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# Single Complete Denture

A Project Submitted to

The College of Dentistry, University of Mosul, Department of Prosthodontics in Partial Fulfillment for the Bachelor of Dental Surgery

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# Certification of the Supervisor

I certify that this project entitled " **Single Complete Denture** " was prepared by the fifth-year student ( Mariam Muzahem Abdulrahman )under my supervision at the College of Dentistry/University of Mosul in partial fulfilment of the graduation requirements for the Bachelor Degree in Dentistry.

Supervisor’s name: Assit Lect. Dr. Ali Khalil Hassan Marie

Date … / / 2025

# Acknowledgment

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# Introduction

Single complete denture construction against a non-modified natural dentition is a very challenging task for the dentist due to certain drawbacks like frequent prosthesis fracture, dislodgement, difficulty to obtain occlusal balance, and achieve satisfactory esthetics (due to fixed position of the natural teeth) **(Upadhyay *et al.*, 2012).**

Mal-aligned, tilted or supra-erupted teeth in the opposing arch are some of the problems must be corrected to achieve a balanced occlusion in patients who require SCD. Improperly constructed denture can cause mucosal inflammation, soreness, bone resorption. Thus establishment of a normal occlusal plane in the opposite arch is a pre-requisite for developing a balanced occlusion in SCD **(Bhandari *et al.*, 2014)**

Various techniques for the occlusal plane correction are: Swenson's technique, Yurktas technique, Bruce technique, Boucher technique & Broad rick flag technique. In this article Bruce technique is used for the construction of single complete denture opposing natural dentition **(Archana Singh ,2014)**

Single-arch complete denture restoration against natural dentition is always challenging. Due to the fixed position and irregular occlusal planes of the opposing dentition, the dentist's control over the occlusal design and arrangement is always compromised, resulting in frequent fracture and dislodgement of the denture. Hence, the opposing dentition should be modified before denture restoration to form an appropriate occlusal plane as much as possible**. (Yang *et al.*, 2022)**

The fixed positions of the mandibular anterior teeth make the esthetic and phonetic placement of the maxillary teeth difficult without introducing anterior interferences in eccentric functional movements. Another problem with dentures opposing natural teeth

is that of abrasion of the artifical teeth if acrylic resin is used or the abrasion of natural teeth if porcelain is used. Although these circumstances make treatment difficult and many times compromised, perhaps the greatest error is to make no attempt to modify the occlusal arrangement of the natural teeth. Failure to diagnose and properly modify the mandibular teeth to achieve occlusal harmony with the denture will result in forces that may exceed the physiologic tolerance of the maxillary residual ridge tissues. **( Shroff *et al*., 2016 )**

# Aim of study

This project aims to review literature about single complete denture and difficulties occurs during treatment, determined the suitable types of material of teeth and denture base use in this type, clarify the techniques use in fabrication this denture and explain the outcomes of improper treatment plan.

# Chapter one

# Review of the Literature

## 1.1 Single Complete Dentures

The primary consideration for a single complete denture is preservation. By opposing the natural teeth, the magnitude of the force transmitted to the denture and arrangement of artificial teeth will be the major considerations while planning the denture. **(Rangarajan and Padmanabhan, 2017)**

### 1.1.1 Objectives of single complete denture

Single complete denture should follow numbers of objectives:

1) To achieve an acceptable interocclusal distance.

2) To achieve a stable jaw relationship with bilateral tooth contacts in retruded closure.

3) To achieve stable tooth quadrant relationships providing axially directed forces.

4) To achieve multidirectional freedom of tooth contacts throughout a small range of mandibular movements. **(Prakash and Gupta, 2017)**

### 1.1.2 Indications for single complete denture

Single complete denture is desirable when it opposes any of the following:

• Natural dentition only

• Combination of fixed restorations and the natural teeth

• A removable partial denture and the natural teeth

• An existing complete denture **(Prakash and Gupta, 2017)**

### 1.1.3 Problems encountered in single complete dentures

Problems seen in single complete dentures can be summarized as follows:

1. Deficiency of stability

2. Damage to the mucosa and resorption of the alveolar bone

3. Inefficiency of function

4. Denture base fractures

5. Depending on the teeth material used for the denture, abrasion of artificial teeth or antagonist natural teeth **( Özkan , 2019 )**

## 1.2 Maxillary single complete dentures

Maxillary single dentures are often more successful than mandibular dentures for a number of reasons. First, the mandibular arch is the moveable member of the stomata-atognathic system (mouth, jaws, and related structures), which inherently lacks its stability. Additionally, the proximity of the mandibular denture borders to the tongue and other moveable mucosa may lead to easier displacement. **( Rahn *et al*., 2009 )**

Thirdly, the mandibular edentulous ridge, with its limited amount of attached submucosal tissue, provides less support for the denture base. Therefore, if stability of the single denture is of primary importance for its success, it is clear why patient satisfaction is greater with maxillary single dentures. **(Rahn *et al*., 2009)**

### 1.2.1 Maxillary complete denture opposing complete mandibular natural dentition

Gross occlusal discrepancies are very common and require occlusal adjustments or orthodontic corrections. Some important points to be considered during the construction of these dentures are: The morphology of the natural teeth will determine the selection of the artificial teeth. For example, the size and shade of the artificial teeth should match the natural teeth.

• If the mandibular teeth are attired, or cusp-less teeth are preferred.

• If the mandibular teeth are not attired, anatomic teeth are preferred.

Because of the angulation of the natural lower teeth, the upper teeth may not be arranged in the aesthetically acceptable positions. In order to encounter this problem, the natural teeth can be orthodontically repositioned or the clinical crown of the teeth can be altered by grinding or with restorations. **(Veeraiyan, 2017**)

### 1.2.2 Maxillary complete denture opposing mandibular partial denture

These dentures are clinically very significant due to their complications. Teeth selection is very important in the fabrication of the denture. Artificial teeth for these dentures should be selected based on the following factors:

• If the opposing partial denture has porcelain teeth, porcelain teeth are preferred.

• If the opposing natural teeth have gold or metal crowns then acrylic teeth are preferred.

Acrylic teeth are preferred in dentures opposing normal natural teeth or a partial denture with artificial acrylic teeth. **( Veeraiyan , 2017 )**

Many Complications of maxillary complete denture opposing mandibular partial denture are diagnosed:

- Combination syndrome

- Wear of the natural teeth

- Denture fracture. **(Veeraiyan, 2017)**

## 1.3 Combination syndrome ( Kelly's Syndrome)

It was identified by **Kelly in 1972**, is a dental condition that is commonly seen in patients with a completely edentulous maxilla and partially edentulous mandible with preserved anterior teeth. This syndrome consists of severe anterior maxillary resorption combined with hypertrophic and atrophic changes in different quadrants of maxilla and mandible. **( Tolstunov , 2007 )**

### 1.3.1 Classification of combination syndrome

According to **Tolstunov in 2007** combination syndrome can be classified into the following:

#### 1.3.1.1 Class I

Maxilla: completely edentulous alveolar ridge.

Mandible: Modification 1 (M1): partially edentulous ridge with preserved anterior teeth only.

Modification 2 (M2): stable "fixed" full dentition (natural teeth or implant-supported crowns/bridges).

Modification 3 (M3): partially edentulous ridge with preserved teeth in anterior and one posterior region. **( Tolstunov , 2007 )**

### 1.3.1.2 Class II

Maxilla: partially edentulous alveolar ridge with teeth present in both posterior regions, edentulous and atrophic anterior region.

Mandible: modifications are the same as in Class I **(M1, M2, and M3) (Tolstunov , 2007 )**

### 1.3.1.3 Class III

Maxilla: partially edentulous alveolar ridge with teeth present in one posterior region only, edentulous and atrophic anterior and one posterior region.

Mandible: modifications are consistent with Classes I and II **(M1, M2, M3A, and M3B) ( Jameson , 2003 )**

## 1.3.2 Pathogenesis of combination syndrome

Combination syndrome progresses in a sequential manner. The progress of the disease can occur in any of the following sequences. In Sequence1 the:

1. Patient tends to concentrate the occlusal load on the remaining natural teeth (mandibular anteriors) for proprioception. Hence there is more force acting on the anterior portion the maxillary denture.

2. This leads to an increased resorption of anterior part of the maxilla which gets replaced by flabby tissue. The occlusal plane gets tilted anteriorly upwards and posteriorly downwards.

3. The shift of the occlusal plane posteriorly downwards produces resorption in the mandibular distal extension denture bearing area.

4. Mandible shifts anteriorly during occlusion.

5. The vertical dimension at occlusion is decreased. The retention and stability of the denture is also reduced.

6. The supraerupted anteriors increase the amount of force acting on the anterior part of the complete denture and the vicious cycle continues as in **fig (1.1). (Shinde *et al*., 2016)**

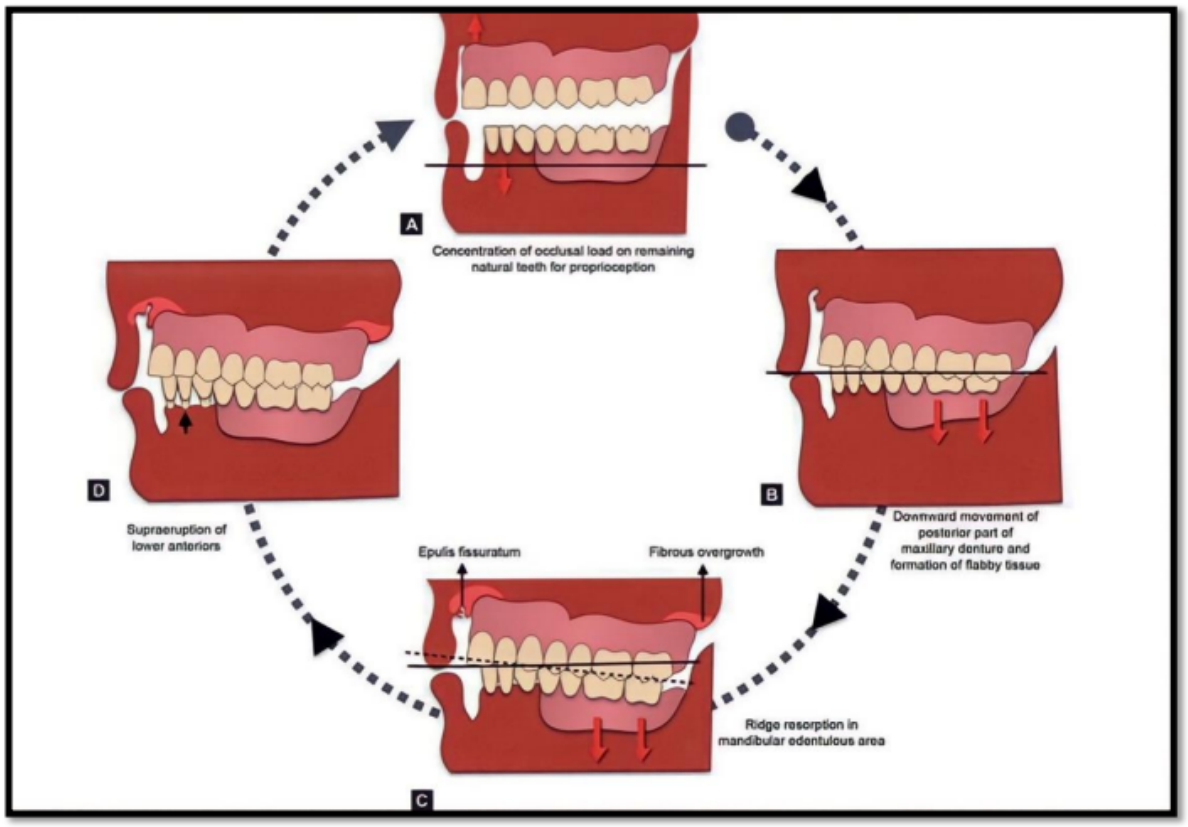


**Figure (1.1):** sequence 1 of combination syndrome **(Veeraiyan, 2017)**

While in Sequence 2

1. Gradual resorption of the distal extension residual ridge in the mandible.

2. Tilting of the occlusal plane posteriorly downwards ands and anteriorly upwards. Rest of the vicious cycle continues as sequence 1. In addition the chronic stress and movement of the denture will often result in an ill-fitting

prosthesis and contribute to the formation of palatal papillary hyperplasia as in **fig (1.2) . ( Bhuminathan *et al*., 2014 )**

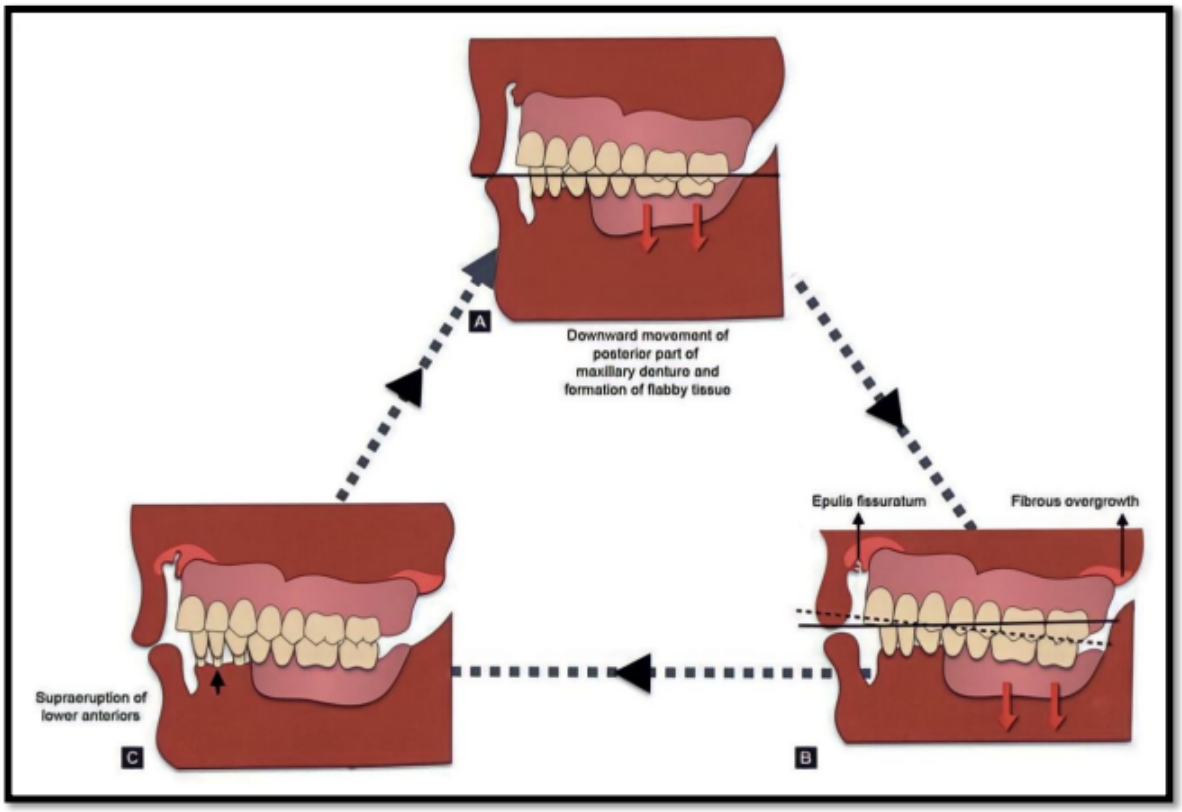


**Figure (1.2):** sequence 2 of combination syndrome **( Veeraiyan , 2017 )**

### 1.3.3 Syndrome Characteristics

There are five signs or symptoms that commonly occurred in this situation according to **Resende *et al*., (2014)**:

1- Bone resorption in the maxillary anterior region

2- Tuberosity overgrowth , as in fig (1.3) a

3- Palatal papillary hyperplasia , as in fig (1.3) b

4- Extrusion of the remaining natural mandibular teeth

5- Mandibular posterior bone resorption.

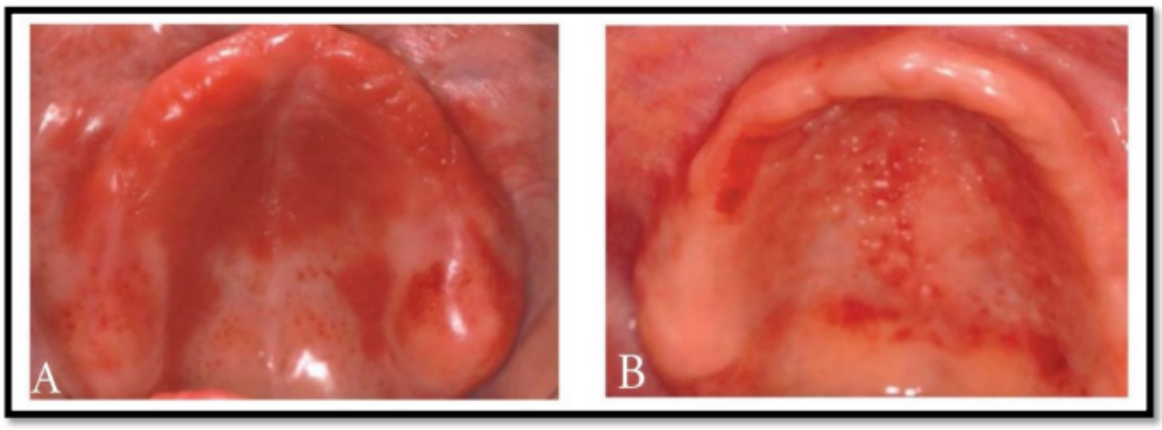


**Figure (1.3)**: Syndrome Characteristics : A) Overgrowth of the tuberosities . B) Papillary hyperplasia in the hard palate. **( Salvador *et al*., 2007)**

There are additional changes or signs associated with this syndrome, as stated by **( Bhuminathan *et al*., 2014 )** . they include:

1. Loss of vertical dimension of occlusion
2. Occlusal plane discrepancy.
3. Anterior spatial repositioning of the mandible
4. Poor adaptation of prosthesis.
5. Epulis fissuratum , as in **Figure (1.4)**
6. Periodontal changes.

**Figure (1.4)** Epulis fissuratum **( Salvador *et al*., 2007)**

### 1.3.4 Management of combination

Preserving the health and function of remaining natural teeth can prevent progression of combination syndrome. Early detection of the symptoms of combination syndrome will enable the dentist to initiate corrective measures. Prosthodontic treatment of combination syndrome should be designed to restore posterior occlusal support and reduce the occlusal pressure on the anterior maxilla as much as possible. Proper occlusal records at the correct vertical dimension of occlusion are critical to determine if there has in fact been supraeruption of the mandibular anterior teeth. **( Termeie , 2016 )**

### 1.3.5 Prevention of combination syndrome

The prevention this syndrome according to **( Gupta *et al*., 2018 )** is by the following:

- Avoid combination of maxillary complete dentures opposing mandibular removable partial denture

- Retaining weak posterior teeth as abutments by means of endodontic and periodontic treatment.

- An over denture on the lower teeth.

### 1.3.6 Treatment

Before proceeding with the prosthetic treatment, gross changes that have already taken place should be surgically treated that suggest by **Kelly in 1972**.

These include conditions like:

- Flabby (hyperplastic) tissue

- Papillary hyperplasia

- Enlarged tuberosities

- Lower partial denture base should be fully extended and should cover retromolar pad and buccal-shelf area. **( Rajendran , 2012 )**

They also stated some specific objectives:-

1- Mandibular removable partial denture should provide positive occlusal support from the remaining anterior teeth and have maximum coverage of basal seat beneath distal extension bases.

2- The design should be rigid and should provide maximum stability while minimizing excessive stress on remaining teeth.

3- The occlusal scheme should be at a proper vertical and centric relational position

4- Anterior teeth should be used for cosmetic and phonetic purposes only.

5- Posterior teeth should be in balanced occlusion.

6- Patient education and frequent recall and maintainance care are essential, if the development of this insidious syndrome is to be avoided. **( Gupta *et al*., 2018 )**

Many treatments approach that attempted to minimize the destructive changes as suggested by **( Madan and Datta , 2006 ).**

- The prosthesis is made in 2 stages.

- Mandibular RPD is completed first.

- Acrylic resin teeth are used to replace the maxillary anterior teeth.

- Cast gold occlusal surfaces for posterior denture teeth.

• Mandibular overdenture provided better prognosis in patients who already had combination syndrome and whose mandibular anterior teeth were structurally periodontally compromised.

• Mandibular implant-supported overdenture offers significant improvement in retention, stability, function and comfort for the patient and a more stable and durable occlusion **( Madan and Datta , 2006 ).**

• Implant supported fixed prosthesis.

• Some form of stabilization of the maxillary arch.

- retention of maxillary overdenture abutments.

- maxillary osseointegrated implants.

- augumention of maxilla with resorbable hydroxyapatite in conjunction with a guided tissue regeneration technique and vestibuloplasty. **( Madan and Datta , 2006 )**

Wennerberg et al., (2001) reported excellent long-term results with mandibular implant supported fixed prostheses, opposing maxillary complete dentures **( Wennerberg *et al*., 2001 ).**

## 1.4 Denture fracture

Denture fracture is common in cases with single complete dentures." This is because the denture will receive excessive load from the natural teeth

The precipitating factors, which produce denture fracture, according to **(Veeraiyan , 2017 )** are:

1- Excessive anterior occlusal load

2- Deep labial frenal notches

3- High occlusal load due to excessive action of the master **(Veeraiyan , 2017 )**

Some Precautions should be taken:

- Check for the occlusion.
- Maintain adequate thickness of the denture base.
- Never deepen the labial notch
- For cases with high fracture potential, use a cast metal denture base **( Veeraiyan, 2017 )**

## 1.5 Wear of natural teeth

When porcelain teeth are used, severe abrasion of the opposing natural teeth will occur. Hence, a proper selection of the tooth material is very important. Care should be taken to avoid any occlusal discrepancies **( Veeraiyan , 2017 )**

## 1.6 Mandibular single complete denture

Causes of loss the lower teeth that lead to complete lower edentulous patient:

1- Irradiation therapy

2- Trauma **( Rangarajan and Padmanabhan , 2017 )**

Greater challenge than maxillary single denture due to the following:

- Difficult to stabilize lower denture - Mandible is the movable member
- Proximity to tongue
- More resorption than maxilla
- Limited availability of good quality mucosa. **( Rangarajan and Padmanabhan , 2017 )**

- Osseointegrated implants supported prosthesis is best in this situation.

- If patient cannot afford, conventional single denture is made. Patient should be educated about the potential problems. **(Rangarajan and Padmanabhan, 2017)**

## 1.7 Occlusal modification

It can be done in one of the following ways.

### 1.7.1 Swenson method

It is performed with articulated casts at the correct vertical dimension and with maxillary teeth set, one at a time, to an ideal setup. As interferences arise, the opposing teeth on the cast are adjusted to allow for the ideal maxillary tooth positioning. The adjustments are marked on the cast, and the same adjustments are made in the mouth at the time of delivery of the maxillary denture. In this manner, changes are more precise and less arbitrary, and proposed adjustments can be evaluated ahead of time rather than clinically, when it may be found that proposed changes are not feasible. ( Driscoll and Masri , 2004 )

### 1.7.2 Yurkstas method

U-shaped occlusal template is used which is slightly convex on the mandibular surface as in **Figure (1.5)**. Upon placing the occlusal template on the occlusal surfaces of the remaining teeth, the cusps required to be adjusted are identified. The mandibular cast is modified to a more acceptable occlusal relationship. By marking with a pencil the reduced areas are identified. Using the cast as a guide the natural teeth are modified accordingly. **( Chandra *et al*., 2022)**

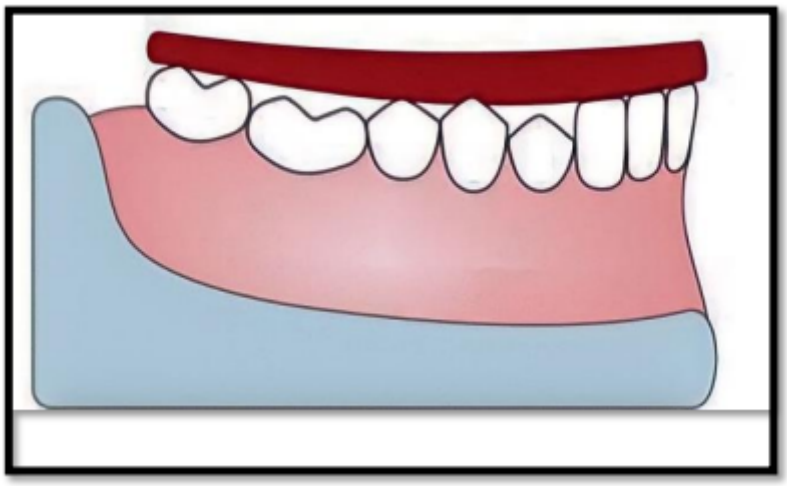

**Figure (1.5)**: Yurkstas method **( Rangarajan and Padmanabhan , 2017 )**

### 1.7.3 Bruce method

Bruce Technique: Use of a clear acrylic resin template fabricated over the modified stone cast. The inner surface of the template is coated with pressure indicating paste and placed over the patient's natural teeth. **( Ulla *et al*., 2021 )**

### 1.7.4 Boucher method

Use of porcelain teeth on edentulous cast. Porcelain teeth abrade the opposing dentulous cast. Similar corrections are made on natural dentition. **( Ulla *et al*., 2021 )**

## 1.8 Selection of teeth for single complete denture

### 1.8.1 Based on the type of material used:

Acrylic teeth are the cheapest, IPN resin teeth are slightly more expensive, and porcelain teeth are more expensive. **( chandra *et al*, 2022 )**

#### 1.8.1.1 Acrylic teeth

The major disadvantage of acrylic teeth used in single complete denture opposing natural dentition is rapid wear on occlusal surfaces. This affects the vertical dimension of occlusion and tooth relationships, and results in increased horizontal stresses and their associated sequelae. **( Patil and Parkhedkar , 2009)**

Acrylic resin with amalgam stops as in fig (1.6), It is simple and less expensive than gold occlusals. Teeth become more resistant to abrasion in comparison to acrylic but less resistant in comparison to gold occlusal **( Chandra *et al*., 2022 )**

**Figure (1.6)**: Acrylic resin with amalgam stops **( Patil and Parkhedkar , 2009)**

The use of Gold is considered to be the best material to oppose a natural tooth. Hence the occlusal surfaces of acrylic teeth are covered with a thin layer of 20 carat gold. Teeth having gold covering on occlusal surface become very much resistant to abrasion.

Their disadvantages are (a) visibility of gold (b) more expensive and (c) require a longer fabrication time, hence they are rarely used. **( chandra *et al*., 2022 )**

### 1.8.1.2 Porcelain

Advantages and disadvantages of porcelain teeth, according to **( Verma and Nanda , 2017 )**:

• Porcelain teeth cause significant wear of opposing enamel and metallic occlusal surfaces. This prohibits their use in single complete dentures opposing natural teeth or those with gold occlusal surfaces.

• The teeth are quite brittle and easily crack or chip on impact.

• They allow the dentures to be rebased without a need to replace the teeth.

• They are dimensionally stable and hard in comparison with the softer resins.

• Porcelain teeth have a high wear resistance that is equal to or greater than natural teeth, and 10 to 20 times that of resin teeth.

• They exhibit no permanent deformation under occlusal loading. **( Verma and Nanda , 2017 )**

### 1.8.1.3 IPN resin (inter-penetrating polymer network resin)

IPN resin has the advantages of acrylic and porcelain. This material has an unfilled, highly cross-linked polymer chain. Hence it has more wear resistance than conventional acrylic. **( Chandra *et al* , 2022 )**

## 1.8.2 Based on occlusal form of teeth:

### 1.8.2.1 Anatomic teeth

Anatomic teeth have following advantages, **( Rao, 2015 )**:

- They closely resemble natural teeth.

- They are highly aesthetic.

- Cuspal inclines provide a depth to obtain eccentric balance.

- There is greater chewing efficiency. **( Rao, 2015 )**

Anatomic teeth have some disadvantages, **( Rao, 2015 )**:

- More difficult and time-consuming to obtain balanced occlusion.

- Possibilities of more lateral stress in function.

- Settling also causes the vertical dimension at occlusion to decrease and the mandible to move forward. **( Rao, 2015 )**

### 1.8.2.2 Semi Anatomic teeth

Advantages of semi-anatomic teeth, **( Rao, 2015 )**:

- They are easier to arrange and obtain balanced occlusion.

- They can provide freedom, if settling occurs. - Reduction of lateral stresses. **( Rao , 2015 )**

Disadvantages of semi-anatomic teeth, **( Rao, 2015 )**:

- Less aesthetic (buccal cusps are shorter).

- Less chewing efficiency (controversial: some claim greater). **( Rao , 2015 )**

### 1.8.2.3 Non anatomic teeth

Non anatomic teeth have some advantages, **( Rao, 2015 )**:

- Easy to set up.

- Less lateral stress.

- Best for patients with poor neuromuscular control and poor ridge relationships. **( Rao, 2015 )**

Non anatomic teeth have some disadvantages:

- Difficult to obtain balanced occlusion in excursive movements.

- Less chewing efficiency for fibrous and tough food.

- Poor aesthetics. **( Rao, 2015 )**

## 1.9 Occlusal concept of single complete denture

Selecting the occlusal concept depends on the occlusal anatomy of the opposing teeth **( Rahn *et al.*, 2009 )**. Opposing teeth anatomic then balanced occlusion is used:

*Balanced occlusion*—the bilateral, simultaneous, anterior, and posterior occlusal contact of teeth in the eccentric position, and the bilateral simultaneous occlusal contact of posterior teeth only in centric occlusion. opposing teeth are attrited then monoplane occlusion is used.

*Monoplane occlusion*-An occlusal arrangement wherein the posterior teeth have masticatory surfaces that lack any cusp height. **( Rahn *et al*., 2009 )**

## 1.10 selection of denture base for single complete denture

The ideal denture base material should according to . **( Rickman *et al*., 2012 )**:

1- Be biocompatible with the oral tissues; Satisfy aesthetic demands;

2- Have sufficient mechanical strength to resist fracture under repeated occlusal and masticatory forces;

3- Be dimensionally stable to maintain fit and occlusion;

4- Resist abrasion and erosion;

5- Have colour stability;

6- Be radio-opaque so that they can be detected if some part of the denture is accidentally swallowed or inhaled;

7- Bond to artificial teeth;

8- Be rigid enough to distribute forces without damaging the supporting tissues and to maintain the occlusion;

9- easy to process, adjust and repair. **( Rickman *et al*., 2012 )**

### 1.10.1 Acrylic base

Polymethylmethacrylate (PMMA) resin has become the most popular material for denture bases. Polymethylmethacrylate is a glassy, hard, brittle acrylic **( Prakash and Gupta, 2017)**. The advantages of using acrylic base:

- It is easy to fabricate and economical.

- It is easily relined or rebased.

- It can be characterized by enhancing aesthetics.

- It has sufficient rigidity to resist functional forces. **( Prakash and Gupta, 2017)**

Use of acrylic base have some disadvantages as stated by **( Prakash and Gupta, 2017 )**:

• It cannot be used in thin sections.

• Wear is faster as compared with a metal base.

• Thermal conductivity is less.

• There are chances of acrylic warpage. **( Prakash and Gupta, 2017 )**

### 1.10.2 Metal base

Metal bases have an advantage over acrylic in preventing acrylic warpage, more strength, increased accuracy, less sue change under the base, less porosity and therefore easier to clean thermal conductivity and less deformation in function. The disadvantages of metal base: Metal bases are high in cost, difficult to refit, and have time-consuming construction. **( Nayar, 2021 )**

## 1.11 Clinical steps in the fabrication of single removable complete denture

### 1.11.1 Primary impressions

A negative likeness or impressions of the maxillary or mandibular edentulous arches are made for the purpose of diagnosis, treatment planning or the fabrication of the custom tray. The preliminary impressions are made with impression compound as in **Figure (1.7)**, alginate or putty consistency of elastomeric impression material **( Lakshmi, 2022)**

**Figure (1.7)** : An upper primary impression taken using impression compound **( Devlin , 2002 )**

### 1.11.2 Border moulding and secondary impression

The borders of the custom tray are shaped or contoured to the sulcular extension of edentulous arch with the help of tracing compound as in **Figure (1.8)** or heavy body elastomeric impression material to obtain a peripheral seal in the custom tray. Master or final impression is then made with zinc oxide eugenol impression paste or light body elastometic impression materials. **( Lakshmi, 2022)**

**Figure (1.8)**: Custom tray with the tracing compound **( Lakshmi, 2022 )**

### 1.11.3 Jaw registration

The vertical and horizontal jaw relations are recorded in the patient's mouth and transferred to an articulator which simulates the jaw movements same as in the patient's mouth. The artificial teeth are set in the occlusion rims which are mounted in the articulator **( Lakshmi, 2022 )**

### 1.11.4 Try in of waxed denture

The artificial teeth set is selected based on the patient's anatomical guidelines. The artificial teeth are then set in the mounted maxillary or mandibular occlusion rims as in the **Figure (1.9)**. The waxed denture is then tried in the patient's mouth. The registration of vertical and horizontal jaw relations is verified in the patient's mouth. Aesthetics and phonation are also verified during the try in of the waxed denture. **( Lakshmi, 2022 )**

### 1.11.5 Final denture insertion

After the attempted procedure of the waxed denture, the waxed dentures are processed in heat-cure acrylic resin. The processed denture is finished and polished. The finished denture is inserted into the patient's mouth as in the **Figure (1.10)**. The dentures are checked for border extension, occlusion and aesthetics. **( Lakshmi, 2022 )**

# Chapter Two

# Discussion

## 1.1 Discussion

The fabrication of a single denture, where only one arch (either maxillary or mandibular) is restored while the opposing arch retains natural teeth, presents several clinical challenges. The success of a single denture depends on various mechanical and biological factors that influence its longevity and functionality **(Chan *et al*., 2000).**

**Lin *et al*,. (2002) summarized the** clinical challenges **in the followings:**

- Occlusal Force Imbalance: The difference in support between the denture-bearing tissues and the natural teeth can lead to uneven force distribution, causing discomfort, instability, and potential damage to the underlying tissues.

- Residual Ridge Resorption: Since natural teeth in the opposing arch exert stronger forces than a complete denture, the residual ridge supporting the single denture may undergo accelerated resorption, leading to poor retention and stability over time.

- Occlusal Interference and Wear: Natural teeth tend to exert excessive forces on the artificial teeth of the single denture, increasing the risk of occlusal wear, fractures, and loss of adaptation.

# Chapter Three

# Conclusions and Suggestions

## 3.1 Conclusions

1- Single complete denture most common seen in maxillary arch than the mandibular.

2- The most common problem in single complete denture is attrition of denture teeth while opposing natural dentition which can be taken care of by providing metal occlusals in single complete dentures. Metal occlusal surfaces preserve the established occlusion and prevent loss of vertical dimension.

3- Combination syndrome is the most serious problem associated with maxillary complete denture opposes a mandibular distal extension removable partial denture.

4- The cause for semi completive denture fracture is the present of the excessive load from the natural teeth.

## 3.2 Suggestions

In light of this review, it could be suggested the following:

1. Create a retrospective comparative study to compare between modern single denture design and conventional design

2. Investigate patients' opinion about the issues related to single denture

3. Compare between fixed single complete denture and removable single complete denture.

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