DOI: 10.22270/jmpas.V10I6.1243 ISSN NO. 2320–7418

International peer reviewed open access journal

Journal of Medical Pharmaceutical and Allied Sciences

Journal homepage: www.jmpas.com CODEN: JMPACO

Case report

Physiotherapy Rehabilitation in elderly patients with postoperative femoral neck fracture

Devyani Purushe, Prasad Dhage, Radhika Sawal, Pratik Phansopkar*, Neha Chitale, Om C. Wadhokar

Ravi Nair Physiotherapy College, Datta Meghe Institute of Medical Sciences, Wardha, Maharashtra, India

ABSTRACT

The femoral neck fracture in older people is a significant public health problem. Femoral neck fracture is a common type of hip fracture, which has a high morbidity and mortality. Surgical treatments is the first choice. Femoral neck fractures are common injuries in every trauma center's patient population and have a high prevalence in the overall population. The most severe outcomes of hip fractures are known to be falls or osteoporosis, which is typically confirmed in patients with trauma. Ninety-seven femoral neck fracture patients aged 70 years or older were included, and history characteristics, falls, fractures, and other postoperative complications were examined and reported during hospitalization. Therefore, this study focus on the protocols for the treatment of physical therapy following surgically treated proximal femoral fractures in elderly patients. In the postoperative treatment of patients with proximal femoral fracture, physical therapy helps to increase muscle strength and enhance walking safety and performance, understanding the condition of the patient, thereby helping the elderly to become more independent. It is incredibly necessary for the doctor to have knowledge about the form of fracture, along with the material used for surgical fixation, secure a healthy beginning for physical therapy. In order to avoid respiratory issues and other complications resulting in immobility, it is of critical importance for this patient to remain orthostatic and to walk as soon as possible, irrespective of the nature of fracture and the material used for fixation, although this is frequently not possible because of the patient's general health status.

Keywords: Fracture, Neck of femur, Trauma, Aged, Physiotherapy, Rehabilitation.

Received - 12/07/2021, Reviewed - 05/09/2021, Revised/ Accepted- 13/10/2021

Correspondence: Pratik Phansopkar* ✉ drpratik77@gmail.com

Ravi Nair Physiotherapy College, Wardha, Maharashtra, India

INTRODUCTION

In recent decades, the world population's survival has risen globally. This rise in longevity associated with today's more active elderly lifestyle and the chronicity present in this demographic, such as a loss incoordination, muscle strength, reflexes and bone mineral density, results in osteopenia and osteoporosis, has led to rise in cases of trauma and thus fractures in the elderly population [1]. In older adults, these fractures are the primary cause of injury, physical impairment, and death .The risk of fracture can be increased by technical factors during surgery [2]. The increase in the total number of patients with hip fractures from 1.7 million per year in 1990 to 6.3 million per year in 2050 and the rise in socio-economic costs was related to the effects of the aging population worldwide. Therefore, the purpose of care for these patients is to retain their functions, their mobility and their activities[3]. But treatment for general weakness is also needed [4]. Delirium is a common complication in hip fracture patients [5]. Awareness of falls following hip fracture surgery during hospital stay is missing, in particular, residential treatment, chronically ill people and those with cognitive disability are included[6]The day they fall, forty-five percent of the patients were mentally unstable. Intervention measures, including the prevention and treatment of delirium and sleeping disorders, as well as increased care of male patients, may allow for fall prevention strategies [6].

Patients with hip fractures may not be able to regain indepe ndence the serious oedema of the lower extremity and the reduced oe dema strength of knee extension, particularly after surgery [6]. Low bone mineral density (BMD) osteoporosis puts elderly people at high risk of developing fractures.Specific reasons for the successful treatment of these elderly patients focus on patient comorbidities, specific clinical process management, and more or less early post-operative recovery. For patients lying in bed after surgery, the form of fracture, surgery, special care, early active recovery improve the functional outcome in the short term [4]. In postoperative treatment for older people, improvement in the stand ard of care and recovery with an emphasis on fall prevention based of these outcomes, should be introduced.

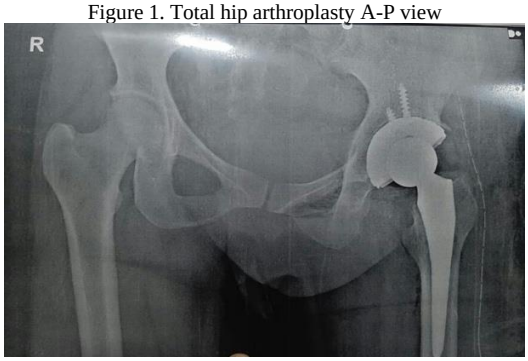
Patient Information

A patient 60 years old female housewife who lives in Nagpur city. Hand dominance right hand. She was apparently alright 8 days back. She was met with road traffic accident date 1st November 2020. After 1 hour she was admitted in AVBRH hospital, Sawangi Meghe, Wardha. by her relatives. X-rays on admission revealed a displaced left neck of femur fracture. The patient had complained of left hip pain. She was having diabetes mellitus and hypertension since 17 -18 yrs. Surgery was done. Total hip arthroplasty, along with the improvement of implants, has earned praise for the prevention of displaced femoral neck fracture. Intensive recovery is initiated in order to better recover physical activity after surgery. Post-operatively patient had chief complaints of pain in right leg, which patient describes as dull-aching with intensity of 6/10 at rest and 8/10 with activity on NPRS, aggravated on activities, also unable to perform range of motion (ROM) at hip due to the plaster slab and trouble in achieving activities of daily living such as self-hygiene.

Clinical findings

The patient in the supine position was examined with both shoulder at same level with left lower limb covered in plaster slab (no ROM possible at left hip). On physical examination, vital signs including temperature were normal, pulse rate 90beats/min, RR-24 breaths/min, BP-130/90mmhg.The hip was unable to palpable due to presence of plaster cast and dressings. Patient was advised for not bearing weight on the operated left leg.

Figure 1. Total hip arthroplasty A-P view



Physiotherapy Intervention

Pre-operative Management

The short-term aim was to minimize discomfort and oedema, avoid respiratory problems, preserve and improve the mobility range and strength of the unimpacted limbs in the joint. The long-term target was to prevent respiratory issues, reduce discomfort, and improve strength and joint range of motion.

Cryotherapy was used in the mid-thigh region to relieve pain. Movement of the ankle toe, static hams, quads and glutei to maintain the strength of hamstrings, quadriceps and glutes. Bridging exercise for retaining primary strength (using normal leg and both elbows). Active movements of unaffected limbs to preserve their power. Deep breathing, relaxation methods and spirometry eliminate complications in the respiratory system.

Post-operative Management

Phase 1(1 -2 weeks)

The patient received physiotherapy for 15 days on a regular basis in the orthopedic inpatient ward by a skilled orthopedic physiotherapist.With the goal of improving independent walker walking with non-weight bearing and minimal assistance for remembering daily activities, the sessions were initiated. The focus of treatment and recovery should be on regaining physical capacity and avoiding complications. It seems like the most important complications to avoid are delirium and sleeping problems since it seems that these complications are related to an increased risk of dropping during hospital stay. For left thigh pain and elevation with a pillow to position the left lower limb, cryotherapy with ice packs was given to manage pain and muscle spasm.

Phase 2 (3-4 weeks)

Table 1. Pre and post outcome

Pre-outcome	Post-outcome
Patient had complain of pain to the hip and knee. Inability to stand or walk. Decrease range of motion. Patient frequently complains of night pain. Deformity of the thigh. Patient's leg appears shorter than unaffected leg.	The patient was able to walk without any support or assistance by the end of the session. She was also independent. The patient was willing to do physiotherapy and was well motivated and did whatever was asked him to do. Home exercises program was also tough to the patient. She did the home exercises regularly and also visited the department regularly. The patient was psychologically fit which was a positive factor which helped to treat him properly.

Table 2. Follow up and outcome

	Pain	ROM (affected limb) Active ROM	MMT(affected limb)	LEFS score
1-2 weeks	4/10 on rest. 6/10 during movement.	Flexion-80 Abduction-35 Lateral rotation-30 Medial rotation-35	Flexion-3/5 Abduction-3/5 Lateral rotation-2/5 Medial rotation-2/5	50
3-4 weeks	No pain on rest. 2/10 during movement.	Flexion-100 Abduction-40 Lateral rotation-35 Medial rotation-40	Flexion-4/5 Abduction-4/5 Lateral rotation-4/5 Medial rotation-4/5	78

Further we give rehabilitation exercises which included isometric contraction for left hamstrings, quadriceps, and gluteus muscles with ten second hold for ten repetition each respectively. Active assisted movements for left hip flexion-extension and abduction – adduction and angle finger toe movements were performed ten repetition. The physiotherapy sessions were aimed at preserving muscle integrity for the lower left limb and strengthen the lower right limb and both upper limbs to facilitate independent walker walking with non-weight bearing and limited assistance for everyday activities. Active resisted exercises for upper limbs with weights and weight cuff for right lower limb were used progressively with proper safety measures. Family members were instructed and educated to carryout home exercises program using a proper written protocol. Further progress in the healing was recommended after the first follow-up,

which would consist of removing the plaster cast and returning the range of motion to the left hip.

RESULTS AND DISCUSSION

Improvements were observed in the initiation to active assisted to active movements of the left hip flexion- extension and abduction – adduction and also in independence of activities of daily living with minimal assistance or supervision. The improvement was observed gradually as the patient progressed from NWB walking with walker with minimal assistance to NWB walking with walker without assistance and only supervised.

The study shows that patients can take a few months to regain normal muscle function after undergoing surgery.In order to ensure a safe start to physical rehabilitation, it is extremely necessary for the doctor to consider the type of fracture as well as the material used for surgical fixation [7].These data can interfere with the action, which in some activities involves weight bearing on the leg, walking time, and restriction. It is of major concern to stay orthostatic and to walk as early as possible for this patient, irrespective of the kind of fracture and material used for fixation [8]. Respiratory disorders and other issues inherent in lack of mobility can be avoided by therapists, although this is often not possible because of the general state of health of the patient [9]. Using weight bearing exercise of the lower limb improves the functional outcome measure. In the postoperative treatment of patients with femoral neck fracture, physical therapy helps to increase muscle strength and improve the protection and performance of walking, thereby enabling the elderly to become more stable [10].

CONCLUSION

The above studies suggest that the definitive surgical method and early rehabilitation of physiotherapy contributed to improvement of the patient's functional objectives, which are a significant understanding of a good recovery**.**

AUTHOR'S CONTRIBUTION

For the concept, assessment and evaluation, data collection and analysis and interpretation of the data, each author made the best contribution.

INFORMED CONSENT

Proper consent was taken from patient's son for writing case report.

CONFLICT OF INTEREST

Authors have no conflicts of interest to disclose.

REFERENCES

1. Carneiro MB, Alves DPL, Mercadante MT, 2013. "Physical therapy in the postoperative of proximal femur fracture in elderly. Literature review". Acta Ortop Bras. 21(3), 175–8.
2. Judkins TR, Dayton MR, 2010. "Femoral neck fracture during physical therapy following surface replacement arthroplasty: a preventable complication? A case report". Patient Saf Surg. 4(1):3.
3. Stenvall M, Olofsson B, Lundström M, Englund U, Borssén B, Svensson O, et al., 2007. "A multidisciplinary, multifactorial intervention program reduces postoperative falls and injuries after femoral neck fracture". Osteoporos Int J Establ Result Coop Eur Found Osteoporos Natl Osteoporos Found USA. 18(2), 167–75.
4. Sciard D, Cattano D, Hussain M, Rosenstein A, 2011. "Perioperative management of proximal hip fractures in the elderly: the surgeon and the anesthesiologist". Minerva Anestesiol. 77(7), 715-22.
5. DP, CG, SM, AK, WB, CK, et al., 2019. "Weight bearing in patients with femoral neck fractures compared to pertrochanteric fractures: A postoperative gait analysis". Injury. 50(7), 31128909.
6. Kennie DC, Reid J, Richardson IR, Kiamari AA, Kelt C, 1988. "Effectiveness of geriatric rehabilitative care after fractures of the proximal femur in elderly women: a randomised clinical trial". BMJ. 297(6656), 1083-6.
7. Stenvall M, Olofsson B, Lundström M, Svensson O, Nyberg L, Gustafson Y, 2006. "Inpatient falls and injuries in older patients treated for femoral neck fracture". Arch Gerontol Geriatr. 43(3), 389–99.
8. Vaidya L, Kumar K, Naqvi W, Narang S, Pisulkar G, Dadlani M, 2020. "Revision of total hip replacement surgery in elderly patient and its recovery based on periprosthetic fracture rehabilitation". Medical Science, 24(104), 2628-2638.
9. Kasatwar P, Bele A, Dhankar S, Naqvi W, 2020. "Comparative study of effect of vaginal cones as a biofeedback device and pelvic floor exercises in rural females with urinary incontinence". J Datta Meghe Inst Med Sci Univ. 15, 36-9.
10. Sinha RK, Sinha S, Varadharajulu G, 2020. "Effectiveness of structured exercise protocol on functional performance in subjects with COVID-19". Int J Res Pharm Sci. 1244–9.

How to cite this article

Devyani P, Prasad D, Radhika S, Pratik P, Neha C, Om C. W, 2021. Physiotherapy Rehabilitation in elderly patients with postoperative femoral neck fracture. Jour. of Med. P'ceutical & Allied. Sci. V 10 - I 6, 1243 P-3883-3885. doi: 10.22270/jmpas.V10I6.1243