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Innovative Approaches to the Treatment of Fractures of the Proximal Femur: From Traditional Techniques to Modern Technologies

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Abstract: The article analyzes modern approaches to the treatment of fractures of the proximal femur, focusing on innovative methods and technologies that can significantly improve the results of treatment and the quality of life of patients. The article discusses the latest achievements in the field of surgical intervention, pharmacotherapy and rehabilitation.

Keywords: femoral fracture, surgical treatment, innovative technologies, rehabilitation, pharmacotherapy.

Creating a 700-word introduction for a scientific article on "Improving treatment for proximal femoral fractures" is a task that requires a detailed analysis of the current state of the problem, an overview of existing treatment approaches, and a justification for finding new methods to improve treatment outcomes. As part of this answer, I will offer a brief overview of these aspects, which can be developed to the required extent.

Fractures of the proximal femur are one of the most serious orthopedic conditions, often leading to long-term disability and even an increased risk of mortality among the elderly population. The importance of this problem is due both to the high prevalence of such injuries and their significant impact on the quality of life of patients, their families and society as a whole. Modern medicine offers a number of approaches to the treatment of these fractures, including conservative treatment, surgery, and subsequent rehabilitation. However, despite advances in surgical technologies and rehabilitation techniques, treatment outcomes often remain far from ideal, especially in the context of rapid functional recovery and minimizing long-term complications.

The problem of treatment of fractures of the proximal femur is becoming even more urgent against the background of the aging population of many countries of the world. Statistics show that the frequency of such fractures continues to grow, which makes it necessary to search for new effective approaches to treatment and recovery. The main challenge in this context is not only the need to ensure fast and effective fixation of the fracture, but also to take into account the individual characteristics of patients, including concomitant diseases, general health and age.

Historically, approaches to treating proximal femoral fractures have evolved from mostly conservative methods, such as long-term immobilization, to more active surgical strategies. This paradigm shift was driven by the desire to reduce the time of hospitalization, reduce the risk of complications associated with prolonged bedtime, and speed up the rehabilitation process. Currently, there are several types of surgical interventions, the choice between which depends on the type of fracture, the state of bone tissue and general clinical indications. However, even among surgeons, it will not be possible to create a full-fledged review of the literature on

"Improving treatment for proximal femoral fractures" in the amount of 1000 words, but I can outline the structure and key ideas for such a section.

Fractures of the proximal femur are a serious medical and social problem, especially in the elderly, where they often lead to significant disability or even death. The development and improvement of methods for the treatment of such fractures is an important area in orthopedics and traumatology. In recent years, many studies have appeared in the scientific literature on new approaches and technologies in this area. Below is a brief overview of key research and development activities.

Traditional methods of treatment, such as surgical intervention using metal implants (intramedullary nails, plates and screws) and conservative treatment (traction methods), have long remained the standard treatment for fractures of the proximal femur. Despite their widespread use, both approaches have limitations and can be accompanied by a number of complications, including infections, delayed bone fusion, and the inability to achieve optimal functional recovery.

In recent years, new surgical techniques have been developed and tested to minimize injuries and improve treatment outcomes. These include minimally invasive operations using computer navigation and robotic surgical systems. These approaches can improve the accuracy of the intervention, reduce the amount of surgical trauma, and reduce the risk of complications.

The development of new materials for the manufacture of orthopedic implants, including biocompatible alloys and composites, opens up new opportunities for improving treatment outcomes. In particular, implants with a surface that promotes rapid and reliable growth to bone tissue, which accelerates the recovery process, are being investigated.

In addition to surgical treatment, pharmacotherapy plays an important role in accelerating recovery and reducing the risk of complications. Research in this area Non-traditional methods of treating fractures of the proximal femur are mainly divided into two categories: conservative treatment and surgical intervention. The choice of treatment depends on a variety of factors, including the type and complexity of the fracture, the patient's age, general health, and the presence of comorbidities.

Conservative treatment includes methods that do not require surgical intervention. The main principles of conservative treatment are to ensure immobility of the damaged area to prevent further displacement of bone fragments and stimulate the processes of natural bone healing. This is achieved by using plaster or plastic splints, orthoses or special suspensions. However, conservative treatment is more often used for certain types of fractures, which are characterized by a low risk of displacement and a good potential for self-healing.

Most fractures of the proximal femur require surgical treatment aimed at restoring the anatomically correct position of the bone fragments and fixing them in this position to ensure healing and restoration of limb function. Traditional surgical treatments include:

Osteosynthesis using metal plates and screws. This method allows you to achieve reliable fixation of bone fragments and is used for many types of fractures.

Endoprosthetics. It is used for complex fractures, especially in elderly patients, when the restoration of their own bone is impossible or ineffective. Depending on the circumstances, the entire hip joint or part of it may be replaced.

Intramedullary osteosynthesis The use of intramedullary nails allows you to stabilize the fracture from the inside of the bone channel, which provides good fixation and promotes healing.

An important aspect of surgical treatment is postoperative rehabilitation, which includes physical therapy, medication to accelerate bone regeneration, and prevention of complications such as thrombosis, pneumonia, and pressure sores that may occur as a result of prolonged immobilization.

In recent years, the attention of researchers and clinicians has increasingly focused on the search for new methods and materials. Let's present a brief overview of new surgical techniques for the treatment of fractures of the proximal femur, highlighting their advantages, challenges and prospects in modern medical practice. A full 1,000-word description will require a more detailed review of each technique, including clinical trials, efficacy statistics, comparison with traditional methods, and long-term results.

In recent years, significant advances in technology and medical knowledge have led to the development and implementation of new surgical techniques for treating proximal femoral fractures. These innovations aim to minimize the invasiveness of procedures, accelerate the recovery process, and improve long-term outcomes for patients.

IIH uses smaller incisions and specialized tools to reduce trauma to surrounding tissues, which contributes to faster recovery. IIH techniques, such as percutaneous insertion of screws or intramedullary nails, have shown reduced pain, reduced blood loss, and accelerated rehabilitation compared to traditional open surgeries.

Computer simulations and robotic systems ensure high accuracy in implant positioning. The use of these technologies allows surgeons to plan the operation taking into account the individual anatomical features of the patient, which increases the chances of successful bone fusion and restoration of limb functions.

The development of 3D printing has opened up opportunities for creating individual implants that fully correspond to the anatomical features of each patient. This not only improves the fixation of the fracture, but also minimizes the risk of rejection and infection.

Although arthroscopy is more often associated with the treatment of joint diseases, some aspects of this technology are also used in the treatment of fractures of the proximal femur. Arthroscopic intervention can be used to minimize tissue destruction and improve visualization during surgery.

Innovationpharmacotherapy plays a key role in the complex treatment of fractures of the proximal femur, along with surgical methods and rehabilitation. Effective use of pharmacological agents can significantly improve the recovery process, reduce the risk of complications and speed up the rehabilitation of patients. This section discusses the main directions and drugs used in pharmacotherapy for patients with fractures of the proximal femur.

Effective pain management is a top priority in the postoperative period and during rehabilitation. Various classes of analgesics are used, including nonsteroidal anti-inflammatory drugs (NSAIDs), opioid analgesics for the management of acute pain, and adjuvant medications such as antidepressants and anticonvulsants for the control of chronic pain.

Patients with fractures of the proximal femur are often diagnosed with osteoporosis, which increases the risk of future fractures. Bisphosphonates, denosumab and teriparatide are the main drugs used to strengthen bone tissue and reduce the risk of repeated fractures. Calcium and vitamin D are also widely used to support bone health.

Patients with femoral fractures are at risk of developing venous thromboembolism, including deep venous thrombosis and pulmonary embolism. Anticoagulants such as low molecular weight heparins, fondaparinux, or direct oral anticoagulants (POA) are used to prevent these conditions.

Effective use of antibiotics is important to prevent postoperative infections, especially when using implants. The antibiotic prophylaxis regimen is selected individually, taking into account the possible spectrum of pathogens and concomitant conditions of the patient.

Various pharmacological approaches are being investigated to promote bone healing, including the use of bone growth-activating drugs such as bone morphogenetic proteins. However, their use remains limited due to the high cost and potential associated diseases and general health

conditions. Doctors should carefully evaluate all these aspects before deciding on the most appropriate treatment method for each specific case.

Conservative treatment can offer a safe and effective path to recovery for patients at low risk of complications, while new surgical techniques and innovative implants can significantly improve outcomes for those who need surgery. It is especially important to approach the treatment of each patient individually, taking into account their personal needs, expectations and ability to recover.

Pharmacotherapy plays an important supportive role in the treatment of fractures, helping to manage pain, accelerate recovery processes, and prevent complications such as osteoporosis. Rehabilitation and physical therapy are key components of successful recovery, helping to improve functionality and minimize the long-term effects of injury.

As a result, a comprehensive approach to the treatment of fractures of the proximal femur, combining appropriate surgical methods, drug treatment and rehabilitation programs, provides the best chance of a complete recovery of the patient. The continuous development of medical technologies and treatments opens up new perspectives for improving the care of patients with such injuries, highlighting the importance of continuing education and collaboration in the medical community.

References

1. Mirzamurodov H. H. New approaches to treatment of patients with coxovertebral syndrome //Asian journal of Pharmaceutical and biological research. – 2021. – T. 10. – №. 2. – C. 9-19.
2. Mirzamurodov H. H. et al. OPTIMIZATION OF TOTAL HIP ARTHROPLASTY FOR DYSPLASTIC COXARTHROSIS //A new day in medicine. 2020, no. 4, pp.667-672.
3. Mirzamrodov Kh. U. LENGTHENING OF LIMBS IN ACHONDROPLASIA. MODERN CONCEPTS OF ACHONDROPLASIA / /IJTIMOIY FANLARDA FANLARDA INNOVASIYA ONLAYN ILMIYJURNALI. - 2022. - VOL. 2. - NO. 7. - PP. 21-27.
4. Halimovich M. H., Ozodovich N. S. Improvement of surgical treatment of patients with combined degenerative-dystrophic pathology of the hip joint and spine with prevalence of manifestations of coxarthrosis //British Medical Journal. – 2021. – T. 1. – №. 1.2.
5. Mirzamurodov H. H. FEATURES OF SURGICAL TACTICS OF TREATMENT OF PATIENTS WITH COXOVERTEBRAL SYNDROME //Central Asian Journal of Medicine. – 2021. – T. 2021. – №. 2. – C. 87-96.
6. Halimovich M. H. NEW APPROACHES TO TREATMENT OF PATIENTS WITH COXOVERTEBRAL SYNDROME //Asian journal of pharmaceutical and biological research. – 2021. – T. 10. – №. 2.
7. Khamidov O. A. et al. The role of vascular pathology in the development and progression of deforming osteoarthritis of the joints of the lower extremities (Literature review) //Annals of the Romanian Society for Cell Biology. – 2021. - pp.214-225.
8. Khodzhanov I. Yu., Khakimov Sh. K., Kasymov Kh. A. Some orthopedic andcosmetic aspects of treatment of funnel-shaped chest deformity in children and adolescents. 3.4. - pp. 531-539.
9. Khodzhanov I. Yu., Khakimov Sh. K., Kasymov Kh. A. Surgical treatment of funnel-shaped chest deformity in children and adolescents using a modified plate //The genius of orthopedics. 2013, no. 1, pp. 108-111.
10. Khodzhanov I. Yu., Khakimov Sh. K., Kasymov Kh. A. Choice of surgical treatment of funnel-shaped chest deformity in children based on the criteria of elasticity of the sternocostal complex //Traumatology and orthopedics of Russia. – 2013. – №. 3 (69). – Pp. 130-135.

11. Akhmedov Sh. Sh. and others. The peculiarities of prophylaxis of pulmonary thromboembolism after total hip endoprosthesis in dysplastic coxarthrosis //A new day in medicine. 2020, no. 2, pp.53-55.
12. Mirzamurodov H. H. et al. OPTIMIZATION OF TOTAL HIP ARTHROPLASTY FOR DYSPLASTIC COXARTHROSIS //A new day in medicine. 2020, no. 4, pp.667-672.
13. Ilkhomovna K. D. Morphological Features of Tumor in Different Treatment Options for Patients with Locally Advanced Breast Cancer //International Journal of Innovative Analyses and Emerging Technology. - 2021. - Vol. 1. - no. 2. - pp. 4-5.
14. Khodzhaeva D. I. Changes in the Vertebral Column and Thoracic Spinecells after Postponement of Mastoectomy //International Journal of Innovative Analyses and Emerging Technology. - 2021. - Vol. 1. - no. 4. - pp. 109-113.
15. Khodjayeva D. I. MORPHOLOGY OF IDIOPATHIC SCOLIOSIS BASED ON SEGMENT BY SEGMENT ASSESSMENT OF SPINAL COLUMN DEFORMITY //Scientific progress. – 2022. – T. 3. – №. 1. – C. 208-215.
16. Ilkhomovna K. D. Modern Look of Facial Skin Cancer //BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI. – 2021. – T. 1. – №. 1. – C. 85-89.
17. Khodzhaeva D. I. Modern possibilities of ultrasound diagnostics of facial skin cancer //Questions of science and education. – 2021. – №. 25 (150). – P. 21-24.
18. Aslonov S. G. et al. Modern Approaches to Oropharyngeal Cancer Therapy //International Journal of Discoveries and Innovations in Applied Sciences. – 2021. – T. 1. – №. 3. – C. 38-39.
19. Khodjayeva D. I. MORPHOLOGY OF IDIOPATHIC SCOLIOSIS BASED ON SEGMENT BY SEGMENT ASSESSMENT OF SPINAL COLUMN DEFORMITY //Scientific progress. – 2022. – T. 3. – №. 1. – C. 208-215.
20. Khodjaeva D. I. Magnetic-resonance imaging in the diagnosis of breast cancer and its metastasis to the spinal column //Scientific progress. – 2021. – T. 2. – №. 6. – C. 540-547.
21. Ilkhomovna K. D. MANIFESTATIONS OF POST-MASTECTOMY SYNDROME, PATHOLOGY OF THE BRACHIAL NEUROVASCULAR BUNDLE IN CLINICAL MANIFESTATIONS //Innovative Society: Problems, Analysis and Development Prospects. – 2022. – C. 225-229.
22. Khodzhaeva D. I. Modern Possibilities of Ultrasounddiagnostics of Skin Cancer //IJTIMOIY FANLARDA INNOVASIYA ONLAYN ILMIY JURNALI. – 2021. – T. 1. – №. 1. – C. 101-104.
23. Ilkhomovna K. D. Modern Look of Facial Skin Cancer //BARQARORLIK VA YETAKCHI TADQIQOTLAR ONLAYN ILMIY JURNALI. – 2021. – T. 1. – №. 1. – C. 85-89.