

# CU-SIL Denture: A Innovative Approach-for the Preservation of Teeth and Bone – A Case Report

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## Abstract

According to Muller De Van's dictum which states that "the perpetual preservation of what remains is more important than the meticulous replacement of what is lost." In recent times, the concept is more toward preservation rather than removing the tooth and replacement of artificial teeth. Modification from conventional techniques of removable partial dentures is the CU-SIL denture – a type of transitional denture where the natural teeth are preserved, and the denture covers the remaining natural teeth. The preservation of remaining natural teeth helps maintain the integrity of the alveolar bone and the proprioceptive ability of the periodontium. When the remaining natural teeth are free from caries, without periodontal problems and mobility, a CU-SIL denture is an indication. This case report presents the fabrication of a CU-SIL denture in a patient with one tooth remaining in the mandibular arch.

**Keywords:** Alveolar bone, CU-SIL, Proprioception, Transitional denture.

## INTRODUCTION

The present concept of dentistry is on the preservation of remaining natural teeth and periodontium. Because the preservation of remaining natural teeth helps in maintaining the alveolar bone integrity and proprioceptive ability of the periodontium, earlier it was said that total extraction of remaining natural teeth followed by complete denture replacement is inexpensive and is the permanent solution, but it leads to a major problem called residual ridge resorption (RRR) leading to poor retention, stability, and support of the prosthesis.<sup>[1,2]</sup>

Nowadays, various treatment options are available for the few remaining teeth, such as overdenture, immediate denture, transitional denture, and implant-supported prosthesis. CU-SIL denture is a type of transitional denture for the preservation of remaining natural teeth which is both an easy and affordable treatment option.<sup>[3]</sup> It is a removable partial denture with holes allowing the remaining natural teeth to emerge through the denture; the holes are surrounded by the gasket of silicone rubber, which encircles the natural teeth, providing a natural suction to form under the denture. This rubber gasket acts as a cushion to the natural teeth and also provides retention to the denture.

The fabrication of a CU-SIL denture is the same as that of a complete denture and does not require any tooth preparation or extra-laboratory steps. The natural teeth retained should also be free from caries, periodontal problems, and mobility. In case the remaining teeth are lost in the future, the existing denture is modified to occupy the missing place.<sup>[4,5]</sup>

## Indications

- Patients who do not want to lose their remaining teeth but cannot be adequately treated with fixed partial dentures<sup>[6]</sup>
- Patients with few teeth whose mucosa and supporting bone have a poor prognosis for complete dentures
- Psychological benefit of the patient.

## Contraindications

- Patients with poor oral hygiene
- Periodontally compromised patients

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- Patients with many remaining natural teeth
- Unfavorable undercuts interfere with denture fabrication.<sup>[7]</sup>

## CASE REPORT

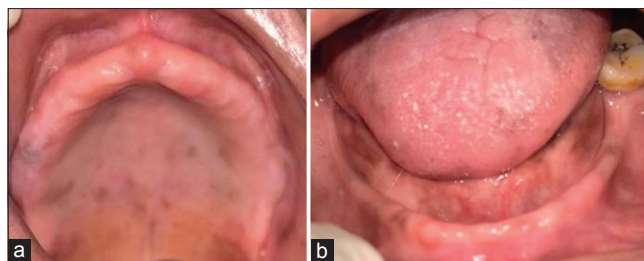
A 68-year-old female patient reported to the Department of Prosthodontics and Crown and Bridge, Sri Ramakrishna Dental College and Hospital, Coimbatore, with the chief complaint of replacement of missing teeth in the upper and lower front and back tooth region. There is no relevant medical history. Dental history revealed the patient had a previous conventional interim removable partial denture with the clasp 10 years ago. On intraoral examination, the patient presented with only one posterior tooth remaining (37), and all other teeth were missing (Figure 1a and b). Different treatment options were explained to the patient:

- Implant-supported prosthesis
- Over-denture
- Interim conventional RPD
- CU-SIL denture.

However, the patient insisted on a removable complete denture in the maxillary arch and a CU-SIL denture for the mandibular arch.

## Technique

1. The primary impression of the maxillary and mandibular arch was made with irreversible hydrocolloid impression material (Alginate) in a metal stock tray
2. The casts were poured using dental plaster for the maxillary arch and dental stone for the mandibular arch
3. Spacer Design: For the maxillary arch, Sharry's spacer design was given, and a complete spacer design was given to the mandibular arch with two tissue stops in the canine region and one on either side in the molar region
4. Custom tray fabrication was fabricated using cold cure acrylic resin for the maxillary arch and the mandibular arch – the tooth is also covered with cold cure acrylic resin
5. Border molding of the maxillary and mandibular arch was made using a green stick impression compound, and the secondary impression was made with polyether impression material
6. Beading was done using dental plaster, and boxing was done using modeling wax
7. The master casts were poured using dental stone
8. The undercuts were blocked using a dental surveyor (Figure 2). Temporary denture bases were made with self-cure acrylic resin
9. Tentative jaw relation recording was done, and the casts were mounted on the mean value articulator
10. Semi-anatomic teeth were selected, and teeth arrangement was done
11. A complete try-in procedure was performed and checked for occlusion, retention, stability, esthetics, and phonetics (Figure 3).
12. Processing was done for the upper and lower dentures.



**Figure 1:** (a and b) Maxillary and mandibular arch (intraoral picture)



**Figure 2:** Surveying



**Figure 3:** Try-in

A silicone gasket was given in the region of 37 to provide a cushioning effect. Temporary soft liners were placed and held in position till the final setting of the material. Then, the denture was removed, the excess was trimmed, and finishing and polishing were done.

Insertion of the upper removable complete denture and lower CU-SIL denture was made (Figure 4), and the denture was examined for retention, stability, phonetics, and esthetics.

Post-insertion instructions were given, and the patient was asked to come for review after 24 h, 48 h, 1 week, and periodic review.

## DISCUSSION

Preservation of remaining natural teeth helps in preserving the periodontium, which in turn prevents the RRR from regulating



**Figure 4:** Insertion

natural jaw reflexes and providing psychological benefits to the patient.

Soft liners are placed around the remaining natural teeth, and they provide a cushion-like effect which distributes the forces evenly around the denture.<sup>[8]</sup> Temporary soft liners are used, which need frequent correction, which is a disadvantage. The rate of plaque accumulation is high, and fungal growth may occur on the dentures.<sup>[9,10]</sup>

Therefore, the patient is advised to maintain good oral hygiene. The patient is advised to use denture cleansers (sodium perborate mono-hydrate).

## CONCLUSION

CU-SIL denture is the best option for those who have very few remaining teeth present and are not willing for extraction or endodontic treatment. It preserves the alveolar bone integrity, thus improving masticatory efficiency, stability, support, and retention compared to conventional removable complete dentures.

## DECLARATION OF PATIENT CONSENT

Patient consent is not required as the patient's identity is not disclosed.

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Nil.

## CONFLICTS OF INTEREST

There are no conflicts of interest

## REFERENCES

1. Jain JK, Prabhu CR, Al Zahrane M, Al Esawy MS, Ajagannanavar SL, Pal KS. Cu-sil dentures-a novel approach to conserve few remaining teeth: Case reports. *J Int Oral Health* 2015;7:138-40.
2. Goel D, Talukder D, Datta P, Paul G, Singh S. Cu-sil denture: An innovative approach to preserve the few remaining natural teeth: A case report. *Int J Sci Rep* 2019;5:29-34.
3. Sharma V, Paliwal J, Meena K, Dadarwal A. Cu-sil Denture-An Alternative Approach to Preserve Lone Standing Remaining Natural Teeth: A Clinical Case Report. *J Res Adv Dent* 2021;12:363-5.
4. Dange SP, Dhage DT, Mahale KM, Khalikar SA. Cusil denture: A new esthetic approach to improve retention, stability and preserve remaining natural teeth and bone in macroglossia patient. *Int J Appl Dent Sci* 2022;8:337-40.
5. Jain AR. Cu-sil denture for patients with few remaining teeth-a case report. *J Adv Pharm Educ Res* 2017;7:333-5.
6. Reddy Y, Dhaded S, Sajjan C, Kumar L, Student PG. Cu-sil dentures-A novel approach to conserve few remaining teeth: A case report. 2023;1:1-8.
7. Khandelwal M, Punia V. Saving one is better than none-technique for cu-sil like denture case report. *Ann Essences Dent* 2011;3:41-5.
8. Stalin M, Rathee M, Mittal S, Tomar SS, Diwan K, Balavignesh S. Preserving natural dentition and enhancing prosthetic rehabilitation with cu-sil denture: A case report. *Indones J Dent Med* 2024;7:30-4.
9. Chellath A, Tejaswini A, Ashok JB, Patil SB, Subin EK. Cu-sil denture: An unconventional approach to prosthetic rehabilitation-case report. *J Pearlident* 2017;8:14-20.
10. Jha S, Banerjee B, Kapoor D, Shahi H, Rajan DR. Cu-sil denture-a prosthodontic rehabilitation for remaining single tooth: A case report. *Chief Patron* 2020;6:87.