeth and check the occlusion, retention, stabilization and aesthetics. The procedure continues with a laboratory process (acrylic packaging).

The sixth visit, try-in maxillary metal framework denture and mandibular overdenture telescopic crown was performed figure 5B. Checks of retention, stabilization, occlusion, aesthetics and patient’s comfort. If there is a traumatic occlusion, the grinding is done in the traumatic area. Then the denture insertion is performed figure 6A.

The control has carried out in the first 24 hours (1 day) figure 6B, 72 hours (3 days) and 7 days after insertion. In the subjective examination there were no complaints and the patient was satisfied with his denture, in the objective examination there were no signs of gum inflammation, there was no impact of food in the area of the telescopic crown, retention, stabilization, good occlusion. The patient has instructed to keep the oral cavity clean.

Discussion

In the case of a partial denture treatment with considerable loss of teeth, the use of an overdenture GTS with precision telescopic crown links may be an alternative option. The maintenance of the GTS metal structure overdenture with precision links of the telescopic crown has chosen because there were difficulties in the insertion path due to the condition of the inclined support teeth. In addition, to provide better retention of dentures than conventional dentures. Telescopic crown mounted with 34 38 44 48 dental devices, combined with metal frames and artificial acrylic resin teeth.

In this case, a telescopic crown with a cylindrical crown design is used. In the cylindrical design, retention obtained from friction between the inner and outer crowns. The cylinder design has the advantage of good retention and aesthetics in the marginal region. In addition, as a result of constant friction, the wear rate of the metal surfaces increases and the action of the lever occurs.36
**Conclusion**

Overdenture with precision attachment of telescopic crown is an alternative solution that allows the manufacture of removable prostheses by keeping the remaining teeth and the addition of telescopic crown as a support to improve the aesthetic, retention and stabilization of dentures.

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**Conflict of Interest**

The authors report no conflict of interest.

**References**