

# Cu-sil dentures – A novel approach to conserve few remaining teeth: A Case report.

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## **ABSTRACT:**

*The present prime concern in dentistry is on preservation of remaining natural teeth. Presence of few teeth in oral cavity help in preserving alveolar ridge integrity, maintain the proprioception, and gives psychological benefit to the patient. Transitional denture provides us with alternative treatment plan for the patients willing to replace their missing teeth while retaining their very few remaining teeth.*

*A relatively newer type of transitional denture is Cu-sil denture and it is the simplest removable partial denture. A Cu-sil denture is a denture with holes, lined by a gasket of silicone rubber or soft liners, the holes thus providing space for remaining natural teeth to emerge into the oral cavity through the denture.*

*This case report represents a simple chair side technique to fabricate Cu-sil dentures in usual dental set-up.*

**Keywords:** *Cusil denture, Transitional denture, soft liners.*

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## **Introduction:**

De van stated” The perpetual preservation of what remains is more important rather than the meticulous restoration of what is missing”

Even a single healthy tooth in the arch can help in preservation of alveolar ridge height. Preserving natural teeth also helps in maintenance of proprioceptive ability of periodontium. Single remaining teeth in the arch can increase the stability of the entire denture many fold over a completely edentulous arch. Treatment options are such arches with very few remaining teeth includes over dentures, immediate dentures and transitional dentures. Over dentures may not always be a favorable option in all such patients because of contraindications, need for endodontic treatment for which the patient may not be willing for, poor positioning of remaining teeth, requirement of more patient visits and economic reasons.

Transitional dentures prove to be a good treatment option for such patients who are not willing for the extraction of the remaining healthy teeth. CuSil denture is one such transitional denture which is rarely opted for treatment in dental practice but can prove an easy and affordable treatment option for such arches.

A CuSil denture is essentially a full denture with holes through which natural teeth protrude without compromising the retention which usually holds the denture in place. These holes are surrounded by gasket of silicone rubber or soft liner which envelops the natural teeth, allowing a natural suction to form under the denture. In addition it also gives mechanical stability offered by the immobility of the natural teeth. These are especially useful in situations in which the remaining teeth are on the same side of the arch.

This case report describes a newer approach to save the few remaining teeth via the CuSil denture.

### **INDICATIONS:**

- Mobile, isolated or periodontally involved teeth
- A patient who does not want to lose his remaining teeth but cannot be adequately treated with fixed or other removable partial dentures
- A patient with a few remaining teeth whose mucosa, supporting bone, or general health, suggests a poor prognosis for complete dentures.
- When natural maxillary teeth are to oppose a mandibular complete denture.

### **CONTRAINDICATIONS**

- When there are Multiple teeth

- Severe Undercuts

### **CASE REPORT:**

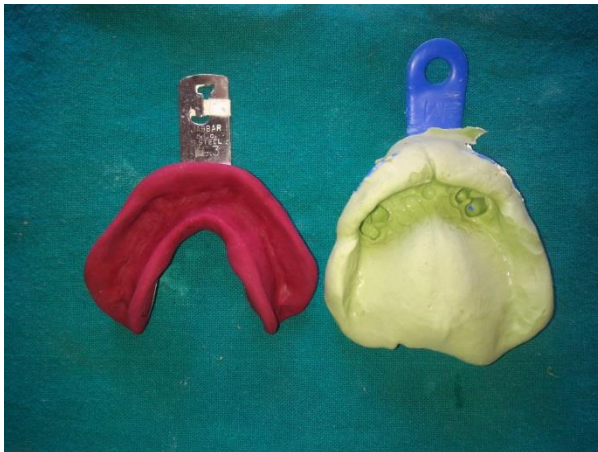
A 60 year old male patient reported to the department of prosthodontics, AME's Dental College and Hospital, Raichur with the chief complaint of difficulty in mastication and poor appearance due to several missing teeth. The patient has been partially edentulous since 2 years. Intraoral examination revealed Kennedy's Class I mod 1 condition with missing 17, 16, 15, 14, 11, 27, 26, 25, 22, 21 in maxillary arch and Completely edentulous mandibular arch (Figure 1). It was decided to fabricate a partial denture for the maxillary arch and complete denture for the mandibular arch as the patient was not willing for extraction



( Figure 1)

### **Procedure:**

- 1.** Upper impression was made with irreversible hydrocolloid impression material (Alginate-dentsply) and lower impression was made with impression compound.(Figure 2)



(Figure 2)

**2.** The special tray was constructed using autopolymerising resin. Border molding was done with DPI green stick compound then impression was made with zinc oxide eugenol and over that pick up impression was made using alginate. (Figure 3)



(Figure 3)

**3.** Secondary cast was made. Jaw relation (figure 4), tryin (figure 5), denture processing was done in conventional manner.



(Figure 4)



(Figure 5)

**4.** Denture was finished and polished. In the 12,13 and 22,23 region, space of 4-5mm was created in the denture. Acrylic based soft liners (GC RELINE SOFT LINER) is applied to occupy the space between denture and natural teeth (figure 6). Denture was inserted in patient's mouth and held in

position (figure 7). After setting of the soft liner material, denture was removed and the excess was trimmed.



(Figure 6)



(Figure 7)

**5.** 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.



(Figure 8)

### **DISCUSSION:**

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, it gives the patient psychological 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 minimal and it needs frequent corrections.

### **ADVANTAGES:**

- Simple with ease in fabrication.
- Cu-sil denture cases require no adjustments upon insertion.
- Denture stability and retention is achieved even when only one or two permanent teeth are present

- Proprioception is maintained, the potential psychological impact is avoided, and patient can achieve clarity of speech, mastication and aesthetics.
- Cu-sil dentures eliminates the clasps as these dentures stabilize, cushion and splint teeth with an elastomeric gasket that provides retention and seals out food, therefore, maintains a good oral hygiene
- Cu-sil like denture is a promising alternative for paediatric group of patients with unique edentulous conditions wherein multiple primary teeth are missing with very few permanent teeth erupted which cannot be used as abutment teeth for space maintainer.

### **DISADVANTAGES:**

- The functional duration of soft liner used will be of short duration
- Entire gingival margin of remaining teeth which is covered may lead to plaque accumulation.
- Cu-sil lower dentures are prone to fracture when grounded against the upper natural teeth

### **CONCLUSION:**

Cu-Sil like dentures serves as a viable treatment alternative 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, and vertical dimension and proprioception are maintained. Factors to be considered during treatment planning include number of teeth present, their distribution across the arch, periodontal status and undercuts.

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