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Immediate Complete Denture

A Project
Submitted to the College of Dentistry, University of Baghdad, Department of Prosthodontics in Partial Fulfillment for the Bachelor of Dental Surgery

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Declaration

This is to clarify that the organization and the preparation of this graduation project have been made by the under graduated students **(Taleen Levon Agoob)** under my supervision in the college of dentistry, University of Baghdad/ Department of oral and maxillofacial surgery.

Signature

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B.D.S.,M.Sc.
2022

Dedication

- *To the dearest and closest to my heart, to my dear mother and my dear father, who support me all the time, and their blessed prayers had the greatest impact in reaching me this stage.*
- *To my brothers, sister, and all of my family, who have always been supportive of me in my study career.*
- *To my friends who have always been with me in all moments of my life, I will never forget their love and their constant support for me, thank you for being with me.*

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Abstract

Background: An immediate denture is a prosthesis placed immediately following tooth extraction due to esthetic reasons. It is used to enhance esthetics, protect extraction-related surgical wounds and provide function during healing. This type of transitional denture is often associated with a larger number of teeth being extracted on the day of prosthesis insertion and a higher degree of unpredictability relative to anticipated healing. Consequently, the required treatment addresses an immediate denture that will ultimately be transitioned into a definitive prosthesis.

Objective: An immediate complete denture is a restoration for lost natural teeth and associated tissues, which is inserted into the patient's mouth immediately following the extraction of the remaining teeth. The purpose of the paper is to draw the dentist/practitioner's attention to the need for immediate complete denture fabrication. The aims, advantages, and disadvantages of immediate dentures, as well as contraindications, are described in detail. Modern procedures for immediate complete denture fabrication as well as instructions to patients about wearing the denture and mouth and denture hygiene are given. A need for a timely rebasing of immediate dentures and adjustment of the occlusion is also pointed out. The functional, aesthetic, and psychological success of immediate dentures depend on the correct indication, diagnosis, treatment planning, and precisely executed fabrication procedures.

Conclusion: ICD is a rehabilitation procedure that promotes an immediate rehabilitation of edentulous patients, providing a significant improvement of functional and esthetic which, in turn, contributes to the improvement of the psychological and social well-being of patients. Such a health improvement increases self-esteem and quality of life.

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INTRODUCTION

The world’s population is aging considerably, and forecasts show that people over 60 years will surpass 2 billion by 2050, the absence of all teeth in at least one of the arches in the 60 years old age group will be a clinical common finding.

An immediate complete denture is a restoration for lost natural teeth and associated tissues, which is inserted into the patient's mouth imme- diately following the extraction of the remaining teeth.

The purpose of the paper is to draw the dentist/practitioner's atten- tion to the need for immediate complete denture fabrication. The aims, advantages and disadvantages of immediate dentures as well as con- traindications are described in detail.

Modern procedures for immediate complete denture fabrication as well as instructions to patients about wearing the denture and mouth and denture hygiene are given.

A need for a timely rebasing of immediate dentures and adjustment of the occlusion is also pointed out. The functional, aesthetic and psy- chological success of immediate dentures depends on correct indication, diagnosis, treatment planning and precisely executed fabrication pro- cedures.

This study sought to present some treatment features of edentulous patients through ICD, its advantages, disadvantages, indications, contraindications, and post-installation care. Guidelines for surgical procedures that must be followed before the placement of ICD in one or both dental arches were presented as well.

AIMS OF REVIEW

The purpose of this study is to draw the attention to the need for immediate complete denture fabrication. The aims, advantages, and disadvantages of immediate dentures, as well as contraindications, are described in detail. Modern procedures for immediate complete denture fabrication as well as instructions to patients about wearing the denture and mouth and denture hygiene are given. A need for a timely rebasing of immediate dentures and adjustment of the occlusion is also pointed out. The functional, aesthetic, and psychological success of immediate dentures depend on the correct indication, diagnosis, treatment planning, and precisely executed fabrication procedures.

REVIEW OF LITERATURE

1.1 Advantages of Immediate Complete Denture

General advantages for all types of immediate dentures. Immediate dentures have a number of advantagesSome of these are as follows :

1. The patient need not be without teeth during the healing period.
2. Pain and swelling will likely be reduced after extraction of teeth, because the denture acts as a protective splint and aids in the healing process.
3. Esthetics and tooth arrangements are obtained by selecting teeth of the proper size, shape, and color by direct comparison with the natural teeth. Their positions can be duplicated exactly if desired.
4. The locations of the anterior incisal plane and vertical dimension of occlusion are more easily ascertained when there are natural teeth present than when all natural teeth are missing. The centric relation may be more accurately recorded for dentulous patients than for edentulous patients.
5. The patient usually adapts to the presence of immediate dentures more quickly than to dentures inserted two to six months after the natural teeth are removed.
6. Good speech and appearance are maintained, because the artificial anterior teeth are correctly positioned, and the same vertical dimension of occlusion is re- tained. Usually, changes in the facial muscle tone and supporting structures are reduced.
7. The patient does not develop undesirable mastiratory habits, and the nor- mal size of the tongue is maintained.
8. The cooperation and emotional attitude of the patient are improved in comparison with those attitudes present when all teeth are extracted wihout immediate replacement.

9. Potential for hemorrhage is reduced, because the denture aids in retaining the blood clots within the sockets. **(LaVere and Krol, 1973)**

1.2. Disadvantages of immediate denture are:

1. The immediate denture does not replace the stimulation that was supplied to the bone by the natural teeth.

2. The procedures are precise and time consuming and require more appointments, particularly during the adjustment phase.

3. The resorbtion is faster than the changes of healed tissue. These changes require new impressions to keep the denture base adapted to the basal seat. The remounting of the dentures to refine the occlusion is necessary whenever the denture base is altered.

4. There is no opportunity to observe the anterior teeth at the try-in appointment; therefore, the esthetic result cannot be evaluated until the dentures are inserted.

(**Soni ,2000)**

1.3. Indications for immediate denture

(Devan, 1961)

1.3.1.Physical reasons:

1. Disuse atrophy of the bony base,

2. Unfavorable trabeculation of the repairing bone, 3. Damage of the temporomandibular joints

1.3.2. Physiologic reasons:

1.Abnormal functioning of the mouth and mandible 2. Impaired enunciation,

3. Abnormal deglutition,

1.3.3. Psychologic reasons:

1. Humiliation,
2. adverse subjective reactions,
3. serving the indifferent patient **(Plainfield, 1975).**

1.4. Contraindications for immediate denture

1. Diseases of a debilitating nature e.g., post irradiation of the head and neck regions, systemic conditions that affect healing or blood clotting, cardiac or endocrine gland disturbances, and psychological disorders) extreme deep overbites or other abnormalities that make balanced occlusion impossible.
2. Multiple extractions might be unwise because of systemic conditions.
3. Emotionally disturbed individuals
4. Mental incapacities
5. Indifferent unappreciative patients
6. Acute periapical or periodontal pathosis
7. Extensive bone loss adjacent to remaining teeth.**(Heartwell and Salisbury, 1965).**

1.5. Requirements

Patients vary greatly in what they want, expect and demand.

To attain the maximum degree of success, the following requirements should be satisfied:

1) Compatibility with the surrounding oral environment.
2) Restoration of masticator efficiency;
3) Harmony with the functions of speech, respiration and deglutition;
4) Esthetic acceptability and preservation of the remaining tissues.

(Anca et al,1993)

To accomplish these requirements, it is mandatory that each patient be analyzed and evaluated on an individual basis.The best patient for immediate dentures is the philosophical type. Their motivation for denture is the maintenance of health and appearance, and they accept replacement of natural teeth that cannot be saved as a normal procedure. These patients overcome conflicts and organize their time and habits in an orderly manner. They eliminate frustrations and learn to adjust rapidly. The philosophic patient will listen to and carry out instructions in an intelligent manner. Their mental attitude contributes to a favorable prognosis for the immediate denture.

1.5. Classification of the immediate complete denture:

1.5.1. According to the treatment plan:

1. Conventional immediate dentures.
2. Transitional dentures.
3. Diagnostic dentures **(LaVere and Krol, 1973).**

1.5.2. According to flange design:

1. Flanged type.

A. complete flange.

B. Partial flange.

2. Flangeless type (open face) **(LaVere and Krol, 1973).**

1.6. Conventional immediate dentures:

It is an immediate denture, which can be later modified to serve as a permanent prosthesis. It is usually done for patients undergoing total extraction. The treatment outline while preparing a conventional immediate denture consists of the extraction of the posterior teeth followed by the extraction of the anterior teeth. The ridges in the posterior region are allowed to heal before the

extraction of the anterior teeth. The denture is inserted on the appointment of extraction of the anterior teeth **(George, 2006).**

1.6.1. Indications:

• For patients with periodontally weak teeth indicated for extraction.

• For socially active people who are very self-conscious about their appearance **(George, 2006).**

1.6.2. Advantages:

• It gives a psychological benefit to the patient. The patient does not appear edentulous at any point in time.

• Muscle tone, tongue size, and vertical dimension are preserved. • Centric jaw relation is easy to record.

• Less post-operative pain, because the extraction sockets are protected.

• Postoperative hemorrhage and infection are also prevented due to the protective action. It acts as a splint for the tissues

• Tooth size, shape, shade selection, and arrangement are easy.

• It is easier for the patient to adapt to the permanent prosthesis **(George, 2006).**

1.6.3. Disadvantage:

• Requires more chair time.

• More expensive.

• Due to the different positions of the teeth centric relation and centric occlusion are difficult to record.

• Try-in procedure is not possible. Hence the dentist cannot have any idea about the outcome of the denture.

• The patient might find speech and mastication difficult for a short period **(George, 2006).**

1.7. Transitional (Interim) immediate dentures:

An interim denture is defined as, "A dental prosthesis to be used for a short interval of time for reasons of aesthetics, mastication, occlusal support, or 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" - GPT. These are immediate dentures used temporarily, during the healing period of the patient to preserve ridge contour, until the permanent denture can be fabricated. They are **mainly indicatedin** patients with periodontal disease going in for total extraction. They help to preserve the contour of the ridge until a permanent denture can be fabricated **(Śarada, 2009).**

1.7.1. Advantages:

• The shape and height of the ridge are preserved.

• Psychologically beneficial to the patient.

• It can be used as a temporary replacement when the permanent denture is being fabricated or undergoing any repair or rebasing.

• The dentist will be able to get an idea of the vertical dimension and jaw relation of the patient.

• For patients who show atrophic changes due to long-term edentulousness the interim denture helps to rehabilitate the temporomandibular joint and the oral musculature **(Śarada, 2009).**

Table 1: COMPARSION OF CIDS AND IIDS

Conventional Immediate Denture(CID)	**Interim Immediate Denture (IID)**
Intended as definitive or long-term prosthesis	Transitional or short-term prosthesis
After healing is complete , it is relined	After bealing, a second dentare is made, the ID is kept as a spare denture and may be relined for use as a spare
Usually has good retention and stability at placement, which is possible to maintain during healing	Usually has only fair retention and stability at insertion, which must be improved by provisional relines (tissue conditioning) during healing
The overall cost of CID treatment is less The overall cost of ID treatment is greater than CID treatment because it includes the cost of the interim denture and a second denture	The overall cost of IID treatment is greater than CID treatment because it includes the cost of interim denture and a second denture
Treatment process takes longer than the IID because there is a delay of 3-4 weeks for the posterior teeth extraction areas to heal partially before making the final impression	Treatment process takes less than the CID because denture fabrication procedures can begin right away
Generally indicated when only anterior teeth are present or few posterior teeth remain that do not support an existing removable partial denture	Generally indicated when there are multiple anterior and posterior teeth remaining or full arch extractions and or these teeth support a removable partial denture that the patient desires to retain until insertion
Generally indicated when patient can function without posterior teeth for approximately 3 months (3-4 weeks posterior area healing time plus 2 months to fabricate and place the CID)	Generally indicated when the patient cannot or will not go without posterior teeth ar an existing removable partial denture because of esthetic or functional concerns
At placement of the CID, usually only anterior teeth are extracted (possibly also one premolar on each side that had been retained to preserve the vertical dimension of occlusion)	At placement of the IID, usually both anterior and posterior teeth are extracted
Indicated when two extraction visits are feasible	Indicated when only one surgical visit is preferable (eg, to meet "one hospital surgical visiimurance benefits or when the patient's medical condition warrants only one surgical andor hospital visit
Esthetics of the CID are acceptable	The second denture procedure after the IID allows an alternation of esthetics and any other factor
At the end of the treatment, the patient has one denture	At the end of the treatment,the patient has a spare denture to use in case of extenuating
If all posterior teeth are initially removed, the vertical	Because posterior teeth need not be removed before fabrication

dimension of occlusion is not preserved; opposing premolars can be maintained for this purpose	of the IID, the vertical dimension of occlusion may be preserved
Contraindicated for a patient who has a complex treatment plan (e.g., periodontal therapy, crowns, fixed partial dentures and removable partial dentures in the opposing arch) or for changes in the vertical dimension of occlusion	Indicated when the patient will become edentulous in one arch and become partially edentulous in the opposing arch for the first time or complex procedures are needed (such as crowns, fixed partial dentures, and removable partial dentures) or changes in the vertical dimension of or changes in the vertical dimension of occlusion; an upper IID against a transitional lower partial denture can be made; then any periodontal procedures, crowns, and fixed partial dentures can be done during the initial healing stage
Not useful for converting existing prostheses such as removable partial dentures	Can be useful in converting existing prostheses to an IID

1.8. Diagnostic dentures (splint):

Diagnostic dentures are used primarily to diagnose a patient's problem. The diagnostic denture is one in which the anterior segment contains the artificial teeth, while the posterior segment consists of flat occlusal blocks made of plastic resin The posterior teeth are extracted in the same manner as that for the usual complete dentures, and a period of healing is allowed; or all of the natural teeth may be extracted at one time, and the diagnostic dentures are placed in the same manner as that for transitional dentures **(Singh et al, 2019).**

Diagnostic dentures are indicated for patients with advanced periodontal disease. Due to the movement and extrusion of the natural teeth, the correct vertical dimension and centric relation may be difficult to determine for these patients. By reducing or adding to the flat acrylic resin posterior segment, the correct centric relation and occlusal vertical dimension can be restored. In addition, the patient's esthetic requirements may be incorporated into the new dentures. In many instances, patients may masticate with lateral mandibular movements. With flat occlusal surfaces, the patient is not "locked-in" an occlusion and a study of the masticatory habits may be undertaken **(Akulwar, 2021)**

1.9. Flange type:

A.Partial flange:

The partial flange is indicated for immediate dentures when

(1) Undercuts are present on the labial and buccal sections of the residual ridge.

(2) The flange should serve as a surgical splint.

The partial flange is contraindicated for immediate dentures when:

(1) The economic condition of the patient renders multiple corrective procedures impractical and

(2) The patient has an unusually active lip line which would cause the denture flange to be unaesthetic due to exposure of its labial border **(Gooya et al, 2012).**

B.Complete flange:

A labial flange may be used for the majority of patients when

(1) No large anterior bony undercuts are present.

(2) The lip line and lip activity are normal.

(3)The teeth are periodontal involved and supporting bone is lost .

A flange on an immediate denture is contraindicated when:

(1) Pronounced undercuts are present in the anterior labial region of the alveolar residual ridge.

(2)Fullness of the lip would produce an unaesthetic result**(Gooya et al, 2021)**

C.Flangeless immediate dentures:

The flangeless immediate dentures are indicated when

(1) Deep undercuts are present on the anterior labial and buccal residual ridge.

(2) A high lip line and an active lip would expose an unaesthetic flange.

(3)Minimal amount of surgery is considered desirable.

Flangeless immediate dentures are contraindicated when:

(1) Periodontal disease exists with a substantial amount of bone loss which makes an acceptable cosmetic effect difficult.

(2) An anterior fixed partial denture has been worn resulting in an uneven contour of the anterior residual ridge **(Gooya, 2012).**

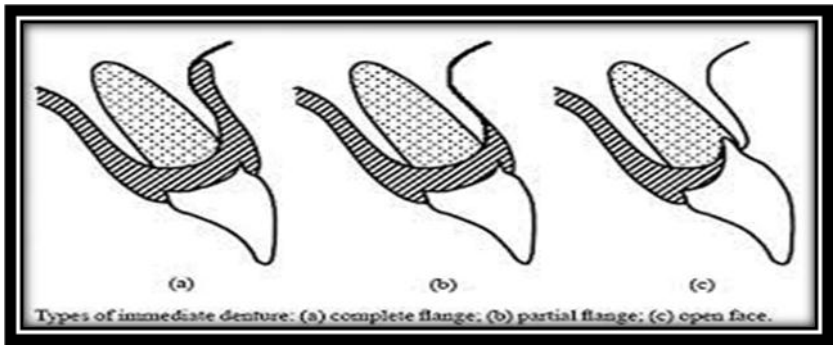

Figure (1.1): Types of the immediate denture **(Gooya, Ejlali and Adli, 2012).**

Comparsion between flanged and open

1. Appearance (1) A flanged denture's appearance does not change once it is fitted, however an open-face denture's appearance, while good at first, might quickly degrade as resorption creates a space between the teeth's necks and the ridge.

2) The flange design gives the anterior teeth a lot of leeway in terms of placement, but the open face denture requires the anterior teeth to be positioned with their necks in the sockets of their natural predecessors.

2. Consistent performance

An upper denture with a flange offers a better border seal and, as a result, greater retention than an open-face design. A border seal is typically not as important in the lower denture. A labial flange, on the other hand, improves stability by preventing posterior denture displacement.

3. Strength

1) The presence of a labial flange results in a denture that is more resistant to breaking due to accidental impacts or severe occlusal loads.

(2) A labial flange will stiffen the denture, reducing the risk of a midline fatigue fracture caused by repeated flexing across the midline.

4. Maintenance (1) The immediate denture becomes loose as the bone resorbs after the teeth are extracted, necessitating a reline. The inclusion of a labial flange makes it easy to use a chair-side process to apply either a short-term soft lining material or a cold-curing polymethylmethacrylate relining material.

5. Hemostasis

(1) The flanged denture totally covers the clots and protects them better than an open-face denture.

(2) The flanged denture also applies pressure to the lingual and labial gingivae, minimizing the risk of hemorrhage after extraction.

6. The ridge is being remodeled.

A patient's failure to attend a maintenance appointment is always a possibility. The resulting wear of an ill-fitting denture might result in a scalloped ridge in the socketed teeth region if it is open-faced. This risk is eliminated with a flanged denture, which also has the benefit of dispersing functional loads more evenly to the underlying ridge, reducing bone resorption.

1.9. Diagnosis and treatment planning

Diagnosis and treatment planning of immediate denture patients Diagnosis is defined as the determination of the nature, location, and cause of the disease. The diagnostic procedure starts by reviewing the medical and dental history of the patient, intraoral and extraoral examinations of the soft and hard tissues, evaluation of the patient's mental attitude and his/her expectations. The medical history and past dental history of the patient are of utmost importance in evaluating the prognosis for the immediate dentures **(Sumit and Parama, 2009).**

1.9.1.Some of the systemic conditions which can affect the basal seat are:

• Uncontrolled diabetics

• Cardiovascular and cerebrovascular diseases – these present a problem of the poor clotting mechanism

• Mucosal disorders such as desquamative stomatitis

• Keratosis, hyperkeratosis, and dyskeratosis can result from deficiency of vitamins A and B

• Dermatological disease, such as psoriasis, pemphigus, or erosive lichen planus

• Collagen disorders such as lupus erythematosus

• Osteoporosis resulting from bone matrix defect during the extraoral examination, facial form, facial symmetry, facial profile, and temporomandibular joint (TMJ) are evaluated. It is followed by a complete clinical examination of the hard and soft tissues, which also includes assessing the periodontal condition of the remaining teeth. It is supplemented by full mouth radiographic series (IOPA and bitewing) which help evaluate the extent of the bone loss due to periodontal disease **(Serge and Dietrich, 2010).**

1.9.2. Local factors which are of significance in complete immediate denture treatment:

• Periodontal status of the remaining teeth to be extracted • Location of the teeth in the arch

• Presence and severity of soft and hard tissue undercuts

• Presence of bony exostosis

• Condition of the bone adjacent to the remaining teeth

• Lack of muscular coordination.

A patient's psychological status and mental attitude should be assessed during the diagnosis and treatment planning phase. The patient's expectations are

discussed and the patient should be educated from the first visit to the completion of the treatment. A treatment plan is formulated based on the diagnostic information of the patient. When a treatment plan is made for immediate complete dentures, either both the maxillary and mandibular arches are restored together or either of the arches is restored. It should be preferred to restore the single arch with the immediate complete denture and after its stabilization, the opposing arch should be treated **(Keyvan, 2018).**

1.10. History, examination and diagnosis

Prior to making a final decision on immediate denture fabrication it is necessary to collect more detailed information from the patient about his/her general health. If the patient is ill, it is necessary to know whether he is in treatment and which med- ication he takes. If a severe disease is in question, it is necessary to consult the patient's doctor about whether the patient can undergo procedures of immediate denture fabrication. It is important to identify the patient's expectations and to explain to him/her limitations and possibilities of fabrication of aesthetic and functional satisfactory restorations. An immediate denture can replace one tooth, several teeth or all teeth in one or in both jaws. Sometimes it is necessary to hospitalise the patient in order to carry out preoperative and postoperative procedures more easily and safely.

A detailed extraoral and intraoral examination is the basis for correct diagnosis, indication and treat- ment planning. Inspection, palpation and radio- logical examination help in assessment of the state of soft tissues, periodontium of the remaining teeth, bones, temporomandibular joints and muscles.

It is especially useful to collect and store data on the patient's teeth. In this way information about the shape, size, colour and position of teeth, as well as about the vertical and horizontal relations of the lower and upper jaw can be obtained. The patient's natural teeth, diagnostic casts, old dentures and photos are the most helpful (**Sonja et al,2001).**

1.10.2. Oral examination

The shade and mold of the existing teeth should be determined. A gingival shade should be taken with denture-base shade tabs. Patients should be asked if they like their current shade and tooth position and what changes they would make, if any. This discussion should include deciding whether to preserve diastemata, rotations, and overlapping of teeth for a more natural transition and a more natural-looking denture. This initial esthetic dialogue will streamline the final tooth selection process at a later visit. It also is best to include photographs as part of the permanent record, including full-size face and profile, lips closed and smiling, and an intraoral view of the teeth in maximum occlusion.

Time should be spent evaluating the lip support, philtrum shape, position of high lip line, low lip line, occlusal plane and amount of tooth exposure in function while the patient is both silent and talking. Notation of the following factors will help in later visits:

- The patient's existing midline and need for modification of its position (existing teeth may have drifted, especially if a nearby tooth has been lost for some time)
- The patient's existing vertical dimension of occlusion and amount of interocclusal distance (freeway space) and the need for conforming to or changing it, according to whether the patient's existing maximum occlusal position coincides with the planned centric relation position for the immediate dentures and how difficult it is to manipulate or achieve that position for recording.
- The present amount of horizontal and vertical overlap of anterior teeth
- Whether a horizontal cant or lack of harmony of the occlusal plane with facial form, or a hypererupted alveolus requires correction with surgery or correction with prosthetic tooth position.

1.11. Explanation to the patient

The patient should always be provided with a careful explanation of the limitations of the immediate denture service.

Explanation to the Patient Concerning Immediate Dentures:

1. They do not fit as well as complete dentures. They may need temporary linings with tissue conditioners and may require the use of denture adhesives.
2. They will cause discomfort. The pain of the extractions, in addition to the sore spots caused by the immediate denture, will make the first week or two after insertion difficult.
3. It will be difficult to eat and speak initially, almost like learning to eat and speak all over again.
4. The esthetics may be unpredictable. Without an anterior try-in, the appearance

of the immediate denture may be different from what you or the dentist expected.

5. Many other denture factors are unpredictable, such as the gagging tendency, increased salivation, and facial contour.
6. It may be difficult or impossible to insert the immediate denture on the first day. Every effort will be made to do so. If it is not possible, it will be inserted or remade as quickly as possible.
7. I mmediate dentures must be worn for the first 24 hours without being removed by the patient. If they are removed, they may not be able to be reinserted for 3 to 4 days. The dentist will remove them at the 24-hour visit.
8. Because supporting tissue changes are unpredictable, immediate dentures may loosen up during the first 1 to 2 years. The patient is responsible for all fees involved in refitting or relining the dentures.

1.12. Clinical procedures in the fabrication of ICD

Surgical Procedure

The posterior teeth are extracted first leaving bilateral centric stops on the retained natural teeth, usually the incisors, canines, and first premolars. If any pre-prosthetic surgery is required, it should be performed at the initial surgery appointment. A healing period of 6-8 weeks should be maintained before the commencement of the prosthodontic procedure. The other surgical procedures that may have to be performed are:

a. Elimination of broken / left over roots / root stumps.

b. Surgical correction of bony projections/exostosis that would interfere with the insertion of denture

c. Surgical resection of soft flabby tissue.

d. Closely attached frenal attachments **(George, 2006b).**

Figure (1.2): Mandibular partially edentulous arch for immediate denture treatment **(George, 2006b).**

A.Periodontal Therapy:

Thorough prophylaxis of anterior teeth should be done to permit quick healing after the extraction of teeth **(George, 2006b).**

Preliminary Impression of Jaw Foundation

The impression is made using alginate material in the stock perforated tray which is modified with boxing wax on the borders. The center of the palatal surface of the maxillary tray is also covered with wax, to effect a closer approximation of the tray to the palatal tissues. The wax border extensions ensure the proper extension of the impression and adequate support of the alginate impression material. Wax stop should be placed in widely separated areas. Even if the wax shows through the first impression surface because of tissue contact, it will not harm the impression since it is soft and exerts minimal pressure **(Stoker and Wismeijer, 2009).**

Figure (1.3): Tray modification **(Stoker and Wismeijer, 2009).**

B. Impression Procedure:

Three final impression procedures are explained as follows:

First Procedure:

The single thickness of modeling wax is placed to cover the palatal surface of the maxillary foundation including the palatal surfaces and incisal edges of the teeth to form a ledge or seat for the tray anteriorly. The first part of the final impression includes all the areas except labial sections and the second part includes the labial vestibule along with labial surfaces of the teeth which is divided into two sections to facilitate proper removal from the mouth. Borders

of the tray are perfected by using a low fusing compound. Material for the first part of the impression may be either zinc oxide eugenol or rubber base impression material. Stops are used for correctly locating the tray in the mouth. The second part of the impression is made with quick setting plaster for the labial surface and vestibule. A small groove is cut in the anterior section of plaster to permit clean fracture of the set impression plaster for easy removal. All the three sections are joined together in their proper alignment and the master cast is poured **(Elsyad, et al, 2011).**

Second Procedure:

A. Single Impression Technique:

The peripheral tissues should be recorded with a low fusing compound. The impression of the entire edentulous foundation is made with rubber base impression material using a custom tray **(Elsyad, et al, 2011).**

B. Third Procedure: Dual Impression Technique

A self-cure acrylic resin tray is fabricated to conform to the edentulous segments only. The trays have positive stops on the lingual surfaces of the remaining teeth and in the buccal shelf area and posterior palatal seal areas. The peripheral tissues are recorded with a low fusing impression compound. The tray is relieved by placing escape vents and an impression is made with zinc oxide eugenol impression paste/rubber base impression material. This sectional impression is checked in the usual manner and all excess material is removed. The impression is placed back in the same position in the mouth and an irreversible hydrocolloid impression is made with a perforated stock tray. When the hydrocolloid impression has been set the impression is retrieved from the mouth along with the sectional impression and the cast is poured **(Fatahillah, et al, 2018).**

C. Jaw relation records

Well adapted record bases are made and occlusal rims fabricated. Face bow record and centric relation are recorded in the usual manner and transferred to the articulator **(Rahn, et al, 2009).**

D. Selection and arrangement of teeth and try-in

- Shape, size, and shade of the teeth are selected using the existing dentition of the patient.
- Appropriate teeth are selected and arranged to provide bilateral posterior contacts in centric relation. Posterior try-in
- Posterior try-in is done to verify the centric relation and the vertical dimension of occlusion
- Position of the posterior palatal seal is verified and scribed on the cast **(Vijay and Ruchi, 2017).**

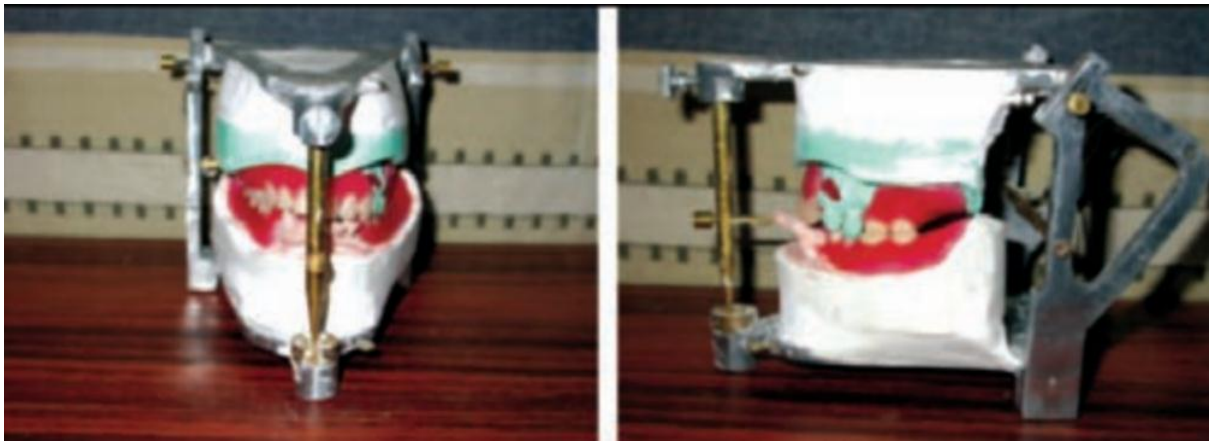

Figure (1.4): Arrangement of posterior teeth **(Vijay Prakash and Ruchi Gupta, 2017).**

E. Arrangement of anterior teeth:

- The anterior teeth are arranged once the satisfactory posterior try-in is accomplished.
- The anterior teeth are trimmed one at a time from the master cast.

• Each tooth is trimmed to the level of gingival margin using a sharp BP blade or rotary instrument.

• Denture tooth is positioned in this space.

• In the first method, alternate teeth are removed from the cast and the denture tooth is positioned.

• This procedure is repeated for arranging all the anterior teeth.

• This method ensures accurate positioning of the teeth and maintaining a natural appearance.

• In the second method, teeth on the cast are trimmed to a line corresponding to the depth of the gingival sulcus and are broken off the cast at their cervical aspect.

• One segment of the cast is trimmed and the teeth are arranged to take the other segment as a guide.

• Similarly, the other segment is removed and the denture teeth are arranged.

• The advantage of this method is that the clinician can ensure that the complete cast preparation is carried out correctly **(Yankova and Fetfova, 2016).**

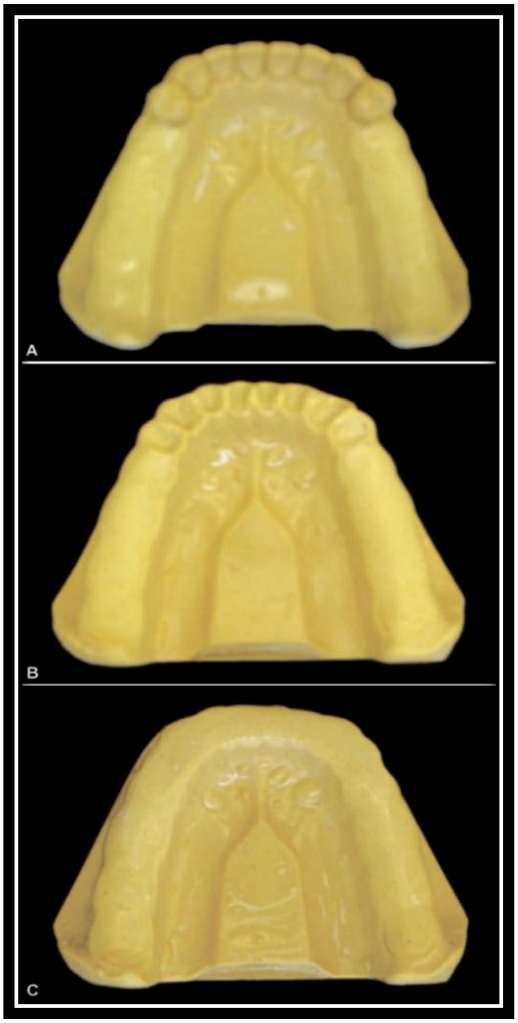

Figure (1.5): Procedure for the elimination of teeth on the cast (A) Partially edentulous arch for immediate denture treatment (B) Elimination of teeth maintaining the gingival margin (C) Rounding off the ridge **(Yankova and Fetfova, 2016).**

F.Extraction of teeth and insertion of the denture

The dose and rate of administration of anesthesia are controlled to avoid volume changes in the tissues. The remaining teeth should be removed with a minimum of trauma. Bony spicules and sharp edges of bone are carefully smoothed. Conservative surgery is preferable to preserve as much alveolar bone as possible. If sutures are necessary, use as few as possible and avoid excessive tension. The dentures can be inserted after the initial control of bleeding. The denture borders and surfaces should be examined and adjusted for any overextensions and areas of tissue surface projecting into the sockets. Once the

denture is seated, gross occlusal prematurities can be eliminated while the patient is still under local anesthesia. The denture should be manipulated as little as possible to avoid further trauma to the extraction sites. Final corrections of the denture can be done at a later stage **(Bissasu, 2004).**

Figure (1.6): Extraction of anterior teeth **(Bissasu, 2004).**

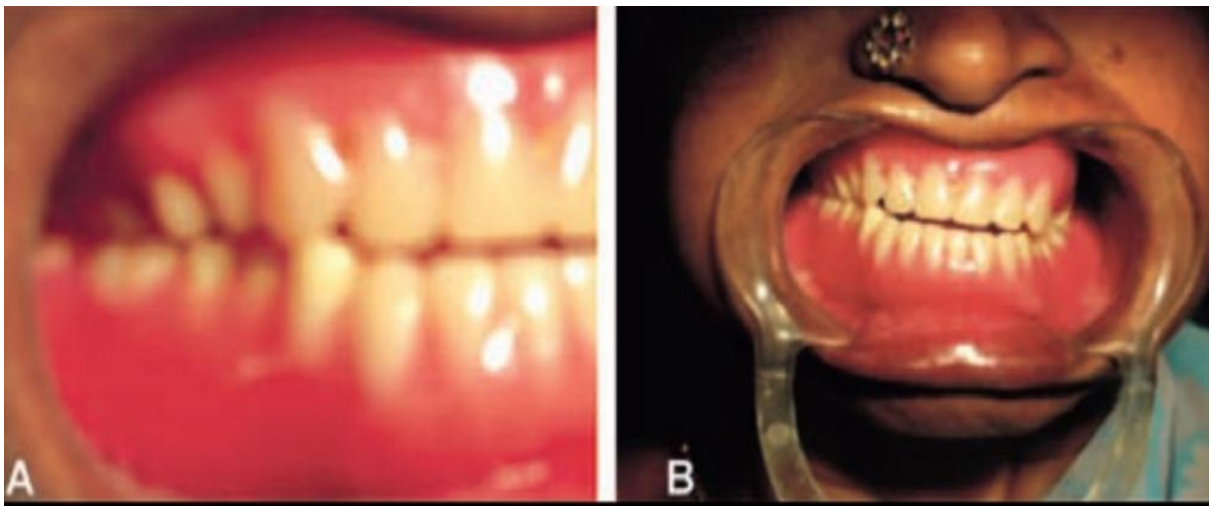

Figure (1.7): Immediate denture insertion **(Bissasu, 2004).**

C. Post-operative care and instructions to the patient:

First 24 Hours The patient should avoid rinsing, avoid drinking hot liquids or alcohol, and not remove the immediate denture (s) during the first 24 hours. Because inflammation, swelling, and discoloration are likely to occur, their partial control can be helped with ice packs (20 minutes on, 20 minutes off) on the first day. Because of swelling, premature removal of the immediate denture could make its reinsertion impossible for 3 to 4 days or until the reduction of swelling. In addition, If swelling occurs and the denture can be reinserted, the number of sore spots created will be increased. The patient should be reminded that the pain from the trauma of extraction would not be eliminated by the removal of the dentures from the mouth. Analgesic medications are prescribed as required. Patients should be alerted to expect minimal blood on their pillow during the first night. The diet for the first 24 hours should be liquid or soft if tolerated **(Martins et al, 2014).**

Ask patients where they feel sore. Warn them that you are going to remove the denture and that this will cause some discomfort. Have some dilute mouthwash ready for the patient to rinse with. Remove the denture and wash it **(Khanna and Gurav, 2012).**

Quickly check the tissues for sore spots related to the denture; these will appear as strawberry-red spots. Usually, these areas include canine eminences, lateral to be tuberosities, posterior limit areas, and retromylohyoid undercuts as well as any other undercut ridge areas **(Martins, Freire and Júnior, 2014).**

These areas may be related to the denture bases visually or with the adjunctive use of pressure indicator paste. The corresponding areas are relieved in the acrylic resin. The denture should be kept out of the mouth only for a very short time. Adjust any gross occlusal discrepancy in centric relation or excursions. Reevaluate the denture for retention. Place a tissue conditioner if denture retention is unsatisfactory **(Khanna and Gurav, 2012).**

First post-operative week:

Counsel the patient to continue to wear the immediate denture at night for 7 days after extraction or until swelling reduction. This ensures that a recurrence of nocturnal swelling will not preclude reinserting the denture in the morning. Starting immediately after a 24-hour visit, the patient should be shown how to remove the denture after eating to clean it and to rinse the mouth at least three to four times daily to keep the extraction sites clean. The denture should then be quickly reinserted and worn continuously. After one week, sutures can be removed, and the patient can begin removing the denture at night **(Wiens et al., 2018).**

It is anticipated that gradual ridge resorption will occur over the first 3 to 6 months, which may necessitate the readaptation of the denture to the tissue surface. A reline or rebase of the denture is anticipated within the first year of clinical service. The relining is established through observation of diminished adaptation to the underlying soft and hard tissue **(Zarb et al., 1997).**

CONCLUSION

Functional, aesthetic, and psychological reasons justify the fabrication of immediate complete dentures wherever possible. The success of 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 extraoral and intraoral examination. Before the beginning of the treatment, the patient should be introduced to the plan, advantages of an immediate denture, and possible difficulties. In this way, acceptance and cooperation of the patient are assured.

When making a final decision it is necessary to consider possible contraindications. With due care in preparation, immediate dentures can be recommended and fabricated in the majority of patients who request them.

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