



## CHARACTERIZATION OF REMOVABLE PARTIAL DENTURE: CASE REPORT

### Prosthodontics

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### ABSTRACT

Edentulism is a debilitating and irreversible condition and is described as the final marker of the disease burden for the oral health so, the patient with the missing teeth seek for the dental prosthesis which will restore their natural teeth. According to the survey conducted by Kenzoic concludes that patient wearing removable denture consider the appearance to be most important priority of prosthesis. Thus characterization of denture can be done which allows more acceptable final prosthesis. [1] The two elements that must be considered in denture esthetics are teeth and their supporting denture base, to meet the esthetic needs of the denture patient we should make the denture look like patients natural teeth. [7] In this article, the characterization in the patient with removable partial denture is done according to the patient's present occlusion and the dental status.

### KEYWORDS

characterization, harmonious occlusion, esthetic, dentures.

#### INTRODUCTION:

The prime duty of dentist is to provide the patient what he desires while keeping the functional modalities in mind. [2] The dentist should inform patient that denture can be characterized according to their wish for better aesthetics in permissible limits. Characterization of denture allows for a more acceptable final prosthesis.

Denture characterization is the modification in aesthetics of form and color of denture base and teeth to produce a more lifelike appearance [3]. Contouring and characterization of denture base can contribute to lifelike appearance.

Current characterization technique requires skill and understanding of various color dynamics for the fabrication of satisfactory denture prosthesis.

Several methods that have been used for the reproduction of characterization in artificial denture are as follows. [4]

1. Characterization by selection arrangement and modification of artificial denture
2. Characterization by tinting the dynamic base.

Various techniques of characterization are,

- a. Overlapping- Arrangement of anterior teeth when lateral incisor are overlapped by central incisor which provide much natural profile to the patient's denture. [5]
- b. Stained gingiva - Tinting of dental gum tissue can be achieved by adding brown pigments such as coffee to the monomer and painted on tissue surface in patients with physiological melanin pigmentation and pan chewing habits. [2]
- c. Gingival veins : Denture can be fabricated using chemical cure acrylic resin polymer powder that contains minute fibers which will appear more like blood vessel once denture are cured. [6]
- d. Attrited mandibular incisors with stained incisal edge : Gradual attrition of teeth occur physiologically with age. Pathology due to Para functional habit , incisal edges of anterior teeth usually have stained incisal edge which can be mimicked in the denture by selectively grinding the incisal edge that will give illusion of natural teeth. [5]
- e. Denture coding : The denture are provided with the bar code during the process of acrylization either on palatal soft tissue surface denture flanges for the identification purpose , a database can be prepared on the computers with patient's details , so that any case , the denture are broken then, scanning these codes , the details regarding patients oral cavity can be traced. [2]
- f. Fractured teeth : Patients might have suffered from trauma resulting in fracture of incisal edge such minor fracture is often left untreated for

prolonged duration , becomes a part of patient routine appearance , when such patient receive their partial denture they may insist to mimic the same in partial denture [5]

#### CASE REPORT

The male patient aged 62 years reported to the department of prosthodontics and crown and bridge Yogita Dental College and Hospital, Khed with the chief complaint of missing teeth and wanted to get it replaced.

Patient is otherwise, physiologically fit but have very poor oral dentition which is suspected to be the result of severe generalized periodontitis.

On clinical examination, a fractured tooth in upper front right tooth region of jaw, right side posterior cross bite, crowding and tobacco stains were present.(figure 1).



**Figure 1:** Partially edentulous maxillary and mandibular arch

As a treatment plan, a complete oral prophylaxis followed by removable partial denture (R.P.D) was suggested for him as it would serve the purpose of function. But the patient was unwilling for any intervention thus a comprehensive scaling was done.

However, it was seen that the conventional R.P.D. would pose the following problems

- Harmonious occlusion could not be achieved because of existing malocclusion
- Because of tobacco chewing habit, the patient's teeth have stains and have grade III gingival recession, hence the esthetic would be hampered
- The denture would be unable to serve its function efficiently, it would be functionally compromised

To crater the above problems, it was decided to customize the denture to the patient's esthetic needs and dental status.

1) To improve the occlusion – posterior teeth were arranged over the crest of ridge with the cross bite relation with the lower teeth. (figure 2). If the teeth were placed in the ideal class 1 molar relationship, the position of the teeth had to been shifted buccally outside the crest of ridge would create instability in the opposing arch.



Figure 2: Posterior cross bite on right side given.

2) To improve the occlusion in the anterior teeth, it was observed that the upper anterior obstructed the ideal position of the lower anterior teeth because of the severe supraeruption and the tilts of the upper anteriors. Hence the lower incisors were placed slightly lingual to the alveolar crest. (figure 3)



Figure 3: Crowding in the anterior teeth in mandibular arch.

3) Furthermore, because of drifting of the adjacent teeth, the mesiodistal space for the 4 incisors was more than the ideal dimension. Hence, even after selecting the largest possible dimension of the acrylic lower incisor there was space seen, hence a larger sized canine acrylic tooth was selected which was modified to the shape of lateral and central incisor (figure 4). Furthermore, to create the characterized natural effect, the incisors were placed in slightly crowded position.



Figure 4: Modification of the canine into the incisors. a) Largest sized

canine acrylic tooth selected. b) Incisal edge was trimmed. c) Canine modified into the lateral incisor.

4) To mimic the presence of the tobacco stains, artificial stains were incorporated in the esthetic zone of R.P.D.



Figure 5: Artificial stains were incorporated to mimic the presence of tobacco stains

5) Selective grinding was done to harmonize the occlusion in the centric and eccentric position. (figure 6)

The denture was delivered. Post-operative instructions were given and patient was recalled for follow up after 7 days. On follow up, patient showed no signs of any trauma caused by given occlusion.



Figure 6: Selective grinding was done to improve the occlusion

**SUMMARY:**

Although the most appropriate treatment protocol to be followed was to sequential extraction of all the poor prognosis teeth and opt for removable or fixed implant prosthetics. However in this case, due to the patient's non willingness to consider comprehensive treatment our approach got limited to provide only removable prosthesis as final treatment plan.

Out of the many methods of the characterization, the characterization by the selection, arrangement and modification of the artificial teeth has been used. The occlusion was improved by giving posterior crossbite relation with lower teeth. To improve occlusion and to give more natural look in anterior teeth, the lower anterior were placed in crowding. Also the larger sized canine were modified to the shape of lateral and central incisor as the artificial stains were incorporated to mimic the presence of tobacco stains in esthetic zone of R.P.D.

**CONCLUSION:**

The characterization of the dentures provides infinite possibilities for the patient to make his denture look as close to the natural. The treatment with the characterized denture prosthesis can produce a more lifelike natural appearance compared with the conventional dentures that produce artificial look in the patient.

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