

MODERN METHODS OF TREATMENT OF FRACTURES OF THE PROXIMAL FEMUR

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Annotation: Fractures of the proximal femur (femoral neck, intertrochanteric and pertrochanteric zones) are one of the most pressing problems in traumatology and orthopedics, especially among elderly patients. These injuries are accompanied by a high rate of disability and mortality, which makes it important to introduce effective, low-trauma and quickly restorative treatment methods. The modern strategy for managing patients with such fractures includes early diagnostics using radiography and CT, rapid hospitalization and individually selected treatment tactics. Surgical treatment methods are currently considered the "gold standard" for most fractures of the proximal femur. The most widely used are osteosynthesis with dynamic hip screws (DHS), intramedullary fixation with PFN and Gamma nails, as well as modular hip endoprostheses. Prosthetics is used more often in older patients or in comminuted fractures, where restoration of the anatomy of the femur is impossible. In modern practice, special attention is paid to minimally invasive technologies that reduce the volume of surgical trauma, minimize blood loss and shorten the hospital stay. Modern anesthesiological approaches, prevention of thromboembolic complications, antibacterial therapy, as well as a multidisciplinary approach to the treatment of elderly patients (geriatric orthopedics) can significantly improve treatment outcomes. Rehabilitation begins early after surgery and includes the stages of exercise therapy, physiotherapy, psychological support and drug correction of osteoporosis. An integrated approach to treatment and subsequent rehabilitation can improve the quality of life of patients, reduce the risk of recurrent fractures and restore lost functions of the musculoskeletal system. This work is aimed at generalizing modern methods, analyzing their effectiveness and prospects for implementation in clinical practice.

Keywords:femur fracture, proximal section, osteosynthesis, intramedullary fixation, endoprosthetics, geriatric trauma, treatment methods, osteoporosis, early rehabilitation, surgical intervention.

Introduction

Fractures of the proximal femur occupy one of the leading places among severe injuries of the musculoskeletal system, especially in elderly and senile people. With the increase in life expectancy and aging of the population, the frequency of such injuries is steadily increasing, which makes the problem of their diagnosis, treatment and rehabilitation extremely urgent. The most common are fractures of the femoral neck and intertrochanteric zone, which usually occur as a result of a fall from one's own height against the background of reduced mineral density of bone tissue (osteoporosis). These injuries are accompanied by a high risk of complications - thromboembolism, bedsores, pneumonia, as well as a significant loss of independence and quality of life. In the absence of timely and adequate treatment, severe disability or even death is possible. Therefore, in modern clinical practice, special attention is paid not only to surgical treatment methods, but also to a comprehensive interdisciplinary approach, including anesthetic support, prevention of complications, active rehabilitation and secondary prevention of osteoporotic fractures. The aim of this work is to analyze modern methods of treating fractures of the proximal femur, evaluate their effectiveness and determine the criteria for choosing the optimal treatment tactics depending on the age, nature of the fracture and the patient's condition.

Materials and methods

The analysis used clinical data from patients treated in trauma and orthopaedic departments with fractures of the proximal femur. The study group included patients over 55 years of age with fractures of the femoral neck or intertrochanteric fractures, as well as with osteoporosis and other risk factors such as falls and chronic diseases affecting bone tissue. Patients were divided into groups depending on the treatment method used:

Osteosynthesis using a dynamic hip screw (DHS).

Intramedullary fixation using PFN or Gamma nail.

Hip replacement, including hemi- and total hip replacement.

The effectiveness of treatment was assessed using criteria such as fracture consolidation time, incidence of postoperative complications (infection, thromboembolism), pain level, functional recovery results according to the Harris Hip Score scale several months after surgery, as well as the duration of hospitalization and return to normal physical activity.

Results and discussion

The analysis showed that modern surgical methods of treating proximal femur fractures provide improved results compared to conservative treatment, especially in the older age group. Among the surgical methods, osteosynthesis and endoprosthetics stand out, which significantly reduce the recovery time and improve functional results. Intramedullary

fixation (using PFN or Gamma nail) showed high fixation stability, which contributes to early mobilization of the patient and a decrease in the level of postoperative complications. This method ensures reliable fixation of bone fragments, especially in the case of unstable fractures, and accelerates the fusion process. Hemiprosthesis and total hip arthroplasty showed the best results in patients with comminuted fractures or senile changes in bone tissue. These methods provide a high functional result, allowing patients to return to an active life within a few weeks after surgery. Prosthetics also reduces the risk of secondary complications, such as pain and osteonecrosis. Despite the effectiveness of surgical methods, it is important to consider the age and general health of the patient when choosing a treatment method. For elderly people with comorbidities, the choice should be based on minimizing surgical intervention and reducing the patient's time in hospital. It is also important to consider the need for early rehabilitation and prevention of osteoporosis, which is an integral part of treatment and helps reduce the risk of recurrent fractures. The overall results of the study confirm the high effectiveness of modern surgical methods for the treatment of proximal femur fractures in improving functional outcomes and reducing disability. However, further research is needed in this area to optimize treatment tactics depending on individual patient characteristics.

Conclusion

Proximal femur fractures remain a serious medical and social problem, especially in the elderly. Modern surgical treatment methods, such as intramedullary fixation and endoprosthesis, have proven their high efficiency in providing stable fixation, reducing the level of complications and reducing rehabilitation periods. The choice of method depends on the anatomical type of fracture, age, functional state of the patient and the presence of concomitant diseases. The most optimal approach is an individualized treatment strategy, including multidisciplinary support, early mobilization, drug therapy for osteoporosis and full rehabilitation. Thus, the introduction of modern technologies and a personalized approach to treatment can significantly improve outcomes in proximal femur fractures, improve the quality of life of patients and reduce medical and social costs for long-term treatment and care.

References

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