

Possibilities of Magnetic Resonance and Computed Tomography in Early Detection of Joint Changes In Rheumatoid Arthritis Disease

Botirbekov Abdurashid Nazarqulovich

Tashkent Medical Academy, assistant of the Department of Internal Medicine in family medicine No. 2.

Purpose: Early detection of joint damage by MRI and CT methods relative to the stage of the disease in patients with rheumatoid arthritis observed.

Keywords: Magnetic resonance imaging and computed tomography, joint changes, rheumatoid arthritis

Relevance. Various etiology as well as movement of systemic or local nature-base aparati diseases are accompanied by persistent or transient rheumatological disorders in most hos. But most of them are accompanied by damage to the internal organs, which leads to the loss of the patient's ability to work, to become disabled and to a shorter life span. This group of diseases occurs in 20-45% of the population of different ages, genders and races, and 6-10% of patients remain disabled. Most patients go to the doctor for the first time, with local or diffuse pain in the joints. Joint fractures can be directly associated with diseases of the joint and pre-articular tissue, and in some cases have a mental nature. In order to make the correct diagnosis in such cases, the doctor must determine the nature of the pain, the time of its appearance, the cause, duration, and know the diseases and their main symptoms that can be accompanied by these changes. In young people, joint fractures are indicative of severe pathological processes, which in most cases lead to bad consequences, that is, as a manifestation of immune changes and systemic diseases, while in older patients, dystrophic changes in the tissues of the joint and thorax. Therefore, the doctor should conduct an in-depth comparative diagnosis and responsibly approach the assessment of the pain syndrome in the patient, without focusing his attention solely on the treatment of the affected joint. Knowing the common diseases associated with joint syndrome and the laboratory–asbobium examinations necessary for their diagnosis, timely diagnosis and carrying out pathogenetic treatment, will help, if necessary, send patients to specialized treatment institutions (rheumatology, oncology, urology, orthopedics, etc.). Joint pain is one of the pathological symptoms observed in primary and secondary damage to the musculoskeletal system and occurs in more than 100 different diseases. Their appearance is directly related to the interaction of joint-forming structures (synovial shell, articular bones, vertebrae) and nerve endings located in the prearticular tissue. Only the joint does not have nerve fibers and vessels, and its limited damage is not accompanied by pain. Arthrosis is one of the causes of joint pain. It accounts for 80% of all joint diseases. They begin with degenerative changes in the toga, covering the bones lying under it in a short time, the articular shell, even the synovial wrap and muscles. Joint inflammation is a group of diseases accompanied by pain syndrome, which is the second most common in the spread of arthritis. Usually on their basis lies a pathological process located in the joint cavity and synovial shell (synovitis). Tumors that are detected in the joint occur not only due to synovitis, but also due to inflammation of the synovial shell and soft tissue around the joint. If arthritis occurs due to infection, autoimmune inflammations, impaired metabolism, injury, in some cases it will not be possible to determine its cause. The pathological process in the joint can also occur as a result of non-rheumatic diseases of other organs and systems. In this case, joint syndrome occurs in the form of arthralgia and arthritis. It develops as a result of systemic damage to connective tissue, substance metabolism and violation of the hormonal status of the vegetative nervous system, a serious change in the sensitivity of the connective tissue under the influence of toxic, allergic, toxico - allergic mechanisms. Their location varies, and depending on the underlying disease will have specific symptoms.

Rheumatoid arthritis is a disease of unknown etiology characterized by chronic symmetrical erosive arthritis of the peripheral joints (synovitis) and systemic inflammatory damage to the internal organs. Rheumatoid arthritis is one of the most common chronic inflammatory diseases, with an average prevalence rate of 1.1% in the population. The disease is 2.5 times more common in women than in men. In older adults, the incidence of rheumatoid arthritis is 0.5–1% [2-4]. Rheumatoid arthritis is accompanied by numerous

inflammation of the small and large joints, severe pain, diffuse swelling, and movement restriction in older people. Joint damage can be divided into 2 categories: 1. Potential relapse (usually early) – synovitis; 2. Irreversible structural changes (somewhat late) – erosions, ankylosis. In rheumatoid arthritis, one of the clear signs that Joints Show synovial shell inflammation is limited movement in the morning, the duration of which is usually associated with the appearance of synovitis on the surface and lasts no less than a few hours. Currently, the MRI examination method is considered a slave method for early detection of soft tissue damage and other internal organ damage in patients with rheumatoid arthritis. Chest X-rays in rheumatoid arthritis only detect the changes observed in lung tissue in 2-3% of cases.

Materials and methods. 100 patients with rheumatoid arthritis were examined at Shahar Clinical Hospital No. 3. All patients were divided into early and late stages relative to the night. At an early stage, the average age of patients was taken as 48. Among the patients, women made up 70 people (70%) and men made up 30 people (30%). The duration of the disease was from 1 month to 30 years. At an early stage of the disease, the joints MRI: changes in the joint sac, synovitis in 35 patients, panus in 30 patients, thinning of the lower jaw, migraine tumors in the paws in 25 patients, erosions in 45 patients and in the late stage: erosions in 55 patients, spherical plates in the joints in 43 patients, sclerotic changes were observed in 15 patients.

Conclusion: MRI examination can clearly distinguish pannus and synovitis at an early stage of RA. Radiography compared to computed tomography method gives high-level results in 35% of cases. The use of complex examination methods in RA disease is effective in early and effective diagnosis and choice of treatment method.

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