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Peculiarities of Neuromyographic Indicators in Adolescent Musicians with Pain Syndrome of the Cervicothoracic Spine

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ABSTRACT

The article deals with the clinical manifestations of juvenile spinal osteochondrosis. The main causes of the development of the disease. Pain syndrome, a typical symptom of adult patients, is rare in adolescents. Discomfort and quick fatigue of the back is often noted, which disappears after rest and does not hold the parents' attention. Neurological disorders: adolescents complain of headache, dizziness, increased general fatigue. Reflected pain and numbness of the limbs are almost never encountered. And what is the approach to treatment.

KEYWORDS: *Syndrome, symptom, spine, osteochondrosis, nerve roots*

INTRODUCTION

Juvenile osteochondrosis of the spine is not such a rarity in our time, and after all, thirty - forty years ago, the disease was considered purely "adult".

Osteochondrosis is a complex of dystrophic disorders in the articular cartilage.

It becomes clear if you look around: people move little, consume synthetic food and drinks, breathe conditioned air, live under the influence of a high level of electromagnetic and other radiation.

All this affects the metabolism in the body, the level of immunity, provokes the development of diseases, in particular, early osteochondrosis of the spine.

Clinical manifestations of juvenile osteochondrosis of the spine have their own characteristics. Pain syndrome, a typical symptom of adult patients, is rare in adolescents. Discomfort and quick fatigue of the back is often noted, which disappears after rest and does not hold the parents' attention. Neurological disorders are usually present: adolescents complain of headache, dizziness, increased general fatigue. Reflected pain and numbness of the limbs are almost never encountered. Hence a different approach to treatment is needed.

How to cure osteochondrosis of the spine in a teenager, parents will learn from a doctor (neurologist or orthopedist) after a medical examination, having received individual recommendations. Treatment of osteochondrosis and its complications is carried out using conservative methods aimed at eliminating pain syndrome, dysfunction of the spinal roots and preventing the progress of degenerative changes in the structures of the spine.

In children and adolescents, drugs of the NSAID group are rarely used, only with severe pain and a short course. The treatment is based on vitamins, physiotherapy, acupuncture, massage and exercise therapy. Swimming is useful. It is important to adhere to the daily regimen and proper nutrition for osteochondrosis of the spine. Adequate sleep and lack of anxiety will help strengthen the nervous system, and a balanced diet containing proteins, fats, carbohydrates, vitamins and minerals will support a good metabolism, including in the vertebral discs, bone structures, muscles and ligaments. Nutrition for osteochondrosis of the spine is enriched with foods rich in B vitamins, calcium, phosphorus, in particular - cereals, dairy products, fish, eggs, vegetables.

Physiotherapy exercises and regular outdoor games, walks in the fresh air activate blood circulation, increase vascular tone. The body is saturated with oxygen, cell respiration improves. Harmonious living conditions allow the young body to overcome all health disorders and recover.

Diagnosis - pain in the thoracic spine

The diagnosis always begins with a personal conversation between the patient and the doctor. In this conversation, in order to collect anamnesis, the patient tells the doctor his medical history, describes his life circumstances, gives instructions on the type and location of pain.

At the second stage, the doctor probes the spine, looks at possible distortion, pays attention to the symmetry of the upper body, changes or injuries. Are there inflammatory processes? These questions are usually answered by a blood test. If the doctor suspects something more than HOP syndrome behind the complaints, for example, a possible latent heart attack, he prescribes an electrocardiogram (ECG). Last but not least, imaging techniques such as X-rays, chest MRI scans, CT scans or scintigraphy.

Syndromes and symptoms of osteochondrosis

- Stenosis (syndrome of narrowing of the spinal canal): compression of the vessels of the spinal cord by herniated intervertebral discs, osteophytes (growths of bone tissue) or a thickened vertebral ligament. As a result, blood circulation in the affected area is disrupted. The person begins to feel constrained, feels a noticeable pain in the cervical spine. Numbness and tingling are found in the upper and lower extremities
- Radicular syndrome: compression of the nerve roots by the intervertebral disc. This leads to headaches, expressed in aching, burning or throbbing impulses, sometimes the sensations are similar to those of hypertension. With this syndrome, speech defects and olfactory disorders, hypertrophy of the facial muscles, damage to the sensitivity of the lingual muscles, a feeling of “clogged” throat with lumps can occur. Breathing becomes intermittent, a person suffers from snoring, his nose is often, seemingly for no reason, "stuffy".

- Vertebral artery syndrome: forms when the vertebral artery is compressed (compressed). Its main companion is throbbing pain. Attacks can involve the parietal lobe, the superciliary region, the temporal and occipital lobes.
- Cardiac syndrome: resembles attacks of angina pectoris, but their duration is much longer. The pains are reflected in the diaphragm. This phenomenon in some individual cases is accompanied by high blood pressure, arrhythmia.

The main causes of the development of the disease

- Disruptions in metabolism;
- Lifestyle with low physical activity;
- Hereditary predisposition;
- Age-related ossification;
- Clamps in the muscles, as a result of which posture changes;
- Lack of fluid and vitamins in the daily diet;
- Prolonged stay in an uncomfortable position that increases pressure on the discs and spine;
- Overweight or overload on the spine due to wearing heels;
- All kinds of postponed spinal injuries;
- Regular lifting of weights;
- Autoimmune diseases (the process of self-destruction of the immune system), which lead to degeneration of cartilage tissue;
- Stress, which leads to muscle spasms and impaired blood flow to the intervertebral discs;
- Hypothermia.

Massage for osteochondrosis of the cervical spine

The massage is performed with the aim of strengthening muscle tone and relieving pain. Depending on the stage of development of the disease, different massage techniques are performed. The classic massage techniques include:

- stroking - this technique consists in affecting the surface layers of the skin. The massage begins from the collar area and continues to the collarbones and armpits. squeezing - in this case, the effect during the massage occurs on the deeper layers of the skin. Across the neck, thumb and forefinger perform movements to grasp the skin, which resemble squeezing. rubbing - performed with the aim of warming up and relaxing the skin in order to improve blood flow in the neck area of the cervical spine.
- kneading - has special limitations, as it affects deep tissue. If performed incorrectly, this technique can harm the patient.
- In cases where the patient feels pain on only one side, the massage should be started from the healthy part of the neck, gradually moving to that part of the cervical region where pain appears.

The massage can be performed both at home and in a medical facility. However, in the course of its implementation, one should be very careful not to provoke an exacerbation of the disease or not make it worse.

Epidemiological evidence suggests that low back pain is significant in both adults and children and adolescents. According to studies conducted in different countries, there are significant deviations in the prevalence of back pain in healthy children and adolescents: in Finland - 20%, Sweden - 29%, Switzerland - 51%, Canada - 33%. Such a spread is probably associated not only with the ethnic and age heterogeneity of the studied samples, but also with the lack of a common terminology and unified diagnostic criteria. So, in the same regional group at the age of 11, this figure is up to 11%, and upon reaching the age of 15 it reaches 50%.

Methods

It was found that in children with high growth and asymmetry of the trunk, as well as reduced mobility of the joints of the lower extremities, the frequency of back pain is higher. Potential risk factors for back pain include smoking, malnutrition, physical activity levels, psychosocial factors, muscle elasticity, and joint mobility. The external factors that most often provoke the development of back pain in students include overload. At the same time, the etiopathogenesis of back pain in children and adolescents can be caused by inflammatory, tumor, post-traumatic and stress-overload processes that arise as a result of practicing such sports that are associated with extreme physical exertion, sudden movements, falls and injuries.

Symptoms of cervical osteochondrosis of the spine

The manifestations of cervical osteochondrosis differ from symptoms in other parts of the spine. This is due to the fact that the cervical vertebrae have a different structure and are located very close. Therefore, any displacement is manifested by severe pain. In addition, nerve bundles and arteries are often pinched in the cervical spine.

Cervical osteochondrosis of the spine is manifested by the following symptoms:

- Feelings of pain - pain can be felt in different parts of the body. This is due to the fact that the nerve endings and muscles of the corresponding part of the body are pinched.
- Weakness in the upper limbs - manifested due to pinching of the nerve endings responsible for motor activity.
- Difficulty turning the head, the appearance of crunching of the vertebrae in the cervical spine - occur due to changes in the structure of the intervertebral disc, the appearance of bone formations.
- Low hand sensitivity.
- Weakness and dizziness are caused by a pinched artery that supplies blood
- and nutrition to the brain.
- Decreased hearing and vision - appears at the last stage of the disease, when blood circulation to the cerebellum is impaired.

Signs of the cervical spine of osteochondrosis

- Radicular syndrome - characterized by pinching of the nerve bundle in the neck. It is manifested by severe pain that can be felt in the shoulders, scapula.
- Vertebral syndrome - manifested by severe headaches, pain in the temples and back of the head.
- Reflex syndrome - characterized by severe pain in the cervical spine, which can worsen with any movement of the head. The pain can travel to the shoulder and chest.
- Cardinal syndrome - resembles an attack of angina pectoris, which is extremely difficult to determine.

Degrees of development of cervical osteochondrosis of the spine

As the disease progresses, it goes through several stages. Each stage has its own characteristics and is characterized by certain features.

- 1 stage. The bone and cartilage tissue of the vertebrae gradually begins to deteriorate. Symptoms of the disease are subtle. And very often patients simply do not notice them, but associate fatigue and pain with overwork and stress.
- 2 stage. The disc begins to decrease in height, and cracks appear on it. The patient experiences constant pain, weakness, facial numbness.
- 3 stage. Herniated discs begin to form, and cervical vessels and muscles are damaged. There are complaints of dizziness, pain in the back of the head.
- 4 stage. The bone tissue, which protects the vertebrae from unnecessary stress, begins to grow, as a result of which the nerve endings are pinched. Stiffness arises in movements, adjacent joints are damaged.

Dangers of cervical osteochondrosis

The cervical region contains a large number of nerves and arteries that provide nutrition to the brain. In the event of a malfunction, the brain will not receive sufficient nutrition for normal functioning. This situation can disrupt human motor activity, cause pain in the limbs, as well as loss of coordination.

In the advanced stage of osteochondrosis, ischemia, stroke and many other diseases that are life-threatening can develop,

Therefore, it is recommended that you seek medical attention if you develop any symptoms associated with this disease.

Diagnostics of the cervical spine

The following types of diagnostics are used to examine diseases of the spine:
an x-ray is an ineffective way to diagnose this disease,
MRI (magnetic resonance imaging) shows bone structures, disc herniation and their size
CT (computed tomography) is ineffective compared to MRI, since it is difficult to determine the size of hernias using this diagnostic method,

Duplex ultrasound scanning is used when general blood flow is impaired. This examination shows the existing blood flow velocity, as well as the presence of barriers in its path.

Treatment of cervical osteochondrosis of the spine

Treatment of cervical osteochondrosis of the spine should be carried out in combination, depending on the situation. A positive effect can be achieved thanks to a comprehensive and individual approach, which includes medicinal treatment, physical procedures, physiotherapy exercises, massage, and traditional medicine is also used.

During the period of exacerbation, the treatment of cervical osteochondrosis of the spine is aimed at increasing blood circulation, at getting rid of muscle spasms. In this case, agents are prescribed that improve blood flow, anti-inflammatory and analgesic drugs, and a vitamin complex.

Physiotherapy exercises for osteochondrosis of the cervical spine

Remedial gymnastics gives visible results and is less dangerous at the stage of recovery. The principle of action of physiotherapy exercises is to restore blood flow to damaged parts of the body. Performing exercise therapy exercises, the patient should not feel pain and discomfort.

A set of exercises for the cervical spine is designed to strengthen the muscles of the neck, and also acts as a prophylaxis for the development of cervical osteochondrosis.

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The massage can be performed both at home and in a medical facility. However, in the course of its implementation, one should be very careful not to provoke an exacerbation of the disease or not make it worse.

Prevention of cervical osteochondrosis

To prevent the onset and development of the disease, it is recommended to follow simple rules:

- lead a healthy lifestyle, exercise, regularly visit the pool;
- diversify the diet with foods rich in magnesium and calcium;
- In the case of sedentary work, it is necessary to warm up several times a day;
- for sleeping you should choose an orthopedic mattress and a comfortable pillow.

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