

Modern Methods Of Treatment Of Chronic Hematogenous Osteomyelitis In Children

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Abstract: Chronic hematogenous osteomyelitis (CHO) develops after an acute disease and is characterized by a long-term course alternating with periods of exacerbation and remission (relative well-being). The morphological substrate for this course of the disease, as a rule, is the bone area that has died as a result of acute inflammation. Over time, it is rejected by living bone and a sequestration is formed, which is usually located in the bone cavity - a sequestration box. A common component of CHO is purulent fistulae, which are pathological transitions in the tissues that connect the osteomyelitis cavity with the external environment. A fistula usually opens in the skin with an external hole and is a type of drainage that drains the excess pus formed into the external environment. Being an absolute pathology, fistula, nevertheless, sometimes allows the patient to live for many months and years with minimal manifestations of the inflammatory process. When the fistula is closed or cannot drain the pathological intraosseous lesion, conditions are created for the disease to worsen. Pain appears or increases, temperature rises, local signs of an acute inflammatory process (swelling, redness, etc.) are observed. In the future, parosseous phlegmon may develop or the purulent fistula will reopen. As a rule, patients with chronic exacerbation of the gastrointestinal tract seek emergency medical care. Timely assistance in such a case causes the risk of spread of the purulent process to the surrounding tissues, increased intoxication and the development of sepsis.

Key words: Osteomyelitis, age dependence, types, diagnosis

Diagnosis of chronic hematogenous osteomyelitis

In most cases, the diagnosis of CHO does not cause any difficulties, because usually patients with such a diagnosis have been in the view of a specialist who has been familiar with the specific features of the disease for a long time. However, structural changes in the bone can be judged: their nature, severity and distribution only on the basis of instrumental examination of the patient. The examination begins with a survey X-ray, which allows to determine the main pathological changes in the bone tissue. However, many details of a bone injury can be incomprehensible even to an experienced eye. In addition, their evaluation is very important in planning surgical intervention, which is the main method of treatment for patients with CHO. The capabilities of multi-slice X-ray computer tomography allow objective and detailed imaging of changes in bone structures, which is especially important when massive bones such as the pelvis, sternum, etc. are affected. In addition, modern instrumental diagnosis of osteomyelitis in most cases requires mandatory computed tomography (CT). In the case of CHO, this is absolutely necessary. The presence of purulent fistula is the basis for fistulography. The study involves injecting a radiopaque substance into the fistula tract, followed by a series of X-rays. First of all, fistulography is necessary for planning surgical intervention,

because all purulent fistulas must be removed. In the diagnosis of chronic hematogenous osteomyelitis, magnetic resonance imaging has an auxiliary value, and in some cases it helps to determine the degree of soft tissue damage around the bone, including purulent discharge in complex anatomical areas, for example, in pelvic osteomyelitis.

Rice. 1. External opening of a purulent fistula in a patient with chronic hematogenous osteomyelitis of the femur. Many scars are found after previous surgical interventions.

Rice. 2. Fistulogram of the same patient. Thickening and deformation of the femur affected by osteomyelitis is determined. The contrast material injected into the external opening of the fistula enters the parosseous and intraosseous purulent spaces.

Rice. 3. Computed tomography of the same patient. A large osteomyelitis cavity is detected in the femur.

Rice. 4. CHO of the leg bone. The latter is significantly thickened and deformed. A sequestration is detected in the bone cavity.

Rice. 5. Computed tomography of the femur. Transverse section at the level of the distal metaepiphysis. A free lying bone sequestration is detected in the osteomyelitis cavity.

Rice. 6. Fistulogram of a patient with CTO of the femur. Many purulent fistulas located in soft tissues and entering the osteomyelitis cavity are contrasted.

Rice. 7. CHO X-ray of the femur. More than 40 years of medical history. Clear structural changes are detected in the femur (thickening, deformation, numerous osteomyelitic cavities with sequestration located in them). Computed tomography is necessary to determine the size and nature of destructive changes.

Treatment of chronic hematogenous osteomyelitis

The main treatment for CHO is surgery. The goals of surgical treatment of the disease are to remove sequestrations and non-viable areas of bone tissue, drainage of the bone cavity. In some cases, bone cavity filling or plastic surgery is needed. Surgical tactics and techniques in the treatment of CHO are determined both by the spread of the pathological process and by the direct anatomical features of the affected bone. In the treatment of osteomyelitis, it is important to assess the condition of the surrounding soft tissues, because they are important in the blood supply to the bone. Cicatricial and destructive changes in the soft tissues surrounding the bone significantly complicate the task of surgical treatment of osteomyelitis. In some cases, various skin plastic surgeries help.

One of the main principles of surgical treatment of chronic gonorrhea is the principle of "do no harm". This means that an unsuccessful operation for osteomyelitis can significantly worsen the general condition of the patient (for example, as a result of major bleeding) and cause serious functional disorders (post-operative fractures, joint contractures, etc.).

Surgical treatment of CHO requires, in addition to professional skills, the presence of special tools that allow to reach the osteomyelitis focus with minimal trauma, as well as to remove the pathologically changed areas without disturbing the blood. providing the remaining bone.

Conservative treatment complements surgical treatment or is the only one if there are contraindications or if the patient refuses surgical intervention. In these cases, the goal of conservative treatment is to reduce the severity of inflammatory events. It includes antibacterial, detoxification therapy, physiotherapeutic treatment and washing fistulas with antiseptic solutions.

Rice. 8. Plain radiograph of a patient with CHO of the humerus. Obvious bone-destructive changes are detected in the proximal part of the bone, located on the side of the bone marrow channel, i.e. endosteal.

Rice. 9. Fistulogram of the same patient. The contrast material injected into the fistula enters the bone and forms a reservoir in the osteomyelitis cavity in the area of the proximal metaepiphysis of the humerus.

Rice. 10. X-ray of the same patient after surgical treatment. Trephination of the humerus was performed with osteonecrectomy.

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