

## MYOFASCIAL PAIN SYNDROME

Myofascial pain syndrome is a condition that involves the muscles of the body. There is regional musculoskeletal pain, as opposed to generalized musculoskeletal pain that is seen in Fibromyalgia Syndrome. In the following paragraphs, I will give an overview of the clinical aspects of the condition, pathophysiological findings and treatments.

Muscle pain is a common universal human experience as muscles make up to 40 percent of the human body mass. However, muscle pain syndromes are very controversial in the medical community. There has been a lot of research over the years looking into the causes, treatments and physiologic changes to the affected muscles. Muscle pain has been noted in the medical community since the 1700's where it was distinguished from joint pain syndromes. In the early 1900's, pathologic studies were done on muscle tissue from nodules and the term fibrositis was used to describe these painful areas of muscles. However, the term denotes an inflammatory response in these muscle nodules and later pathologic research did not find any indication that an active inflammatory response occurred in these nodules to cause pain.

A theory was formulated in the 1940's and 1950's as to the cause of the muscle pain as the muscle pain occurred in a localized region of the body and was not generalized. The pain was described in terms of a spasm which led to muscle pain but a common underlying cause was the presence of a preexisting trauma in these patients. Further work led to the terminology of trigger points to denote these painful areas of muscle spasm or nodules causing Myofascial Pain Syndrome.

Trigger points are painful areas found in muscle that cause pain. The trigger points are found within taut bands of muscle where the taut band is a shortened group of muscle fibers. These muscle fibers can be palpated by sliding skin perpendicularly over the fibers. Palpation then causes a characteristic twitch response when the taut band of fibers is palpated. The pain is also referred to another area of the body when the trigger points are palpated.

There are now criteria for diagnosing myofascial pain. There are major criteria which are the following:

1. Regional pain
2. Referred pain
3. A taut band
4. A tender point in the taut band
5. Restricted range of motion

There are also several minor criteria that can be used to diagnose this condition. Those criteria are as follows:

1. Pain complaint reproduced by pressure on the tender spot
2. A local twitch response
3. Relief of pain with injection or stretching

As far as the pathophysiology of this condition, research redefined Myofascial Pain Syndrome through the use of electromyography or EMG. EMG failed to find the spasm in the involved muscle that was previously postulated. It was found that a sequence of factors occur in the localized muscles leading to pain that involved an acute muscle strain in a regional area with localized tissue damage in an area of muscle. The damage leads to tears in the sarcoplasmic reticulum which caused free calcium ions to result in sustained muscle contraction. This sustained contraction causes the muscle based pain.

In terms of treatment, it can involve the use of localized treatments or injections of the trigger points. The use of localized treatments involve spraying cold sprays, directly to the trigger points. Stretching of the affected muscles massage and myofascial release techniques via manual therapy can be done and is often very effective. In many cases, injection of the trigger points can provide pain relief that in many cases can give quicker pain relief than use of the local treatments alone, which may not show effects for several days. It has been found that just placing a dry needle without using an injectate is enough to decrease pain, but most clinicians inject a local anesthetic or anesthetic with combination of a corticosteroid. However, use of a corticosteroid may not be that beneficial as prior research showed, as stated before, there is not an inflammatory response in the trigger points that cause myofascial pain. Also, saline alone could be injected.

Also, as far as treatment with medicines, analgesia can be obtained with NSAID's, especially with those with excellent analgesia such as Bextra, acetaminophen containing medications and newer agents such as Ultram. The goal is to avoid opioid narcotic medications. Also, most patients benefit from use of a muscle relaxant.

### REFERENCES

1. Simons DG. Travell JG. Simons LS. Travell and Simon's Myofascial Pain and Dysfunction: The Trigger Point Manual, Volume 1 Upper Half of Body. 2, 1999.
2. Braddom R. *Physical Medicine and Rehabilitation: The Diagnosis and Treatment of Muscle Pain Syndromes*. 1(42): 903-913, 1996.