Cons sheet #27

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**The Effect of malocclusion on restorative dentistry**

Occlusion : is the alignment of teeth and the way which upper and lower teeth fit together

Malocclusion : anything that isn’t normal occlusion

**previously** they considered a rotated tooth is a malocclusion however it doesn’t affect the pts life and he doesn’t complain from it

But **now** to be able to say that the pt have malocclusion, he must complain from it

In The normal occlusion the upper teeth should fit slightly on lower teeth (cusp to fossa ) to protect the lip and the cheek from biting

**\*Angels classification for occlusion :**

MB cusp of the upper 1st molar fits with buccal groove of lower 1st molar >> class 1

If more anterior >> class 2

If more posterior >> class 3

Also the pt should have a normal overbite and overjet and midline coincidence with no rotations or crowding

The concept of Malocclusion : misalignment between teeth of the arches and its any deviation from physiological accepted contact between teeth

**\*Causes of malocclusion :**

1. Difference between the size of teeth and jaws
2. difference between the size of both jaws
3. extra teeth , loss of teeth , impacted teeth
4. abnormal shaped teeth
5. trauma that lead to jaw fracture dilacerations and ankylosis
6. TMD
7. Malignancy
8. Hereditary
9. Childhood habits (thumb sucking)
10. Iatrogenic cause (high filling)

**\*Forms of malocclusion :**

1. Crowding and spacing(due to microdontia and hypodontia)
2. Increase overjet
3. Overbite or underbite (anterior crossrbite )
4. Infraocclusion which could lead to supraeruption
5. Rotation , tilting , transposition
6. Occlusal interferences which will lead to functional crossbite ( when the patient closes , interference will happen which will lead to shift in the mandible to avoid this interference , this will end up with a functional crossbite )

**\*Consequences of malocclusion :**

1. Mainly they will complain of esthetic problems ( midline shift and loss of vertical dimension )
2. Functional problems ( will affect speaking and chewing )
3. Caries (due to overlapping and crowding which will limit the access to teeth and lead to caries development )
4. Periodontal problem ( crowded teeth will have less attached gingival which will lead to teeth mobility )
5. TMD ( lead to strain at jaws and teeth and muscles which will lead to occlusal instability )

**\*Categories of malocclusion :**

1. Class 1 :

The most common

MB cusp of upper 1st molar with B groove of lower 1st molar

There is rotation , spacing and crowding

1. Class 2 :

Proclination of teeth

Prognathism of upper jaw or retrognathism of lower jaw

Crowding in the lower teeth

1. Class 3 :

Prognathic lower jaw or retrognathic upper jaw

If it was edge to edge , all the load will be at the anterior teeth , the posterior teeth aren’t in touch with each other ,, so the clinician will face a problem when doing a crown for example since the patient isn’t occluding fully posteriorly the bite will differ each time

\*\*The dr started discussing cases with different forms of malocclusion and the treatment options that we have for each :

**If a pt have simple crowding what are the treatment options we have ?**

* Ortho treatment
* Interproximal stripping if very minimal crowding
* Veneers ( one of the contraindications for veneers is malformed and severely rotated teeth )

**In case of sever crowding and rotations :**

* ortho is the best treatment option
* it could be treated by restorations but its so aggressive treatment and will lead to severe loss of tooth structure

peg shape lateral could be treated by composite build up or veneers

**a case of lower anterior teeth crowding , what are the treatment options ?**

* ortho treatment
* composite restorations
* interproximal stripping
* in a case of **sever** crowding extract the the most malaligned tooth and do 4 unit bridge with distributing the space
* veneers are contraindicated here because you have to do veneers for the whole anteriors to be able to do a proper alignment !

**in a case of diastema :**

* take index for the teeth , then do wax up , then close the space with composite veneers for example
* if there is enough space , do fixed bridge

**in a case of missing lateral and rotated canine :**

* ortho is the best option
* reshape the canine to look like a lateral
* crowns ( very aggressive option)
* if there is enough space you can put implant

**in case of black triangles :** close them with composite

**in case of malformed teeth (gemenation and fusion ) :**

* if they have separate roots we can do rct for them and separate the crowns then do crown lengthening if needed
* if single root , do preparation and a crown

however these teeth are difficult to treat

**in case of infraocclusion or ankylosis :**

* if there is no successor under it , put a crown on the primary tooth
* if there is successor , you can extract the primary tooth and restore the space
* or you can cut the crown and keep the roots subgingivally to **allow formation of bone** , then after that we can extract the roots and put implant ( but this option isn’t much predictable)
* or we can build it up with composite

**in case of overeruption :**

* intrude the tooth with ortho by using miniscrews
* do elective rct and prepare the tooth then crown it , then do enameloplasty for the opposing **(if there is no opposing , the tooth will overerupt again )**

**in case of tilting :**

* ortho
* onlay retained bridge
* elective rct with bridge or crown
* partial coverage of the tilted tooth ( cement the crown with adhesive resin cement)
* fixed movable bridge is another option ; it contains 2 connectors one fixed and the other flexible with intra or extracoronal slot

(more explanation from the net : in this type the pontic will be attached to a major retainer distally by fixed connector , and mesially it will be attached to another minor retainer by flexible connector . This type Is indicated when its difficult to obtain parallel abutments in case of sever drifting )

**in case of occlusal interference :**

it could happen due to cross bite or high restoration , this will lead to :

* shifting in the mandible while occluding
* TMD
* Functional crossbite
* Fremitus >> which is a vibratory motion on the anterior teeth and mobility during closing , its due to occlusal trauma

**\*\*Occlusal equilibration :**

This concept is used to solve the occlusal interferences , its mainly by taking impressions for the pt and transfer it to the articulator with a facebow then you can adjust all the interferences on the articulator and transfer it to the pt's mouth

Also you can do a stabilization splint > its fabricated at the CR with even contact on all teeth , instruct the pt to wear it 24hrs except during eating , also at eccentric movement only the canines must be touching ( canine guidance)

By this splint the pt will adapt to the right occlusion without any interferences , after that you can do whatever you want for him ((this means that you should correct the interferences first then do a crown or bridge or anything else))

**In case of loss of interocclusal space :**

You will notice a sever attrition on teeth

From a restorative aspect you either do confirmative or reorganized occlusion

To increase the vertical dimension anteriorly , we **put anterior bite plate** or do **crown lengthening to be able to do crowns**

The dr mentioned a concept of **mutual exclusive load** : which is after increasing the vertical dimension anteriorly the mandible will autorotate , this will permit the posterior teeth to overerupt and be in contact at occlusion (this will decrease the load on the anterior teeth )

**\*\*Dahl concept :**

It was proposed by Dahl, its used to create a space in case of sever attrition or decreased vertical dimension. He tend to put a high restorations anteriorly and increase its highness **gradually** until the pt adapt to it , by this method the posterior teeth will be separated , and overeruption will happen for them , so this will lead to decrease the interferences (( this will intrude the anteriors and extrude the posterios))

If its done by composite restorations > called composite Dahl concept

You may use also a fixed or removable appliances to apply this concept

Can be done by one stage or two stages

It takes from **2 months up to 2 years**, it depends on the pt's response , if no separation happened after 2 years this means that teeth wont separate at all

This method wont hurt the teeth , because we are doing a high restorations on all the anterior teeth (not only one tooth) , **so it’s a stable high occlusion**

\*\* according to the last part of the lecture I tried my best to write what I heard and understood , since the recording wasn’t clear and the dr was whispering literally ! :p

\*\* If the dr provided us with the slides please refer to them

Sorry for any mistakes

Best of luck seniors