



PROSTHETIC REHABILITATION WITH INTERIM IMMEDIATE COMPLETE DENTURE: A CASE REPORT

Prosthodontics

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ABSTRACT

The advances in Dental surgical procedures has allowed better and improved maintenance of compromised dentition for a longer period of time. The patients who may be losing his entire compromised dentition in maxilla, mandible or both the arches three types of treatment options are available. First is that the patient will have to extract all his remaining teeth and wait for 5–8 weeks for the extraction sites to heal. The conventional complete denture is made following healing, leaving the patient without teeth not only during the healing phase but also during the time required for the fabrication of the conventional complete denture. The second option is to convert an existing removable partial denture into an interim immediate complete denture. A third option is to make a conventional immediate complete denture. The objective of this clinical case report is to explain the fabrication steps involved in fabrication of interim immediate denture in a patient with compromised and hopeless existing dentition.

KEYWORDS

immediate denture, atraumatic extraction, surgical stent, healing, aesthetic

1. INTRODUCTION

Immediate denture is a dental prosthesis constructed to replace the lost dentition, associated structures of the maxillae and mandible and inserted immediately following removal of the remaining teeth [1].

A prosthesis is not a living tissue, but at the same time, it must be physiologic and be tolerated to be an accepted part of a system composed of living tissues. To attain the maximum degree of success, the following requirements should be satisfied: compatibility with surrounding oral environment, restoration of masticatory efficiency within limits, harmony with the following functions, i.e. speech, respiration, mastication, and deglutition, aesthetics acceptability, and preservation of the remaining tissues.

Interim immediate denture acts as a bandage or splint, helps to control bleeding and stabilizes the clot, and prevents food collection and thus promote healing. The patient tends to regain satisfactory functions, e.g., speech, deglutition, and mastication as compared to conventional complete denture when the lips, cheeks, and tongue have gone unsupported without teeth for a long time. Many patients are more willing to get diseased teeth removed if they can have them replaced immediately, as the edentulous state hampers their normal social and business activities. Placement of immediate denture preserves the health of joints and oral physiology [2]. It also helps to preserve the residual ridge with minimum trauma and swelling.

Interim immediate dentures are more challenging than conventional complete dentures because of the presence of teeth, due to which impression making and jaw relations are difficult to record, also require more chair side time. The interim immediate denture does not replace the stimulation that was supplied to the bone by natural teeth. Speech and mastication are likely to be impaired for a while. This treatment modality is more expensive due to requirement of frequent relining, rebasing, and refinement of occlusion. The aesthetic results cannot be evaluated as anterior try-in is not possible due to presence of anterior teeth. Until the dentures are inserted [3].

2. CASE PRESENTATION

A 63-year-old male patient came to the department of prosthodontics with a complaint of inability to chew food and poor appearance. The patient was evaluated and complete history of the patient along with preoperative photographs was taken (fig 1, 2). The patient's medical and family history was non-contributory. Intraoral examination and radiographic assessment revealed an unrestored mouth with generalized severe chronic periodontitis of the remaining teeth that were considered hopeless.

Following a detailed examination and evaluation of the objective parameters of the patient's age, profession, smile, aesthetic and

functional demands and to boost his confidence towards life, patient was advised extraction of all the teeth due to his failing dentition and fabrication of interim immediate denture was planned.

2.1 PROCEDURE

The primary impression was made with irreversible hydrocolloid impression material [4] (Imprint-DPI, India Pvt Ltd) (fig 3). The cast was poured in Type-IV dental stone (Kalabhai, Mumbai, Maharashtra, India). The wax spacer (Golden dental product, Hyderabad, Telangana, India) of 1 sheet thickness on an edentulous area and 12 sheet thickness on the dentulous area was adapted. The custom tray was fabricated with self-cure tray material (DPI India Pvt Ltd, Mumbai India). Border moulding was done, the wax spacer was removed, relief holes were made, tray adhesive was applied, and prior to taking final impression with light-body all undercuts were blocked with wax to prevent entrapment of elastomeric material in these undercuts, light-bodied addition silicone impression material [5,6] (fig 4) (Aquaseal Light Body, Dentsply Sirona Pvt Ltd) was used. Facebow transfer was carried out using Hanau spring bow facebow which is a self-centring type of facebow (fig 6). Jaw relations were recorded at correct vertical dimension. Casts were mounted on Hanau Wide-View articulator (Hanau™ Wide-View Articulator, Whip Mix., Corp., and USA), and teeth arrangement was done and checked in patient mouth (fig 7, 8).

2.2 CAST MODIFICATION

The remaining teeth arrangement was done for all dentition by knocking out the teeth from the cast alternatively. Modification of cast at the intended area is very critical in the fabrication of an immediate denture [7] (fig 9). Three markings were scribed on the facial surface of the cast dividing it into cervical, middle, and apical thirds. The denture was fabricated before the extraction of all remaining teeth.

2.3 SURGICAL STENT

The surgical stent was prepared for both upper and lower arch on the primary cast after removing all the teeth from the same (fig 11). A surgical stent used as a guide for recon touring tissues after extraction. All the teeth were extracted (11, 21, 22, 23, 24, 25, 33, 34) under local anaesthesia except impacted 28 (fig 12). Any bony spicule, if present, was removed with rongeur forceps and ridge form was checked with the surgical stent. The denture was inserted on the same appointment (fig 13).

2.4 POST-OPERATIVE CARE

Avoid spitting, bending over, sucking through a straw, and rinsing for 24 hours. No strenuous activity or smoking for 48 hours. Keep dentures in for 24 hours, without removing at night [8]. No hot liquids, acidic foods or drinks for first 24 hours after 24-72 hours, remove dentures 3 times a day to rinse them off. While the dentures are out rinse your mouth gently using a glass of warm salt water. Replace the

dentures immediately. After 2 weeks progress to a soft diet and gradually to a regular diet.

2.5 FOLLOW UP

Follow-up was done on weekly basis. After 3 months following healing of the residual ridge, conventional complete denture was fabricated.

3. DISCUSSION

An immediate denture is defined as a complete or removable partial denture constructed immediately following removal of compromised or hopeless natural teeth [9]. The immediate interim denture differs from does not require that teeth be extracted prior to its construction.

The patient presented with dissatisfaction with dental aesthetics and consequently his smile. His dental situation was further complicated by generalized chronic periodontitis. In this case, the patient was not convinced for multiple visits for the extraction and wanted all the teeth to be replaced immediately. The usual design of conventional complete denture was not suitable for this patient. So we formulated our treatment plan accordingly and decided to go for an interim immediate denture. The maintenance of the original OVD and centric relation is fundamental for the success total removable prosthesis. The vertical dimension of occlusion exhibited by the natural teeth can be maintained. In this case the OVD is not modified but it is preserved the original one. The artificial teeth can be placed in exactly the same positions as the natural teeth or can be repositioned for a more aesthetic appearance. The initial retention and stability were good and also the patient was able to maintain satisfactory oral hygiene and had no complaints regarding aesthetics and function. However, this prosthesis was intended for use as an immediate interim denture. Relining the intermediate denture with processed acrylic resin before the completion of the conventional denture is not indicated, because it may delay the patient's return for the second denture [5, 10].

4. CONCLUSION

The success of interim immediate complete dentures greatly depends on a correct diagnosis, detailed treatment planning, and precise execution of fabrication procedures. A correct diagnosis and work plan can be made only after gaining insight into the patient's general health and detailed extra oral and intraoral examination. The interim immediate denture does not require that teeth be extracted prior to its construction. The patient's cooperation toward the treatment also plays a major role in success. Philosophical patients are the best candidates for this kind of treatment procedure [11].



Fig1. Pre-op photo



Fig 2. Intraoral view



Fig 3. Primary impression

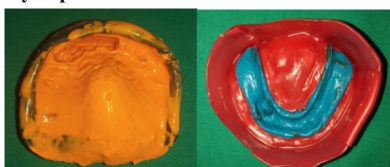


Fig 4. Border moulding and secondary impression



Fig 5. Secondary cast



Fig 6. Facebow taken

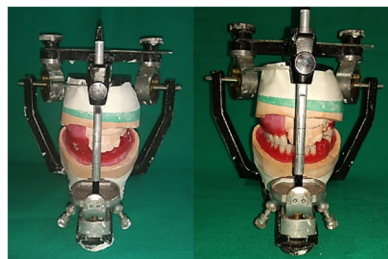


Fig 7. Facebow transfer and teeth setting



Fig 8. Try-in



Fig 9. Cast modification



Fig 10. Complete teeth arrangement

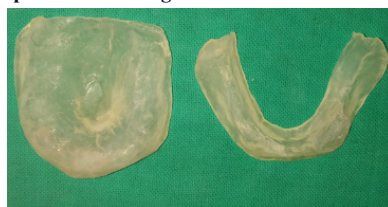


Fig 11. Surgical splint

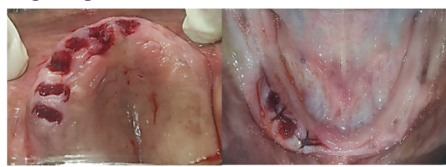


Fig 12. Atraumatic extraction



Fig 13. Post-op photos

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