The Etiopathogenesis of Myofacial Pain Dysfunction Syndrome

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Abstract

This article presents a review of revisiting the Etiopathogenesis of myofacial pain dysfunction syndrome. This article concentrates on the appropriate evaluation, causes and management of MPDS. Myofacial pain is one of the significant and common reasons for the orofacial pain that originate from the myofacial trigger point. Patient with myofacial pain dysfunction syndrome also complains of a chronic musculoskeletal pain on which pressure on a sensitive muscle or point cause pain.

Keywords: *Myofacial pain dysfunction syndrome, Orofacial pain, Trigger point, Musculoskeletal pain.*

Introduction

Myofacial pain dysfunction syndrome is an order characterized by pain and dysfunction of masticatory muscle as well as the skeletal muscle and the trigger zones. The trigger zones are sensitive in nature and palpable. Myofacial pain dysfunction syndrome is defined as pain originates from the myofacial trigger point in skeletal muscles.MPDS is the most common form of temporomandibular disorder. It is the common cause of orofacial pain. MPDS is a psychological disorder that involves masticatory muscles, skeletal muscles, limitation of jaw movements, sensitivity in touch."TMJ pain dysfunction syndrome", first described by Costen (1934), which included Tmj dysfunction, facial and head pain. The term 'Myofacial pain dysfunction syndrome, first coined by Laskin (1969). Myofacial pain can arise in skeletal muscles such as those in the head (commonly muscle of mastication), neck, lower back, and shoulder.[1-3]

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Abnormal occlusion – a person can modify the pathway of closer in case of painful and potentially damagingcontact. This corrective movement of the mandible, during the closer, may lead to muscle strain and spasm resulting in abnormal pressure on the Temporomandibular joint.

Prosthetic problem – according to many authors' faulty partial and complete dentures, bilateral loss of molar teeth, over closer and increased vertical dimension in partial or complete dentureleads to TMJ dysfunction. There is also a change in myotatic stretch reflex in the above mentioned condition.

Orthodontics problem – malocclusion leads to TMJ dysfunction.

Emotional problem – in this case, patients show over behavior or overreactingon food habits, to care for teeth which give rise to TMD (Temporomandibular disorder). At the same time, oral habits are quite dangerous and can cause damage or persistent pain. A behavioral change like anxiety due to dysfunction of ANS(Autonomic nervous system).[1-3]

Psychophysiologic theory – The signs and symptoms of pain dysfunction syndrome are due to masticatory muscle spasm. Tenacious myospasm also can cause 2 other changes in the body, namely degenerative arthritis and contracture degenerative change. Degenerative arthritis arises from constant jaw function with abnormal condyle position contracture degenerative i.e. Muscle

change that accompanies long period spasm. Spasm maybe start by muscular overextension which gives rise tooral habits, dental restoration, tooth loss, denture irritation, adenture wearer.[1-3]

Etiopathogenesis: - Primarily energy is released during muscle contraction then there is an initiation and acceleration of lactic acid, which in turn effectuate coin in osmolality consequence in the reduction of the pH. It makes the muscle receptor susceptible to impule excitation as their censorious firing level is damaged. The lactic acid itself causes effusion and infusion of bradykinin, histamine and serotonin and another amine into the region by the decreased in pH, it leads to pathological musculardisturbance, then this specific zone of muscular disturbance are called as 'trigger zone' or hypersensitive area from which impulse the CNS and cause referred pain.[4]

Clinical Feature:

1. Unilateral, dull pain in the or preauricular region
2. Tenderness in the muscle of mastication.
3. Tender on palpation
4. Restricted mouth opening(opening of mandible)
5. Mostly occurs in the mandible with a more female predilection.
6. The pain continues in episodes of several times a day.
7. Gradually it raises due to increased emotional stress and increased intraarticular pressure in joints.
8. Due to myalgia, arthralgia masticatory pain occurs.
9. Mostly Pain occurs in the preauricular region but can be radiated to the temporal, frontal, and occipital region.
10. The patient complains of difficulty in chewing and restricted mouth movements.
11. Patients also complain of nose rubbing, clicking, grinding, and popping snapping sounds on mandibular movements.
12. The patient also complains tinnitus (ringing in the ear) or toothache or otalgia (pain in-ear). The cause behind tinnitus is that loss of bilateral molar leads to distal condylar movement and puts direct pressure on the Eustachian tube with impaction on the auriculotemporal nerve which is responsible for the ear symptoms.
13. The patient also focuses on hearing loss, myospasm other problems parafunctional habits, such as bruxism, clenching, extensive attrition, ridging of the buccal mucosa, malocclusion.
14. Pain aggravated by movement of the mandible.[1-4]

Management of MPDS: The management of myofacial pain requires a multifactorial approach. It is a long term procedure that takes time to recover. The patient should be calm and keep patience for recovery. The management can be done in two ways –Nonsurgical management & surgical management[5]

Nonsurgical Therapy:

1. Re-educate the patient about the disorders.
2. Reassurance the patient has to be assured of the character, sign, and symptoms of the myospasm.
3. Diet and rest- hard and chewy food should be avoided and the patient should be aware of resting jaw rather than postural movements like clenching, swallowing, or gridding.
4. Thermal therapy- laying a hot moist towel, electric heating pad over the symptomatic area is helpful to reduce pain. It should remain in the place for 10-15 min.

Supportive Therapy: There are two types of supportive therapy are: pharmacological therapy and physical therapy.[6]

Pharmacological Therapy:

- Pain control analgesics- salicylates, morphine,paracetamol, aspirin.
- Anti-depressants- monoamine oxidase inhibitor, lithium carbonate and caffeine.
- Anti-inflammatory agents – salicylates (aspirin)
- Propionic acid (ibuprofen), acetic acid (indomethacin),oxicam, fenamic acid, aryl acetic acid derivative (diclofenac sodium).
- Anxiolytics agent – Benzodiazepines such as lorazepam, diazepam and oxazepam are commonly used.
- Muscle relaxants- chlorzoxazone, meprobamate, methocarbamol and cyclobenzaprine.[7]

Physical Therapy: Physiotherapy may help in such cases and that infection and all are for the second option. There are many kinds of physiotherapy are available e.g. Stretch and spray, ischemic, pressure, soft pressure, continuous massage. Physical therapy can alsoadd electrical stimulation therapy which includes:

- Electro galvanic stimulation (EGS), is a periodic electrical impulse that is applied to the muscle, creating repeated involuntary relaxation and contraction, which cause increases in blood flow to the muscle.

- Trance cutaneous stimulation (TCS), is an electrical nerve stimulation (TENS)that stimulates the A-delta fibers and prevents pain from c- delta fibers by using electric current.[8]

Other Therapies:

1. Hydrotherapy- It is one of these therapies where the patient's cooperation is most important. Patients should understand the procedure and follow the hypnotist's suggestion. This results in muscle relaxation.
2. Acupuncture- it is the simple and effective pain control method skilled by inserting needles into appropriate joints at an appropriate surface called meridians. This therapy (acupuncture) gives relief from pain rather than remove the basic cause.
3. Restoration- Faulty restoration may lead to interactive contact. So the overfilled restoration should be removed. And the occlusion should be checked properly.[8-10]

Surgical Therapy: Surgical management is the rarest treatment of choice where long term results are disappointing. They are:

a. Condylotomy- it meansthe displacement of the head of the condyle, which moves slightly forwards and medially. The procedure is carried out without disturbing the joint capsule and intracapsular structures.[8-10]

b. High condylectomy- this is done when all other conservative forms of therapy have failed and other examination results in extensive proliferative changes or erosion of the condylar head. Basically in this procedure is based on the elimination of condylar articular pathology and surgical reduction of the hight of the condylar head.

c. Meniscectomy- the most acceptable method in which articular disc is removed from the TMJ. After removing the articular disc there is a relief of symptoms due to cutting off the capsular nerve supply and tightening the capsular ligament by post-operative fibrous scarring.[8-10]

d. Myotomy- selected myotomy of the temporalis or masseter muscle via an intraoral method is helpful in the management of pain dysfunction syndrome.

e. Arthroscopy- is the least invasive surgical technique for myofacial pain dysfunction syndrome. It has the potential of successful surgical outcomes with the minimal sequel.

f. Botulinum toxin A (Bt A) injections. It is one of those expensive and intensive means of treatment. This may helpwhen dystonia is a major factor. This method is successfully used to treat having both recurrent TMJ dislocation and excessive clenching.[8-10]

Conclusion

This is important to know about the etiology and the proper diagnosis of MPDS before treating this. The management should be properly done which includes conservative management as well as surgical management. The patients should take rest and have patience. MPDS is self-limiting if etiological factors are erased. Conservative management includes medication, jaw exercises, physical therapy, injections, etc. surgical management should be considered if the pain is not subsided by conservative management. After all of the above efforts, more research is still required. It includes lavage and lysis technique which results in an increased range of motion improvement of joint function and reduction of pain. Better management of the patient who is suffering from this syndrome. The proper management of myofacial pain dysfunction syndrome should be done in the early stage of the disease.

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