



Case Report

Efficacy of physiotherapy rehabilitation in a case with multiple fracture

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ABSTRACT

Road Traffic accidents are one of the major reasons of fracture all over the world. Treating cases with multiple fracture is a challenge of the orthopedic as well as the physical therapist. radius and ulna are the bones which form the base of forearm whereas femur, tibia and fibula forms major part of lower limb. This patient is presented with multi traumatic (fracture) condition. Patient presented with following fractures as mid shaft radius and ulna fracture without neuro deficit right side, compound grade IIIC fracture patella right side, proximal tibia fracture right side, and distal third femur fracture right side. Patient gives an history of being run over by auto after which he sustained a wound over right knee and pain and swelling over right forearm. Pain was aggravated on movements and relieved on stabilization. In the Above case the main problem faced by the therapist was the involvement of multiple bones which reduced the speed of recovery and made patient more prone for secondary complications. A Multidisciplinary approach is very important in managing polytrauma cases. Well-functioning teams are critical to service integration, and teams are more effective in supportive hospital environments. Physiotherapy has significant effect rehabilitation in patients with multiple fractures. Proper exercise protocol should be followed to get good recovery.

Keywords: Rehabilitation, Polytrauma, Physiotherapy, Both Bone Fracture

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INTRODUCTION

Road Traffic accidents are one of the major reasons of fracture all over the world. Treating cases with multiple fracture is a challenge of the orthopedic as well as the physical therapist. Radius and Ulna are the bones which form the base of forearm ^[1] whereas Femur, Tibia and fibula forms major part of lower limb ^[2]. Patella is a small flat bone in front of the knee joint ^[3]. Radius ulna fracture is called as both bone fracture and usually occurs because of direct trauma and the choice to treatment is open reduction and internal fixation. Both bone fracture is classified into three types type1-simple fracture, type 2- wedge fracture and type 3 is multiple segment fracture. Fracture is discontinuity in the structure of bone. Fracture in any region is associated with pain and disability. Distal Femur and Proximal Tibia fracture is difficult to deal because of the involvement of the joint. Distal femur fracture is classified as open reduction internal fixation is many times contraindicated in such cases because it may led to systemic involvement.

This patient is presented with multi traumatic (fracture) condition. Patient presented with following fractures-mid shaft radius and ulna fracture without neuro deficit right side, compound grade IIIC fracture patella right side, proximal tibia fracture right side and the

distal third femur fracture right side.

Patient's information

Primary concerns and symptoms of the patient- Patient gives an history of being run over by auto after which he sustained a wound over right knee and pain and swelling over right forearm. Pain was aggravated on movements and relieved on stabilization. Relevant past interventions with outcomes, patient was initially taken to private hospital in Dahegaon where he was given conservative management. Patient was there after brought to AVBRH casualty for further evaluation and management.

Clinical findings

Significant physical examination and important clinical findings. Patient inspected in supine position. Patella visible and bony fragments seen. Lacerated wound size is 15 X 10 cm over the anterior aspect of knee. Diffuse swelling visible over distal thigh and proximal tibia. Pelvic compression negative. Tenderness elicited over mid thigh and proximal tibia. Knee and hip ROM not elicited due to pain. Deformity visible over mid shaft of radius and ulna. Diffuse swelling visible over mid forearm. Local rise in temperature. Chest compression negative. Tenderness over mid shaft radius and ulna. Supination and pronation not elicited due to pain. Shoulder ROM full and free. Active

finger movements. Distal circulation intact.

Diagnostic assessment

Diagnostic testing: Diagnosis:

Mid shaft radius and ulna fracture without neuro deficit right side. Compound grade IIIC fracture patella right side. Proximal tibia fracture right side. Distal third femur fracture right side.

Therapeutic intervention

1. Primary care

2. Surgical intervention

Administration of therapeutic intervention

1. Primary care- Inj Diclofenac, Inj TT, Inj ceftriaxone, sterile wound dressing, Thomas splint application, and Intravenous fluid resuscitation.

2. Surgical intervention- Closed reduction and external fixation of distal femur fracture right side. Closed reduction and external fixation of proximal femur fracture right side. Implant done- Intramedullary nail.

Physiotherapy Management

Phase 1

The primary goal is to reduce the pain and to maintain the range and strength available. Patient education plays a key role in rehabilitation, patient was explained his condition, do's and don'ts in his condition and importance of physiotherapy was also told. Isometric exercises to maintain the strength was given to gluteal muscles, quadriceps and hamstrings bilaterally^[4]. For Upper limb range of motion exercises were given for shoulder bilaterally and gripping exercises as per tolerated were given.

Phase 2

Primary goal was to maintain the goals achieved in phase one and to increase the range and strength. For the range of motion for lower limb heel slides were given followed by passive overpressure to increase the range as per tolerated. Straight leg raise was given supine lying 10 repetition 3 sets at least 2 times a day. As the patient is bedridden for all time breathing exercises will be given and efforts were taken to maintain endurance.

Phase 3

Goal of third phase is to maintain the goals achieved in phase 1 and phase 2 and to make patient ambulate. Initially the patient was asked to stand with support and vitals were assessed when the patient was able to maintain the balance patient was asked to progress forward with the help of walking aid. Patient will be progressed from non-weight bearing to partial weight bearing to full weight bearing.

DISCUSSION

In the Above case the main problem faced by the therapist was the involvement of multiple bones which reduced the speed of recovery and made patient more prone for secondary complications. A Multidisciplinary approach is very important in managing polytrauma cases. Well-functioning teams are critical to service integration, and teams are more effective in supportive hospital environments^[5].

Secondary complications were prevented and then next main focus was rehabilitation, back to life for which aggressive physiotherapy was given. Family members are intensely involved in rehabilitation and have service needs that may surpass those of families of rehabilitation patients without polytrauma^[6]. The unaffected side was first trained in order to make patient independent in the affected phase as well^[7]. Rehabilitation protocol was followed to get the patient back in activities of daily living which was achieved after 12 weeks of intervention. Exercise plays a very important role in rehabilitation^[8].

CONCLUSION

Physiotherapy has significant effect rehabilitation in patients with multiple fractures. Proper exercise protocol should be followed to get good recovery.

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