

Hybrid Prosthesis- Overdenture Cum Cu-SIL Denture

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Abstract: In the practice of removable prosthodontics much attention is given to the preservation of residual ridge.¹ Preservation of remaining teeth, thereby preserving alveolar ridge integrity and proprioceptive ability of periodontium. It also has positive psychologic effect on patient.² Here we report a case of 52 year old female patient with remaining five teeth in maxillary arch and three teeth in mandibular arch undergone root canal treatment in three maxillary and mandibular teeth and was restored with Hybrid complete denture.

Keywords: Hybrid denture, Cu-sil denture, Overdenture, telescopic denture.

I. Introduction

Hybrid means a thing made by combining two different things. Here we have combined the benefits of cu-sil denture with the tooth supported overdenture. Regardless of what material, technique, or philosophy is used, the fate of the supportive bone is a major factor in the success of any denture. Bone continues to be a dynamic tissue that responds to its function. The extraction of teeth eliminates the need for an alveolar process, and the bone is resorbed.

Denture pressure on a residual ridge also causes bone to be resorbed. However, when tensile stresses are received by bone, additional bone is formed. Such stresses occur when occlusal forces are transmitted to the alveolus by the periodontal ligament.¹ It appears that the presence of a healthy periodontal ligament maintains residual alveolar ridge morphology, in contrast to a diseased periodontal ligament or its absence, is associated with variable but inevitable time-dependent reduction in residual ridge dimensions.

Previously extraction of all the remaining tooth followed by complete denture replacement is considered as inexpensive and permanent solution for oral health care. This approach lead to a major oral morphological problem: advanced residual ridge resorption(RRR).⁵ Natural teeth should be saved only if they can be made comfortably functional or if they can, in a modified state, contribute to the function of the masticatory system. In the latter instance, natural teeth may be useful in support of complete dentures since many residual ridges are poor recipients for either complete or implant dentures.

In these instances, the use of the telescopic denture may be indicated. Telescopic dentures do not preclude the use of removable partial dentures where indicated. Selection is based on the nature of the support of denture-bearing areas and stability of remaining teeth. Through a combination of passive ridge support and full-coverage retainers placed on the remaining natural teeth, the telescopic denture is constructed. The teeth act as stabilizers and do not provide retention for the denture. The teeth prevent lateral displacement of the denture. On the other hand, the passive relationship of the denture to the teeth may provide an increase in the longevity of the abutment teeth.⁴ Here we are reporting a patient with eight remaining teeth restored with hybrid complete denture.

II. Case Report

A 52 year old woman reported to the Department of Prosthodontics, TAMILNADU GOVERNMENT DENTAL COLLEGE AND HOSPITAL for the replacement of her missing tooth. On intra oral examination the sound remaining tooth are 13,14,18,24,28,35,38,45. In the treatment plan taking esthetics into consideration, tooth supported over denture component is planned for the anterior segment of both arch and cusil component is planned for maxillary posterior segment and telescopic component is planned for mandibular posterior segment. Combining the benefits of these three components we landed in our Hybrid complete denture.



Fig 1. Preoperative intra oral photograph

III. Procedure

- 1) Preliminary diagnostic impression was made with irreversible hydrocolloid (Alginate-Dentsply). And study cast was poured in type III dental stone. After then root canal treatment was done in 14,13,24,35,45.



Fig 2: Preliminary Diagnostic Impression

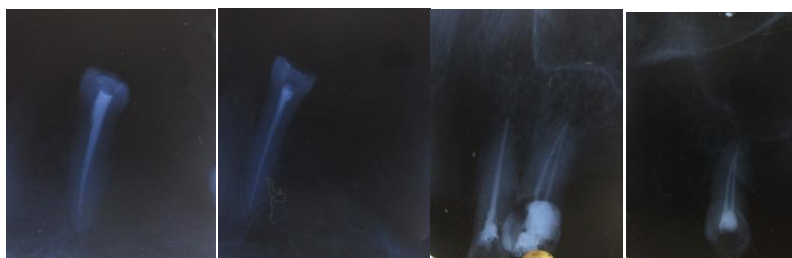


Fig 3: Root canal treatment done in 35,45,13,14,24.

- 2) Abutment preparation done in 13,14,24,35,38,45. Gingival retraction cord placed around the prepared tooth margin. Impression was made with Elastomeric impression material (Speedex Condensation silicone). Wax pattern was made for the metal copings.



Fig 4: Prepared abutment tooth.



Fig 5: Wax pattern and Metal copings.

- 3) Metal copings are cemented to the prepared abutment tooth with resin cement.



Fig 6: Intra oral photograph of cemented metal copings.

- 4) After cementation of metal copings to the prepared abutment tooth final impression was made with Monophase elastomeric impression material. Plaster beading and boxing was done in type II model plaster and impression was poured in type III dental stone.



Fig 7: Final Impression made with Monophase Elastomeric impression material.



Fig 8: Master cast.

- 5) Occlusal rims fabrication followed by Jaw relations are recorded and articulation was done. Artificial teeth arrangement done followed by wax trial was seen in patient mouth.



Fig 9: Articulated occlusal rims



Fig 10: Artificial teeth arrangement



Fig 11: Trial denture in mouth

- 6) Hybrid complete denture was processed after wax trial and inserted in patient mouth.



Fig 12: Cameo surface of hybrid denture



Fig 13: Intaglio surface of hybrid denture



Fig 14: Hybrid denture in patient mouth



Fig 15: Postoperative photograph

IV. Discussion

De van stated “the perpetual preservation of that which remains, and not the meticulous replacement of that which has been lost.” Tooth-supported dentures are indicated when a patient has four or less retainable teeth in the dental arch. If more than four teeth are present, alternate methods, such as removable partial dentures, should be considered. Tooth-supported dentures are practical measures in preventive dentistry.

Patients who are candidates for complete dentures frequently have at least one or two retainable teeth which often will be sacrificed, because they will not provide adequate support for conventional restorations. Other patients who may benefit from tooth-supported dentures are those with malrelated ridges, those facing the loss of teeth in one dental arch while the other arch is dentulous, those with unfavorable tongue positions, muscle attachments, or residual ridges, and those who may encounter difficulty with stability or retention of conventional complete dentures. Contraindications include those situations in which the patient cannot be motivated to develop the desired level of oral hygiene, systemic complications make the use of necessary clinical procedures unsatisfactory, and there is inadequate interarch distance.³

Cu-Sil dentures are designed to preserve the remaining natural teeth and thus the alveolar bone. They have effect on retention and stability of dentures. In addition to this it gives the patient psychologic satisfaction of retaining the natural teeth as they were. Vertical dimension and proprioception is maintained by retained natural teeth. Attachment devices are avoided entirely. This treatment modality does not require any tooth preparation and extra patient visit. It does not require any special armamentarium and material.

If a tooth is lost in future, existing denture can be modified to occupy its place. They serve as a solution for single standing or isolated teeth present in dental arch.

They are not indicated for patients with large number of teeth evenly distributed across the dental arch. These dentures are associated with some disadvantages. The functional duration of soft liner used is short for 3years. It needs frequent corrections. Entire gingival margin of remaining teeth is covered leading to plaque accumulation.⁶

V. Conclusion

Hybrid dentures serve as a alternative treatment for patients with very few remaining teeth. They rest on the soft tissues while provide a snug fit over existing, healthy tooth structures. An elastic gasket seals itself around the cervical part of each tooth, thereby providing a stable and healthy fit. It promotes healthy stimulation to maintain alveolar bone. Retention is improved, attachment devices are avoided, vertical dimension and proprioception are maintained.

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