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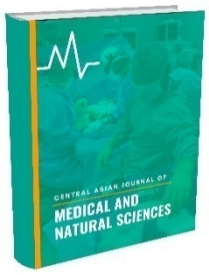

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PATHOGENESIS AND TREATMENT OF NEUROLOGICAL COMPLICATIONS OF SPINAL OSTEOCHONDROSIS

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ABSTRACT: *this article is devoted to the concept, pathogenesis and treatment of neurological complications of osteochondrosis of the spine*

Keywords: vertebrogenic syndromes, spondyloarthrosis, Lushchki'ssinuvertebral nerve, lumbarization, Lasegue symptom, radiculomyeloischemia, spacer symptom

Taking care of one's own health is the immediate responsibility of everyone; he has no right to shift it onto others. Indeed, it often happens that a person, by the wrong way of life, bad habits, physical inactivity, overeating, brings himself to a catastrophic state by the age of 20-30.

No matter how perfect medicine is, it cannot rid everyone of all diseases. Man is the creator of his own health, which must be fought for. From an early age, it is necessary to lead an active lifestyle, temper, engage in physical education and sports, observe the rules of personal hygiene - in a word, to achieve in reasonable ways a genuine harmony of health.

In connection with the acquisition of a vertical position in a person, the lower lumbar and lower cervical parts of the spine are subjected to significant overloads. Therefore, early, starting from the 3-4th decade of life, the wear of these vertebral segments begins. A vertebral motor segment is a pair of adjacent vertebrae, an intervertebral disc and the fibrous tissues and intervertebral muscles connecting them. The deformations of the tissues of the vertebral motor segment arising under the influence of statodynamic loads are the cause of constant irritation of its receptors, especially pain receptors. These deformed tissues (primarily affected discs) can also have a mechanical effect - compression on the spinal cord and nerve roots. Vertebrogenic syndromes are the most common chronic human diseases - every second person suffers from back or neck pain during their life.

Among the lesions of the spine, accompanied by neurological disorders, the most common degenerative-dystrophic processes: osteochondrosis and spondyloarthrosis. These forms should not be confused with spondylosis. Osteochondrosis of the spine is a degenerative lesion of the intervertebral disc cartilage and reactive changes from the side of adjacent vertebral bodies. It occurs with a primary lesion of the nucleus pulposus.

Under the influence of unfavorable static-dynamic loads, the elastic gelatinous nucleus, which plays a shock-absorbing role and provides the flexibility of the spine, begins to lose its physiological properties, primarily due to the depolymerization of polysaccharides. It dries up and sequesters over time. Under the influence of mechanical stress, the fibrous ring of the disc, which has lost its elasticity, protrudes, and subsequently fragments of the nucleus pulposus fall out through its cracks: protrusion is replaced by prolapse - disc herniation.

In conditions of altered, increased mobility of the vertebral segment (instability), reactive changes occur in the adjacent vertebral bodies and in the joints (spondyloarthrosis accompanying osteochondrosis).

If you do not learn how to sit, stand, lie down, then the disc will lose the ability to perform its function (amortization) and after a while the outer shell of the disc will crack, and hernial protrusions are formed. They compress blood vessels (which leads to impaired spinal circulation) or the roots of the spinal cord, and in rare cases, the spinal cord itself. These changes are accompanied by painful sensations and reflex tension of the back muscles.

The vertebral segment includes not only the disc, fibrous tissues and adjacent vertebrae, but also the muscles connecting them - the transverse, interspinous and rotator cuff muscles. They, under the influence of impulses from the receptors of the affected segment, especially from the posterior longitudinal ligament, reflexively strain. This asymmetric tension is responsible for the often occurring local scoliosis, which is referred to by radiologists as the “spreader symptom”.

Reflex tension of deep (segmental) as well as superficial long muscles of the spine creates a natural immobilization, often protective: a muscle corset, or collar. Over the years, the same immobilization is created due to disc fibrosis. Early fibrosis in the area of one vertebral segment, functional shutdown of this link of the kinematic chain of the spine lead to overloading of neighboring ones, which contributes to the development of degenerative processes in them. Some anomalies of the spine contribute to the early development of osteochondrosis and its clinical manifestations: the presence of transitional lumbosacral vertebrae, lumbarization, i.e., the presence of the VI lumbar vertebra due to the upper sacral segment, or, conversely, sacralization, i.e. the fusion of the distal lumbar vertebra with sacrum; asymmetric arrangement of the joint spaces of the facet (facet) joints (violation of articular tropism); splitting arcs. The congenital narrowness of the spinal canal is very important: in these conditions and the small size of the hernia, or osteophyte, puts pressure on the nerve elements.

Depending on which nerve formations the affected structures of the spine have a pathological effect on, compression and reflex syndromes are distinguished. Compression syndromes include those in which a root, vessel or spinal cord is stretched, squeezed and deformed over the specified vertebral structures. Reflex complexes include symptom complexes caused by the effect of these structures on the receptors that innervate them, mainly the endings of the recurrent spinal nerves (Lushka'ssinuvertebral nerve). Impulses propagating along this nerve from the affected vertebra enter the posterior root into the posterior horn of the spinal cord. Switching to the front horns, they cause reflex tension of the innervated muscles - reflex muscular-tonic disturbances. The introduction of the concept of “reflected spondylogenic pain” into everyday life does not in any way deactualize the usual concept of reflected pain in diseases of the visceral organs and blood vessels (stomach ulcer, pancreatitis, myocardial infarction, dissecting aortic aneurysm).

It is with the exclusion of a possible connection between lumbodynia, thoracalgia and cervicalgia with diseases of the abdominal and thoracic cavity organs that the diagnosis of acute and chronic pain in the back and neck begins.

Within the framework of spondylogenic somatic pain, muscle pain should be distinguished. With them, both pain of a reflected nature and those caused by muscle contracture, spasmodic by impulses from the spine, are possible. A blockade of the gluteal or piriformis muscles temporarily relieves lumboischialgia, just as a blockade of the scalene muscle relieves the often severe pain in the arm. The concept of myofascial pain is increasingly used in the analysis of lumboischialgia. The relative frequency of the somatic and radicular components in the total mass of lumboischialgia and cervicobrachialgia has not yet been established, since after the Lasegue symptom, which has lost its specificity of the nodular sign, there is a doubt whether all defects of sensitivity and deep reflexes are always associated with the interest of roots ("non-dermatomal disorders of sensitivity ").

The clinical manifestations of compression at the lower lumbar level also include spinal cord ischemia syndromes. In acute development of the process, they talk about spinal strokes, with subacute and chronic - about myelopathy due to (pressure of the radicular arteries. Compression of the radicular-spinal arteries L5 and S1 comes down to the following. A patient experiencing pain in the leg and lower back develops weakness in the foot. In this case, sensory disturbances do not occur.Specified disorders are apparently associated with ischemia of the anterior horns of the spinal cord and are defined as paralyzing (paresis) sciatica. More extensive areas of the spinal cord, such as the cerebral cone, epiconus, and thoracic spinal cord, may also be affected, causing severe paralysis and sensory disorders in the legs and lower trunk, as well as pelvic disorders.

The course of radiculomyeloischemia is usually two-stage. Initially, lumbar pain occurs due to irritation of the disc herniation of the posterior longitudinal ligament receptors. The attack of these pains can be repeated in the future, and then (in one of the exacerbations) paresis or other spinal disorders develop in a stroke.

Lumbar reflex syndromes. Irritation of the receptors of the annulus fibrosus of the affected disc or the posterior longitudinal, interspinous and other ligaments, as well as joint capsules, as already mentioned, becomes a source of not only pain, but also reflex reactions. This is primarily the tonic tension of the lumbar muscles. The syndrome of vertebral lumbar pain is defined as lumbago in acute development of the disease and as lumbodynia in subacute or chronic development.

Lumbago. Lumbago often occurs at a time of physical exertion or awkward movement, and sometimes for no apparent reason. Suddenly, or within a few minutes or hours, a sharp pain appears, often shooting ("lumbago"). Often the pain is burning, bursting ("as if a stake had been stuck in the lower back"). The patient freezes in an uncomfortable position, cannot straighten out if an attack occurs at the time of lifting the weight. Attempts to get out of bed, turn around, cough, sneeze, bend a leg are accompanied by a sharp increase in pain in the lower back or sacrum. If the patient is asked to stand on his feet, a sharp immobility of the entire lumbar region is revealed, while a flattening of the lumbar lordosis or kyphosis is noted, often with scoliosis. The lumbar spine remains fixed (natural immobilization) even when an attempt is made to passively displace the leg in the hip joint, therefore, carefully performed flexion of the leg extended at the knee joint, with lumbago, is not always accompanied by pain in the lower back: the affected disc is well protected in the immobilized vertebral segment. The main task of drugs in the treatment of the spine is to relieve symptoms: To completely eliminate or reduce pain. Pain relievers are used - non-steroidal anti-inflammatory, hormonal drugs. In severe conditions - narcotic analgesics. The duration of the course is no more than 5-10 days due to possible adverse reactions. Initially, injections are prescribed 1-2 times a day, later you can switch to tablet forms. For more rare use, there are forms of "retard" with gradual resorption during the day.

- Relax tense muscles. Muscle relaxants are used in the form of injections or tablets. It also leads to relief of pain syndrome, pinched vessels open, blood supply is restored.
- Facilitate the conduction of impulses along the nerves. B vitamins cope with this task.

- Improve tissue nutrition. Chondroprotectors prevent aging and destruction of the intervertebral disc, strengthen the fibrous capsule that connects the bodies of two vertebrae to each other. But after one or two weeks of using the effect, it is impossible to get it - you need to tune in to six months of regular intake of drugs, in the future, the course must be repeated after a certain time. Treatment of the cervical spine may require additional medications to lower blood pressure, relieve dizziness - these conditions also limit the patient's physical capacity.
- Treatment of the lumbosacral spine is rarely complete without blockages - one or more drugs in the form of a cocktail are injected into the area of the nerve root, spasmodic muscle or the space around the spinal cord.

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