CASE REPORT

CU-SIL DENTURE : AN INNOVATIVE TECHNIQUE OF REMOVABLE DENTURE PROSTHESIS : A CASE REPORT

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ABSTRACT

The primary focus of present day dentistry lies on preservation of remaining natural teeth. Transitional denture is an alternative treatment plan for those patients who are willing to replace their missing teeth while retaining their few natural teeth. A relatively newer type of transitional denture is Cu-sil denture. A Cu-sil denture is a simple removable partial denture with holes, lined by a gasket of silicone rubber, the holes thus providing space for remaining natural teeth to emerge into the oral cavity through the denture. This case report describes the fabrication of Cu-sil denture using soft liners in usual dental set up.

KEY WORDS

Cu- sil denture, Transitional denture, soft liners

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INTRODUCTION

According to De Van, the preservation of what remains is of utmost importance rather than the meticulous replacement of what has been lost. The prime focus of present-day dentistry is on preservation of teeth and periodontium. Presence of few teeth in oral cavity help in preserving alveolar ridge integrity, maintain the proprioception, and gives psychological benefit to the patient. On the other hand, Extraction of entire dentitions followed by complete denture replacement leads to psychological trauma, reduced stability and retention, compromised masticatory function as well as undermine esthetic appearance.[1,2]

Treatment options for patients with very few remaining teeth include overdentures, immediate denture, and transitional dentures. Cu-sil denture is a relatively newer type of transitional denture which serve as a treatment option for preservation of few remaining natural teeth and for the patients who do not want to go for extraction of remaining natural teeth as it has a mutilating effect on their psychology.[3]

Cu-sil denture is basically a complete denture with holes allowing the remaining natural teeth to emerge through the denture. The holes are surrounded by the gasket of silicone rubber which clasps the neck of natural teeth, thus allowing a natural suction to form under the denture.[4] The fabrication of Cu-sil denture does not require any tooth preparation or any extra laboratory procedures. If in future the remaining teeth are lost, then existing denture can be modified to occupy its missing place.[5]

INDICATIONS

1. Any patient who do not want to lose their remaining natural teeth but cannot be adequately treated with fixed or other removable partial denture.

2. A patient with a number of remaining teeth whose mucous membrane, supporting bone, or general health, suggests a poor prognosis for complete dentures.

PREOPERATIVE DENTITION PICS

Figure 1 – Primary Impression of both arch

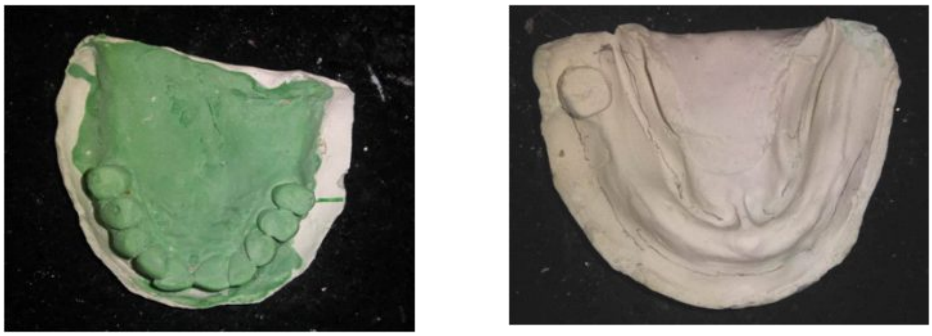

Figure 2 – Final cast of Maxillary arch and Primary Cast of Mandibular arch

3. Patients with natural maxillary teeth oppose a mandibular complete denture.6

CONTRAINDICATIONS

1. Patients who have too many remaining teeth

2. Periodontally compromised patients with poor oral hygiene.

3. Patients whose remaining teeth exhibit unfavourable undercuts.

CASE REPORT

A 62-year old male patient reported to the department of prosthodontics, Dr. R. Ahmed Dental College & Hospital with the chief complaint of difficulty in eating and speaking, and wanted replacement of missing teeth. Dental history revealed that the missing teeth were extracted due to caries and mobility.

Patient presented with maxillary Kennedy's class I partially edentulous arch with missing of both side 1st and 2nd molar and mandibular Kennedy's class II partially edentulous arch with presence of only right 2nd molar tooth. This tooth had no mobility and oral hygiene of the patient was good. Patient was not willing to extract the tooth. So, a cusil denture for the mandibular arch was planned.

PROCEDURE-

1. Primary impression of both arch was made with irreversible hydrocolloid impression material (Aliginate – Dentsply).(Figure-1)

2. The maxillary impression was poured with dental stone and mandibular impression with dental plaster and casts were obtained. (Figure -2)

3. A custom tray was fabricated on the mandibular cast using autopolymerising resin without covering the right 2nd molar tooth.

4. Border moulding was performed with DPI green stick compound and secondary impression was made with zinc oxide eugenol impression paste (DPI) and left in the mouth. Overthat pick up impression was made using alginate. (Figure-3)

5. The secondary impression was poured with detal stone. Acrylic denture bases were made and occlusal rims were fabricated.

6. Jaw relation and try-in procdures were performed.

7. Before dewaxing mechanical undercut of the remaining natural tooth was examined with the help of a surveyor and blocked out using dental plaster.

8. Acrylization of the maxillary and mandibular denture was done in the conventional manner.

9. Dentures were finished and polished. In the right 2nd molar space region of the mandibular cu-sil denture, an acrylic based soft liner (GC

Figure 3– Border moulding, Final Impression and Pickup Impression of Mandibular arch

Figures 4 – Final cast of Mandibular arch and Fabrication of Cusil Denture

Figure 5 – Patient wearing Cusil Denture

TEMPORARY SOFT LINER) was placed. The denture was inserted in the patient's mouth and held in position till the final setting of the material occurred. Then the denture was removed and excess was trimmed. (Figure-4)

10. Post insertion instructions were same as for any removable prosthesis. As there are chances of fungal growth on the soft liner material, special care has to be taken regarding maintenance of excellent oral and denture hygiene. Use of denture cleansers with antimicrobial agents can be recommended.

DISCUSSION

Cu-sil dentures are designed to preserve the remaining natural teeth which helps in preserving the PDL, thus prevents the residual ridge resorption. In addition, it also helps in regulating the natural jaw reflexes and provides a psychological benefit to the patients.[7]

In this treatment modality, no tooth preparation and extra patient visit is required. Also, there is no need of any special armamentarium and materials. If, in future, any tooth is lost, existing denture can be changed to occupy the space. Thus, cusil denture

functions as an alternative treatment plan for single standing or isolated teeth present in dental arch.

Soft liners are used as a relining material in cusil denture. Due to its viscoelastic properties, they provide cushion like effect which can distribute forces more evenly by absorbing energy.[8] Frequent correction of soft liner material is necessary in Cu-sil denture. Rate of plaque accumulation is increased as the entire gingival margin of remaining teeth is covered.[9] There are also possible chances of fungal growth on the soft liner material. Special care should be taken regarding maintenance of excellent oral and denture hygiene. The use of denture cleansers with antimicrobial agents is recommended.

CONCLUSION

Cu-Sil dentures serve as a alternative treatment for patients with very few remaining teeth. Patients who do not want to undergo the treatment option for overdenture or extraction of remaining natural teeth, transitional denture like Cu-sil denture is one of the best treatment options for preservation of remaining natural teeth.

Conflict of interest: None declared

Ethical approval: Not required

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