

## Preprosthetic surgeries

Preprosthetic surgeries : include any surgical procedure either minor or major, which should be considered before the construction , fabrication and insertion of complete denture.

Mainly it aims to improve the denture support that we need , stability , retention and comfort for the patient in large numbers of cases .

ex: minor or small alteration in the denture bearing area might benefit the patient or make it easier for the prosthodontics.

patient come to you 75 year old and you tell him that's he have sever undercut and you need surgery ! The patient won't go back to you !

but if you explain to him that's he have a bone and we must do simple surgery , take only 30 minutes under LA to make good denture ; by this way patient won't fear .

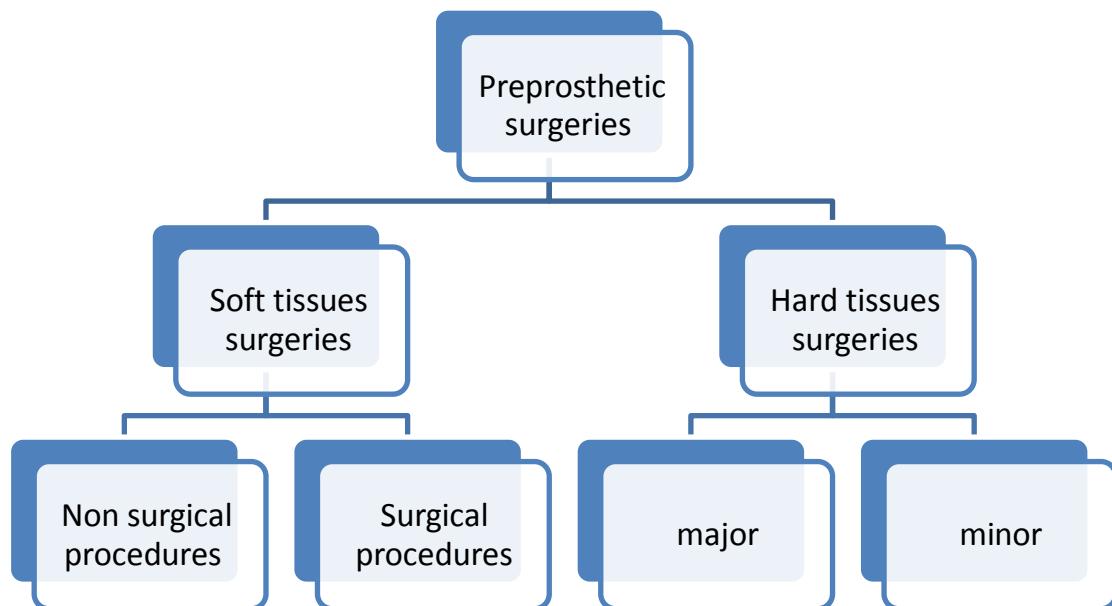
Preprosthetic surgery is an elective procedure and this mean it isn't strictly necessarily so it isn't important to do it unless you have convinced them .

will we get better result after the surgery ?? if I can get benefit from the surgery , I go through it ! cause in some cases the result will be worst than before! so it's your decision .

### **Guidelines for the Preprosthetic surgery:**

- ① full medical and dental history .
- ② Radiographs: periapical , OPG (orthopantomogram), ....
- ③ Study cast especially for the hard tissues surgeries.
- ④ Elimination of most other causes of the trouble with the denture: so if the denture causes the trouble itself e (lesion caused by the denture) you have to remove the cause from the old denture .
- ⑤ Respect the patient wishes; it's an elective .

## \*Classification of the Preprosthetic surgeries:



### Soft tissue surgeries:

- Non surgical procedures:

applied mainly for denture wearers; wearing the denture for long time will cause two things : biological changes in the denture bearing area and material changes in the denture itself .

In most cases the patients aren't aware that the oral tissues either (soft or hard) have been damaged or deformed by the presence of their dentures because some lesions or condition are painless.

### Causes in general :

- 1)prolong use of complete denture more than 5 years ; change in the material it self , attrition on the acrylic teeth , bone resorption ..
- 2)Continuous use of ill fitting denture
- 3) Using of a denture with a faulty occlusion
- 4)Wearing the denture day and night , which we don't advice .

5) Relining the denture for many times or using commercial denture adhesives by the patients themselves, these agents are OTC in the pharmacies; so the patient with the ill fitting denture brings the adhesive and put it in his denture and he will continuous with it until 10 to 15 years then he will end up with a denture that won't fit at all and when he come to the prosthodontist he will notice the sever bone resorption or the denture 2- 3 Kg due to relining :p

Consequences in general for these causes:

- 1) Hyperplasia or flappy ridges
- 2) Granular or papillary hyperplasia
- 3) Denture stomatitis
- 4) Fibrous hyperplasia, epulis , or denture fissuratum .

- Figure : upper jaw , red in color for **diffuse denture stomatitis** ( not restricted for palate , reach ridges and buccal side) due to wear the denture day and night with bad oral hygiene .



- Figure : lady with **partial denture stomatitis** ( restricted to area mucosa and hard palate which covered by acrylic) due to wear the denture day and night .

- Steps for the non-surgical procedure :
 

As we said we applied for denture wearer , so we went treat the cause which is the denture it self

  - 1) rest the denture supporting tissues ; removal of both dentures from the patient mouth for at least 3 days to allow the soft tissues to recover and to be healthy before taking the master impression so even if its denture stomatitis it should be heal .some patients refuse to give you the denture then we remove the cause

( for ex: overextended ) by using the tissue conditioners it act as shock absorbent and must renew every 2 week .

- 2) The patient should be encouraged to clean that affected area by soft brush or by his fingers (to increase the blood supply in these area ) or by using antifungal medications in stomatitis case .
- 3) Remaking or renew a complete denture.
- 4) Occlusal correction for the old denture especially if the patients wear the denture for more than 10 years ; teeth wear especially posteriorly so the vertical dimension will be increase so the FWS will also increase and we have to correct it by :

decrease the vertical dimension gradually OR if it's not possible Long procedure of occlusal pivoting and muscles reprogramming to decrease VD gradually and this usually takes at least 3-6 months ( we will talked about it in 5<sup>th</sup> year enshallah ) .

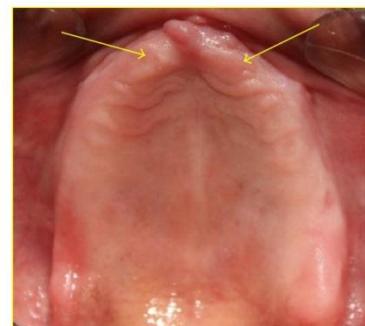
- The surgical procedure:

To better understanding we calcify them to upper and lower arch:

- In the upper arch:

Hyperplastic or flabby ridges or sometimes also we called it "displaceable tissue" , Common founding in the upper jaw in the premaxilla ; from canine to canine , and usually this area over growth .

-figure : show flabby ridges where is elevation of the soft tissue also can see large incisive papilla on the central of the ridge , and sever bone resorption !



We can examination it by probe , we compress to differentiate between enlargement of the bone or enlargement of the soft tissue !

If it's white then it's enlargement of the soft tissue with no bone underneath it !

### **Causes of the flabby ridges:**

- 1) ill fitting old denture ; lead to chronic irritation.
- 2) Sharp underlying residual ridges due to the teeth extraction , leave it sharp and don't make smoothening or foundation and we will end up with flabby ridges .

### **Classical appearance of flabby ridges :**

upper maxillary complete denture opposing by lower natural standing teeth without replacing the posterior one , so the patient will tend to protrude the mandible and incise on the anteriors during eating. the bite force of the lower natural teeth is 4 times more than that of artificial teeth and also the mandible hit the maxilla all the time during eating , speaking, ... (nearly 17 one in the minuets) so the difference in the bite force between natural and artificial teeth will lead to bone resorption in the premaxilla area that apposing natural teeth (upper arch ) and will end up with flappy ridge.

So the causes : different bite force , natural teeth and increase in the biting force .

### **Consequences of the flappy ridges:**

- i. Shifting of the incisive papilla result of resorption may found at central of the ridges or even at buccal side

- ii. Enlargement of the palatal rugae; elevation and increase on growth as result of pressure or different in biting force .

The management:

- 1) Careful diagnosis by propping (or file) or the x-ray ; panoramic to determine the amount of alveolar bone resorption under the soft tissue
- 2) In the severe cases we have to do surgical removal

Most of the prosthodontist don't prefer to do surgical removal to the flabby ridges even in the sever cases so they do what we call special impression technique for the flabby ridges to distribute the force evenly on the denture by using mucostatic impression .

They flabby ridges patient in this case complain that's during chewing or eating the denture displace ; not stable→ cause in presence of flabby ridges the force not distribute evenly .

DR don't prefer to do surgical removal because if we remove these flabby ridges we will end up with shallow sulcus

- 3) Some prosthodontist go to the extreme by injecting of sclerosing agents like boiling water

technique to remove flabby ridge → open window technique:

- use plaster of paris (or any mucostatic material /light body) + zinc oxide .
- patient in supine position
- we put green stick in the periphery of the special tray during the border molding .

note : we will talk about it next lecture ☺

## Papillary hyperplasia:

- mostly in the palate
- advance stage of denture stomatitis
- found on the upper jaw because the minor salivary glands are only found in the upper .



- Causes:

- ① Ill fitting denture with bad oral hygiene
- ② Long standing chronic irritation ; if the denture have rough surface .
- ③ Continuous wearing of the upper denture day and night

Figure: very sever case of denture stomatitis , red in color , papillary elevation (over growth).

- Management:

Try the non surgical procedures ; remove the denture for three day , antifungal . you must reduce the lesion before the mast impression (we can take primary impression in persistent of this lesion) .

Then if the lesion is still persist we will go to what we call electrical surgery → patient comfort and less post-operative pain.

## Fibrous hyperplasia :

- denture epulis or denture fissuratum
- cheneral cause :chronic irritation of over extended poorly fitted denture (hit the sulcus) , which may be result in fibrous tissues between the denture periphery and the sulcus due to the bone resorption.
- Painless just notice it when the patient have secondary infection in the body!
- Clinically: it appear as single form or multiple depend on severity .

### Management:

- 1) Trim and reduce the over extended periphery (by that we remove the cause of the fibrous hyperplasia) then try the non surgical procedures ( the 4 steps that already we talked about it).
- 2) If it persists we have to go to the surgical procedures:  
By giving LA then flap reflection then suturing it might end up with a shallow sulcus in some area what's called vestibuloplasty.

## pendulous fibrous Maxillary tuberosity :

- bilateral or unilateral
- It might interfere with the denture construction of the complete denture (i.e. it might limit the interarch space)
- When you tell the patient to close his mouth it will hit retromolar pad area or the lower six

**Causes:**

- 1) Over eruption of the upper 3<sup>rd</sup> molar ; extract the opposing lower and left the upper ; upper will be over eruption and withdraw the maxillary tuberosity downward , then extract these teeth and left behind them soft tissue.  
And you as prosthodontics must foundation it .
- 2) Expansion of the maxillary sinus ; it will push the soft tissue down .

**Management:**

Surgical removal if the inter arch space between the maxillary tuberosities and the retromolar pad area less than 10mm .  
At least for posterior area we need 8-10 mm inter arch space.

Figure: large , completely soft tissue not hared, and radiograph show expansion of the sinus

**Diagnosis:**

- You place a cotton rolles between two edentulous ridges to check the interarch space posteriorly (we have already talked about this method in the history and examination lectures) if the cotton roll become flatten more than the require that mean the interarch space not enough .
- Then mounting the 2 casts (you have to take an impression) on the articulator to determine the height of the occlusal plane then we determine the exact amount of the cutting we need for the surgeon→ surgeon guide
- Take a panoramic x-ray (OPG) to locate the maxillary sinus

The surgical removal of this mass:

The flap a v-shape or triangular shape , we reflect the flap then cut this pendulous mass by the blade so we end up by exposing the bone and removing of the excess fibrous tissue then we do the suturing.

### **High frenal attachment in both arches:**

- **Very rare we do what's called frenectomy**
- **In most of the cases we can** accommodate these freni specially upper labial frenum ( appear as broad bundle of connective tissue) .

Figure : show broad wide freni , if we relieve the denture to accommodate these freni these may be weaken the denture ; will cause stress concentration area so there will be a bit fracture in the denture (midline fracture) and that fault .  
so the way to accommodate the denture (sth I cant hear clearly) and using cobalt chromium based denture then open the freni .

the freni sometimes is trouble ( also I can't hear it ☺ )

\*Surgical Procedures for the high frenal attachment:

LA →open the two end →use sth similar to hemostat → use blunt scissor not sharp one → open cavity on connective tissue → and cut the part above the hemostat from the underlying tissues → to know the origin and insertion→ suturing.

Surgical Procedures for the tongue tie:

LA then incision directly by using hemostat then we tense it by then you cut it then suturing . you should be careful not to injure the tongue because it's highly vascular

## Vestibuloplasty :

- deepening of the sulcus
- in some cases we have shallow sulcus
- Either in the labial or buccal sulcus
- It helps to achieve the peripheral seal and good retention
- but it's of less value to deepen the sulcus few millimeters where really there is no underlying bone.
- End result gain 2-3 mm depth of sulcus

### Management:

There are many techniques to deepen the sulcus rather than the vestibuloplasty such as mucosal advancement epithelial grafting and with the presence of the dental implants we don't really care about the depth of the sulcus in the complete denture We gain the retention from the implants so we stop using such procedure really it's a major surgery

Figure : shallow sulcus all around , involved the hard palate ,we need to deepen the sulcus we put ethane chloride infiltration (we put ethane chloride as a topical anesthesia before the LA) → open it from buccal to buccal →stripping muscle attachment →surgical dressing → suturing !

with the presence of the dental implants we don't really need these major surgery to deepen the sulcus .

sorry for being late ; because there's no slides and the record not clear enough !

note : i used last year sheet as guideline to write the sheet ☺

**best of luck**