

Application Of An External Fixator In Fractures Of Lower Third Three Diaphysis

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Abstract: *Experience in treating diaphysis fractures of the lower third of the thigh was analyzed in 82 patients. We have determined the indications for the use of methods of osteosynthesis of these fractures and the terms of implementation. The indications for surgery were closed and open fractures of the diaphysis fractures of the lower third of the femur. In closed cases, external osteosynthesis was performed using external extra-bone fixators, which were both the final and intermediate stages of treatment. For open fractures, operations were performed on a delayed basis using the Ilizarov apparatus in 5 (6%) cases. In 38 patients, osteosynthesis with fixation developed by us with a plate was performed, BIOS was performed in 8 patients and in 12 patients with AO plates, in 19 patients, various external fixators. The long-term results of treatment were studied in -66 (80.4%) patients: excellent in 27 (41%), good in 21 (32%), satisfactory in 17 (25.5%), 1 (1.5%) unsatisfactory.*

Keywords: *fractures of the diaphysis of the lower third of the femur, osteosynthesis, external fixators, stable fixation.*

1. INTRODUCTION

The complexity of the treatment of fractures of the lower third of the femoral shaft lies in the need to solve two mutually exclusive tasks - long-term stable fixation of fragments and early activation of the function of the knee joint.

The existing fixators for the osteosynthesis of fractures of the lower third of the femoral shaft require improvement [11]. This prompted us to critically reconsider the indications for the choice of not only the method of treatment, but also the type of fixator in the surgical treatment of fractures of the lower third of the femoral shaft p. the purpose of creating a stable-functional osteosynthesis.

Purpose of the study — improving the results of surgical treatment of fractures of the lower third of the femoral diaphysis by developing and improving the method of stable-functional osteosynthesis.

Research objectives: 1) to study the errors and complications in the treatment of fractures of the lower third of the femoral shaft; 2) to conduct bench tests of the structure for osteosynthesis of fractures of the diaphysis of the lower third of the femur to determine the strength characteristics; 3) determine the indications for the clinical use of the fixator for fractures of the lower third of the femoral shaft; 4) to improve the methods of surgical treatment for fractures of the lower third of the femoral shaft; 5) to study long-term results of treatment of patients with fractures of the lower third of the femoral diaphysis.

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fractures of the lower third of the femoral shaft. In closed cases, external osteosynthesis was performed, which was both the final and intermediate stage of treatment. For open fractures, operations were performed on a delayed basis using the Ilizarov apparatus

The results of the treatment of 82 patients with fractures of the lower third of the diaphysis of the femur, treated in the RCH # 1, the Department of Traumatology of the clinic of the Tashkent Medical Academy, the Bukhara Regional Hospital, the Department of Traumatology, the Bukhara branch of the RSCEMP, the Department of Traumatology, the Kagan State Medical University of the Department of EMT in 2013-2019 were analyzed. ... In 38 patients, open osteosynthesis with fixation was performed, developed by us with a plate, BIOS - in 8 patients and in 12 patients, AO plates,

In 19 patients different external fixators and in 5 patients the Ilizarov apparatus was applied.

In the experiment, bench tests of the proposed fixator were carried out, an objective assessment of the effectiveness of their use was given, clear indications were established for their use in fractures of the lower third of the femoral diaphysis [5,6,15]. Patients underwent clinical, radiological and biochemical determination of calcium in blood, EMG study.

The device we have developed performs three functions: it shapes the thigh, fits snugly to the femur, the teeth, made in the form of a fork, help to preserve the integrity of the vessels of the periosteum and soft tissues feeding the bone, damage the periosteum of the femur and not give the possibility of rotational displacement of bone fragments, the existing legs stably fix bone fragments [1,2.].

The criteria for evaluating the effectiveness of treatment were the presence of pain, the ability to walk, the range of motion in the knee joint, and the results of X-ray studies. The long-term results of treatment were studied in -66 (80.4%) patients: excellent in 27 (41%), good in 21 (32%), satisfactory in 17 (25.5%), 1 (1.5%) unsatisfactory.

We believe that the reasons for unsatisfactory outcomes are associated with errors in the choice of a treatment method and the method of its implementation, with prolonged immobilization, which leads to stiffness of the knee joint.

2. DISCUSSION

Underestimation of all components of fresh injuries of fractures of the diaphysis of the lower third of the thigh, the wrong choice of treatment method, prolonged immobilization of the limb subsequently lead to dysfunctions of the damaged segment, deformities, contractures of the knee joint, arthrosis, instability of the knee joint, which are the main causes of disability in 20-54% of cases . (15.21)

This prompted us to critically review the indications for the choice of not only the method of treatment, but also the type of fixator in the surgical treatment of fractures of the distal end of the femur.

The use of various metal structures often leads to significant damage to the soft tissues of the periosteum, requires a wide exposure of bone fragments, which worsens the conditions of local trophism. Despite the progress of osteosynthesis, there are still many unsolved problems in the development of the most optimal options for metal fixators. The high incidence of complications, disability, the lack of a generally accepted method of treatment and targeted stage-by-stage rehabilitation of patients, as well as the youngest age of patients attach great socio-economic significance to this problem and dictate the need for further deepening of the study of this issue. Nonunion of fragments and the formation of pseudoarthrosis in low fractures of the femur occurs much more often than in other localizations of the femur fracture, and according to various authors, they range from 12 to 32% (3.5)

The second common complication of low hip fractures is knee contractures. The knee joint is a complex anatomical structure, with a violation of the congruence of the articular surfaces or prolonged absence of movement in the knee joint complications develop very quickly, such as persistent contractures. Further developing gonarthrosis, osteoporosis, hypotrophy of the muscles of the thigh and lower leg, various trophic disorders. In the presence of concomitant damage, these problems are compounded. (11,23)

The use of compression-distraction devices, allowing, with stable fixation of fragments, to begin early function in the knee joint, which prevents the development of contractures. However, compression-distraction osteosynthesis in fractures of the femur is not widely used. This is due to the difficulties in using external fixation devices on the thigh, which is largely due to the anatomical features of the segment.

Stable extrafocal osteosynthesis at low fractures of the femur provides early function of the knee joint and shortens the period of temporary disability. In recent years, the method of stable-functional osteosynthesis has been successfully used to treat such fractures, and in most cases it leads to positive results. (4,11,

The existing fixators for the osteosynthesis of fractures of the distal end of the femur need to be improved in order to create stable compression fixation of the fragments and reduce the trauma of surgery. (7,10,19)

This prompted us to critically revise the indications for the choice of not only the method of treatment, but also the type of fixator in the surgical treatment of fractures of the diaphysis of the lower third of the femur.

Thus, with closed fractures of the diaphysis of the lower third of the femur, with low fractures of the femur, external fixation of bone fragments with an extraal fixator gives good results, allows to achieve stable fixation of fragments, to start early functional, rehabilitation treatment, and shortens the duration of treatment and disability.

3. CONCLUSIONS

The use of the fixator developed by us is the method of choice of surgical treatment for fractures of the diaphysis of the lower third of the femur.

1. A differentiated approach to surgical treatment can significantly improve its results and shorten the rehabilitation period.
2. The reasons for unsatisfactory results of treatment are associated with the wrong choice of treatment method and errors in the way of its implementation.
4. Performing surgical interventions for fractures of the diaphysis of the lower third of the thigh using the plates proposed by us allows to achieve stable fixation of fragments, to start early functional, rehabilitation treatment, reduce the time of treatment and disability

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