CASE REPORT

IMMEDIATE DENTURES: A CLINICAL REVIEW AND CASE REPORT

ABSTRACT

Conventionally patients are advised to wait for a minimum period of 3 months, for fabrication of complete denture following extraction. But many patients may find this edentulous period most embarrassing. Immediate dentures may be advocated in such situations, helping the patient for a smoother transition to conventional complete denture. This article reviews the advantages and disadvantages of immediate dentures along with a case report.

Key words: Immediate dentures, post extraction site protection

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INTRODUCTION:

An immediate denture refers to a dental prosthesis constructed to replace the lost dentition and associated structures of the maxillae and mandible and inserted immediately following removal of the remaining teeth. Immediate dentures may be contraindicated in cardiac, endocrine diseases, slow wound healing capacity, acute periapical or periodontal diseases, extensive bone loss, psychologically disturbed patients.[1,2]

There are 2 types of immediate denture

1. Conventional (Classic) immediate denture: Following completion of healing, the immediate denture is relined to serve as a long term prosthesis. The conventional immediate denture is selected only if anterior teeth is remaining, or if patient is willing to undergo extraction of posterior teeth prior to anterior teeth.
2. Interim (Transitional) immediate denture: After healing is completed, a new conventional complete denture is fabricated in place of the immediate denture. This type of immediate denture is usually selected when anterior and posterior are remaining till the day of extraction and placement of immediate denture.

A jiffy denture may also be used when the immediate denture has to be fabricated very quickly in one day or one session. In jiffy denture the tooth may be made from autopolymerizing acrylic resin, or portions of the previous removable or fixed prosthesis.

Advantages of immediate dentures[3,4]

Following extraction, immediate dentures can serve as a splint, as an aid to control bleeding, and for protection of the extraction site from trauma due to food, tongue or opposing tooth. From the clinical appearance of alveolar ridges after placement of immediate dentures, it may be noted that bone resorption is slower, and tissue softness is also preserved when stimulation is supplied by a denture base.

Immediate dentures can help the patient avoid social embarrassment due to edentulousness, as well as regain adequate function in speech, deglutition and mastication .

The remaining natural teeth may also be used as a guide in establishing vertical dimension of occlusion, selection and positioning of artificial teeth

Limitations of immediate denture[5,6]

Immediate denture fabrication may be more challenging for the dentist to attain good esthetics and patient acceptance as there may be no opportunity for anterior try in. The procedures may be more time consuming, and require more appointments particularly during the adjustment phase. Adequate fit may not be obtained relative to a conventional complete denture. These limitations should be explained to the patient prior to the construction of immediate dentures.

Selection of patients[7,8]

Philosophical type patients may be the best candidates for immediate dentures. They are self motivated and accept dentures for maintenance of health and appearance. They are able to adjust rapidly, and are willing to listen and carry out instructions in an intelligent manner. This mental attitude may contribute to a favourable prognosis for the immediate denture. Also absence of medically compromising conditions may contribute to a good prognosis.

CASE REPORT

A 52yr old female patient presented with a completely edentulous mandible arch and a Class I Kennedy maxillary edentation, with remaining incisors and a left first molar, which were periodontally compromised (fig. 1). She wanted immediate rehabilitation and was particular that she could not remain edentulous for an extended period of time.

She was presented the treatment option of immediate dentures and was explained about its limitations. She was cooperative and willing for an immediate denture. Radiographic and clinical examinations were done, and she was appointed for an immediate denture. Maxillary and mandibular impressions were made with irreversible hydrocolloid impression material and stone casts were prepared. Secondary impressions were made with vinyl

polysiloxane impression material with custom acrylic trays. Maxillomandibular jaw relation records were made to articulate the casts (fig. 2).

Jaw relation record.

The proper shade and size of teeth were selected, using the patient existing teeth as a guide. The arrangement of the posterior artificial teeth was completed and evaluated in the patient's mouth to confirm maxillo-mandibular relation records. The wax-up in the posterior region was performed using the conventional method. In the anterior region, the wax -up was modified by creating a window (fig. 3).

Teeth arrangement[9,10]

Patient was called for posterior teeth try in prior to extraction of the remaining teeth.

Arrangement of anterior teeth.[11,12]

Jerbi's modification of Kelley's rule of thirds was followed for modification of casts (fig. 4)

1) First step is to cut away those parts of the crowns of the teeth that are visible i.e. at free marginal gingiva. It must be remembered that a portion of crown still lies beneath gingiva.

2) Step two is to trim the cast so that the sites of previously removed crowns are recessed approximately 1mm. With this step, the trimming equals the removal of entire crown of each tooth.

3) Third step is a flat cut across the facial surface of the ridge. Starting the cut at labial depth of recess made in the cast during step two, stone is removed in a continually diminishing amount from this point to the junction of the gingival and middle third areas of facial surface of ridge. The removal of this amount represents the collapse of labial gingival tissues towards the alveolus.

4) Step four is another flat cut across facial portion of the ridge. This cut begins at crest of ridge and extends to the mid width point of cut made in step three. This begins the contouring of labial surface of the ridge.

5) The fifth step is to trim that part of the cast which is lingual to the teeth. Most casts present a reproduction of continuous roll of gingival tissue that normally lies against the lingual aspects of teeth and it is a landmark for trimming the cast in this area. This roll is completely trimmed away, but care is taken to preserve a part of the cast to represent the incisive papilla in its collapsed position.

6) The last step is to shape and smooth the surfaces of the cast that have been trimmed in the previous steps. The vestibular third of ridge is not trimmed.

Following cast modification, artificial teeth were arranged. Investment and sacralisation was done following wax up. The resulting dentures were polished, and patient was called for denture insertion immediately after extraction (fig. 5).

Patient was given instructions not to remove the denture for 24 hrs, and was recalled the next day to make necessary adjustments. The patient was then kept on further regular recall.

DISCUSSION

The primary advantage of an immediate denture is the maintenance of a patient's appearance because there is no edentulous period. Circumoral support, muscle tone, vertical dimension of occlusion, jaw relationship, and face height can be maintained. Less postoperative pain is likely to be encountered because the extraction sites are protected. The tongue will not spread out as a result of tooth loss. Patients who are in poor general health or who are poor surgical risks or patients who are identified as uncooperative because they cannot understand and appreciate the scope, demands, and limitations to the course of immediate denture treatment may not be suitable candidates for immediate dentures. The main disadvantage lies in the inability to accomplish a denture tooth try-in in advance to extractions which precludes knowing what the denture will actually look like on the day of insertion. Relining may be necessary later on. Also, because this is a more difficult and demanding procedure, more chair side time, additional appointments, and therefore increased costs are unavoidable.

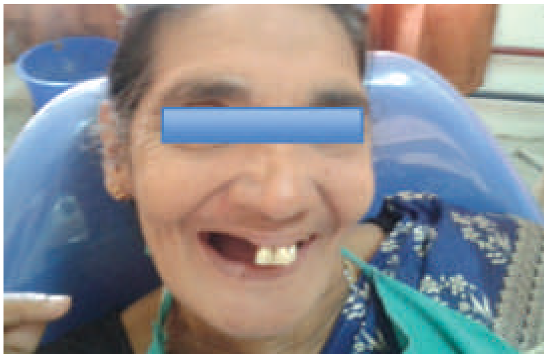

Fig 1. Pre extraction photograph of the patient

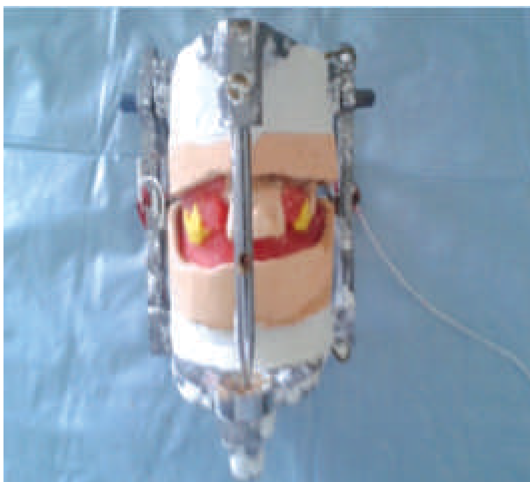

Fig. 2 Jaw relation in the articulator

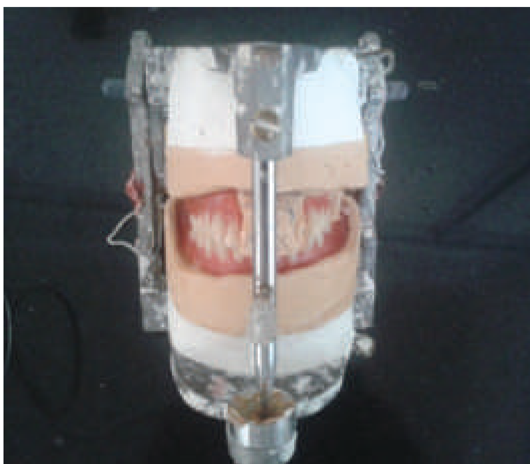

Fig. 3 Trial in the articulator

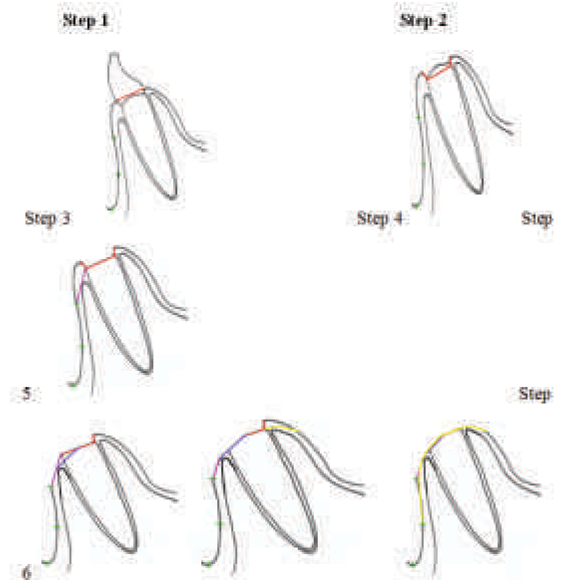

Fig. 4 Modification of cast
(Jerbi's modification of Kelley's rule of third.

Fig. 5 Photograph of the patient after insertion.

CONCLUSION

Immediate dentures allow patients to continue their social and business activities without being in edentulous state. However the patient should be carefully selected for immediate dentures, and explained about its limitations before starting the treatment procedure. A properly fabricated immediate denture can help the patient in a smoother transition to a complete denture.

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