



AESTHETIC REHABILITATION USING IMMEDIATE MAXILLARY COMPLETE DENTURE AND LOWER FLEXIBLE RPD; A CASE REPORT

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ABSTRACT

Immediate complete denture prosthesis fabricated before the removal of the teeth and placed immediately after the extractions of natural teeth. The immediate complete denture has several advantages over conventional complete denture as the natural facial appearance is maintained and the patient never appears edentulous. These immediate dentures allow patients to continue their social and business activities without being in an edentulous state. Removable partial prosthesis is a repulsive modality of treatment that we still must rely upon for some cases and is a part of the practice. But these patients expect prosthesis to look as esthetic as any other contemporary modality of treatment. Missing tooth, replacement a must and it becomes best if a denture patient wearing is comfortable. Innovation of flexible dentures, flexibility combined with strength and light weight provides total comfort and great looks. Features of these prostheses are good retention, aesthetically superb and virtually invisible, excellent strength, easy in handling, no involvement of metal, noninvasive procedures, comfort. This clinical case report describes step by step fabrication of the immediate maxillary complete denture and lower flexible partial denture.

KEYWORDS: Immediate Complete Denture, Flexible dentures, Edentulous Arches, Esthetic, Tooth Replacement.

INTRODUCTION

Immediate complete denture is a restoration, which is constructed to be immediately inserted to the patient's mouth, following the extraction of all the remaining natural teeth. Two types of immediate dentures are described in the literature: conventional immediate dentures and interim immediate dentures.^[1]

Conventional immediate denture is immediately delivered dentures after the extraction of natural teeth. This type prosthesis can be refitted after the healing period for long-term prosthesis. Interim immediate denture is used for a short time, especially for the healing period. At the end of the healing period, the immediate denture may be relined or replaced with a new complete denture.^[2]

REQUIREMENTS OF IMMEDIATE DENTURES

To define an immediate complete denture without discussing its requirements is an insufficient introduction to immediate denture service. Patients are human beings and, as such, they vary greatly in what they want, expect, and demand. A prosthesis is not living tissue but it must become an accepted part of a system composed of living tissue. It must be physiological and must be tolerated by the patient.^[3]

TO attain the maximum degree of success the following requirements should be satisfied: (1) compatibility with the surrounding oral environment, (2) restoration of masticatory efficiency within limits, (3) function in harmony with the activity necessary in speech, respiration, and deglutition, (4) esthetic acceptability, and (5) preservation of the tissues that remain.^[4]

ADVANTAGES OF IMMEDIATE DENTURE TREATMENT

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 adequate 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.^[4] 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. Placement of interim immediate dentures helps the basal tissues, muscles, and joints acquire a healthy condition. It also helps to preserve the residual ridge with minimum trauma and swelling.^[5]

CASE REPORT

A 53 years old male patient reported to the Department of Prosthodontics of K D dental college, Mathura, India with a chief complaint of missing teeth and proclined upper anteriors.

A routine case history was carried out. Intraoral examination revealed multiple missing teeth in maxillary region with proclined and periodontally weak central incisors and missing lower anteriors.

On clinical examination revealed a failing dentition. Severe chronic generalized periodontitis was noticed with the remaining natural teeth.

The patient presented no significant past medical history, he had given the dental history of removal of her teeth due to severe mobility.

For the maxillary arch, only 2 teeth are present 11,21 With supraerupted, periodontally weak and presence of slight mobility 1 degree and the arch is classified as Kennedy class I.

For the mandibular arch 31,32,41 were missing with periodontally weak and grade 1 mobility 33,34,42,43.

Clinical procedure

Maxillary Primary impressions were recorded with irreversible hydrocolloid impression material and an impression was poured in dental stone. On this maxillary diagnostic cast, a custom tray was fabricated in such a way that it should cover the residual alveolar ridges, palate and its anterior border ends at the lingual surface of the maxillary anterior teeth. The tray handle was made with impression compound and placed in the anterior palatal region. This custom tray was evaluated intraorally and the borders of the tray adjusted to eliminate overextensions.

Border moulding was performed with a green stick compound until a proper retention was achieved. **(FIG 1-3)**

The functional impression recorded in two-phase, in the 1st phase wash impression of the denture bearing area was taken with zinc oxide eugenol impression material without taking out the impression, tray handle of impression compound completely removed and in the

end, the pick-up impression was taken in irreversible hydrocolloid using a stock tray that should be large enough to cover the custom tray and remaining anterior teeth. **(FIG 4)**

The master cast is prepared from the final impression in dental stone. Maxillo-Mandibular relations were recorded using trial bases constructed from acrylic base plate and modeling wax rim on the master cast. **(FIG 5)**

The proper shade and size of the teeth were selected using the patient's 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 relations records.

The anterior artificial teeth were arranged to reflect the position of the patient's natural teeth. The teeth on the cast were eliminated one by one and teeth arrangement was completed.

These teeth were trimmed in such a way that 2mm of the master cast from the attached gingival was removed this was done to compensate for the shrinkage of soft tissue after post extractions **(FIG 6,7)**. All the undercuts and sharp margins were rounded off on the master cast. The maxillary denture was processed after completing the wax-up in heat cure acrylic resin.

Extractions of the teeth were done as atraumatically as possible. A thin transparent surgical template fabricated using clear acrylic resin was used as a guide for surgically shaping the alveolar bone **(FIG 8,9,10)**. Then the denture was tried in the mouth with at most care to prevent injury to the extraction socket.

After denture insertion instructions were given to the patient. He was asked not to remove the dentures for 24 hours and also need for a soft diet. **(FIG11)** Along with cold packs to reduced postextraction edema and pain. Then the patient was scheduled for a 24-hour recall appointment soft diet. **(FIG 12)**

The patient was kept on a regular recall schedule to improve the fit of denture upon healing. After this jaw relation and try done was done for replacement of missing lower anteriors and interim flexible removable partial denture given for aesthetic reason. **(FIG 13,14,15)**



A. Maxillary Arch



B. Mandibular Arch



C



D

FIG 1.



FIG. 2.



Fig. 3.

Fig2, Fig3: Border Moulding(Greenstick) with impression compound handle.

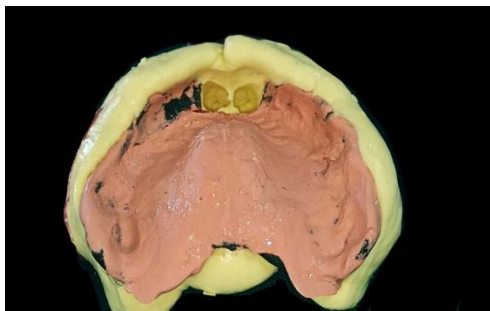


FIG. 4: Pick-up impression.



FIG. 5: Jaw Relation.



Fig. 6: Teeth Setting.



Fig. 7: Try in stage.



Fig. 8. Extraction.



Fig. 9: Transparent surgical template.



Fig. 10: Extracted teeth.



Fig. 11: Complete denture insertion.



Fig. 12: Healing site after 24 hours.



Fig. 13: Jaw relation for lower flexible RPD.



A



B



C



B

Fig. 14: Fabrication of flexible RPD.



Fig. 15.

DISCUSSION

The level of anxiety with which people face the prospect of losing all their teeth and having to rely on complete denture, is unlimited as recorded by Todd and Lader. In immediate denture case selection plays an important role. There are certain limitations, not all cases are suitable for giving an immediate denture. The patient gets the benefits of improved confidence, comfort, and continued dental esthetics. The dentist also finds satisfaction in providing a very acceptable treatment to the patients.^[11,12]

Interim immediate dentures are more challenging to make because a try in is not possible beforehand. The patient may not be completely satisfied with the final appearance and fit of the denture on the day of insertion. Thus, 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.^[13,14]

In many immediate complete denture patients, the centric relation and centric occlusion are not in harmony. If the artificial teeth are placed in the same positions as the natural teeth, balanced occlusion in the centric and/or eccentric jaw positions would not be possible, and the positions of the teeth on their movable bases would not be physiologically acceptable to the support. If a cusp form posterior tooth is used, balanced occlusion in all jaw positions is important in complete dentures, and is even more important in immediate complete dentures because the new bone is in the process of being produced in the alveoli. Bone is plastic in nature, and it can be molded. However, the shock of forces exerted through teeth not in harmony with mandibular movements induces osteoclastic action. If cusplless posterior teeth are used, balanced occlusion in the centric position is imperative because a lack of balanced occlusion will induce unfavorable bone reaction.

Clinical observations do not always substantiate some of the statements that have been made regarding the resorption or atrophy of residual alveolar ridges.

The stresses exerted by dentures, even those which are considered to be well constructed, are so variable that it is impossible to render a definite prognosis. Likewise, clinical observation does not agree with the statements that rapid and extensive loss of the residual ridge occurs as a result of disuse atrophy following the removal of all of the teeth. Just because atrophy has been rapid after the removal of a single tooth (as compared with the adjacent alveolar bone), it does not necessarily follow that the loss of all the teeth will result in the same rapid changes. The stimuli applied to the mucosa in the completely edentulous mouth are quite different from those applied to an isolated edentulous region with adjacent teeth present.

CONTRAINDICATIONS FOR IMMEDIATE DENTURE SERVICE

1. Immediate dentures are contraindicated for patients with diseases of a **debilitating nature**. It would be desirable for people with debilitating diseases to have dentures for masticatory purposes, but with the modern methods of preparing food and the availability of vitamin therapy, the presence of teeth is not necessary to meet nutritional requirements over relatively short periods of time.
2. Patients for whom multiple extractions might be unwise because of **systemic conditions**. This includes patients with cardiac disturbances, endocrine gland disorders, blood dyscrasias, and those with a slow healing potential.
3. **Emotionally disturbed individuals**. This is a large group of patients which includes people in the menopausal and climacteric period of life. All emotionally disturbed individuals should receive special evaluation in the treatment planning procedures.
4. For patients whose **mental capacities** do not allow them to comprehend their responsibility in this service. This includes the aged individuals who are incapable of remembering instructions.
5. Immediate dentures are contraindicated for patients with **acute periapical or periodontal pathosis**.
6. For patients who have extensive bone loss adjacent to the remaining teeth. Patients with extensive bone loss of achronic nature will have a rapid, ever-changing support for the dentures. These changes are reflected in the occlusal relations of the teeth, and unless these relations are kept in harmony, extensive bone loss will result. To keep this harmony requires additional appointments for remounting to correct occlusal relations and for refitting the denture base to the changing support. The resorption of bone as a result of the surgical removal of soft tissue and the placing of sutures is not fully understood. Until further investigation, it appears advisable to minimize the surgical removal of soft tissue in the presence of extensive chronic bone loss.^[2]

The results of Simpson's^[16] investigations into the healing of extraction wounds, the effects of suturing extraction wounds, and the removal of tips of the alveolar crest should receive serious consideration in the surgical preparation for dentures.

The unsightly and uncomfortable materials of traditional dentures such as metal and the acrylic denture material used for RPDs have been replaced by nylon. Nylon closely resembles the material of the fluorescent orange traffic cones on the highway. The advantage of nylon is that it is nearly unbreakable, closely resembles the gums in color, can be very thin, and can form not only the denture base, but the clasps as well. Because the clasps are built to curl around the necks of the teeth, they are practically indistinguishable from the gums that normally

surround the teeth. The most popular brands of this type of flexible partial are Valplast and Sunflex.

Some of these advantages include

1. Cosmetically elegant; no metal clasps and can also be combined with natural colour clasps
2. Metal, monomer and acrylic free
3. Can be used for patients allergic to conventional acrylic restorations.
4. Lightweight, strong and durable
5. Flexible dentures are almost unbreakable and can be made thinner than traditional acrylic dentures, providing more comfort and confidence for the patient.
6. Flexible dentures have just the right degree of flexibility and will not warp or become brittle.
7. The material used can provide translucency that blends with the natural tone of tissue for a more natural appearance.

This clinical report describes an upper immediate complete denture and esthetic flexible lower RPD used for the temporary treatment of a patient with long missing dentition in upper anterior region and lower front region.

CONCLUSION

The immediate complete denture has several advantages over conventional complete denture as the natural facial appearance is maintained and the patient never appears edentulous. These immediate dentures allow patients to continue their social and business activities without being in an edentulous state.

A correct diagnosis and work plan can be made only after gaining insight into the patient's general health and detailed extraoral and intraoral examination.

Immediate denture provides a valuable and reliable treatment option when proper case selection, treatment planning, and other procedures are followed carefully.

RPDs made from acetate and polyamide resins have a high potential for the rehabilitation of partially edentulous patients, and their favorable characteristics allow them to be used without concerns when well indicated.

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