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OUR METHOD OF REHABILITATION AFTER ARTHROPLASTY FOR ASEPTIC NECROSIS OF THE FEMORAL HEAD

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Abstract. Objective: Improving the results of arthroplasty in aseptic necrosis of the femoral head. Materials and Methods: We studied and analyzed 42 patients with total arthroplasty from 2017 to 2021 who were operated on for aseptic necrosis of the femoral head. After EP, the hip joint was divided into two stages: Of these, from the moment of surgery to 3 weeks, this is the early stage. From 3 weeks to 10 weeks - late stage. At this time, it is necessary to productively perform tasks and exercises for rehabilitation after EPT by a surgeon and a rehabilitation therapist. Results: After surgery, the treatment and recovery period began for both groups of patients, which lasts for 2-3 weeks. In the main group, we used a special therapeutic gymnastics for the rehabilitation of patients developed by us and carried out in a sparing mode. In the control group Exercise therapy exercises were carried out in the group or the patients independently performed the exercises recommended by the exercise therapy doctor. Thus, stage-by-stage rehabilitation at ANFH improves treatment results and reduces disability.

Keywords: rehabilitation, endoprosthetics, aseptic necrosis of the femoral head.

Introduction: Rehabilitation of patients after arthroplasty with septic necrosis of the femoral head provides for the following main points: One of them is the return of patients to work [1, 2, 8, 9, 10, 12]. The second is the creation of optimal conditions for his active participation in the life of society, as well as to improve the quality of life of patients [13, 15, 16, 17, 18, 19, 21].

Medical rehabilitation of patients with ANS included the following stages: inpatient, outpatient and outpatient, sanatorium and resort [3, 4, 5, 6, 7, 11]. The stage of inpatient rehabilitation included preoperative rehabilitation and surgical treatment [14, 20, 22].

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Objective: Improving the results of arthroplasty in aseptic necrosis of the femoral head.

Materials and Methods: We studied and analyzed 42 patients with total arthroplasty from 2017 to 2021 who were operated on for aseptic necrosis of the femoral head. After EP, the hip joint was divided into two stages: Of these, from the moment of surgery to 3 weeks, this is the early stage. From 3 weeks to 10 weeks - late stage. At this time, it is necessary to productively perform tasks and exercises for rehabilitation after EPT by a surgeon and a rehabilitation therapist. At the sanatorium-resort stage, the patients received exercise therapy and physiotherapy every year for 3 years in a sanatorium-resort environment.

It is especially important to conduct a preoperative assessment of the state of patients with hip joint movement, shortening, concomitant diseases, since they are the starting point for comparing and recording the results of surgical treatment. Before the operation, patients should be educated about the operation and their possible complications. how to carry out exercise therapy TBS after surgery. The preoperative period lasts 3-4 days. The period of the operation. After the operation, the patient is in the intensive care unit for 24 hours and receives: antibacterial medicines (antibiotics) in order to prevent the development of infection; from venous thrombus formation of anticoagulant drugs.

And also against pain prevention of inflammation of non-steroidal anti-inflammatory drugs; to accelerate the regeneration of bone and muscle structures of protein and calcium supplements.

Results and discussion: After the surgery, the treatment and recovery period began for both groups of patients, which lasts for 2-3 weeks. In the main group, we used a special therapeutic gymnastics for the rehabilitation of patients developed by us and carried out in a sparing mode. In the control group Exercise therapy exercises were carried out in the group or the patients independently performed the exercises recommended by the exercise therapy doctor.

Early stage - after EPHT, patients are in the intensive care unit for 24 hours. The department carries out control over the main functionally significant indicators of

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the state of the body: blood pressure, heart rate, respiration, etc. If necessary, transfusion of blood and blood substitutes is carried out. In order to prevent congestion in the lungs, breathing exercises are performed.

Immediately after the operation, he uses compression cuffs. Carrying out rehabilitation measures strengthens the outcome of surgery. Surgeons and all authors do not recommend adduction of the limb with internal rotation of the hip during physical exercises in order to prevent dislocation of the head of the endoprosthesis. Both groups were the main and control group after surgery.

The list of special exercises exercise therapy after surgery for ANHD (starting position - lying on the back)

Table 1

Exercise content	Dosage	Days	Pace	Execution conditions
Flexion and extension in the toes and ankles with tension in the muscles of the legs	5-10 times	1-2 day	Slow	Breathing free
Flexion and extension in the toes and ankle joints with tension in the muscles of the legs. Flexion and extension, abduction and adduction for the fingers of the hand. Toning massage of the palmar surfaces of the hands for 1 minute. Exercises Niche “closing palms "	10-15 times	3-4 day	Slow	Breathing free
Alternate lifting of straight legs, nipple on yourself. Facilitated flexion in the knee joint of the operated limb. Abduction of a straight leg. Gymnastics for the fingers of the hand. Exercises Nishi "closing palms"	10-15 times	5-6 day	Average	Raising - exhale, lowering - inhale
Simultaneous lifting of straight legs, nipple on oneself Abduction of a straight leg, flexion and extension in the knee joint of the operated limb. Gymnastics for the fingers of the hand. Exercises	12 -15 times	8-9 day	Slow	Breathing free

Niche "palms closing" exercises with visual control, tricycle walking.				
Raising the operated straight leg, pushing on yourself. Active flexion, extension of the knee joint and retention of the operated limb. Raising a straight leg while lying down. Walking with a high rise of the knee of the operated limb. Gymnastics for the fingers of the hand. Exercises of Nishi "closing the palms".	10 – 15 times	10-12 day	Average	Breathing free
Raising the operated straight leg, pushing on yourself. Abduction of a straight leg, flexion and extension in the knee joint of the operated limb. Gymnastics for the fingers of the hand. Exercises Niches "closing palms" Exercises Niches "closing palms"	12 – 15 раз	14-15 день	Average	Breathing free

After the operation, the operated limb was abducted by 20^0 using a roller between the legs. In order to prevent thrombosis of the vessels of the lower extremity after the operation, both legs are immediately bandaged with an elastic bandage.

On the 2nd day, taking into account the severity of the concomitant pathology, the volume of intraoperative blood loss, the patients were allowed to sit down from the bed with the maximally raised bed head end 1-2 times for 10-15 minutes, the position is determined by the patient's well-being. The main position of the patient is lying on his back with abduction of the operated limb by 20 °. The patient was allowed to lie on his healthy side with a pillow or a cushion between the legs. On day 3-4 after constant elastic bandaging of the legs, he was allowed to sit down in bed with assistance. turns to the side with a roller between the legs.

They were also allowed to stand with a support frame or crutches at the bedside with limited support or without support on the operated limb. On days 4-5, patients

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began to move with the help of an exercise therapy instructor on crutches or a support frame in the ward with limited support or without support on the operated limb.

On days 6-7, independent movement was allowed with crutches or a support frame without load or with limited load on the operated limb. On days 8-9, the patients began to walk with a support frame or crutches along the corridor up to 150 m with a 50% insignificant load. On the 8-13th day they were allowed to climb one flight of stairs. On the 14-15th day, the stitches were removed after the surgical wound. The patients were trained to walk with a support device and self-care skills.

With the aim of efficiency, the methods of rehabilitation developed by us were tested according to the Coordination-speed test, which serves to determine the coordination-speed capabilities of patients to determine the severity of asymmetries between the operated and non-operated limbs.

Methodology: coordination-speed test, carried out before surgery, on days 3-5 and before discharge (13-14 days of the postoperative period). In this case, it is necessary to perform as many movements as possible in a fixed time - 10 s (leg abduction, step forward and back). The test makes it possible to judge the degree of readiness of various muscle groups for movement, which is most significant in the postoperative period.

Test results of distance covered by patients in 10 seconds before surgery

Table 2

Main group 15 people	Control group 16 people
2,1 m	2,8 m
2,5 m	3,5 m
4,8 m	3,30 m
4,0 m	3,83 m
3,5 m	3,2 m
3,2, m	4,5 m
2,7 m	3,6 m
3,5 m	2,5 m
2,80 m	3,35 m
3,70 m	3,1 m
2,75 m	3,2 m
3,1 m	…..
Average M = 3.02 m±0.05	Average M =3,55 m±0,01

Test results, distance traveled by patients in 10 seconds. after operation

Table 3

Main group 15 people	Control group 16 people
5,01 m	4,85 m
5,0 m	3,5 m
5,2 m	4,36 m
4,9 m	4,83 m
4,2 m	4,2 m
5,1 m	3,5 m
4,7 m	4,6 m
4,95 m	4,5 m
4,83 m	4,35 m
5,75 m	3,8 m
4,76 m	4,9 m
4,9 m	
Average M =4,95 m±0,05	Average M =4,15 m±0,01

This test shows the condition of the muscular system. It also makes it possible to judge the performance of the periarticular muscles, makes it possible to control the determination of the severity of asymmetries between the operated and non-operated limbs and is safe.

Data of the coordination speed test (number of movements in 10 seconds)

Table 4

Group	Research stages	Non-operated leg			Operated leg		
		Abduction	step forward	step back	Abduction	step forward	step back
Control	Before surgery	9,3	9,5	9,5	9,9	9,8	9,7
		9,53			9,8		
	3-5 days	10,5	10	9,1	8,5	8,0	8,1
		9,8			8,2		
	14	10,5	10,1	10,8	9,5	9,2	9,8

	day	10,5			9,5		
Main	Before surgery	10,5	10,6	10,3	10,2	10,5	10,6
		10,5			10,3		
	3-5 days	11,9	11,0	11,5	8,6	8,8	9,1
		11.5			8,9		
	14 day	11,2	11,6	11,0	12,2	13,1	12,0
		11,8			12,5		

The table shows that before the operation after the operation, the difference in the number of movements for 10 seconds was estimated. When performing the test with the operated and unoperated leg, the index of hip abduction increased the most after the operation. The data of the coordination test showed that on the 14th day this indicator on the operated leg in the main group was 12,2 m and in the control – 11,2 m of movement, which is 25,3% worse than in the main one. This indicator indicates positive changes on the part of the operated joint, shows the performance of the gluteal muscles, which is most important in terms of preventing dislocations of endoprostheses. The data obtained shows that the result in all parameters is better in the main group, in comparison with the control group, and the difference in the dynamics of indicators is clearly visible.

Conclusion: Thus, stage-by-stage rehabilitation at ANFH improves treatment results and reduces disability.

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