

Unconventional Approach for Preservation of Teeth- Cu-Sil like Denture – A Case Report

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Abstract

Preservation of teeth is important for alveolar ridge, periodontium and to prevent residual ridge resorption. Treatment options available for patients with few teeth include overdenture, immediate denture or transitional denture. Through avoiding extractions, a positive attitude is increased amongst the patients. Cu-sil like denture is a newer type of transitional denture which utilizes the existing tooth and gives advantage of better retention and stability. This case report presents a simple chair-side technique to fabricate Cu-sil like denture.

Keyword: CU-SIL denture, Removable prosthesis, Soft liner, Transitional denture

Introduction

Current practices in dentistry is more focused on preservation as well as conservation of natural teeth for successful treatment outcomes. Preserving one or more natural teeth aid in retention as well as stability for a removable prosthesis.¹ Various effects of tooth loss include psychological trauma, un-aesthetic appearance, compromised masticatory function, residual ridge resorption etc. Wearing complete denture has many challenging aspects like retention, denture instability, ridge resorption, denture stomatitis etc.^{2,3,4} Retaining one or more natural teeth while fabricating removable prosthesis may give advantage of stability, retention and

preservation of residual bone.³ Transitional dentures are one of a few options available for patients with few remaining teeth in compromised conditions serving as an intermediate solution.⁵

One of the newer innovations in transitional dentures is the Cu-Sil denture, which offers a simple, gentle, and effective removable partial appliance. This type of denture is distinct due to its use of an acrylic base with an elastomeric seal that clasps the neck of each natural tooth. It provides cushioning effect to the mucosa and prevents food entrapment below the denture.^{5,6} The Cu-Sil denture splints the natural teeth while also offering comfort and retention. However, the fabrication of Cu-Sil dentures requires specialized materials and processing techniques.^{7,8}

This case report introduces a chairside technique for fabricating Cu-Sil-like dentures, which aims to offer better retention and stability for removable prosthesis.

Case Report

A 59 years old male patient reported to the department of Prosthodontics, Siddhpur Dental College and Hospital with chief complaint of difficulty in chewing due to missing teeth since last 6 months. Medical history revealed no significant findings. Intraoral examination revealed edentulous maxillary arch and single second molar (47) present on right side of mandibular arch. [Fig. 1(a) & (b)] The periodontium of the present tooth was compromised but without mobility.

As the patient was not willing for any kind of surgical procedure like implant placement or removal of the present tooth, an alternative approach of Cu-sil like denture was planned for this patient. The removable prosthesis has a hole for the present tooth which is sealed chairside by acrylic based denture lining material.



Figure 1(a): Maxillary edentulous arch



Figure 1(b): Mandibular partially edentulous

Procedure

Maxillary and mandibular primary impressions were taken using impression compound (Y-dent Impression Compound, MDM Corporation, Delhi, India) and Alginate (Imprint Alginate, Bombay Burmah trading corporation Ltd, Uttarakhand, India) respectively. Primary casts were obtained. Maxillary arch custom tray was fabricated in conventional manner. Mandibular custom tray was fabricated by utilizing the technique for immediate denture impression.⁹ Wax was adapted around the natural tooth along with spacer and auto-polymerizing resin (DPI RR Cold Cure, Bombay Burmah trading corporation Ltd, Uttarakhand, India) was used to fabricate special tray. Final impression was made using Condensation silicone light body

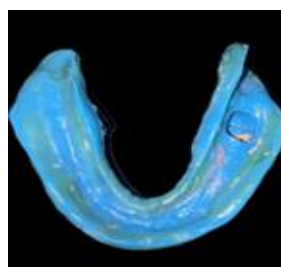


Figure 2: Mandibular Final impression

(Speedex Light body, Coltene Whaledent Pvt Ltd., Switzerland) [Fig. 2] Master casts were made and Jaw relation was recorded. Teeth arrangement, Try-in and

Acrylization of denture was done in conventional manner. Mandibular denture had a hole in place of natural tooth 47. [Fig. 3]

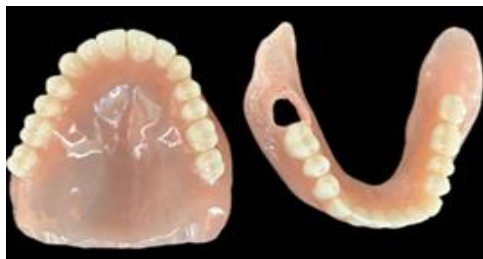


Figure 3: Maxillary and Mandibular dentures

Denture insertion was done and 4-5 mm space was created around the natural tooth in the denture. Acrylic based soft liner (GC Dental Products Corporation, Tokyo, Japan) was mixed according to manufacturers' instructions and applied to the borders of the gasket. Denture was inserted in the mouth and the material was allowed to set while the patient closed in centric occlusion. Once the material was set, denture was removed and excess soft liner was trimmed maintaining the seal around the natural tooth producing Cu-sil like denture. [Fig 4(a) & (b)]



Figure 4(a): Polished surface



Figure 4(b): Intaglio surface after application of Soft lining material

Patient was advised not to utilize brush for denture cleaning at the junction of the soft liner and acrylic denture surface to prevent detachment of lining material.

Discussion

DeVan proposed that "the preservation of that which remains, and not the meticulous replacement of that which has been lost."¹⁰ Retaining a natural tooth has several advantages like preservation of alveolar bone, proprioception, improved retention and stability in the prosthesis as well as psychological advantage.^{1,5} Cu-sil like denture is indicated for patients who have one or more teeth remaining. As compared to overdenture, Cu-sil like denture has advantage of no endodontic treatment, tooth preparation, or attachment requirement thus it is economical and more easily acceptable treatment modality.^{1,8} Also future modifications in case of tooth loss are possible like addition or relining of denture.⁷

Cu-sil like denture is not indicated for patients with more teeth remaining, severe undercuts and bruxism.^{5,7} As functional duration of soft liner is short, this type of denture requires frequent corrections of relining material. Also the gingiva of retained teeth is covered with denture leading to plaque accumulation and fungal infection. Regular dental check-up and oral hygiene maintenance are needed to prevent infection.^{1,6}

Conclusion

Cu-sil like denture serve as boon for patients with a few teeth remaining with fair periodontal prognosis improving retention and stability while maintaining proprioception and seal around the natural tooth.

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