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Headache with Myofascial Origin.

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Abstract:

Myofascial pain syndromes are a prevalent cause among the patients with compliant of pain. They also can manifest as migraine type headache, tinnitus, nausea and vomiting. The purpose of this article is to explain the role of physical medicine exams and rehabilitative exercices in diagnosis and treatment of headaches with myofascial origin, and also to remind that they should be considered as a possible etiology when work up studies for headache are normal.

Key Words: Myofascial, Tinnitus, Headache, Nausea.

Introduction:

Myofascial pain is defined as a regional pain syndrome that is characterized by a referred Pain originated from a trigger point in a taut band of skeletal muscles. The key to diagnosis the myofascial pain syndromes is that the pain site is usually distant from the causative trigger point in skeletal muscle [(1)]. The main symptom is regional pain but other symptoms based on location of trigger point include headache, tinnitus and ear pain, nausea, dizziness, limited range of motion of involved joint and numbness in extremities. It can even mimic cervical radiculopathy if upper limb muscles be involved [(2)]. Myofascial headache caused be musculoskeletal origin is characterized by unilateral or bilateral headache. Pain duration varies from hours to weeks and is usually moderate, spreading into the frontal, temporal and orbital regions [(3)]. It should be considered where neurological and imaging studies are negative in evaluation of headache. The following case report describes a young female who suffered from a chronic headache. The purpose of this article is to explain the role of physical medicine examination and also rehabilitative exercises to diagnose and relieve the patient headache with myofascial origin.

Case Report:

A 22 years old female student of architecture was referred to clinic of physical medicine with compliant of chronic headache. She described it as a constant, dull headache on both sides of head that continued all the day for the last 6 months. It was accompanied with nausea but there was no vomiting or blurred vision. The pain did not radiate to cervical area or upper limbs. There was no paresthesia and numbness in extremities. She explained that her pain and nausea were suddenly relieved when she took supine position and reappeared with sitting and upright positions. Tinnitus in her right ear had been added to patient symptoms from 4 months ago. The patient had been visited by a neurologist 5 months ago for the first time and brain CT was requested for her. Since her scan was normal and symptoms did not respond to NSAIDs, Brain MRI was requested for her that was also normal. She had been treated with sodium valproate 400mg and propranolole 40mg daily with impression of migraine headache, but symptoms did not relieved. After that tinnitus had been added to patient symptoms she had been referred to ENT specialist and tympanomtry and speech audiometry had been done for her that was also normal and she was advised to refer to clinic of physical medicine.

When the patient was seen, in initial visual exam she was a 165cm tall, weigh 54 kg with forewarded head and neck posture. Her pain was rated 7.5 according to visual analoge scale [(4)], and the pain was so impaired her activities of daily living [(5)] that she stated she wished a day awakening with no headache. Her neurological exam demonstrated normal reflexes,

sensory and motor exams. Spurling test, Adson test and lhermittes sign were all negative [6]. In musculoskeletal exam, cervical range of motion was limited in left lateral bending and rotation and a typical trigger point with tenderness to palpation were found in right upper trapezius muscle that provoked patient headache with deep palpation. There was referred pain to right occipital area when trigger point was palpated. The treatment was started with diagnosis of myofascial headache and she was treated with vapocoolant spray applied on trigger point and in direction of pain radiation. Concomitant stretching of right trapezius and levator scapula muscles were done during spray application. The patient was instructed to refer 3 times for the first week to continue treatment and stretching exercises were learned to her to continue at home. One week after, on the third visit her visual analoge scale level decreased to 1 and the patient had significant pain relief. Her nausea and tinnitus were disappeared completely and she became almost symptom free. She was then progressed to isometric strengthening of cervical and shoulder muscles exercises. Proper ergonomic positions were taught to her for computer and desk positions as well as stretching exercises to do during her work. She returned to clinic twice monthly for follow up and during four months of follow her headache, nausea and tinnitus did not recur.

Discussion:

Myofascial pain syndromes take their ever widening acceptance based on work of Travell and Simons in 1983 [10]. In a recent investigation the prevalence of myofascial pain syndrome was estimated nearly 30% of patient with compliant of pain [1] They are commonly seen in patient with chronic pain. Trigger points are characterized by pain originating from small circumscribed areas of hyperirritability and myofascial structures resulting in local and reffered pain [10]. Myofascial pain is aggrevated by compression and often demonstrates a characteristic pattern of referred pain [11]. They can be appeared secondary to trauma, malpositioning and other factors. Chronic muscle strain is an equally important factor that often brought on by fast movements or "hurry at work" [12]. Trigger points are usually found in over used or under used muscles. The trapezius, levator scapula and infra spinatus are commonly involved in upper limb [1]. The patient pain both in site of trigger point and in referred zone is reproduced by deep palpation of trigger point. Myofascial pain can also manifest itself as ear pain, tinnitus, nausea, dizziness, tingling sensation and headache. Active trigger points in upper trapezius, sternocleidomastoid and temporalis muscles can manifest with chronic tension type headache [17], therefore they should be considered as a possible etiology when imaging studies are normal [2]. Pain duration in this type of headache varies from hours to weeks and is usually spreading into frontal, temporal and orbital regions [7]. They can mimic migraine headache due to ipsilateral pain and the typical migraine like symptoms such as nausea, vomiting and ocular problems but it never alternates sides of head and usually is dull, boring pain that could be lasting for minutes to several days [8].

Uncontrolled studies revealed the role

of local ischemia in pathophysiology of trigger points [18]. Energy crisis in the muscle and release of nociceptor stimulant substances are other explanations [19]. According to Travell and Simons theory the sequence of muscle strain, local muscle damage, tear in sarcoplasmic retinaculum, free sodium ions, sustain contraction and subsequently increase strain is responsible for existence of trigger points [20]. Hubbard et al. placed electromyography needle in trapezius trigger points and found spontaneous electrical activity on them and concluded that sustained activity in muscle fibers are responsible for increased tone of muscles [21], but this spontaneous activities detected by him may be end plate potentials that could be observed in all muscles. Along with multiple above described hypotheses for etiology, numerous treatment methods are also advised for myofascial pain syndromes and specially myofascial headaches. The first step is patient education and reassurance that takes time but may put an end to the constant "doctor shopping" [22]. Postural or work related muscle overuse is an important causative factor that should be seriously mentioned. The most reliable method of treating is regular stretching of involved muscles to restore the normal resting length of the muscle. The patient should learn to do this several time a day. Studies showed other treatment include use of thermal modalities, injection of trigger point [13], deep pressure massage, vapocoolant sprays [14],… Cheshire et al. and Porta et al. described the effect of botulinium toxin injection in treatment of myofascial pain.[15, 16] but it is expensive and seems not to have any superiority to other more simple options. A more important fact despite each above described methods are applied is that after initial treatment, a long standing stretching program along with ergonomic correction of the work environment and also posture correction and biofeedback should be applied to the patient in order to prevent recurrence of symptoms. Based on Buckelew et al. study the combination of stretching and aerobic exercises with biofeedback maintained prolonged improvement for 2 years for most patients [23].

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