Surgery lec #23

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**TMJ disorders**

TMJ is the most complex joint in the body. Please study anatomy and physiology of TMJ, we’re going to be asked about them in VIVA. We have to study muscles, bones, articulation, innervation and arterial blood supply of the TMJ.

Know articulation exactly (condyle, articular process, articulating parts of temporal bone, and ligaments)

Study muscles and their functions-all muscles closing the mouth except lateral pterygoid (opening the mouth and lateral movements). VERY IMPORTANT

Study meniscus (disc) and know it’s function, disc is almost avascular and takes it’s nutrition from the synovial fluid except for the posterior part which is vascular.

Study ligaments, where are they and what are their functions?

Disease process of TMJ involves remodeling, anatomy of the joint changes leading to pain and dysfunction.

TMDs (big category): any pathological condition involving the TMJ

1. Neoplasms or tumors leading to hypo or hyperplasia of the joint.

2. Arthritis.

3. Internal derangement.

4. Myofacial pain.

5. Conginital abnormalities.

6. Ankylosis; fibrous or bony; acquired or idiopathic

Acquired=trauma especially in young ages because condyle is a growth center.

Everything mentioned above is introduction and the doctor said it’s very important to know everything about TMJ so study anatomy and physiology.

In this lecture we’re going to talk about internal derangement and myofacial pain.

Dysfunction due to TMDs is very common and very prevalent.

40% of the population have joint noise indicating the existence of a possible problem in the TMJ.

Almost half of the population have dysfunction related to the disc or the condyle or to TMJ structure but the exact etiology is still unknown.

24% of patients with TMDs have neck or head pain and 12% have pain while opening their mouth.

No true cut line to tell if the dysfunction is pathological or not; for example clicking is a very common sign but not all patients with clicking have TMD, it should be painful for clicking to be associated with TMD.

Electromyography studies each muscle and its fibers exactly, lateral pterygoid for example is attached to neck of the condyle and to the medial portion of the disc if displacement of the disc occurs it might be due to problem in this muscle.

TMJ dysfunction may be related to many factors:

1. Occlusal factors i.e. high filling.
2. Intrajoint dysfunction.
3. Psychological factors, becoming very common nowadays.
4. Biochemical and mechanical factors.
5. Skeletal disalignment (malalignment).

Most common is myofacial pain related to muscular hyperactivity especially masseter and temporalis.

Dr sukina, DR Walaa, and Dr Zaid made a study on students from different faculties about the relationship between stress and TMJ dysfunction and found that dysfunction is common in medicine and dentistry students with stress as a major cause (from Tawjihi to graduation to social and financial stress)

Most patients today are younger; 8th and 9th grades which is alarming.

\*\*3 cardinal features of TMJ dysfunction:

1. Orofacial pain.
2. Restricted jaw function.
3. Noise in the joint upon movement; noises alone doesn’t indicate dysfunction and it’s debatable if non-painful clicking will progress to a painful condition but mostly it won’t.

Some patients might have asymptomatic dysfunction.

\*\* Symptoms of TMJ dysfunction:

1. Headache especially in the early morning.
2. Burning / tingling sensation in the cheeks and the perioral area.
3. Tenderness or swelling.
4. Clicking or popping.
5. Reduction in movement range or deviation.
6. Ear pain; very common and most patients are referred from ENT because they have no true ear problem.
7. Neck or facial pain.
8. Clinching especially at night.
9. Pain that worsens with stress.

10. Pain on opening or chewing.

11. Disruption of the occlusion.

Summery:

When we talk about myofacial pain we all know that it’s related to 1. Muscle spasm, so in this case we prescribe muscle relaxants or 2. Internal derangement which is disruption in any part of the joint and there are two categories; a. anterior disc displacement with reduction. b. anterior disc displacement without reduction.

Any problem in lateral pterygoid will lead to abnormal displacement upon opening or sliding or translational movements, medially disc is attached to lateral pterygoid so if a problem occurs it’ll lead to displacement medially or anteriorly because the disc is no more engaging the condyle upon translational movement and we hear clicking sound, another click is heard once the condyle re-engages the disc and it’s called reciprocal click. Hearing 2 clicks means that the displacement is with reduction.

Clicking is not significant unless it’s associated with pain or reduction of movement range.

Displacement without reduction means that the disc is no more able to engage the condyle upon different movements and many symptoms are increasing like popping which is higher than clicking, and more pain upon movements.

Finally a perforation in the disc occurs.

Stages: Displacement with reduction then without reduction then perforation when the condyle is engaging the retrodiscal tissue which is vascularized and innervated and this is very painful.

Assessment of TMJ should include all structures related to it; it’s a bony muscular complex structure, so we assess:

1. Occlusion and intercuspal alignment.
2. Gait pattern of the mandible, is there deviation or not?

In a certain stage of derangement deviation to the involved side occurs.

1. Screen the area carefully, good palpation is a must.
2. Take history and assess mouth opening.

\*\*Management:

First step is diagnosis, we start with panoramic radiograph and if we need something more advanced we take MRI because we want to see the disc. Conservative management comes first, we start with self-care practice, we deal with stress, we improve diet and reduce continuous chewing, we use warm packs and we give muscle relaxants orally regularly for one or two weeks even if there is no pain to benefit from the anti-inflammatory effect or topically (voltarin gels) and we teach patient to do massages in front of the ear with circular motions by fingers tips.

We can provide the patient with a rigid night guard or a stabilization occlusal splint of different thicknesses for 6 months, if it fails we start thinking of surgery (arthroscopy or open surgery).

\*\*Extra information:

We can use botulinum toxin (Botox) which becomes a fashion, it’s a bacterial neurotoxin that affects nerve endings preventing secretion of acetylcholine thus reducing contraction of muscles.

If injected into lateral pterygoid it should be done by an expert because it’s very dangerous.

It can be injected into masseter and temporalis and the effect is magical but not immediate, it needs 3 to 10 days and it’s repeated every 6 to 9 months.

The use of Botox is in between conservative and surgical tx.

Good Luck.

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