

Clinical and laboratory characteristics chronic hematogenic osteomyelitis

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Abstract: The publication summarizes various classical and modern aspects of acute and chronic hematogenous osteomyelitis in children. The results of our own observations and laboratory, instrumental, immunological studies carried out in a large contingent of patients with various forms of hematogenous osteomyelitis, as well as the results of various methods of surgical treatment; issues of etiology, pathogenesis, differential diagnosis and complex staged treatment of children were discussed; the original ideas about the modern classification of these actual diseases were expressed; there are six illustrative clinical examples from our own observations. The publication is intended for doctors of pediatric surgeons and specialists in related specialties

Keywords: hematogenous osteomyelitis, bone tissue, collagen, forecasting, rehabilitation, children

Application of laboratory research methods in practice

First of all, laboratory methods for identifying a bacterial pathogen include studying blood. But this method is not so relevant for the chronic form of the disease that has developed in the human body. The inflammatory process causes leukocytosis, which in the acute phase, at the height of the disease, can reach 30 and above. Indicators such as ESR and C-reactive protein detect infection and indicate the severity of the disease. Often during examination it is necessary to differentiate the disease from other, no less serious ones, such as post-traumatic periostitis, erysipelas, rheumatism, tuberculosis, neoplasms and actinomycosis of bone tissue. Laboratory research methods for joint damage: Use of instrumental techniques for diagnosis. These methods include microbiological and x-ray diagnostics. In order to correctly diagnose and determine the cause of the disease, it is necessary to study how pathogenic microorganisms are released in those places where the bone is damaged, as well as from the joint fluid and blood. Difficulties during examination arise in patients with a developed hematogenous form, since positive cultures are detected in less than 50% of situations. One of the well-known studies is densitometry, which allows us to understand how prone bones are to fractures and destruction. Basic forms of microbiological research. This type of diagnosis has several ways to identify pathogens. A brief description of each of them: Bacterioscopy. Taking a smear from the mucous membrane to assess the state of the microflora. The preparation of the

analysis takes place over several days, and its interpretation is carried out only by a doctor. Examination of the contents discharged from the fistula during its formation. It may have purulent contents, making diagnosis difficult. Serological methods. Capable of detecting antigens and antibodies and includes several reactions after visual observation of the site of the joint lesion. Such methods allow not only to assess and detect the true causative agent of the infection, but also to examine the state of the microflora of the mucous membranes. Features of X-ray examination X-ray diagnostics is one of the most common techniques for any type of osteomyelitis. It is based on the preparation of photographs of the affected limb, which are performed in two projections. In this way, it is possible to determine exactly where the infection is localized, how severe the symptoms are, as well as its distribution throughout the tissues. In a child, manifestations of the developing disease can be noticed already on the fifth day, in adults - on the fifteenth. X-rays can be taken several times during treatment to track positive or negative dynamics. One of the disappointing indicators of the development of the disease is the spread of the periosteal reaction to the previously healthy periosteum.

Radiological signs of osteomyelitis include: by the beginning of the second week, the line between the compact and spongy substance disappears; bone destruction becomes oval or round; the relief of the periosteum thickens and changes; by the end of the first month, sequestration is noticeable. An X-ray image allows you to visually study the condition of the skeletal system and promptly prescribe treatment procedures, excluding the transition of the disease from an acute to a chronic form. . It is especially often used in the study of dental diseases. The significance of the computed tomography technique CT is most often used in the chronic form, the occurrence of recurrent moments. It involves an image of a limb on a computer, allowing you to evaluate not only qualitative condition of the bones, but also quantitative. This method makes it possible to detect sequestered areas of soft tissue that are affected and are not replaced by new growths for a long period of time, and purulent stagnation, if left untreated, leading to sepsis. Tomography makes it possible to develop a strategy for step-by-step surgical intervention if there are indications for this process. The effectiveness of fistulography in determining therapy. This technique can be classified as an x-ray diagnostic method. Fistulography is a technique that involves injecting a certain substance into the fistula, and then fluoroscopy is performed in the area. Before preparing everything necessary for the formation of a fistulogram, radiography is first performed to analyze the cavity under study before the procedure begins. At the next stage, the edges of the opening of the fistula are lubricated with a solution of iodine and alcohol and the contents are taken, and then a contrast agent, previously prepared and heated, is introduced. When the fistula tracts are completely filled, take out the cannula and seal the hole with a plaster. Then, within the framework of radiology, it is

important to again conduct an examination using images, which will reveal how the fistula tracts are located. As a result, after the entire procedure, the fistula is freed from the previously introduced contents, and the affected parts of the joints are treated and washed. The productivity of magnetic resonance imaging in determining the disease MRI allows you to identify in percentage terms how much bone parts are affected by infection. When carrying out this method, the doctor sees where the healthy tissues are still located, and where the damaged areas that look swollen are located. According to experts, it is more effective than scintigraphy - the introduction of radioactive isotopes and analysis of a two-dimensional image during radiation. Positive practice has also been recorded in the detection of sequestration. MRI is available at any stage of the course: when there are only prerequisites for the pathology, when it is already developing, and even in severe cases, when the disease can become complicated. Using scintigraphy as a way to quickly detect infection. It allows you to study the metabolism of the tissue system. It is carried out using radiation equipment (radionuclide diagnostics). A specialized substance is injected intravenously into the bone compartment, which tends to linger and accumulate in the bones. . After this, the radiation is detected by detectors of the device that captures the signal. The administration of the drug is accompanied by the consumption of 1 liter of water: this way the contents accumulate better and the radiation exposure to the body is reduced. Constructiveness in the use of ultrasound. This technique involves the use of ultrasound equipment. Previously, doctors believed that it was effective only in cases of damage to soft tissues and cavities containing fluid. Recently, it has begun to be used in examining hip joints, the spine, and identifying fractures of tubular bones. Ultrasound is used to diagnose osteomyelitis of the upper or lower jaw, especially in children who are acutely experiencing inflammatory processes.

Conclusion - The effectiveness of each method is confirmed by many years of practice of use by doctors actively involved in the diagnosis of osteomyelitis. They are aimed at early detection of the disease using various samples, tests, maintaining clinical protocols, studying tables and visual features of the manifestation of symptoms, reading tests at the biological level. If the development of the disease has already occurred, these techniques are aimed at developing the doctor's understanding of the patient's health status, clinical diagnostic picture of signs, and his prospects in the process of upcoming treatment. When a person has already received recommendations and frequent painful sensations in the joints cease worry, these methods can help identify the causes that lead not only to primary symptoms, but also to chronic relapses.

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