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NON-TRADITIONAL APPROACH TO THE TREATMENT OF MYOFACIAL PAIN SYNDROME

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ABSTRACT

Pain is one of the leading complaints in the ambulatory setting. The Global Burden of Diseases, Injuries, and Risk Factors Study 2019 demonstrated that low back pain, neck pain and other musculoskeletal pain complaints are the leading causes of morbidity globally in terms of years lived with disease. The frequency of acute musculoskeletal back pain in the population averages 31%, while the transition to a chronic form is observed in 38% of patients, in 40% of cases it is not possible to relieve chronic pain syndrome. The article presents a brief review of literary sources of the last 10 years, covering issues of etiopathogenesis, diagnostics and non-traditional methods of treatment of patients with myofascial pain syndrome.

KEY WORDS: *Myofascial Pain Syndrome, Trigger Point, Manual Therapy, Dry Needling*

Pain is one of the leading complaints in the ambulatory setting. The Global Burden of Diseases, Injuries, and Risk Factors Study 2019 demonstrated that low back pain, neck pain and other musculoskeletal pain complaints are the leading causes of morbidity globally in terms of years lived with disease [1].

The probability of an episode of acute back pain during life reaches 84%, and it mainly affects people of working age 30-45 years old. The frequency of acute musculoskeletal back pain in the population averages 31%, while the transition to a chronic form is observed in 38% of patients, in 40% of cases it is not possible to relieve chronic pain syndrome [2].

- The factors that contribute to the activation of muscle nociceptors and the development of MPS are varied. It is no coincidence that MPS is one of the most common causes of pain in the back, neck and limbs. The main causes of myofascial pain syndrome are:
- overload of individual skeletal muscles caused by postural overexertion in non-physiological conditions due to a structural anomaly of the skeleton (different leg lengths, flat feet, pelvic deformities, etc.);
- features of work activity - prolonged non-physiological posture when working at a computer, driving a car; frequently repeated stereotypical movements leading to overstrain of individual muscles;
- prolonged immobilization of muscles (during deep sleep or after wearing a splint for a long time for fractures and dislocations);
- prolonged direct compression of different muscle groups;
- hypothermia.

Myofascial pain syndrome (MPS) is a potential cause of musculoskeletal pain. MPS is defined as a regional pain characterized by the presence of myofascial trigger points [1]. It is a variant of somatogenic pain, the source of which is skeletal muscles and fascia. The formation of pain in the muscles is caused by irritation of nociceptors of non-encapsulated nerve endings of A-delta and C-afferent fibers, a huge number of which are located in muscle fibers, fascia and tendons. These sensory units are activated by various irritants [2].

The key pathogenetic moments are the distortion of proprioceptive information in the hypertonicity zone, a decrease in the excitability threshold of the afferent link, a violation of reciprocal relationships, a violation of inhibitory processes at the segmental and suprasegmental levels, as well as vegetative and psychosomatic reactions and a violation of relationships in the nociception and antinociception systems with depletion of the latter. [3]. And as a consequence, regional pain develops, characterized by the presence of trigger points.

Loss of motor activity, musculoskeletal pain, and emotional-volitional disorder lead to a decrease in functional status and negatively affect a person's quality of life [4], so special attention must be paid to the tactics of managing such patients.

There are many treatment options for myofascial pain syndrome. The principle of treatment of MFPS traditionally consists of three fundamental directions of action: pain relief, relaxation and stretching. Nonsteroidal anti-inflammatory drugs are often used to reduce pain. Their effect is associated with inhibition of the enzyme cyclooxygenase and suppression of prostaglandin synthesis,

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which allows reducing peripheral sensitization and impulses from peripheral nociceptors. But as numerous studies have proven, the duration of their use is limited due to possible ulceration and gastrointestinal bleeding, peripheral edema and dysfunction of internal organs [5,7,8].

Recently, there have been reports of the effectiveness of alternative treatment methods such as myofascial release, acupuncture, pharma puncture, kinesio taping, dry needling, etc. [6,10,11].

The basis of non-drug treatment is manual therapy. Among the manual treatment techniques, pressure, stretching and sliding techniques are used on the muscle. Performing manual therapy techniques allows you to eliminate the trigger point due to the physiological characteristics of muscle function, restore blood flow to damaged muscles, thereby reducing pain by reducing the effects of prolonged tissue ischemia [5]. Among manual techniques, the “dry needling” method is also widespread.

The dry needling method is an invasive method of deep impact on myofascial trigger points (MTP), in which a thin needle or acupuncture needle is inserted into the muscles or more superficial tissues, stimulating receptors, MTP, the muscles and tendons themselves, in order to improve microcirculation, eliminate pain and spasms. It was developed by American scientists and doctors in the second half of the 20th century to treat musculoskeletal pain: pain in the neck, back, joints [6]. When tissues are punctured, receptors are irritated, which in response to stimulation improve local microcirculation, facilitating a more rapid removal of inflammatory mediators from the puncture area that cause pain symptoms.

The introduction of a thin dry needle without injections and drugs reduces pain due to the effect on the portal control of pain. Numerous studies have shown positive results of the use of manual techniques, expressed in a decrease in pain sensitivity and an improvement in the condition and function of muscles. Dry needling, acupuncture and placebo acupuncture were also compared. [11,12,13]. Moreover, the greatest effectiveness was recorded in patients who received the dry needling method.

Thus, dry needles allow to quickly inactivate the trigger point, reducing or completely eliminating the manifestations of pain, which, in turn, increases the range of motion and reduces muscle tension.

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