

CONSERVATIVE TREATMENT OF DEFORMING ARTHROSIS OF THE KNEE JOINT IN VARUS OR VALGUS DEFORMITY

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Relevance. Deforming arthrosis of the knee joint is a common degenerative-dystrophic disease that leads to long-term disability. Damage to the knee joint is in second place after damage to the hip joint. 46% of patients with post-traumatic gonarthrosis have dysplastic changes in the knee joint before the injury. Of those operated on for meniscal damage, 48 had deforming arthrosis. According to the works of the authors who studied deforming arthrosis of the knee joint, it occurs in 45% of people under 50 years of age. Currently, in order to obtain the most accurate picture of the prevalence of the process, determine its nature and identify complications, it is impossible to do without various methods of instrumental diagnosis. Radiographs in typical direct and lateral projections are informative enough to clarify the degree and nature of the degenerative process, the severity of changes in the bones that make up the knee joint. However, they do not provide an idea of the articular surface of the tibial plateau. Ultrasonography, CT, MRI, and arthroscopy made it possible to significantly facilitate preoperative planning and rationally determine subsequent surgical tactics. A number of authors indicate that when comparing MRI and arthroscopy data, changes in the capsular ligamentous apparatus and menisci were confirmed in 87.0% of cases. Rehabilitation arthroscopy allows for the complete evacuation of exudate from the knee joint, which in itself leads to significant clinical improvement, since chronic joint diseases are accompanied by pronounced changes in the synovial membrane and synovial composition. In addition, arthroscopic treatment of gross degenerative-dystrophic lesions of the capsular ligamentous apparatus and articular cartilage significantly improves, and in some cases accelerates, the processes of restoring the ability to support the lower extremities of patients with deforming osteoarthritis of the knee joint. Conservative treatment of deforming arthrosis of the knee joint in varus or valgus deformity brings only temporary relief and does not prevent the progression of the process. Currently, surgical treatment of osteoarthritis has become widespread. Osteotomies are the oldest and most frequent bone surgeries in orthopedics. Currently, high osteotomy, which affects the main links of the pathological process, has proved to be the most promising in the arsenal of surgical treatment. Along with changing the load and eliminating the increased pressure, osteotomy reflexively stimulates the circulatory blood flow. In most cases, osteosynthesis is performed with an AO plate with bone-plastic replacement of the defect, the use of porous titanium-nickelide in this pathology, however, this issue is still poorly understood. A porous titanium-nickelide-based implant allows structures to function in the body for a long time without being rejected. At the same time, stable cell regeneration is ensured and reliable fixation with body tissues is created through the formation and growth of tissue in the pores of the implant, as well as good mechanical adhesion and chemical interaction with the components of the elemental composition of the implant. Currently, it is necessary to objectively assess the degree of diagnostic value of many knee joint examination methods. To determine the role and necessity of arthroscopic rehabilitation of the knee joint during corrective osteotomy. Optimization of surgical technologies in the treatment of patients with deforming arthrosis and frontal deformity of the knee joint is required. The use of porous titanium nickelide as a support implant for bone defect replacement during corrective osteotomy of the tibia seems promising. The use of porous titanium-nickelide to replace irreversible bone defects in total knee replacement is promising and needs to be studied. The purpose of the work Improving the effectiveness of surgical treatment of patients with deforming arthrosis and frontal deformity of the knee joint based on the development and application of porous titanium-nickelide and plates with angular stability in corrective osteotomies and total knee replacement.

The clinical and diagnostic significance of a comprehensive examination has been determined: standard radiography, stress radiography, ultrasound, magnetic resonance imaging and arthroscopic examination in the surgical treatment of deforming arthrosis of the knee joint. The effect of arthroscopic rehabilitation of the knee joint on the results of treatment of deforming arthrosis of the knee joint in the postoperative period has been established. The long-term results of the use of sanitizing arthroscopy and combined osteosynthesis with porous titanium nickelide and AO plate in patients with deforming arthrosis of the knee joint are analyzed. A new method of combined osteosynthesis with porous titanium-nickelide and an LCP plate with angular stability during corrective osteotomies has been introduced. A new method has been developed for the replacement of irreversible tibial defects using porous titanium-nickelide in patients with total knee replacement. The proposed complex of diagnostic studies helps to identify bone lesions, capsular ligamentous apparatus of the knee joint in deforming arthrosis. The use of arthroscopic rehabilitation of the knee joint makes it possible to reduce pain in the treatment of deforming arthrosis of the knee joint. The developed methods of surgical treatment using sanitizing arthroscopy and combined osteosynthesis with porous titanium-nickelide, AO plate and plates with angular stability make it possible to avoid immobilization during corrective osteotomies. The use of porous titanium-nickelide for irreversible defects of the tibia makes it possible to eliminate additional bone filings during knee joint prosthetics and can be recommended for use in specialized clinics. Diagnosis of degenerative and post-traumatic changes in the bones forming the knee joint and the capsular ligamentous apparatus should be based on a combination of standard X-ray examination, stress radiography, ultrasound, MRI and arthroscopic examination. The reliability of the detected damage reaches 100%. Arthroscopic rehabilitation of the knee joint in deforming osteoarthritis leads to a significant reduction in pain and an increase in the volume of movements for up to 3 months in the postoperative period. A sustained reduction in pain in 92.3% in the long-term postoperative period depends on maintaining the correct relationships in the joint created by corrective osteotomy. At the same time, the use of combined osteosynthesis with porous titanium-nickelide and AO plate avoids the loss of correction in 93.9% of patients, while the loss is no more than 2°, and the use of combined osteosynthesis with porous titanium - nickelide and AO plate with angular stability avoids the loss of correction in 100% of patients. The use of corrective osteotomy with fixation with porous titanium nickelide and AO plates, as well as porous titanium nickelide and LCP plates with angular stability in the long-term postoperative period leads to good results in 39.2% and satisfactory in 60.8%, eliminates external immobilization, reduces disability by 2 to 2.5 months in comparison with traditional types of osteosynthesis. The use of porous titanium-nickelide in total knee arthroplasty with irreversible defects of the tibia makes it possible to eliminate additional filings of the latter, making it possible to optimize the technique of surgery and improve the stability of the knee joint. Preoperative planning of surgical treatment of deforming knee osteoarthritis should be based on a combination of standard X-ray examination, stress radiography, ultrasound, MRI and arthroscopic examination. Arthroscopic rehabilitation of the knee joint should be mandatory in the surgical treatment of deforming osteoarthritis of the knee joint. In corrective osteotomies, osteosynthesis is more advisable to perform with AO plates and plates with angular stability with replacement of the resulting bone defect with porous titanium - nickelide. In the surgical treatment of deforming arthrosis of the knee joint, external immobilization should be avoided by applying stable fixation. Prosthetics of the knee joint in case of irreversible defects of the tibia should be accompanied by plastic repair of the defect with porous titanium - nickelide.

Stress radiography allows you to assess the degree of damage to the cartilage of each of the femoral and tibial regions, as well as the viability of the ligamentous apparatus. Ultrasound examination of the knee joint in case of degenerative knee injury is a fairly informative, inexpensive and minimally invasive method for assessing the condition of the menisci and paraarticular soft tissues. MRTOGRAPHY, revealing destructive and degenerative lesions, does not allow us to assess the effect of these lesions on tissue resistance to stress, the diagnosis of which is possible only with arthroscopic examination. Arthroscopic examination of the knee joint makes it possible to clarify the nature of intraarticular injuries, as well as to assess their functional significance. The positive effect of arthroscopy is due to the fact that during surgery, the capsular ligamentous apparatus of the joint is

stretched, free bodies and cartilaginous deuteritis containing cytokines supporting aseptic inflammation in the joint are washed out of the joint cavity. The volume of structural micro-lesions of spongy bone tissue significantly exceeded the macro-lesions visible on X-rays and endoscopically. Gonarthrosis should be understood not only as the degree of damage to hyaline cartilage, but also as the volume of bone tissue adjacent to it, where changes naturally occur. An MRI scan made it possible to clarify the type of post-traumatic and degenerative bone injuries in 49 (100%) and capsular ligamentous apparatus in 38 (77.5%) patients. Diagnosis of degenerative and post-traumatic changes in the bones forming the knee joint and the capsular ligamentous apparatus should be based on a combination of standard X-ray examination, stress radiography, ultrasound, MRI and arthroscopic examination. The reliability of the detected damage reaches 100%. Arthroscopic rehabilitation of the knee joint leads to a significant reduction in pain syndrome from 0-2 to 5-6 Rasmussen points in the early postoperative period, the degree of which depends on the stage of deforming osteoarthritis. A sustained reduction in pain in 90.5% in the long-term postoperative period depends on maintaining the correct relationship in the joint created by corrective osteotomy. Sanitizing arthroscopy with removal of intraarticular bodies, torn menisci, remnants of torn ligaments, cartilage shaping, osteoperforation of cortical plates according to Pride, knee lavage leads to a significant reduction in pain in patients with deforming arthrosis. With the loss of the correction angle, the reduction in the effect of sanitizing arthroscopy in the form of a reduction in pain and an increase in the volume of movements in the long-term postoperative period depended on the magnitude of the loss. The beneficial effect of osteotomy is to influence the main pathogenetic factors of the disease. Biomechanical conditions in the joint are improved: the load is shifted from the affected joint to the unchanged articular cartilage, and the load in the joint is symmetrical. In addition, the intersection of the tibia eliminates venous stasis, as one of the causes of degenerative-dystrophic damage to articular cartilage, reduces intraosseous pressure, relieving patients from constant pain at rest. Osteotomy leads to increased vascularization in this area, which also has a positive effect on the course of the pathological process. Rehabilitation arthroscopy allows for the complete evacuation of exudate from the knee joint, which in itself leads to significant clinical improvement. The use of combined osteosynthesis with porous titanium-nickelide and AO plate during corrective osteotomies avoids the loss of correction in 93.9% of patients, while the loss is no more than 2°. The use of combined osteosynthesis with porous titanium-nickelide and an AO plate with angular stability during corrective osteotomies avoids the loss of correction in 100% of patients. When using corrective osteotomy with fixation with porous titanium nickelide and AO plates, as well as using porous titanium nickelide and LCP plates with angular stability of 39.2%, it leads to good results, and 60.8% to satisfactory results. While maintaining the integrity of the cartilage of the condyles on which the load is transferred, corrective osteotomy leads to persistent relief of pain syndrome in 92.3%. When used in corrective osteotomies, combined osteosynthesis with porous titanium-nickelide and a plate with angular stability makes it possible to avoid external immobilization, reducing the period of disability by 2 to 2.5 months from 282.8 to 148.7 days of disability. The quality of life of patients treated with internal fixation has improved.

Conclusion. When using technology with porous titanium-nickelide, AO plates and LCP plates with angular stability, the quality of life of patients is higher than that of patients treated with traditional methods. The use of porous titanium-nickelide in total prosthetics of the knee joint with irreversible defects of the tibia makes it possible to eliminate additional sawdust of the tibia and use a smaller polyethylene liner, which positively affects the stability of the formed knee joint.

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