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**FABRICATION OF IMMEDIATE COMPLETE DENTURE WITH  
CHARACTERIZATION TO MAINTAIN VERTICAL DIMENSION IN A  
YOUNG PATIENT INDICATED FOR TOTAL EXTRACTION: A CASE  
REPORT**

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**ABSTRACT**

The objectives of this case report was to treat the middle aged patient with missing teeth and mobile teeth using immediate complete denture with characterization for the aesthetic and comfort purpose. A 38 year female patient reported with mobility of teeth as well as missing teeth. On intra oral examination 14, 13, 12, 11, 21, 22, 23, 24, 25, 26, 27 were the teeth present with mobility and 16, 17 were grossly decayed in the maxillary arch and 32, 33, 34, 35, 38, 41, 42, 43, 44, were present in the mandibular arch with generalized gingival recession, with no significant medical history, after radiographic and clinical examination patient was diagnosed for generalized periodontitis and teeth were indicated for extraction, but patient was not willing for extraction of the mobile teeth, as she was worried about the esthetics. This paper describes a step-by-step approach of the different treatment phases starting with, immediate complete denture fabrication with characterization.

**Keywords: Immediate complete denture, characterization, vertical dimension, prosthesis,  
Extraction**

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**INTRODUCTION**

Loss of teeth is physically and emotionally stressful experience, which not only changes facial appearance and masticatory function, also affects social behavior in some patients. It is a period of transition from dentate state to edentate state.

Immediate denture has become a popular option among these patients whose teeth are indicated for extraction due to various reasons like periodontal diseases, decay, trauma etc. Immediate denture is fabricated before all the remaining teeth have been extracted and inserted immediately after the removal of the teeth [1]. Immediate dentures can be classified into two types namely, conventional immediate denture (CID) and interim immediate denture (IID) or transitional prosthesis. CID is a complete or removable partial denture or over denture fabricated for placement immediately after the removal of natural teeth as the definitive prosthesis. IID is a dental prosthesis to be used for a short time when more of bone remodeling is expected [2]. It is indicated basically for esthetics, mastication, occlusal support, convenience, or to condition the patient to the acceptance of an artificial substitute for missing natural teeth until more definitive prosthetic therapy can be provided. It may be complete or a partial

denture [3].

The dentist realizes the greatest sense of artistic accomplishment during fabrication of immediate denture. This case report describes the technique involved in fabrication of conventional immediate denture with denture characterization.

**CASE REPORT**

A 38 year old female patient reported to the department of prosthodontics and crown & bridge, JSS Dental college & hospital Mysuru, with the complain of missing and loose teeth. On intra oral examination 14, 13, 12, 11, 21, 22, 23, 24, 25, 26, 27 were the teeth present with mobility and 16, 17 were grossly decayed in the maxillary arch and 32, 33, 34, 35, 38, 41, 42, 43, 44, were present in the mandibular arch with generalized gingival recession, with no significant medical history, after radiographic and clinical examination patient was diagnosed for generalized periodontitis and teeth were indicated for extraction, but patient was not willing for extraction of the mobile teeth, as she was worried about the esthetics. She was a teacher by profession and was not ready to stay edentulous even for a short period of time because as her job required meeting the school children every day. After educating about treatment options,

she agreed on immediate complete denture, which would be immediately placed after the extraction and she need not go home without teeth after extraction of her teeth. Therefore immediate maxillary complete denture was planned.

## MATERIALS AND METHODS

Maxillary and mandibular impressions were made with Alginate (Algitex dust free, Mumbai, India). Impressions were poured with type III dental stone (kalastone, kalabhai Pvt. Ltd., Mumbai, India) the cast was retrieved from impression (**Figure 1**). Oral and maxillofacial surgeon extracted mandibular 34,38, which was grossly destructed and maxillary posterior teeth. Postoperative instructions was given, patient was recalled after a week for suture removal, simultaneously laboratory procedure had begun, posterior teeth were knocked out in the cast, custom tray was fabricated for maxillary and mandibular arches using self cure acrylic resin (DPI-RR cold cure, the bombay burmah trading corporation, Ltd, India). Patient was recalled after 3 weeks and border moulding of mandibular, maxillary posterior region was done, secondary impression was made with zinc oxide eugenol paste (DPI Impression paste, the bomaby burmah trading corporation, Ltd) and a pick up impression was made for mandibular arch with alginate. Master casts

were obtained. Denture base (self cure acrylic) and (the Hindustan dental products, Hyderabad, India) occlusal rims were fabricated for bite registration. Jaw relation was established by the bite registration of the remaining teeth. Teeth selection was done according to the remaining anterior teeth. Maxillary (14, 15, 16, 17, 24, 25, 26, 27) and mandibular (44, 45, 46, 47) posterior teeth (acryrock, ruthinium dental products PVT Ltd) arrangement was done and was tried in patients mouth, the occlusion was checked. Anterior teeth were knocked out in the cast and cast was smoothed arbitrarily until the crest of the ridge. Denture base was extended until the anterior region, second quadrant anterior teeth (21, 22, 23) were knocked out first and according to first quadrant anterior teeth were arranged followed by first quadrant anterior teeth arrangement. Wax-up of the denture was done; patient was satisfied with the teeth arrangement (**Figure 2**). Denture was cured with compression moulding technique using heat cure acrylic resin (DPI Heat Cure, Mumbai, India), Denture base extensions were trimmed and polished. A yellowish white colour was mixed with self-cure acrylic monomer and was applied on cervical areas of the teeth to mimic the teeth in the opposing arch (**Figure 3**). Oral and maxillofacial surgeon extracted remaining

anterior teeth from 13 to 23 and socket was compressed, and was sutured. After half an hour, bleeding had stopped and the immediate denture, which was soaked in chlorohexidine solution, was inserted carefully without disrupting on the wound and there was a passive fit of denture base (**Figure 4 and 5**). Occlusion was checked using articulating paper to check for

occlusal interferences. Post insertion instructions was given to the patient had no complains of pain during insertion. Patient was recalled after a week for suture removal and was examined for sore spots and she had no pain. She was recalled after 3 and 4 months, retention of the prosthesis was satisfactory.



Figure 1 (a): After extraction of maxillary posterior teeth intra oral picture , 1 (b)- Frontal view

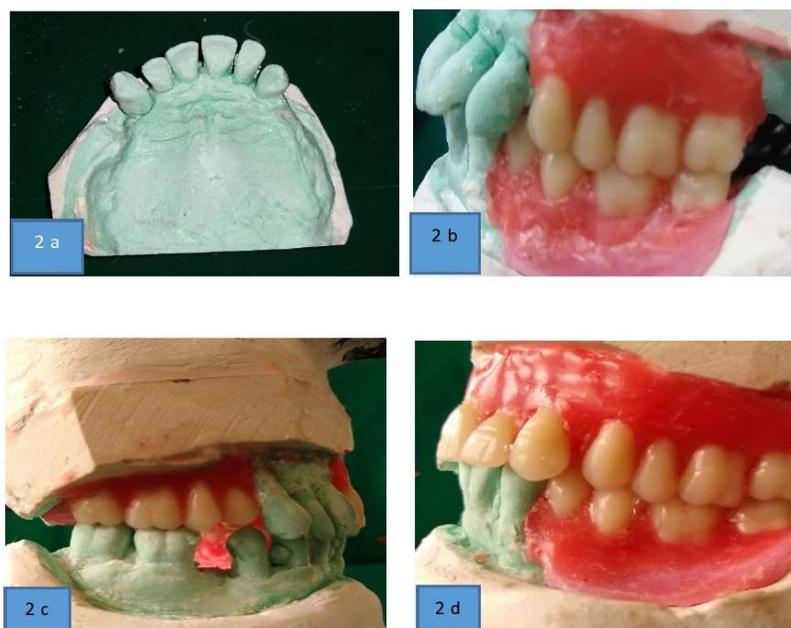


Figure 2 (a): Master cast, 2(b)-posterior teeth arrangement (Left side), 2 (c)-Posterior teeth arrangement (Right side), 2(d)-Posterior teeth arrangement (anterior)



Figure 3: Characterized maxillary immediate denture and mandibular acrylic partial denture



Figure 4 (a): Extraction socket immediately after extraction 4 (b) – sutures placed over the extraction socket



Figure 5: intra oral view of maxillary complete denture immediately placed after extraction with mandibular partial denture. 5(a)-Right side,5(b)-Frontal view, 5(c)-Left view

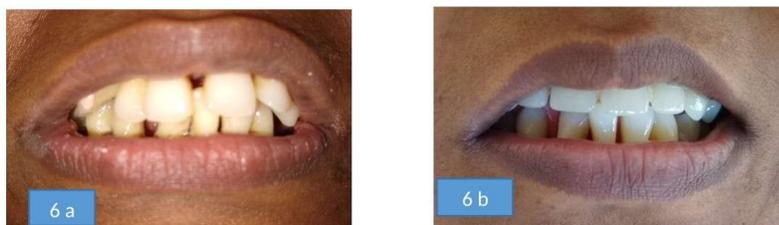


Figure 6: Pre and post treatment pictures 6 (a) –pre treatment picture showing proclined maxillary anteriors with a everted upper lip. 6 (b) post treatment picture -adequate visibility and lip support was obtained and vertical dimension was maintained

## DISCUSSION

Immediate denture treatment requires a series of appointments. Making impression prior to extraction and obtaining a cast to refine the patient's natural esthetics and establish ideal a maxilla mandibular relationship. Here the patient emphasized the necessity for a smooth transition to the provision of complete dentures due to her lifestyle requirements. This transitional procedure can be positively recommended to the patients who are very much concerned about their appearance after teeth extraction. The most important advantage from patients perspective was that no time she was without teeth .The general appearance of the patient was less affected, with minimal change in muscle tone and occlusal vertical dimension was maintained, There are various methods to fabricate immediate denture like jiffy denture [2] another method is described where impression of the existing teeth are made, tooth color acrylic resin is poured up to cement-enamel junction of the teeth in the impression and cast is made with the duplicated acrylic teeth by hand articulating the cast and pink acrylic resin was applied in the remaining areas of the cast and denture was delivered to the patient in one appointment [4]. This is similar to indexing the existing denture

where in new teeth were added to existing partial denture [1].

Immediate denture allows sufficient time for the tissues to heal and protect them it restores the muscle tone, appearance and function of teeth immediately after the natural teeth have been extracted. The advantage of immediate dentures are there will be less resorption of residual ridges [3]. Ridges are better preserved as they are subjected to early function and its acts as a matrix or bandage which creates a negative pressure over the surgery site, as it controls hemorrhage, prevents contamination and provides a protective covering over the wound, the artificial teeth can be set in identical position occupied by natural teeth with similar size, shade and shape. Drawback of immediate denture is that it had to be relined or remade in 6-12 months following insertion [5].

Definition of characterization is 'to alter by application of unique markings, indentations, coloration and similar custom means of delineation on a tooth or dental prosthesis thus enhancing the natural appearance (GPT 8). In our study for the immediate denture we have done the characterization to suit the patient appearance (**Figure 6**). The complete denture patients may be satisfied with what the dentists provide. They understandably

do not ask for what they don't know. It is the duty of the prosthodontist to inform the patient that his or her complete denture can be characterized to suit his/her wish and appearance. Hardy stated that, "To meet the esthetic needs of the denture patient, we should make the denture teeth look like the patients natural teeth [6, 7]." The goal of characterization is to achieve a natural appearance for the denture by creating an illusion of reality in the smile.

### CONCLUSION

The fabrication of an immediate denture has been described in this case report. The patient, due to the requirements of her lifestyle and employment, emphasized the necessity for the most timely and efficacious restoration of the maxillary arch. Hence immediate denture was planned, the denture characterized with gingival contouring and spacing was made according to patients desire, follow up was done regularly first, second week and after one month of denture insertion. The patient was comfortable and happy with the prostheses.

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