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PATHOMORPHOLOGY OF SPONDILESIS OF THE CERVICAL SPINE

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Abstract:

This paper examines the pathomorphological changes that occur in 5 radiological cycles of cervical spine spondylosis. In degenerative diseases of the cervical spine, too, the disc, spinal cord, interlocking joints, surrounding fibrous tissue and bone tissue are damaged, deformed and fragmented. In osteoarthritis of the cervical spine, there are 5 radiological periods, and at its onset, initially, fibrous tissue and muscles around the spine undergo pathomorphological changes. In stages II and III of the disease, the specific tissues of the joint, such as the synovial membrane, the disc, the lower and upper bones of the joint, begin to be damaged, osteophytes appear in the bone, and the joint cavity narrows. Eventually, the osteophytes enlarge, the joint cavity narrows sharply, the bones of the lower and upper tumors thicken and harden, leading to severe osteosclerosis and deformity.

Keywords: Spine, Neck, Joints, Uncle Disc, Fibrous Membrane, Muscles, Osteoarthritis, Spandilez.

THE URGENCY OF THE PROBLEM.

Osteoarthritis is one of the most common degenerative diseases of the spine, affecting the cervical spine and, in rare cases, the chest and lumbar region. The incidence rate increases with age. 85-90% of the elderly over the age of 60-65 suffer from this disease. However, in some cases, people between the ages of 25 and 30 also develop cervical spondylosis. Cervical spondylosis continues in 30% of cases with pain in the neck area. Among the entire population of the world, 5.9% to 38% of people suffer from neck pain (Podymova I.G., 2015; Lila A.M., Alekseeva L.I., Taskina E.A .. 2019). The incidence of this disease is 10.4-21.3% annually. Between 14.3% and 71.0% of people suffer from neck pain clinically (Hoy D. G, Protani M, De R, 2010). Patients with complaints of neck pain are 35-49 years of age, however, the disease is more common in women than in men (Carroll L. J, et al, 2010). Ya.Yu. According to Popelyansky (2003), osteochondrosis syndrome is 5.7% in 20-year-olds, 17% in 21-30-year-olds, 48% in 31-year-olds, 71% in 41-50-year-olds, 74% in 51-60-year-olds and over 60-year-olds. 80% detectable.

Degenerative diseases of the cervical spine have been studied mainly clinically and radiologically. Given that the morphological changes that occur in the 5 stages of cervical osteoarthritis identified on the basis of radiographs are almost unstudied, an attempt has been made to address this issue in this study. The aim of the study was to identify specific pathomorphological changes in the developmental stages of cervical osteoarthritis. Materials and methods.

The material of this research is the surgical procedures performed in the neurosurgery department of the ASMI clinic for 2019-2022, namely, during cervical spinal discectomy, laminectomy, intervertebral disc fibrous membrane, elastic membrane covering the spine, peripheral dense and middle vertebrae of the common bone, The surface was taken deep muscles. These tissue fragments were hardened for 72 hours in formalin dissolved in 10% phosphate buffer. The bony portion of the fragments was decalcified in 10% nitric acid. Then all the pieces were washed in running water for 3-4 hours, dehydrated in increasing concentrations of alcohols, and paraffin with wax was added and the bricks were prepared. Histological incisions of 5-7 microns thickness were made from paraffin bricks and stained with hematoxylin-eosin and van-Gizon method dyes. The drugs were studied under a light microscope and images were taken from the required areas.

RESULTS OBTAINED AND THEIR DISCUSSION.

In the development of osteoarthritis, macro- and micro-injuries occur in the joint tissue due to stress in the tissue and cell, ie external and internal influences, the cells undergo an adaptive reaction, resulting in dehydration of the intercellular matrix of joint tissue. This activates the nomenclature recovery response, which is accompanied by inflammation and the immune system response. Initially, changes begin

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at the molecular level, then cell and tissue structures begin to change, the joint is dehydrated, bone tissue is remodelirovanie, on the surface there are tumors in the form of osteophytes.

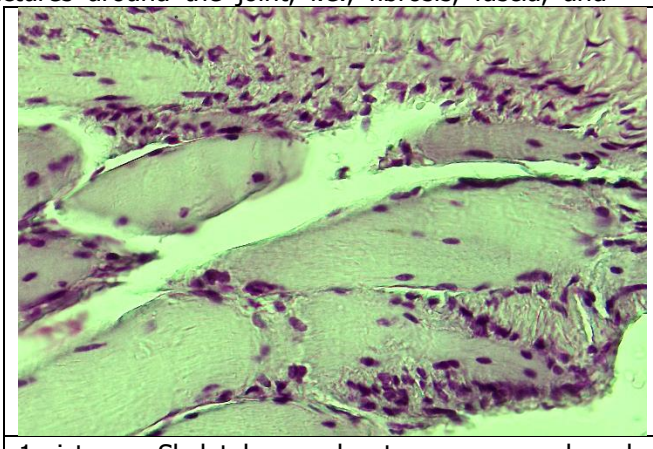
When a person's head is bent down, the vertebral column is slightly resisted due to the fact that the lateral (arched tumor) joint is located vertically. When the head is bent backwards, the weight falls more on the lateral joint, and if the intervertebral space is narrowed and the disc is degenerated, the weight on this joint is even higher. When a person has a neck injury, a heavy load, or a twisted neck, these diseases re-emerge and worsen. As a result, periarticular fibrosis of the tissues around the joint and the longitudinal area occurs, the tissue thickens and hardens, and tumors appear on the bone surface. The lower and upper tumors of the lateral joint become enlarged and noxious in appearance, resulting in joint degeneration and loss of the joint, and asymmetric distortions begin from the irregularity of the joint surface.

In degenerative diseases of the cervical spine is also characterized by damage to the disc, spine, interconnected joints, deformation, fragmentation, violation of density. In the elderly, irreversible dystrophic, destructive, resorptive changes in the composition of bone and joint tissue structures due to aging.

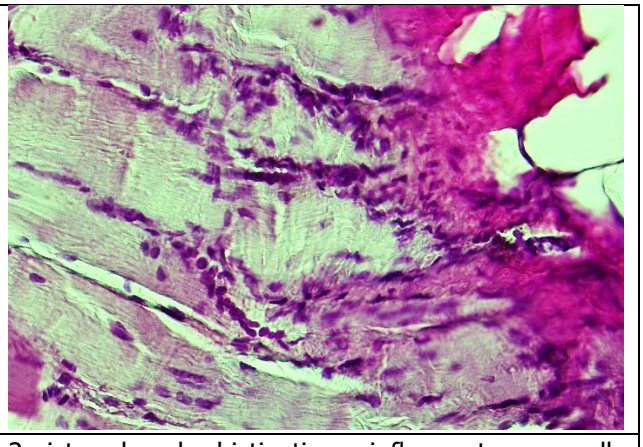
According to the results of X-ray examination of the cervical spondylosis of the spine, 5 stages are distinguished, and the following pathomorphological changes were detected during these periods.

Period 0 - no radiological changes. Morphologically, no morphological changes were seen in the bone, joint, and joint tissues of the joint, which were visible and even detectable under a microscope. During this period of the disease, morphological changes were detected, albeit minimal, in the tissue structures around the joint, i.e., fibrosis, fascia, and muscle tissue. As a result, it is determined that the skeletal muscle fibers are torn, of different sizes, and the interstitial connective tissue expands due to swelling and disorganization. It is found that the fibrous tissue adjacent to the muscle fibers is fragmented, divided into fragments, and as a result of growth and proliferation, it invaginates and surrounds some muscle fibers. period - suspected osteoarthritis - suspicious narrowing of the joint fracture without significant changes in the lateral joint tissue, osteophytes may be present in the bone. During this period, the synovial membrane surrounding the inner surface of the joint and the altered state of the fluid inside the joint are undetectable on the radiograph. During this period, it is found that in the fibrous tissue surrounding the joint, connective tissue cells proliferate, hyperchromasize, become active, the interstitial substance and fibrous structures thicken, and become a coarse-grained substance. When examined under a large microscope, it is observed that the muscle fibers are torn due to the tumor of the interstitial tissue, the myofibrils are slightly torn and sparse, the nuclei are dislocated and mixed with proliferative inflammatory cells (Fig. 1). Complete proliferative inflammation around individual muscle fibers is found to be densely surrounded by lympho-histiocytic cell infiltrates.

Phase II - mild stage - osteophytes and low narrowing of the joint fracture. During this period, it is found that in the fibrous tissue around the joint, lympho-histiocytic inflammatory cells densely surround the muscle fibers, tearing, destroying and myolizing the fibers (Fig. 2). The fact that histiocytic cells in the inflammatory infiltrate are activated by enlargement, hyperchromization of their nucleus, the formation of large clusters in some places, sparse infiltrates in other areas, indicates their aggressiveness towards muscle fiber tissue.



1-picture. Skeletal muscle tumors are densely



2-picture.lympho-histioytic inflammatory cells

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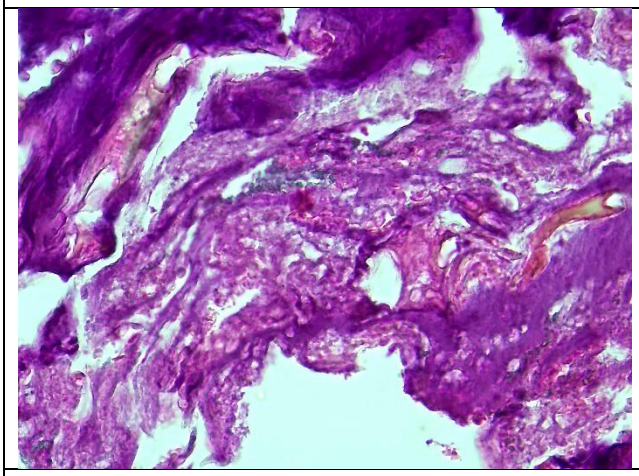
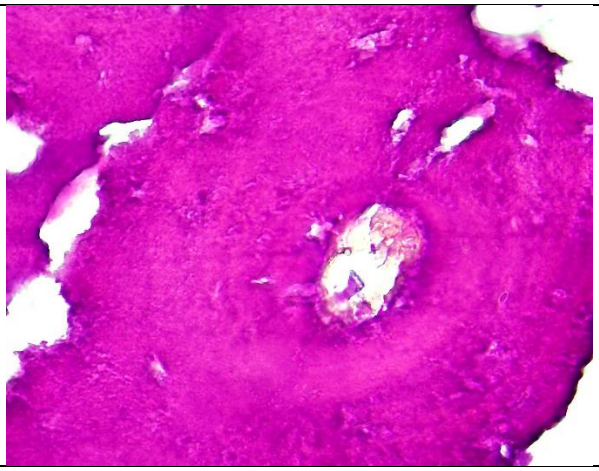
surrounded by proliferative infiltrate and fibrous tissue. Paint: G-E. Floor: 10x40.	wrapped tightly around the muscle fibers,typed the fibers,.underwent myolysis, . Paint: G-E. Floor: 10x40.
	
3- picture.The fibrous mtmbrane around the joint is prone to severe inflammation and sclerosis. Paint: G-E. Floor: 10x40.	4- picture .Osteosclerosis and deformity of the bone tissue of the joint. Paint: G-E. Floor: 10x40.

Stage III - period of moderate change - the appearance of osteophytes of medium size, narrowing of the joint space, deformation of the bones are observed. During this period, bone tumors of various sizes appear on the edges of the spine, even on the radiograph. These osteophytes are found to have sunk into the uncle disc. In the fibrous membrane around the joint, strong inflammatory infiltrates and foci of sclerosis are observed (Fig. 3). It is found that the joint space narrows sharply and becomes indistinguishable in the form of cracks. The surrounding bones are found to be deformed to varying degrees.

Stage IV - the period of severe changes - is characterized by enlargement of the osteophytes, a sharp narrowing of the joint space, a sharp compaction and hardening of the bones, and severe osteosclerosis and deformity (Fig. 4).

CONCLUSIONS

In degenerative diseases of the cervical spine, too, the disc, spinal cord, interlocking joints, surrounding fibrous tissue and bone tissue are damaged, deformed and fragmented.

In osteoarthritis of the cervical spine, there are 5 radiological periods, and at its onset, initially, fibrous tissue and muscles around the spine undergo pathomorphological changes.

In stages II and III of the disease, the specific tissues of the joint, such as the synovial membrane, the disc, the lower and upper bones of the joint, begin to be damaged, osteophytes appear in the bone, and the joint cavity narrows.

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