Sheet : 8

Slide : 5

Done by : maysa , lina

Corrected by : lubna يذكر في هذا الشيت المشؤوم حيث كنت استخدم لاب توب ما عليه بطاريه و قام اخوي بالدخول الي غرفتي على غير المعتاد بيحكيلي ليش محبوسه بالغرفة ، في هذه الاثناء كنت اضع النقطة الاخيرة بجانب كلمة تم بحمد الله .. اما الطرف المقابل فقد كانت رجله تتجه نحو الوصله حيث لمست رجله اليمنى الوصلة وفُصلتْ الكهرباء .   
يأبى الحزن أن يفارقني بعد المد .. كنت اعرف انني فقدت ما تم تعديله .. لقد كانت من اصعب المواقف الدراسية التي تمر علي في حياتي الجامعية . لقد فقدت ما قمت بتعديله من الساعه 10 والنص للساعه التالته .. وفتحت على اليوتيوب وحطيت اغنية .. أبكي على ما جرالي يا هلي :/   
الرجاء وضع البطاريه اثناء استخدام جهاز اللابتوب عند كتابة الشيتات او التعديل عليها :"(   
  
**\*\*Special Trays, Final impressions and production of master casts, Surveying master cast**

This lecture will talk about the special try, the final impression and surveying the master cast .

In the lab we make special tray but in theory part, we will know how to make the final impression and how to survey the master cast

To start making the RPD fabrication you have to follow these steps:   
IN GENERAL

* + - * 1-Primary Impression: always start by primary impression, we use elastic material “alginate" in the lab.
      * 2-survey and Design , according to the design , certain area need to modify; either by doing G.P modifying or rest seat “this is called tooth modification ’’or modification to surveying line .
      * 3-Tooth modification intra orally ( rest seats and guiding planes
      * 4-Final impression which has a pervious laboratory step " construction of a special tray "

Then we will get master cast

* + - * 5-Framework construction and transfer it to metal framework .
      * 6-Framework try in how to try in ( only after trying-in and ensure that’s its good you take the bite registration )
      * 7-Maxillomandibular relationship
      * 8-Teeth try in and process the denture .(setting )
      * 9-Delivery
      * 10-Follow up

The difference between( class 1 , 2 ; distal extension saddle ) and ( class 3 , 4 “short extension ;tooth tissue supported ) by impression technique .  
In bounded saddle area e.g. missing upper or lower 5,6 tooth , there is no need to make special tray because it is bounded saddle area and no need for border molding , so in this case we use the stock which would give a good extension more than Enough☺

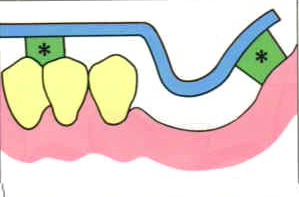
In pic , 3 or 2 missing teeth , so in this case there is no need to make a special try , using stoke tray we will get all extensions and boundaries .



\*\*\*so in short span tooth supported RPD we don't need to make Special try and a border molding but in other situation likedistal extension it’s a long span…so we have to make (special tray + border molding)

Slide4:

In the primary impression we use a metal perforated square-shaped tray , we made the impression which has all the landmarks with alginate ( it is marked the full width and depth of the sulcus )

Slide5:

For the final impression we use the custom tray .

\*\* The green (\*) material it is a stoppers

Our goal ofputting stoppers in theSpecialtray :

1. Specific Reference point :To insure every time when I use tray inside ptn mouth , it will insert in the same way , so it will be as a reference
2. Important To assure to get the proper thickness of the impression material ; if you don’t have the proper thickness of the material you will not get the proper physical properties of it . If we are going to take the final impression with alginate we need 3-5 mm thickness of the impression material , so by the stoppers we assure that thickness

In this pic : this is other case . we use the green stick material is using to make the border molding for edentulous part . this is an example for a tray fabrication without stopper to make it in your clinic , it is consuming the time to send it to the lab .so addition of this material in fitting surface will give proper thickness .Distribution of the stoppers are quaternary or at least tertiary ,,one anterior and two posterior(bilateral).

\*\*SO there are two ways to give proper thickness : 1- by green sticky wax on tray in clinic , 2- and stopper in the lab .

Now we get the special tray and you should make perforation which give mechanical retention than is not enough , so we use adhesive spray that give chemical adhesive so we will get the maximum retention . adhesive material found in two form spray or gel .when we apply them we should wait 5-7 min , if we spray it and take the impression immediately then it will counter it’s effect and it’s disadvantage will exceed its benefit , if we apply it directly it will act as separator rather than adhesive material , so the proper function will be lost

Slide 6 :

For the impression materials

Elastic : the best are Silicones, Polysulphides , Polyethers agar agar “less use” ,, etc.

What the basic that determine which material to use ??   
design of tray , cost , handling of material ..

silicones it is the best when its used its need 1-2mm thickness, the dimensional stability and accuracy achieved by one layer but the alginate is cheaper ,and need good handle using to give same properties like silicones .

So in general any elastic material should be satisfactory , under any condition we use proper spacer .

Slide7:

We pour the impression and the master cast that we will have should be nice , any wrong lead to problem , (((beeding and boxing are important to make otherwise the result is bad ))) .



The difference between 2 cases

The right cast it is properly done where as the left case has poor extension , poor trimming and there's no land area and tongue space.

In the good poured impression we should have (land area “ the aim of land area is to preserve the border ” , tongue space if it was for mandible arch , the proper width of the sulcus and proper trimming ) .

the next pic is the acceptable and predictable cast from us in the clinics.to preserve the border land marked by beading and boxing.



Slide8 :

we need to **survey** : the master cast . Why? To know where the undercut, where the survey line, where to put the wax ‘used in blocking’

1. To make sure theat what we do previously “ any modification ” is in right way.

Slide9:

Surveying is done same as how it was made for the primary impression

Slide10 :

Here we see 2 casts for a maxillary arch , the left one ( the white cast which is made from plaster ) is a primary cast which we had surveyed before and made the modifications , we make it as reference , while the other one on the surveyor is the master cast as its poured with dental stone .

We put the master cast on the zero tilt and make sure that the plane of occlusion is parallel to the floor ,,primary cast as a reference  
if everything fit in a place properly that ensure that you made a proper preparation.

**If not ,** that indicate we either made over-preparation or under-preparation , so we go back to the patient mouth and fix the tooth modifications that we did before , get another impression , pour it and survey it all again .

Slide11:

We analyze the undercuts by the analyzing rod we do all analyzing that we know , analyze tooth and soft tissue.



\*\*And then we get the carbon marker to make the surveying exactly as primary cast .

Remember that the carbon marker bevel is always toward tissue side

\*important to measure the undercuts by the undercut gauge and write it on the cast , >clasp type depend on undercut .

We write the measurement down on the cast to orient the technician so as to choose the proper material of the clasps . of course you do that on all abutment teeth and the soft tissue , you also mark the undercut .



Slide 19

Then we draw our design on the final cast . drow the retentive nd reciprocal arm .   
\*\* retentive tip should be under the undercut , Only the retentive tip ( the distal 1/3 of the retentive arm) should go under the survey line , so we shadow the other parts by another color to notify the technician to block this area out ) .

\*\* reciprocal arm should be above undercut .   
   
Slide 20 :

0.02 , 0.01 this is amount of under cut



Slide21:

How to draw design :

**1- always start to draw the rest seats , ( we draw the lines as what it is intraorally )**

2- drow the finish line “ horizontal line for upper cast”

3- drow the saddle area .

Slide 22:



Slide23 :

you draw the finish lines

The finish lines :the junction between the metal framework and acrylic from the internal and external sides

Slide 24 :

perforation her is mesh: to retain the acrylic in metal framework .

4- drow the square that represent a tissue stopper, and its better to make a solid square and notify your technician that the solid squares are tissue stops .

The aim of tissue stopper : later on , we will do processing to acrylic , so if we don’t have these stopper which stabilize the metal framework on the cast during applying pressure inside flask, it will return back toward the cast . and this is wrong .

So the aim of the tissue stopper : To maintain the contact between the metal framework and the cast upon processing the acrylic during flasking .

Remember that the only place where there is touch between the metal and tissue id tissue stopper , except that ,tissue contact acrylic .



Slide 26+27:

5- draw the major connector.

a. if we have single tooth then use nail head to give the proper support for the acrylic tooth .  
b. minimum thickness of major connecter is 8 mm   
c. the distance between the gingival margin and the maj. Connecter is 8 mm.   
d. if u have posterior extension saddle , you should extant major connector to cover maxillary tuberosity ,because it is a secondary support . so any distal extension case you should extant the major connector to tuberosity in maxilla , retromolar pad in mandible .

we use in this case in the lower pic broad palatal strap , why ما استخدمنا غيره ?   
1- presence of torus .  
2- decrease tissue coverage as we can .  
3- simplicity .  
4- if we use horseshoe , it is not rigid .  
5- if we use anterioposterior palatal strap (O-ring then it will be on the torus , in such case we should avoid the torus .



* Mandible RPD design We will have the same steps as in maxilla
* We'll have the primary cast –> surveying it –> make the design –> make the preparations in the patient mouth –> make the final impression and pouring it –> get the master cast –>surveying it
* We draw the survey line on both teeth and soft tissue , we write the undercuts measures
* We do the scoring to help in reorienting the cast in the lab ( if we have excessive gingival undercut then we can’t use gingival approach .

The major difference between the maxillary and mandibular design is the major connecter designe due to the presence of tongue space .

The major connecter type in slide #37 is lingual bar as its not touching the Gingival margin , remember that the bar thickness is 4-5 mm and the distance from the deepest point of the sulcus to the gingival margin is 8-9 .

In pic >>its important to draw surveying line in soft tissue .  
insevere undercut we can't use I –bar clasp

Making ascoring and tripod ,the retentive arm in middle buccal

\*under cuts in lower molar are more in lingual side. Not as anterior teeth

\*undercuts in upper molar are more buccaly

\*I bar clasp is originated from major connector ,you should draw it asDimensions not as line .



\*\*We used I-bar as the undercuts are in the mid-buccal side ( we draw it above the survey line of the tissue ) so as not to make any interference .

Note that the clasp arm is above the survey line why ? 1- prevent trauma to tissue 2- prevent accumulation of food

Note that the position of the retentive arm depend on the undercuts of each tooth (its not necessarily to be at the same side for all the teeth , as we see in the case that we are studying)

Slide 36 :



There's a vertical line which has been drawn from the distal side of the premolar and extend inferiorly to the floor of the mouth 🡪 finish line .

Note that the finish line in the mandible looks different not like the maxilla .

* In the maxilla it goes horizontally .   
  do we have a case in maxilla that we use a vertical finishing line ??
* NO . the presence of palate make it horizontal .

In the mandible it goes vertically because of the anatomic of the body of the mandible and the presence of tongue “not all cases of lower cast just with extension saddle .”  
  
This distance has to be 3mm to be sure that the bar can cross the gingiva safely

Slide37 :

The upper picture :

As the drawing of the lingual bar is completed we can notice that there's a 3 mm distance from the gingival margin to the bar , and detect lingual fermium has been delineated as its only 1 mm far from the bar .

Always should be less coverage to the tissue as much as u can .

Lingual plate major connecter ( as it covers part of the lingual sides of all the lower teeth ‘scalloped’   
 we prefer plate more than bar when there is no sufficient space.

Slide 40 :

لا تنسوا تعرفوا الاشياء اللي بالصورة

You can see the **vertical and horizontal finish lines ,**

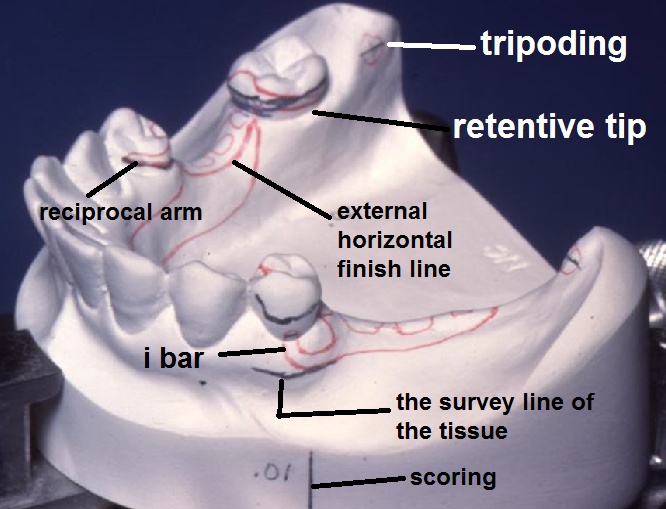
Gingival foot : in this area we should put acrylic instead of metal , so to make it easier to relieve any interference by trimming the acrylic .

**Important : In the mandible , if the case was tooth-tooth support we draw horizontal finish line (just like the maxilla ) but if the case was with distal extension we draw a vertical finish line .**

Slide 41 :

The arrow shows you how the tissue stop should look ,we firstly try it in the metal try-inframework, if it was fine , we do wax try-in , then we do the final denture where all the mesh part will be covered by acrylic except for the tissue stop ; as it prevent the metal from sinking down to the tissue , if the tissue stop is not present , the denture will not seat properly .

Slide 42 :

distal extension need indirect retainer in canine then use minor connecter to تصل between major connecter and the rest on canine.

How to know the exact place of the indirct retainer ?

1. Drow the fulcrum line : line between the 2 distal rest and ننصفه عموديا

The final picture of the design ;

Dr give an introduction to the next lec

She said :   
the lec will be about how to fabricate the metal framework

نتذكر الخطوات

Do primary cast >> > متل كل الحكي الي قبل >> until have master cast , now we should duplicate it , but before that we do blocking out and relive . blocking out and relive have types in next lec will talk about it.

The aim of it to block out all area that should fill with metal and to relive all the area that should cover by major connecter .

For e.g. we should put thin layer of wax under prevent impingement under I bar

Posteriorly , at the major connecter underneath the mesh , we should have space to acrylic so we put wax . so any area that will not have metal or cover by major connecter should block out this called arbitrary blocking out . next lec will talk about it . ☹