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Case Report

# Effectiveness of systematic desensitization and goal directed physiotherapy management on anxiety and early mobility in a patient with intertrochanteric fracture of femur

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## ABSTRACT

Intertrochanteric fractures are classified as proximal femur extracapsular fractures that occur between the Greater and lesser trochanters. The intertrochanteric portion of femur is situated between the greater and lesser trochanters and is made of dense trabecular bone. The calcar femorale is the thick bone vertical wall that stretches to the posterior portion of the femoral neck from the posteromedial part of the femur shaft. This structure is critical because it determines whether or not a fracture is stable. These fractures are commonly the result of a fall in the elderly population at ground level and are graded as either stable or unstable. Usually, these patients show a short and externally rotated lower extremity. Nonoperative therapy is seldom suggested. As the failure rate is strongly associated with the choice of implant and fracture pattern, the method of surgical treatment is based on the fracture pattern and its inherent stability. Physiotherapy Rehabilitation plays a key role in treatment. The present case is of 74 years aged male with intertrochanteric fracture of femur and also suffered with anxiety issues. He was given physiotherapy treatment protocol for a week along with cognitive behavioural therapy. There was improvement in functional activities and transitions without load bearing on affected leg.

**Keywords:** Intertrochanteric Fracture, Physiotherapy, Rehabilitation, Anxiety, Cognitive behavioural therapy.

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## INTRODUCTION

The longevity of the world population has improved globally in recent decades. This rise in longevity associated with the more active lifestyle of the elderly today and the comorbidities present in this population, such as reduced muscle strength, coordination, reflexes and bone mineral density, resulting in osteopenia and osteoporosis, has contributed to an increase in cases of trauma and subsequent fractures in geriatric population [1]. Studies have shown that six months after a proximal femoral fracture, less than half of people recover the physical function they had prior to the fracture [2]. Limitations on mobility are very prevalent and can be partially linked to the lack of strength and muscle power. Between 3 and 36 months, the fractured leg may be 20% weaker than the unfractured leg [3]. the present case report is of a male patient of age 74 years suffered with intertrochanteric fracture of leg operated with plates and screws referred for physiotherapy. Patient was also suffering from anxiety related issues. The aim of the present study is to target the anxiety issues and also rehabilitate the patient to the optimal functional recovery.

### Patient information

Patient is 74-year-old male who fell down in his room on 22nd January 2021, at 8:00 am. Patient started experiencing pain in the right hip and inability to bear weight over right limb immediately after the fall. Patient came directly to AVBRH for further management. Patient is the known case of anxiety disorder and is on medication for the same.

### Diagnosis

Patient was diagnosed as Intertrochanteric fracture of right lower limb through X ray findings. Patient was managed with open reduction and internal fixation. The patient was reported to physiotherapy post-surgery.

### Clinical findings

On examination on day 2 after surgery, patient was Conscious, Oriented and alert. He was responding well but because of post-operative pain looked drowsy. right lower limb was immobilized, left lower limb and bilateral upper limbs range of motion and strength was normal. There was no erythema nor swelling at the right ankle.

### Physiotherapy intervention

Treatment was planned based on the evidence-based protocols [4]. First three days treatment primarily focused on breathing exercises and bed mobility [5]. We targeted the sound lower limb and bilateral upper limbs as they have to bear weight in the next stages of mobility. We prevented the complications like pressure sores and

disused atrophy by performing bed mobility exercises and isometric exercises from 4th day to the end of 8 week, we targeted anxiety related issues by systematic desensitization program through one on one therapy by utilising principles of cognitive behavioural therapy [6] by taking inputs from Clinical Psychologists. We also targeted goal directed rehabilitation of strength, range of motion and transition training of right lower limb.

## RESULTS

**Table 1:** depicting problems, goals and treatment strategies.

| Problem identified | Probable cause | Goal Framed | Physiotherapy Intervention |
|---|---|---|---|
| Anxiety | Behavioral issues | To manage anxiety causing behavior and make patient cope up with anxiety related issues | Simultaneous inputs from Clinical Psychologist, Cognitive Behavior Therapy management using systematic desensitization technique with one on one therapy. |
| Breathing related issues | Post-surgery related issues | Increase the air entry to lungs | Breathing exercises, Thoracic Expansion exercises |
| Decreased Bed mobility | Post-operative immobility of affected side | Targeting the bedmobility by utilizing normal upper and lower limbs | Strengthening and range of motion exercises to unaffected lower limb, bilateral upper limbs and isometrics to affected side lower limb |
| Pain | Because of fracture and surgery | Alleviating the pain | Compensatory and alternate movement strategy training. |

**Figure 1 and 2:** Pre-operative and Post-Operative X ray of Intertrochanteric Fracture

The programmed and goal-oriented exercise protocol helped the patient to gain functional recovery of partial weight bearing walking in 8 weeks. Anxiety issues were also decreased because of problem oriented counselling. Numerical pain rating scale score which was 9/10 on day 1 was reduced to 2/10 after 6 weeks. Though the patient was on non-weight bearing gait training, the pain perceiving levels as drastically decreased.

## DISCUSSION

Studies proved that early mobilizations are extremely helpful in reducing the hospital stay and also musculoskeletal complications in lower limb fractures and infectious conditions [7][8]. Studies also proved the importance of goal directed training and emphasis on strength and range of motion. There is a literature gap in dealing with anxiety along with rehabilitation of lower limb function. Present study focused on anxiety and as well as rehabilitation of lower limb function. We primarily focused on cognitive behaviour therapy through which systematic desensitization of anxiety causing situations and issues were targeted. During the process of treatment tenure patient gained confidence and belief that he can face situations and inculcated problem-solving behaviour which helped us in giving rigorous rehabilitation to achieve maximum benefits and goals which was even proved in previous studies in lower limb conditions [9][10].

## CONCLUSION

Through the present case report, we would like to conclude that by concentrating on anxiety related issues, the goals of the treatment specifically related to post-operative major fractures of lower limb can be managed efficiently with active participation of patients themselves.

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