

Fabrication of Immediate denture -A case report

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Introduction

An immediate complete denture is a restoration fabricated prior to the extraction of a tooth, which is placed in the patient's mouth immediately following the removal of the remaining teeth. They are fabricated increasingly nowadays, mainly for aesthetic and psychological reasons. The success of immediate dentures depends on correct indication and precise execution of clinical and laboratory fabrication procedures. Usually posterior teeth are removed, leaving the six anterior teeth in position and allowed for an adequate healing period of 8 to 12 weeks.¹

An immediate denture is classified as:

A. Conventional immediate denture- one placed after healing is completed and denture is relined to serve as the long-term prosthesis.

B. Interim or Transitional immediate denture- prosthesis is designed to enhance aesthetics, stabilization and or function for a limited period of time, after which it is replaced by a definitive prosthesis.

C. Lavere and krol classified immediate dentures as conventional immediate dentures, transitional dentures or diagnostic dentures (splint) and each further into groups as having a labial flange, partial labial flange, flangeless immediate denture.²

It has been reported that the interim immediate denture shows numerous advantages such as preservation of facial appearance and height, reduction in postextraction pain, muscular tone, phonetics. The treatment outcome for an immediate denture is very unpredictable as the prostheses cannot be completely assessed before final insertion. One of the most important issues to be considered

while fabricating immediate denture is the difficulty in assessing the vertical dimension at occlusion (VDO) and centric relation after extraction of the posterior teeth.^{2,3}

Advantages of immediate denture⁴

The main advantages especially from patient perspective are

1. The patient doesn't have to stay without teeth at any point. They appear to be less apprehensive knowing that a denture will be inserted immediately following extraction of natural teeth, without their social and business activities being affected.
2. Their digestive function stays uninterrupted as the patient is not without any teeth at any point of time. However, they have a limited diet for a short period post insertion.
3. The general appearance of patient is less affected as there is only a minimal change in muscle tone and VDO is also maintained. Masticatory and facial muscles do not change with no unfavourable speech, chewing habits and occurrence of tongue enlargement.
4. Centric relation is easier to record.
5. The ridges are subjected to early functions, so less resorption takes place. As

a result, the ridges are preserved and adapted to support a complete denture.

6. Patient recovers from the shock of multiple extractions and at the same time becomes accustomed to immediate dentures. He becomes adjusted to the changes more quickly than with conventional dentures and the healing period is faster and less painful.

7. Immediate denture can be considered as a matrix or bandage with a negative pressure over the surgery site. It controls the hemorrhage, prevents contamination, provides a protective covering over the wound, can be used to maintain medications in place.

8. Artificial teeth can be set in the identical positions which were occupied by the natural teeth. Their size, shape, shade, individual positions and inclinations can be duplicated.

Disadvantages of immediate denture⁴

1. Following insertion, the alveolar bone and soft tissue removal in and extraction sites. As healing proceeds and resorption occurs, the denture also doesn't fit as well. So, it should be relined or remade in months to a year following insertion. This should be informed to the patient prior to the start of the treatment.

2. Treatment with an immediate denture appears to be costly due to increased treatment time, postoperative adjustments, need to relin or remake the denture following healing.

3. No anterior try in can be done. So the esthetics of the denture cannot be evaluated until the insertion.

Case Report

A 40-year-old female patient reported to the Department of Prosthodontics and Crown & Bridge, with chief complaint of difficulty in chewing due to mobile teeth, swollen gums and missing teeth. The patient expressed concerns about his inability to chew effectively; dissatisfaction with smile & aesthetics. There was no relevant medical history affecting prosthodontic treatment. Intraoral examination revealed partially edentulous mandible with generalised recession in maxilla and mandible. The patient was informed of an immediate complete denture option which he reluctantly agreed to. The patient was initially wary of extraction due to psychosocial considerations, but after being educated about the advantages and possible drawback of immediate dentures, he agreed to the treatment plan. Alginate impressions of upper and lower arches were made with

the teeth liberally rubbed with lubricant to prevent exfoliation of the teeth during impression making. Upper and lower stone casts were made from the impressions. The standing teeth were removed at the level of the gingival margin from the cast and record blocks were fabricated on the cast. Bite registration was done with record blocks made of modelling wax. Two dots technique was used to establish the occlusal vertical dimension and the upper and lower record blocks were sealed together at centric relation position. The recorded centric relation was transferred to the mean value articulator and the teeth were set up. The wax dentures were thereafter processed in acrylic resin using a compression moulding technique. The dentures were trimmed, polished and fitted for the patient immediately after the extraction of the standing teeth under local anaesthesia. surgical template was inserted before closure of the surgical site and any areas of tissue blanching, which were evident through the clear template was corrected by minor alveoloplasty. The patient was instructed not to remove their immediate denture for 24 hours. Post denture insertion instruction given. The patient was reviewed twenty-four hours after the fitting of the denture.



Fig. 1 Intraoral frontal view



Fig.- 2 Jaw relation followed by Bite registration and Mounting on mean value articulator



Fig. 3 Try-in on patient

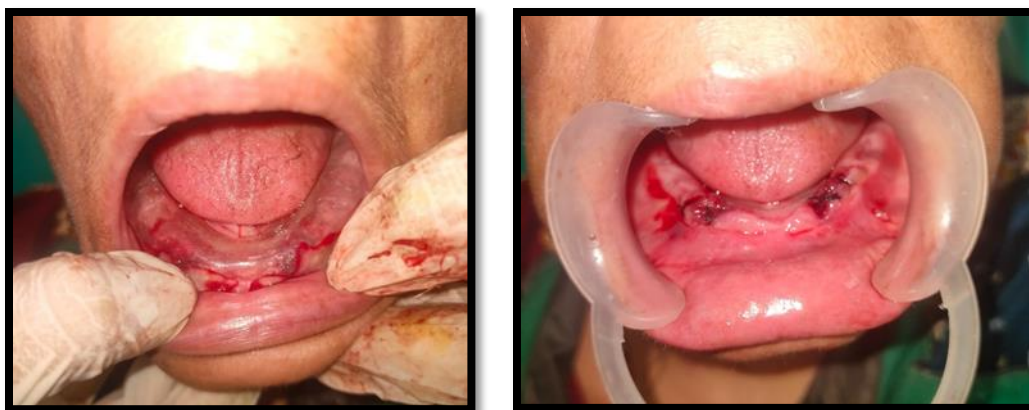


Fig.- 4 Extraction followed by surgical template and suturing



Fig.- 5 Immediate denture insertion

Discussion

The conventional immediate denture treatment requires a series of appointments for performing the standard procedures; following the extraction of remaining natural teeth and any necessary adjunct surgery, the denture is placed, tested for excessive pressure in different areas, and adjusted accordingly.⁵ Actually, whenever an immediate denture is fabricated, there is generally a period from several weeks to months of edentulism where healing occurs teeth extraction. Several procedures have been described in the literature for construction of an intermediate or transitional prosthesis, to reduce the time required for its fabrication and to provide a fast and economical service.

Khan et al. (1992) used self polymerizing, tooth-coloured acrylic, and visible light-cured resins for fabricating an immediate transitional complete denture in one appointment.⁶

Gilboa et al (2009) performed a procedure by fabricating an immediate complete overdenture where he used natural teeth retaining an interim provisional fixed partial denture until the complete denture was finished. He maintained the posterior occlusion during the healing period and also avoided the trauma of multiple extractions at one visit.⁷

Gooya et al. (2013) used the patient's fixed prosthesis for fabricating an interim immediate partial denture in one appointment, by maintaining the VDO. He concluded that the present occlusion, VDO

and facial support could be maintained during the healing period in this procedure.⁸

The immediate denture fabricated with the described technique can be easily used for taking the final impressions (can be used as custom made impression trays), jaw relation, transferring the face bow, for the final denture construction, thus, reducing time, visits and costs. The contraindications to this procedure include the case of complete edentulous patients.⁹

CONCLUSION:

Immediate denture allows patients to continue their own work without edentulous state. By the fabrication of the immediate denture, we improved the comfort of the patient regarding function and aesthetics increased quality of her life. It is a challenging job for all dentist to achieve the patient expectation, as the arrangement of artificial teeth cannot be observed at a try-in appointment. So, it is always necessary to explain about the limitation of the procedure. Proper follow up and care is essential.

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