

Early-Stage Surgical Intervention in Aseptic Necrosis of the Femoral Head: Approaches and Outcomes

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Abstract: Aseptic necrosis of the femoral head (ANFH) is a progressive orthopedic condition characterized by the death of bone tissue in the femoral head due to impaired blood supply, leading to joint dysfunction, pain, and potential disability. In the early stages of ANFH, timely intervention can prevent the progression of the disease and reduce the need for more extensive surgeries, such as total hip replacement. This article examines the role of early-stage surgical interventions in patients with ANFH, exploring various surgical approaches, including core decompression, osteotomy, and bone grafting, which aim to restore blood flow to the affected area and preserve the joint. The study also highlights the importance of early diagnosis through imaging techniques such as MRI and X-rays, allowing for more effective treatment decisions. Additionally, the article discusses patient outcomes following early-stage surgeries, emphasizing the potential for pain relief, improved function, and joint preservation. By analyzing clinical data and treatment success rates, this research advocates for early surgical intervention as a promising approach to managing ANFH and delaying or avoiding more invasive procedures. Early intervention is crucial for enhancing the quality of life and mobility of patients diagnosed with this condition.

Key words: Aseptic necrosis, femoral head, early-stage intervention, core decompression, osteotomy, bone grafting, surgical approaches.

Relevance

Aseptic femoral head necrosis (ANGBC) is a serious condition that often occurs in active middle-aged and young patients. This condition is characterized by a violation of the blood supply to the femoral head, which leads to its gradual destruction and degeneration. Patients with angioedema often experience restricted movement, hip pain, and poor quality of life.

One of the main problems is that angioedema is often diagnosed in the late stages, when the destruction of the femoral head is already significant, which reduces the effectiveness of conservative treatment and increases the need for surgical interventions, such as total joint replacement. Therefore, it is important to develop effective strategies for diagnosis and treatment in the early stages of the disease.

Surgical treatment in the early stages of angioedema is a significant alternative that can prevent the progression of the disease and preserve joint function. However, the choice of the optimal method of surgical intervention remains a subject of debate in the medical community. There is a need for further research aimed at comparing the effectiveness of different surgical approaches, their impact on long-term outcomes, and comparison with conservative treatment methods.

It is also important to study the risk factors for developing angioedema and develop prevention strategies in affected populations. Continuing research in this area will help to form recommendations for doctors on optimal management of patients with this disease, thereby improving treatment outcomes and the quality of life of patients.

Purpose of the study:

The aim of this study is to evaluate the effectiveness of various surgical treatment methods in patients with early stages of aseptic femoral head necrosis (ANGBC). The main focus is on achieving maximum preservation of the femoral head, improving functional and clinical results after surgery, comparing the frequency of complications and the need for subsequent surgical interventions.

Materials and methods:

To achieve this goal, a retrospective study was conducted, including patients who underwent surgical treatment in our medical center during the last 5 years. The criteria for inclusion in the study included patients with clinical and radiological signs of early stages of angioedema, for whom it was decided to conduct surgical treatment.

The parameters studied included the patients' age, gender, Arker and Kruskal stage of the disease, the presence of concomitant diseases (for example, diabetes, vascular pathology), the nature and technical aspects of the chosen surgical intervention (for example, osteotomy, bortnyakov transplant, arthroscopic procedure).

The analysis of the results included evaluation of the following indicators:

1. Clinical and functional outcomes after surgery: improvement of pain symptoms, restoration of the range of motion in the hip joint.
2. Radiological criteria: preservation of the femoral head, the degree and quality of its reconstruction.
3. Frequency of complications, including femoral head fractures, infections, and transplant rejection.
4. The need for repeated operations, for example, revision interventions or total hip replacement.

Statistical analysis of the data was performed using appropriate methods, including Student's criteria, chi-square criteria, and Kaplan-Mayer curve survival analysis.

Limitations of the study included the retrospective nature of data analysis, possible biases due to differences in individual patient characteristics, and a limited follow-up period. Nevertheless, the results provide important information about the factors that influence the success of surgical treatment of early-stage angioedema and can serve as a basis for further research and development of optimal clinical recommendations.

Results and conclusions:

Based on the study, we obtained the following main results:

1. Effectiveness of surgical treatment: The majority of patients who underwent surgery in the early stages of aseptic necrosis of the femoral head achieved the preservation of the femoral head. Restoration of joint function and reduction of pain syndrome were achieved in a significant part of cases, which confirms the effectiveness of surgical treatment at the stage of early clinical manifestations of the disease.
2. Types and results of surgical interventions: Osteotomies, including corrective and submerged osteotomies, have shown good results in restoring the structure and function of the femoral head. Bortnyak transplants and arthroscopic procedures were also successfully applied, preventing further tissue destruction.
3. Complications and the need for repeated interventions: Despite the success, complications such as infections, fractures, and transplant rejection have been identified. This highlights the importance of careful monitoring and an integrated approach to managing postoperative risks.
4. Clinical recommendations and prospects: Based on the results obtained, it is proposed to continue research with the participation of a larger number of patients and long-term monitoring of the results of

surgical treatment. Optimization of the choice of surgical intervention methods and in-depth study of risk factors can significantly improve the prognosis and quality of life of patients with aseptic femoral head necrosis.

Conclusions:

This study confirms that early surgical intervention is an effective treatment method in patients with aseptic femoral head necrosis in the early stages of the disease. Osteotomies and maintenance surgeries have shown good clinical and functional results, reducing the need for total joint replacement in the future.

However, it is important to consider potential complications such as infections and fractures that require careful monitoring and management. Further research should focus on optimizing the choice of surgical methods and predicting treatment outcomes based on individual patient characteristics. This will make it possible to develop more accurate clinical recommendations and improve long-term prognosis in patients with angioedema.

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