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Result Of Treatment And Rehabilitation After A Hip Fracture

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Abstract: Treatment of femoral neck fractures is an urgent problem in traumatology and orthopedics. We observed 62 patients from 20-24 to 2025, aged 60-70 years in 26 patients, 71-80 years in 31 patients, and 81 years or more in 5 patients. Men – 22 , women – 40 . When studying the causes of hip fracture, we found that 15 patients had careless walking, 37 patients had instability and falls, and 10 patients had traffic accidents. The patients were divided into two groups: the main group consisted of 32 patients who received our developed treatment after surgery. The control group consisted of 30 patients who received traditional treatment after surgery. We studied the results of treatment. Good and excellent results were obtained in 52 (83.8%) patients after 3 months, satisfactory results were obtained in 8 (12.9%) patients, and unsatisfactory results were obtained in 2 (3.22%) patients. After 6 months, good and excellent results were obtained in 57 (92%) patients, satisfactory results were obtained in 4 (6.4%) patients, and unsatisfactory results were obtained in 1 (1.6%) patient.

Keywords: Rehabilitation; hip fracture; therapeutic gymnastics; endoprosthesis; restoration of function.

1. Introduction: Treatment and rehabilitation of hip fractures is a pressing issue in traumatology and orthopedics. In elderly patients, hip fractures account for up to 50% of all fractures and often lead to disability.

Mortality during the first year after a fracture can reach 20-30%, primarily due to complications such as pneumonia and thromboembolism.

Some authors attribute excess weight, osteoporosis, advanced age, female gender (women often experience bone changes during menopause), tumors, osteomyelitis, and unhealthy habits to predisposing factors for hip fractures. [3]

Modern rehabilitation should begin as early as possible and include a comprehensive range of physiotherapy, kinesiotherapy, and social interventions. Patients who have not received periodic rehabilitation also lose the ability to care for themselves after surgery, which impairs quality of life and increases the risk of mortality.

The authors [12] wrote that, in the case of a femoral neck fracture, the consequence is aseptic necrosis, i.e., death of the femoral head due to impaired blood supply. Necrosis then gradually progresses, leading to deforming arthrosis of the hip joint.

According to the authors [4], in femoral neck fractures, nonunion forms a pseudoarthrosis within the fragments of the femoral head.

The authors [3] indicate that venous thrombosis is often observed in femoral neck fractures, the cause of which is prolonged standing in one position.

The authors [10] noted sputum retention and a tendency toward pneumonia and depression as a consequence of a femoral neck fracture.

As the authors [20] note, effective rehabilitation is impossible without normalizing the psychoemotional state of a patient who has undergone surgery and is temporarily immobilized. According to the authors' observations [11], swimming exercises also play a significant role in improving the patient's condition during rehabilitation after a hip fracture in the Moscow region. They stimulate brain function, promote optimism, and improve mood.

If the patient is depressed and refuses to eat, diet therapy is prescribed to prevent further deterioration of their physical condition. The rehabilitation diet is designed to be tasty and nutritious, primarily containing silicon and calcium to strengthen the skeletal system, along with all the necessary nutrients.

The sooner rehabilitation begins after surgery, the faster the positive effect will be achieved. Only then is it possible to fully restore motor activity and return the patient to their normal life.

Objective: To develop a rehabilitation program for patients with hip fracture by improving hip function and preventing complications.

2. Methods

We observed 62 patients from 2024 to 2025, aged 60–70 years (26 patients), 71–80 years (31 patients), and 81 years or older (5 patients). There were 22 men and 40 women. The causes of hip fracture were: carelessness when walking (15 patients), instability and falls (37 patients), and traffic accidents (10 patients). Patients were divided into 2 groups: the study group consisted of 32 patients who received the treatment program we developed after surgery. The control group consisted of 30 patients who received traditional treatment methods after surgery.

Clinical features: All patients under our observation who were unable to walk or stand reported groin pain, as well as a "sticky heel" sign, outward rotation of the foot, and shortening of the injured leg.

For diagnosis, patients underwent radiography, which allows us to confirm or rule out a fracture and determine the location of the injury (at the base of the femoral neck, in the center or close to the center, or near the femoral head). CT and MRI scans were performed when necessary.

After a definitive diagnosis, all patients underwent surgical treatment with hip arthroplasty, a highly effective and safe method that involves replacing damaged components with artificial implants. Two types are used: total hip replacement, which replaces the entire joint, and partial hip replacement, which replaces the femoral neck while leaving the pelvic region intact.

All patients underwent preoperative and postoperative clinical assessments, including pain, mobility, walking, loosening, protrusion, and acetabulum protrusion. After preliminary patient preparation, 48 patients underwent total hip replacement surgeries with various designs without cement. During surgery, in patients with osteoporosis or a wide femoral canal, cemented procedures were performed in 14 patients to ensure secure fixation and stabilization of the prosthesis. Movement of the internal head relative to the external cup of the prosthesis was radiographically verified.

Rehabilitation after a hip fracture

The process and duration of rehabilitation depend on the type of surgery. Patients undergoing hip replacement surgery were allowed to resume weight-bearing activity one day after the procedure. Therapeutic massage and physiotherapy can help speed recovery. Postoperative pain management was administered to prevent physical inactivity and conditions associated with a sedentary lifestyle or complete immobility, including trophic disorders, pressure ulcers, and gastrointestinal, cardiovascular, and respiratory problems. Patients were allowed to walk with castells or walkers, as well as exercise therapy, psychotherapy, and diet therapy one day after surgery.

Main rehabilitation methods after surgery

After surgery for a femur fracture, particularly hip replacement, rehabilitation began with a complete patient examination and the prescription of an individualized treatment plan, which included not only medication but also various restorative techniques. Patients were prescribed physical exercises 1.5 months after surgery to improve their condition. A customized exercise program was also developed to strengthen the affected limb. During the initial stage of rehabilitation, patients were prescribed a brace to provide neck support. To increase stress on the limbs, patients were advised to exercise with exercise equipment, which helps relieve muscle pain and improve blood flow to all organs and tissues, including bones.

Complications after hip surgery: how to prevent them

Prolonged immobility can lead to thrombosis of the veins of the lower extremities and pulmonary embolism if a clot breaks off. There is also a risk of developing pressure ulcers, pneumonia, multiple organ failure, and urinary tract infection.

To prevent complications, we recommended not fully bending the hips (for example, squatting) after discharge from the hospital and sitting on a higher chair. Keep your feet slightly apart, so your knees are not too close together. Avoid leaning forward when rising from a chair. Always hold onto a handrail when climbing stairs. Wear appropriately sized shoes with low heels and non-slip soles. Monitor your weight. Avoid heavy lifting.

Immediate results were studied in all patients. Before treatment, the average score was 4.9-4.3 points; after treatment, it improved (Table 1). Long-term treatment results were studied in 92% of patients.

Table No. 1.
Long-Term Hip Replacement

Score(score)	After 3 month	After 6 month	After 9 month.
Excellent (0 -1,3)	7 (11,2%)	14 (22,5%)	18 (29%)
Good(1,4- 2,9)	45 (72,58%)	43 (69,3%)	39 (63%)
Satisfactory 3- 4,2	8 (12,9%)	4(6,45%)	5 (8%)
Unsatisfactory (4,3-5)	2 (3,22%)	1 (1,6%)	
Average 2,7- 1,8	**62 (100%)3.7 - 2,6 points**	**62(100%) 2,6-1,8 points**	**62 (100%) 1,8 - 1,1 points**

The table shows that good and excellent results were achieved after 3 months in 52 patients (83.8%), satisfactory in 8 (12.9%), and unsatisfactory in 2 (3.22%). After 6 months, good and excellent results were achieved in 57 patients (92%), satisfactory in 4 (6.45%), and unsatisfactory in 1 (1.6%) patient. After 9 months, good and excellent results were achieved in 57 patients (92%), satisfactory in 5 (8%), and there were no unsatisfactory results. The average score after 3 months was 3.7-2.6 points, after 6 months 2.6-1.8 points, and

after 9 months 1.8-1.1 points.

Thus, the use of endoprosthetics for femoral neck fractures can achieve good and excellent results after 6 months. In 92% of cases, the inclusion of physiotherapy, exercise therapy, psychotherapy, and dietary therapy in the treatment program prevents complications and improves patients' quality of life.

To evaluate the effectiveness of the method we developed, we conducted a walking speed test and a coordination test. This test noted an asymmetry in the speed of steps taken between the operated and non-operated limbs.

Our method was administered before and after surgery on days 14-15. It measured the number of patient movements in 15 seconds. This method allows us to assess the condition of various muscle groups during movement.

Test evaluation: The distance walked by patients in the 15 seconds before surgery.

Table 2.

Main group 15 people	Control group 15 people
2,7	2,5
2,4	3,5
2,9	2,7
4	3,85
2,8	4,5
4,2	3,1
2,6	3,6
4,1	4,6
3,8	3,2
4,5	3,1
2,3	2,8
2,7	3,2
3,6	3,6
4.5	3,8
M=3,14	M=3,2

Test evaluation: The distance walked by patients in the 15 seconds after surgery.

Table 3.

Main group 15 people	Control group 15 people
5,1	4,7
4,9	3,8
5,2	4,38
4,8	4,6
4,7	4,4
5,2	3,95
5,8	4,8
4,95	4,2
5,2	4,35
5,7	3,85
4,85	4,9
4,9	4,9
5,1	4,85
4,7	3,8

M=4,74	M=4,1

This test assesses the condition of the muscular system. It also allows for an assessment of the performance of the periarticular muscles and allows for comparison between the healthy and operated limbs.

Speed test assessment (number of movements in 15 seconds).

Table 4.

Group	Study time	Non operated Limb			Operated Limb		
		Leg abducting	Forward walking	Backward walking	Leg abducting	Forward walking	Backward walking
Control	Preoperative period	9,4	9,5	9,6	0	0	0
		9,5			0		
	4-5 day	9,3	9,6	9,5	8,5	8,8	8,7
		9,46			8,66		
	15 day	9,8	9,9	9,8	9,2	9,7	8,9
		9,8			9,26		
Main	Preoperativa period	9,8	9,5	9,7	0	0	0
		9,66			0		
	4-5 day	10,9	10,8	10,5	8,9	9,8	9,5
		10,7			9,4		
	15 day	12,8	13,5	13,0	12,5	13,0	12,8
		13,1			12,7		

The step test varied. On day 15, this figure for the operated leg in the study group was 12.7 m in 15 seconds, while in the control group, the figure was 9.2 m, which is worse than in the study group. According to our step test assessment methodology, positive results were observed in the operated leg, which improves lower extremity muscle function and helps prevent endoprosthesis dislocation. The step test showed that the treatment results were better than in the control group.

3. Discussion

The results confirm that early rehabilitation promotes accelerated recovery of hip joint function. Including physiotherapy, exercise therapy, psychotherapy, and diet therapy in the program helps prevent complications and improves the overall condition of patients. The psychoemotional state of patients is of particular importance: depression and anxiety significantly slow the recovery process. The use of water treatments and swimming pool exercises showed a positive effect on

patients' mood and motivation. A diet high in calcium, silicon, and protein contributed to strengthening bone tissue. Hip Fracture Prevention

For preventive measures, patients were primarily directed toward strengthening the muscular frame and ligaments in the hip joint, as well as developing coordination. Physical exercise was recommended. Patients were advised to maintain an active lifestyle and include walking in their daily routine. Vitamin D and calcium supplements were also recommended for preventive purposes after blood tests.

The rehabilitation program we developed for hip fractures following endoprosthetics ensures the preservation of joint function and comfortable rehabilitation, as well as improving patients' quality of life.

Conclusion: When studying the causes of femoral neck fracture, the following were found: carelessness when walking - in 15 patients, instability and falls - in 37 patients and road traffic accidents - in 10 patients. Patients were divided into 2 groups: the main group - 32 patients who underwent the treatment complex developed by us after surgery. The control group consisted of 30 patients who underwent traditional treatment methods after surgery.

We studied the treatment results: good and excellent results were obtained after 3 months in 57 (79.5%), satisfactory in 12 (16%) and unsatisfactory in 3 (4.5%) patients. After 6 months, good and excellent results were obtained in 66 (92%), satisfactory in 5 (6.5%) and unsatisfactory in 1 (1.5%) patient. After 9 months. Good and excellent results were achieved in 57 patients (92%), satisfactory in 5 patients (8.0%), and there were no unsatisfactory results. The average value after 3 months was 3.5-2.8 points, after 6 months 2.5-1.6 points, after 9 months 1.5-1.2 points. These indicators indicate the effectiveness of the rehabilitation method we developed. Despite the development of surgical treatment methods, restoring hip function remains a challenge. Features of comprehensive rehabilitation after endoprosthetics, including therapeutic exercises, physiotherapy, psychotherapy, and diet therapy.

4. Conclusions

1. Treatment outcomes for femoral neck fractures: The average pretreatment score ranged from 3.7 to 2.6 points after 3 months, 2.6 to 1.8 points after 6 months, and 1.8 to 1.1 points after 9 months. These results demonstrate the effectiveness of our rehabilitation method.

2. A study of treatment outcomes revealed good to excellent results after 9 months in 57 patients (92%), satisfactory in 5 (8.0%), and unsatisfactory in no patients.

3. Physiotherapy and exercise therapy play a key role in restoring motor activity.

4. Psychological support and patient motivation contribute to accelerating the rehabilitation process, as do preventive measures aimed at strengthening bone tissue and preventing complications.

References

1. Andreeva T.M., Soloviev V.A. Rehabilitation of patients after hip arthroplasty. Moscow: GEOTAR-Media, 2021.

2. Cooper C., Cole Z., Holroyd C. et al. The epidemiology of hip fractures. Osteoporosis International, 2011.

3. Azizov M.Zh. A modern view on the treatment of femoral neck fractures in the elderly and senile patients: a scientific publication / M.Zh. Azizov, O.E. Valiev // Bulletin of Emergency Medicine: Scientific and Practical Journal / Association of Emergency Physicians of Uzbekistan. Tashkent: Publishing House "Ozbekiston". - 2019. - Vol. 12 N 4. - P. 92-99

4. M. Zh. Azizov, F. M. Usmonov [et al.] Hip arthroplasty for femoral neck fractures and pseudoarthroses / // Surgery of Uzbekistan. - Tashkent, 2011. - N1. - P. 3-7

5. Baratov A.B. Treatment of femoral neck fractures in emergency traumatology / A.B. Baratov, A.R. Shukurullaev, M.B. Rakhmatov, E. Kamolov, Zh. Yarlokobov // Endosurgical methods in traumatology and orthopedics: materials of the Republican scientific and practical conference (November 3, 2006, Bukhara). - Bukhara, 2006. - P. 41

6. Cummings S.R., Melton L.J. Epidemiology and outcomes of osteoporotic fractures. Lancet, 2002.

7. Haentjens P. et al. Meta-analysis: Excess mortality after hip fracture among older persons. Ann Intern Med., 2010.

8. Boonen S., Vanderschueren D. Hip fracture

recovery and nutrition therapy. Clin Endocrinol, 2014.

9. Geroeva E.V. Prevention of recurrent femoral neck fracture: scientific publication / E.V. Geroeva; E.V. Gerieva // Issues of Economics and Management for Healthcare Managers. - M., 2009. - N7. - P. 44-45

10. Gnetetskiy S. F. Social significance and results of total hip arthroplasty in the elderly: scientific publication / S. F. Gnetetskiy // Russian Medical Journal. - M., 2013. - N6. - P. 54-56.

11. Kavalerskiy G. M. Differentiated approach to the treatment of femoral neck fractures in elderly and senile patients: scientific publication / G. M. Kavalerskiy, L. L. Silin, S. V. Donchenko, V. V. Kostyukov // Medical care. - M., 2005. - No. 1. - P. 27-30. -

12. Kazakov S. K. Endoprosthetics for diseases and injuries of the hip joint with assessment of quality of life / S. K. Kazakov // Central Asian Medical Journal. - Bishkek, 2008. - №6. - P. 502-504

13. Klyuchevsky V.V. Endoprosthetics for femoral neck fractures: scientific publication / V.V. Klyuchevsky, S.I. Gilfanov, V.V. Danilyak, M.V. Belov et al. // Bulletin of traumatology and orthopedics. - Moscow, 2009. - №3. - P. 21-25

14. Lazarev A.F. Endoprosthetics or osteosynthesis for femoral neck fractures: scientific publication / A.F. Lazarev, E.I. Solod // Actual problems of traumatology and orthopedics: Proceedings of the scientific and practical. conf. (Samarkand, November 7, 2014). - Samarkand, 2014. - P. 131-132

15. Menshchikova O. A. Acute postoperative mental disorders in elderly and old patients with femoral neck fractures during hip arthroplasty: the role of anemia and allogeneic transfusion: scientific publication / O. A. Menshchikova, V. V. Kuzmin, S. I. Solodushkin // Genius of orthopedics. - Kurgan, 2012. - No. 3. - P. 80-84.

16. Mirzaidov A. M. Results of treatment of femoral neck fractures in the elderly / A. M. Mirzaidov, Z. A. Sharapov // Endosurgical methods in traumatology and orthopedics: materials of the Republican scientific and practical conference (November 3, 2006, Bukhara). - Bukhara, 2006. - P. 79

17. Fedoseyev AV Choice of the method of surgical treatment and rehabilitation of patients with medial femoral neck fractures: scientific publication / AV Fedoseyev, AA Litvinov, PS Filonenko // Palliative medicine and rehabilitation. - M., 2006. - N4. - P. 19-22

18. Khudaibergenov M. Arthroplasty of the hip joint for femoral neck fracture: scientific publication / M. Khudaibergenov // Doctor. - M., 2018. - Vol. 29 N8. - P. 81-84.

19. Yusupov N. A. Errors and complications in surgical treatment of femoral neck fractures: scientific publication / N. A. Yusupov, A. K. Yuldashev // Actual problems of traumatology and orthopedics: materials of the IX Congress of traumatologists and orthopedists of Uzbekistan (Tashkent, October 20-21, 2017). - Tashkent, 2017. - P. 236

20. Fomin N. A., Mitina E. V. Psychological aspects of rehabilitation of elderly patients. Bulletin of Gerontology, 2020

21. Yaremenko D. A. Therapeutic physical education for injuries of the musculoskeletal system. - St. Petersburg, 2019.