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Oral Surgery II

**University of Jordan**

**Faculty of Dentistry**

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Hand Out

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Sheet

Designed by: Hind Alabbadi

**Tempromandibuler joint disorder “TMD”**

\*In the last year Dr gives two lectures ; first lecture about conservative therapy and TMJ disorder and the second about surgical management. This year Dr decided to combine two lectures with each other ☺ .

\* already you know a lot “ you should be “ about TMJ physiology , anatomy , function and disorders .

\* you have to know every elements of the basic structure : mandibular condyle , temporal bone , glenoid fossa , meniscus and anatomy of meniscus , and coronoid process .

\* you have to be well oriented of articulation and function of TMJ and all movements from translational movement , lateral joint movements , retrusive, protrusive and what muscles work on this , anatomy of muscles , innervations and vascular supply of the muscles ,,, SO you have to do refresh for these information☺.

\* the most powerful muscle of mastication masseter muscle and temporalis muscle .

\* when we talk about TMJ we don’t talk about joint alone , although it appears simple joint but it is one of the most complicated joints in the system . why? Because you deal with bilateral occlusion , both maxillary and mandibular teeth , and muscles working on this apparatus ,, so look at this unit as comprehensive unit .

**\*Articulation and disc function :**

- The most important to know anatomy of bilumenar disc zone ,, it transmits forces , protects , lubricates the articulating surface because you talk about head of condyle and glenoid fossa .

-Divided in 3 portions : anterior , intermediate, and posterior .

-the main articulation is with intermediate zone of the disc .

- movement is mediated by lateral pterygoid and all of us know the role of lateral pterygoid in major part of movement specially in protrusive , opining and lateral movement.

\_ attachment of lateral pterygoid is on anterior potion of the disc .

\_ retrodiscal tissue on the posterior disc and synovial fluid in joint capsule.

-TMJ disc facts : the intermediate portions is the thinnest ( although it is the thinnest but main articulation is on it ) and has very little or no innervations or vascularty ,it’s nutrition comes from synovial fluid by diffusion .

\_ anterior and posterior portions are highly vascularized ,, so any pathology or abnormality in the joint ,deviation or whatever the pain will affect the anterior and posterior part of the joint “ we call it **PAINFUL SYNDROME**”.

**\*facts on TMJ :**

**-**most soft clicking noises NOT indicator of joint dysfunction and are not clinical significance “ specially soft noise “.

-it become pathological if it associated with pain , tenderness, restriction of certain movements.

- loud clicking while **opening** , with deviation on opposite side is significant for possible **anterior condyle displacement** .

- loud clicking while **closing** , with deviation on opposite side is significant for possible **posterior condyle displacement.**

**-** internal derangement of TMJ : dislocation with reduction or without reduction .

- the disease of TMJ is not clear yet , there are a lot of researches ,,still it is not obvious .

- 40% of population have some joint noise , indicating the existence of possible disc problems.

-24% have some head , neck , and / or face pain : if there is muscle pain that means tension >> people exposed to high level of stress ,, no one is exceptional from stress ,, the most stress is found between people 18-24 years old ,, and it might be in 14 , 15 years >> so stress is shifting to this ages. And we can see stress in mothers and ladies in 38,39,40 years old because in this stage they have a lot of homework.

\_ stress is more common in females .

\_ Dr. Sukaina , Dr.Falih and Dr.Zaid do a study on the students in our university , they found that the stress is very high and so TMD ,, and between medical , scientific and literature students >> medical was the highest and literature was the lowest >> so the disease is tension related .

-TMD patients also have clenching on teeth and headache in the morning ,, patients don’t know that they do clinching because they were in subconscious level ,, we see it clinically as attrition on teeth .

\_12% report pain when opening : the normal opening range 45-50 mm( clinically 3 fingers vertically) ,, it different between males and females and it different between populations .

\_ there are a huge vector forces in TMJ movements ; protrusive , retrusive and lateral movement .

\_ TMJ disorders are tension related ( TMJ syndrome ) ,,or trauma whatever was the trauma “ fractures” ,,pathology like arthritis ,,but the most common one is TMJ SYNDROME “ painful syndrome “.

\_ TMD reflects the possibility of other factors not just the joint capsule : occlusal factors , intrajoint dysfunction , psychological factor , biochemical factors “ patient has arthritis” , degenerative joint disease , skeletal misalignments specially in trauma “ fracture of condyle “ >> during childbirth they taking the child out from his head so increase pressure in condyle and this make fracture of condyle and joint ankylosis which is very serious and bad problem .

**\*TMD:**

**1- myofacial pain “ TMJ syndrome “**: the most common ,, related to muscle and tension .

**2- internal derangement of joint** ; involves displaced disc with or without reduction ,, dislocated joint “ yawing “>>

كثير بتيجي حالات ع الطوارىء ، بيجي المريض فاتح ثمه ،وعليها كثير معتقدات انه انصاب بالعين وهيكا

Management is really easy and straight forward, catch the posterior aspect of mandible with your thumb > downward then posterior movement and it is so very nice☺ ,, keep your fingers protected because patient might close with high force !

If dislocation happens usually ,, we should think about surgical intervention >> we put anterior stop of condyle .

**3- Arthritis :**group of degenerative inflammatory joint disorders that can affect TMJ: arthritis denovo ; just in TMJ OR part of systematic arthritis .

* The myofacial pain is the most common and resulted from : bruxism , jaw tension related to stress , anxiety , depression and chronic pain .
* 3 cardinal features of TMD : orofacial pain , restricted jaw function and noise (painful ) in the jaw.
* **Symptoms** : headache , burning or tingling sensation , tenderness and swelling , clicking or popping , reduced range of movement , ear pain “ very common “ w/ o infection , neck and or facial pain .
* One of line of management is physiotherapy of sternocledomastoid , trapezuis because they are related .
* Force by masseter muscle average 70-80 kg .
* **Assessment of TMJ :** assist the occlusion , palpation of joint and muscle , examination should be systematic to determine where is the problem .
* Usually in TMD we start with **conservative therapy** : means muscle relaxant , massage ,self care practice ”control stress” , soft diet (( علكة ، جزر ، تفاح ممنووع >> gum in 3 days >> ½ hour per day >> TMD in the fourth day ,, pain medications ( muscle relaxant and NSAID >> regular taking of panadol or ibuprofen has anti inflammatory elements it will reduce the symptoms ) ,, stabilization splint if problem in occlusion >> problem is doctors make soft splints and there is a research that soft will worsen the disease >> so we have to use hard splint with thickness 5 mm. the Q is in centric relation or centric occlusion ? the right answer is in centric relation when condyle is well seated.,,,, ultrasound therapy ,, hot packs “القربة الساخنة ",, prosthodontic treatment.
* **Surgical management :**
1. ***Arthrocentesis***
2. ***Arthroscopy***
3. ***open surgery*** : open the joint , last choice because has a lot of complications and little benefit .
* ***Arthrocentesis:*** joint lavage “" غسيل,, TMJ is front of the ear ,, we determine certain land marks and we enter 2 cannulas in superior joint cavity then with needle that contain saline or water we wash the superior joint cavity .

***-Concept :*** we have inflammatory byproduct in superior joint cavity + adhesions ,, when I enter saline and exit from the joint I do extension of this area which is small so adhesion disappear and inflammatory byproduct exit ,, we do lavage with 100 ml saline or water ,,,cannula size is 10 ml ,,so we have to enter 10 times .take in your consideration the landmarks because one of facial nerve branches pass in this area .

"نفسيا انهم عملو عملية"***-***high success rate ,, patients like it “

***-***70% of symptoms disappear .

***-*** we can do it under sedation but doctors like to do it under GA.

***- why we do it in superior part ?*** because all actions ,,movements ,, pathology happen in superior part.

***-*** minimally invasive technique.

***-*** most common use with patients with anterior disc displacement without reduction ( with reduction >> conservative treatment ) .

* ***Arthroscopy :*** specialty , fashion in surgery in general is not to open , fashion is to go to parascopic ,, we don’t open ,, we enter parascope with camera and display in screen .
* ***By arthroscopy*** we can enter probe in TMJ , blades ,, laser probes and whatever .. work in TMJ and disc with seeing in screen ,, with special blades we can remove the disease part of disc and correct the attachment of lateral pterygoid muscle ,, remove the adhesion and pathological part of the disc with laser probe .
* ***The largest center in Vienna .***
* Compared with open surgery less morbidity and complication.
* Useful in fibrosis, adhesion and degenerative joint disease .
* ***open joint surgery;*** the most common approach is preoricular , we have to be very carful about the facial nerve ,
* open surgical exploration of TMJ traditionally proceeds after conservative techniques have been maximized .
* what I do in open surgery depending in the diagnosis of the disease “ what is the problem “ ,, remove the head of condyle in tumor or remove the disc ( just remove the disc or remove the disc and put membrane from temporalis fascia ),, remove the coronoid if there is pathology .

coronoid removal >> intraoral approach .

condyle removal >>extraoral approach.

\*In hyperplasia of condyle “ deviation of mandible to other side “ >> we do high condyler shaping >> open on condyle and remove tumor and bone.

* Last choice is total joint replacement : 2 options :
1. Synthetic joint : company see the patient before operation and take special measurements to make synthetic joint.
2. Natural : we take it from ribs and do modulation “ ribs contain cartilage and can replace condyle ‘.

**GOOD LUCK SENIORS**

