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PURULENT-NECROTIC COMPLICATIONS AFTER SURGICAL INTERVENTIONS IN THE HIP JOINT

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Abstract: Purulent necrotic complications after surgical interventions on the hip joint remain one of the most severe problems in orthopedic practice due to their rapid progression, diagnostic complexity, and high risk of unfavorable functional outcomes. This study analyzes clinical, laboratory, and radiological features of purulent necrotic processes developing in the early and late postoperative periods after hip joint surgery. Special attention is given to the importance of early diagnosis based on a comprehensive assessment that includes clinical symptoms, biochemical and bacteriological indicators, immunological data, and modern imaging techniques. In the early postoperative stage, purulent complications are characterized by fever, general intoxication, pain, soft tissue swelling, and limited joint mobility, while radiological signs may be absent. Delayed diagnosis often leads to deep soft tissue suppuration, diffuse osteoporosis, narrowing of the joint space, femoral head damage, instability of the joint, and complications related to implanted metal structures. The study also considers pathogenetic mechanisms of dystrophic changes in the femoral head associated with hip dysplasia, emphasizing the role of impaired blood supply, mechanical instability, and prolonged non physiological positioning of the joint. Diagnostic differentiation between hip arthritis, osteomyelitis of the proximal femur, and soft tissue infections is highlighted as a key factor in choosing appropriate treatment tactics. The results confirm that timely detection and adequate surgical management significantly improve functional outcomes and reduce the risk of severe destructive changes. Along with radiography, contrast studies, and histological analysis, radionuclide and infrared diagnostic methods are proposed as valuable tools for early identification of acute purulent processes in the hip joint.

Key words: hip joint surgery, purulent complications, necrotic processes, postoperative infection, early diagnosis, hip dysplasia, femoral head, orthopedic surgery

Introduction

The diagnosis of purulent-necrotic complications in the hip joint during surgical interventions on it is based on a combination of clinical, laboratory (biochemical, bacteriological, immunological) and radiological research methods. Early detection of the inflammatory process greatly facilitates further treatment and ultimately allows for the most favorable results. In the literature, considerable attention is paid to the objective clinical examination of the patient. The clinical picture of purulent-necrotic complications in the hip joint in the early postoperative period is very peculiar. The main symptoms are: the appearance of high evening and then morning body temperature, decreased appetite, lethargy and drowsiness, sweating, bursting joint pain. There is swelling of the soft tissues of the thigh and smoothness in the groin area, sharp pain on palpation of the groin area, when tapping on the large trochanter and heel, and especially when attempting the slightest active and passive movements in the joint. At the same time, the authors point out that these signs need to be differentiated from other diseases, such as osteomyelitis, thrombophlebitis (deep), synovitis, purulent myositis. In the late postoperative period, the above clinical signs increase, fistulas are often noted. With regard to hematogenous coxitis, many authors believe that if clinical data confirm the diagnosis of arthritis, then you do not need to wait for the results of a bacteriological test, but urgently drain the joint. The authors also believe that unsuccessful drainage results are much less dangerous for an unaffected joint than the prospect of arthrotomy in the absence of indications. To assess the degree of damage to bone and cartilage tissue, when there are still no X-ray

signs, the use of infrared tomography is of great importance. Additional research methods, in particular radiography, have their own diagnostic value, especially for determining the degree of anatomical changes and the depth of damage to bone and cartilage tissue. At the same time, the data of contrast-X-ray histological studies are of great importance for assessing the prevalence of the purulent process. During X-ray examination in the early postoperative period, characteristic signs indicating a purulent lesion of the joint are usually not observed.

Hip head hypoplasia in hip dysplasia increases its sensitivity to various types of injuries, including reduction, with the subsequent development of the dystrophic process. Most researchers associate the development of the dystrophic process with impaired blood supply to the femoral head as a result of vascular injury during reduction and reduced stability of the dysplastic joint. A number of authors point to the onset of compression of the femoral head as a result of prolonged, non-physiological hip position due to decentration, subluxation of the head, immobility due to prolonged immobilization, as well as significant repositional trauma, especially with simultaneous forcible reduction. Most authors note the phasicity of the course of the dystrophic process, distinguishing from three to eight phases. The dystrophic process can develop both during the treatment of dysplasia, hip dislocation, and in the long term, which confirms the need for medical examination of children with hip dysplasia. Histological examination revealed foci of destruction, fragmentation of the ossification core.

Micro- and macroscopic examination revealed that the dystrophic process of the femoral head proceeds without the phenomena of aseptic necrosis [2.4.6.8.10]. A number of stability indices have been proposed to assess the spatial relationship between the proximal femur and the acetabulum. The most important are: the orientation of the mechanical axis of the femoral neck, which makes it possible to differentiate dislocation, subluxation, and decentration of the femoral head in the cavity; the angle of vertical alignment determines the stability of the hip joint in the vertical plane; the degree of bone coverage of the head by the roof characterizes the stability of the hip joint in the frontal plane. The degree of coverage of less than 2/3 indicates instability of the joint in the frontal plane due to lateroposition of the head, or insufficient development of the roof of the acetabulum. The magnitude of the pathological torsion of the proximal femur determines the stability of the joint in the horizontal plane.

As a result, the increasing pronation of the femur induces the destruction of the pelvic articular cavity. The data we obtained were used to develop an operative method for the treatment of hip dysplasia through extraarticular myoplasty of the gluteus medius muscle and its transposition above the level of the main axis of rotation. It is associated with low injury to paraarticular tissues, which leads to a significant reduction in the rehabilitation period, duration of surgery and a reduction in the risk of postoperative complications.

Conclusion. However, in cases where the purulent necrotic process was diagnosed late, according to the study, deep suppuration in soft tissues, diffusive osteoporosis of the pelvic bones and in the region of the acetabulum, femoral head, narrowing of the articular gap, and instability in the presence of metal structures are revealed. The most important thing in obtaining a good functional result in the treatment of postoperative purulent-necrotic complications of the hip joint is early diagnosis and the surgeon's ability to differentiate osteomyelitis of the proximal femur, hip arthritis and soft tissue damage. However, the authors believe that not only X-ray diagnostics and contrast X-ray diffraction, but also radionucleoid diagnostics can be used as methods of early diagnosis of acute suppurative processes.

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