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Knee joint endoprosthetics for rheumatoid arthritis

Xo'janazarov Ilxom Eshqulovich, Axmedov Xalmurad Sa'dullayevich, Anorboyev Ma'ruf Xolbo'ta o'g'li
Tashkent Medical Academy

Abstract.
Purpose of the study. Determination of the immediate outcomes of disease course, preparation for surgery and treatment during knee joint endoprosthetics of patients with rheumatoid arthritis.
Keywords: Knee joint endoprosthetics

Materials and methods

We studied 145 patients at the Republican Specialized Traumatology Orthopedics Research Practice Center. In 2020 – 2024, knee joint endoprosthesis is practiced. The first group included 120 patients (82.7%) with deforming osteoarthritis (DOA). The mean age of patients in the first group was 65.8±11.6 years (minimum 42, max. 86). Women 82 (68.3%), men 38 (31.6%).

The second group includes 25 patients with secondary gonarthrosis due to rheumatoid arthritis (17.2%). The mean age of patients in the second group was 52.0±8.3 years (min. 24, max. 75). There were 16 females (64.0%), males 9 (36.0%).

The exceptions were patients with other etiologies and post-traumatic gonarthrosis. In all patients, the operation was performed under spinal anesthesia. Drainage was left in the jar all the time.

In the group with deformable osteoarthrosis, 102 patients (85.0%) used a sparing carpal ligament (CR) endoprosthesis, and 18 patients (15.0%) used a spinal cruciate ligament removal (PS) endoprosthesis. In the patients in the first group, partial sinocapsulectomy was performed, with only hypertrophyed, hyperemic areas of the synovial membrane being resected.

In the group with secondary gonarthrosis due to rheumatoid arthritis, CR endoprosthesis was used in 6 patients (24.0%), PS - in 19 patients (76.0%). In addition, patients in the second group underwent continuous total trial capsulectomy.

Preliminary preoperative data showed approximately identical performance for functional activity and other indicators assessed by the OCS scale in the groups. Patients in the second group had less range of motion and agility in the knee joint.

Given the long history of the disease and primary therapy, the mean levels of hemoglobin and hematocrit in patients with RA prior to surgery were 15–20% lower than in patients with deforming gnarthrosis.

In patients in the second group, ECHT is elevated in the range of 30-50 and C - reactive protein. All patients with deforming gonarthrosis received nonsteroidal anti-inflammatory drugs for a long time, and patients with RA received primary therapy with non-steroidal anti-inflammatory drugs, prednisolone, methotrexate, cartilagin, which are immunosuppressants, according to the Medicare database, which is associated with a higher rate of periprosthetic infection, which is about 1,6 compared to patients with deforming arthrosis. times higher. There are detailed plans to remove medications that need to be stopped before surgery because it is not safe to stop them abruptly due to the risk of developing adrenal gland insufficiency. We recommended that our patients stop taking leflunomide for 6 weeks. NSYQDs and methotrexate 1-2 weeks before surgery. Scales of OCS, VAS, and MOS SF-36 were used to evaluate treatment outcomes.

Results

Patients in the first group had a shorter duration of hospital treatment. In the first group, the average postoperative bedding day is 10 days, in the second group - 15 days. It is important to note that the volume of blood loss in patients with RA is 50% higher for DOA than at the time of surgery, given the initial hemoglobin levels, these indicators need to be strictly controlled. Blood transfusions in patients of the first group were performed in 5% of cases, in the second group - in 15% of cases.

For the first group patients, the stitches were removed for 14±2.1 days and for the second group patients at 19±3.1. Taking into account significant blood loss and postoperative hematomas, the range of movement in the group of patients with RA was slightly lower than in the first group, but at 18 months. Observations, the volume of motion is almost flattened. The preoperative pain study was performed using the VAS system (visual analogue scale using a 10-point system) at 3, 7, 10, 14, and 21 days, and 3 months postoperatively. The patients

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were distributed as follows: the level of pain in the groups was 2.2 + 0.3 before surgery, and 8.2 + 2.7 in the group with RA 3 days after surgery, and slightly lower. in the group with deformant osteartrosis - 7.8 + 2.2. Then, pain in the groups gradually decreased, and 3 weeks after the operation, it was much less- 2.0 + 1.5. However, no statistically significant differences in pain levels were found ($p<0.05$). In patients with RA, complete knee joint replacement can significantly improve knee function, but a long-term systemic process in connective tissue, muscle atrophy does not provide the possibility of full physical recovery of the limb, and according to studies conducted on the OCS scale throughout the study period, the outcome of prosthetics in general RA is lower than in DOA. In terms of physical and psychological components, determining the quality of life of patients with RA after knee arthroplasty are the most interesting facts, which increases significantly after surgery and continues to grow for 1.5 years.

It has been noted that these rates are higher in the group of patients with RA than in patients with deforming arthrosis.

Conclusions

Complete knee joint replacement in patients suffering from rheumatoid arthritis is an effective method of medical and social rehabilitation that eliminates pain, improves the functionality of the affected joint and improves the patient's quality of life.

Due to greater osteoporosis and changes in the longitudinal apparatus of the knee joint, the use of endoprostheses with cemented fixation of components ensuring stable primary fixation of components is recommended in patients with rheumatoid arthritis. It is also desirable to add antibiotics to the bone cement. In most cases, it is justified to choose an endoprosthesis in which the posterior cruciate ligament will be removed. A total trial of capsulectomy, which is accompanied by greater blood loss in the postoperative period, results in large hematomas in the soft tissue area of the knee joint and ankle area of the foot compared to all patients with rheumatoid arthritis during knee joint replacement surgery, accompanied by greater blood loss in the postoperative period.

Patients with rheumatoid arthritis should pay special attention to the low traumatic nature of the operation due to immunosuppression, careful treatment of soft tissues, prevention of thrombosis and infectious complications.

Non-steroidal anti-inflammatory drugs and methotrexate should be discontinued one week prior to surgery prior to knee joint replacement surgery. Methotrexate therapy can be resumed 2 weeks after surgery. Treatment with Leflunomide (Arava) should be discontinued for 6 weeks before the operation.

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