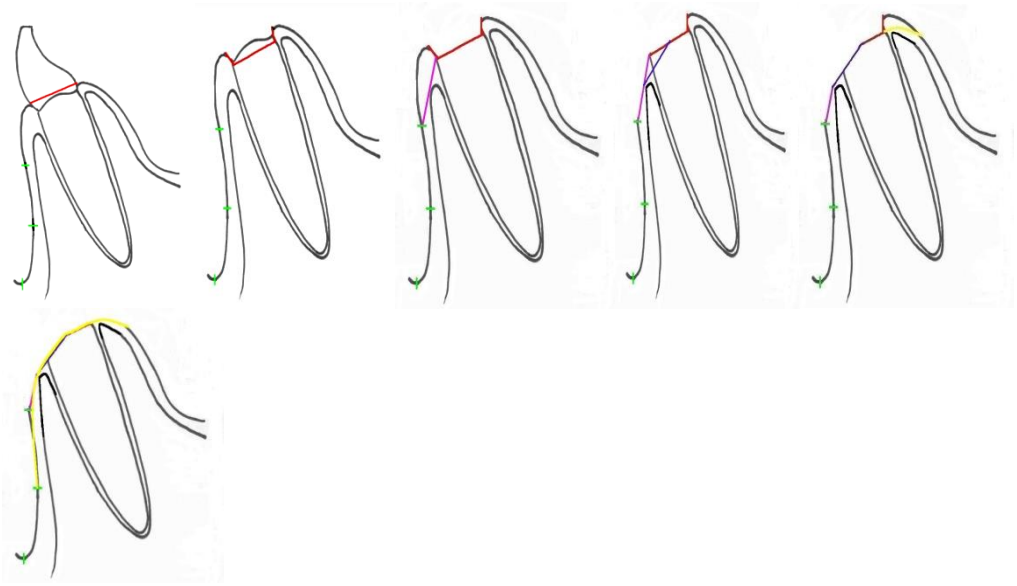
Lec. 2 **د.**
زينب الجمالي

Immediate denture continue---

Cast trimming guideline(rule of third):

It's a modification of the rule of third as suggested by Kelly who recommends dividing the labial aspect of the ridge into 3 equal bands of space between the gingival line and the depth of the vestibular space.

- Remove tooth at gingival level: cut away those parts of crowns of the teeth that are visible (the cut is made at aline drawn around the teeth at free gingival margin.



Step 1 step 2 step 3 step 4 step 5 step 6

- Recess Socket 1 mm :trim the cast so that the site of the previously removed crown are recessed approximately 1mm.
- Labial edge recess to incisal third mark :flat cut across the facial surface of the ridge ,starting the cut at the labial depth of the recess made

in the cast during step 2 ,the removal of this amount of stone represent the collapse of the labial gingival tissue towards the alveolus.

- Mid-point recess to mid-width labial cut : another flat cut across the facial portion of the ridge .this cut begins at the crest of the ridge (labio-lingual center) and extends to the midwidth point of the cut made in step 3 .this procedure begins the contouring of the labial surface of the ridge.
- Round over lingual aspect of socket :trim the part of the crest which is lingual to the teeth ,most casts present a reproduction of the continuous roll of the gingival tissue. Note that the amount of grinding is very minimal on the palatal side, this is because the remodeling after extraction is usually minimal in this side.
- Round off labial to middle third, sand smooth: shape and smooth the surface of the cast that have been trimmed in the previous steps.
- Do not change or trim the essential landmarks as incisive papilla or any frenum.

In case of elimination moderate labial alveolar undercut (alvealoplasty)

The denture is constructed on a working cast which is trimmed to the anticipated contour of the ridge after surgery.

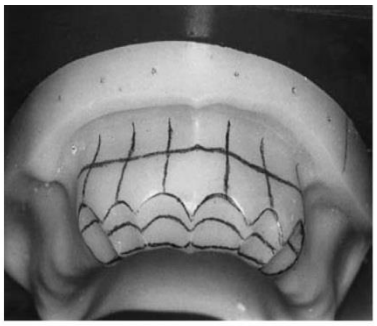


Fig. 3.12 Alveolotomy following interseptal alveolectomy: lines drawn on the cast to guide model trimming (see text for details).

1.the gingival margins are marked and teeth removed.

2.guidlines are drawn on the cast .

3.all the part of the cast contained within these two lines is trimmed away and the edges are rounded over.

4.a clear acrylic template is processed on a duplication of this cast and is used as a guide to control the amount of bone removal at operation .

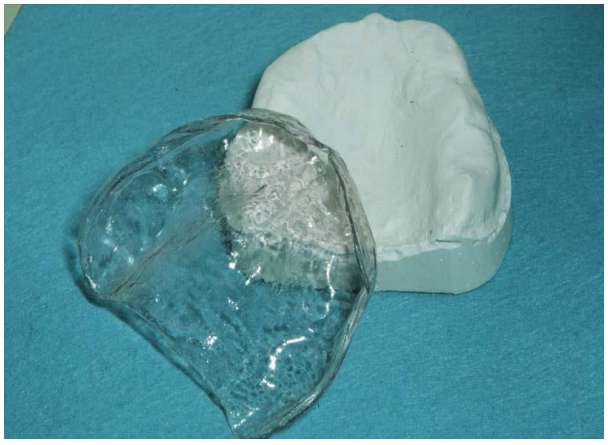
Waxing &flasking:

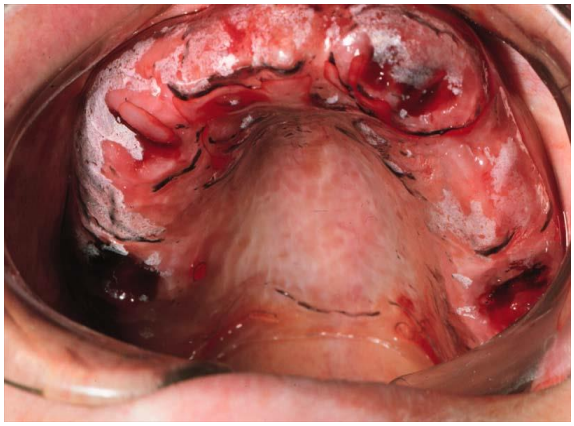
Generally ID is thinner than the conventional CD , but be careful at time of insertion &in the presence of undercut the acrylic must be thick enough to be adjusted. In this step you have to custom any selected personalization criteria must be caved.

Surgical Template:

- A thin, transparent form duplicating the tissue surface of an immediate denture and used as a guide for surgically shaping the alveolar process .it is essential when there is a need to do some alveolar corrections after teeth extraction or ridge recontouring or correction of the interseptal bone or in multiple teeth extraction. Make alginate impression to the cast after trimming, pour the impression, make the clear template processes either by heat or light, vacuum from &sprinkle-on method can be used also.

- **Advantages:**help to remove any expected pressure area at the sight of extraction thus minimize insertion time &adjustment at the insertion time.

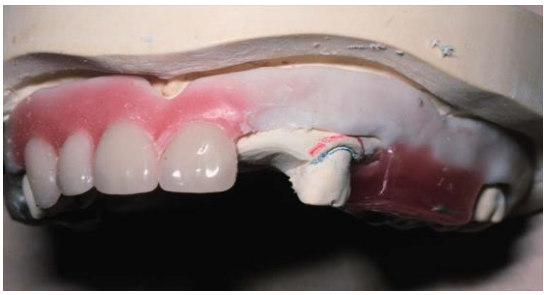




Setting the anterior teeth

If the arrangement of the natural anterior teeth is to be reproduced in denture a recording of their position must be obtained in one of the following ways:

✓ **First way:**produce a labial index of the natural teeth before they are cut off the cast.



- The index can be produced quite simply by molding silicone putty against the labial surface of the teeth and ridge on the cast.
- Then the artificial teeth are then set into the index while its held against the cast.

✓ **Second way:** remove teeth singly from the cast and immediately wax an artificial teeth into position so that the adjacent teeth serve as a guide to the position of the artificial replacement.

Arrangement of the anterior teeth in open face denture:

1.prepertion of tooth socket on the cast, 2-5mm depth depending on the amount of the gingival retraction which depend on the degree of pocketing and bone loose that is present around the natural teeth.

2.the neck of the artificial tooth is placed in preparation site.

3.at the time of insertion the neck will just enter the socket of natural tooth after extraction.

Processing &finishing:

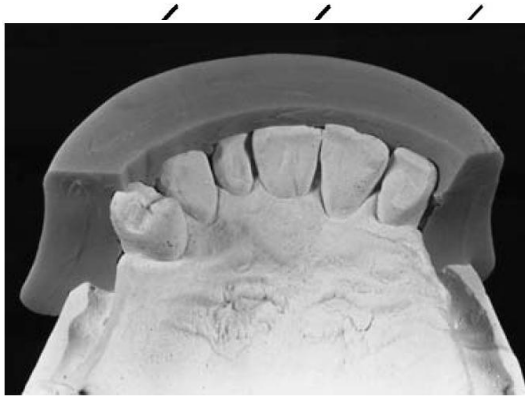
It is the same as in the conventional CD ;do not remove posterior undercut &try to modify the path of insertion. Keep both the denture &the splint template in the disinfectant to delivery.

☒*ID can classified According to flange design:*

1.flange type.

A. complete flange . B. partial flange .

2.flangeless type(open-faced or close fit)



Position of the anterior teeth recorded by a silicone putty index.

☒ Comparisons of flanged and open faced denture :

1.Appearance2.stability 3.Stength 4.Maintenance

5.Heamostasis6.Remodelling of the ridge7.Tolerance of replacement denture.

Appearance

1.appearance of flanged denture **does not altered** after fitting where the appearance of open – face denture (although good initially) can deteriorate rapidly as resorption create a gap between the necks of the teeth and ridge .

2.the flanged denture allows **freedom in the positioning** of teeth ,where,in open face denture teeth have to be positioned in the sockets of the natural teeth.

*so on case of malpositional teeth we can do good alignment in flanged denture while we cannot in open face type.

Stability:-In upper denture:

A flange on an upper denture create a more effective borders seal , therefore , better retention than is achieved with an open face denture

- In lower denture:open face denture is not usually constructed because of poor stability of lower denture during function , so flange denture is commonly used.

*so flange denture is better from the point of stability

Strength

1.the presence of labial flange produces a stronger denture .

2.labial flange will make the denture stiffer so the midline fatigue fracture cause by repeated flexing across the midline is reduced .

*so from the point of strength the flange denture is better .

Maintenance

1.as the bone resorped fallowing extraction the denture become loose and a reline is required , so the presence of labial flange make it easier to add either a short – term soft lining materials or a cold curing relining materials as a chair side procedure.

2.as the color of some reline materials is not always ideal they may be visible when used with open face denture.

Hemostasis

1.the flange denture cover the clot completely and protect them more effectively .

2.the flange denture exerts pressure on both lingual and labial gingiva reducing post extraction hemorrhage.

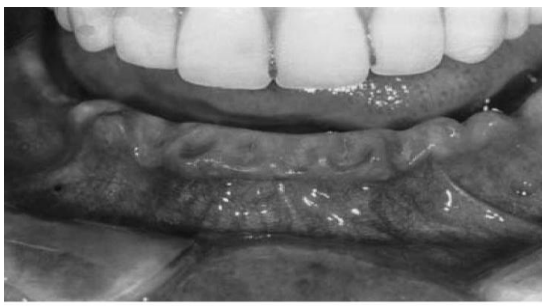
Remodeling of the ridge:

The consequence wearing of ill-fitting denture can lead to:

- If it is open face ,will produce a scalloped ridge in the region of the socketed teeth.
- In flange denture ,distribution the functional loads more favorably to the underlying ridge, thus minimizing bone resorption

Tolerance of replacement denture

- When patient have got used to an open face ID there is difficulty to accept a denture with labial flange in future and patient will complain from the fullness of the lip .



Tissue damage produced by an open-face lower immediate denture.

- If flange denture had worn from the beginning this problem does not occur .

- When the ridge morphology produce deeply undercut area it may not be possible to fit a full labial flange unless there is surgical reduction

- In this case the using of partially flange denture or open face denture is preferable when surgical procedure is contraindication .

- In these circumstances selection of the correct path of insertion of the denture is essential .

Surgical procedure &insertion:

1. Examine the patient intra-orally to check for any changes.

2. extraction of the teeth .

2.removal of the associated interseptal bone and reducing the undercut .

3.collape (squeezing) of the labial cortical plate of the bone .

4.insertion of the clear acrylic template to check if bone removal has been sufficient .

5.further bone removal ,if necessary, until re-insertion of the template cease to cause blenching .

6.suturing the socket and insertion of the immediate denture.

- Insertion of the immediate denture is done ,denture should seats well with good firm bilateral occlusion contact ,no pressure area, check the frena relief .

- If the denture will be found to be inadequately retentive ,this is frequently occur in case of both anterior and posterior teeth were extracted, tissue conditioning liner can be placed at this stage.

- Material should not be allowed to get into extraction sites.

- Some authors recommended that instead of extraction of remaining teeth ***decoronation*** of crowns (with puplectomy) should done and roots should be removed after several days through 2-3 weeks. **Advantages:**better visualization (less blood)

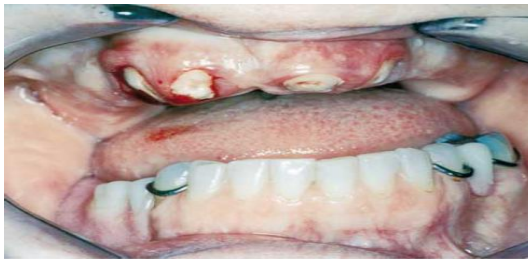


Fig. 7. Decoronated anterior teeth.

shorter placement visit ,minimum pain and swelling, easily distinguishing sore spots at adjustment visit .**Disadvantages:**.no tissue collapse that can be planned when setting denture, root extraction may be more difficult without the clinical crown .

**Contraindication of this procedure: Acutely infected teeth and sever bilateral undercut.

Postoperative Care and Patient Instructions

First 24 hours:The patient should avoid rinsing, avoid drinking hot liquids or alcohol, and not remove the ID(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 reduction of swelling. In addition, If swelling occurs and the denture can be reinserted, the amount 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 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.

The first adjustment should occur at the 24-hour visit:

1. 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.

2. 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 tuberosities: posterior limit areas; and retromylohyoid undercuts .

3. 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.

4. Adjust any gross occlusal discrepancy in centric relation or excursions.

5. Reevaluate the denture for retention. Place a tissue conditioner if needed.

First Week after extraction &insertion:

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. Remove the denture after eating to clean it and to rinse the mouth at least 3-4 times daily to keep the extraction sites clean. The denture should then be quickly reinserted and worn continuously. After 1 week, sutures can be removed, and the patient can begin removing the denture at night.

Further Follow-up Care

Second week is the next call, this is depend on the case. Then the patient should be seen during the first month after insertion, the patient is seen on request or else weekly as required for sore spot adjustments. Denture adhesives can be used during this period as an aid if retention is lost between visits.

Subsequent Service for the Patient with an Immediate Denture

After the sore spots are eliminated and the tissues have healed, a recall program for changing the tissue-conditioner liner is organized. The patient should be seen one month later, 4-6 months interval. Ridge resorption is fastest during the first 3 months. The frequency of changing these liners varies from patient to patient and is influenced by denture hygiene frequency and methods, diet, and smoking habits. New light-cured soft liners may last longer in some patients. The major determinants of the frequency of changing temporary liners are the rate and amount of ensuing bone resorption and the ability of the patient to keep the liner clean.

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 & may require the use of denture adhesive.

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. The esthetics may be unpredictable. Without an anterior try-in, the appearance of the immediate denture may be different from what you expected .

4. Many other denture factors are unpredictable such as the gagging tendency, increased salivation, different chewing sounds, and facial contour

5. ID 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.

6. Because supporting tissue changes are unpredictable, immediate dentures may loosen up during the first 1 to 2 years.

7. You may face difficulty eating &speaking initially, learning to eat &speak all over again.

ID can classified according to type of restoration into:

1. Immediate complete denture.
2. Immediate partial denture.
3. Immediate over denture.

The technique has been developed that allows placement of the full denture the same day that the remaining front teeth are removed, dentures made in this fashion are called ID. However, ID are properly better described by the more appropriate term of transitional denture. This term is more appropriate because the day that the last teeth are removed &the denture placed is the beginning or transition from natural to denture teeth. The transitional denture has three or four phases. The first phase is preparatory extraction of all posterior teeth in the arch to receive the denture. All molars &bicuspid are removed &the bone &overlying gums are allowed to heal. Sometimes upper& lower first bicuspids are left to keep the bite dimension from changing as well as provide a broader smile during healing. The healing period varies but is usually 6-8 weeks. Some patients will have transitional RPD made to replace the back teeth. These PD are used only during the healing of the posterior areas phase. They can be placed the same day the back teeth are removed &will require some adjustments for fit &function during healing.