Case study

Advanced Physiotherapy Rehabilitation in Patient with Low Back Pain- A Case Report

ABSTRACT

Low back pain is a common condition due to many possible causes. The causes include improper lifting, improper posture, lack of regular exercise and fracture. Low back pain is experienced by everyone at least once in there lifespan. Proper management of low back pain is very important to prevent further complications. Low back pain can be managed by medication, surgery or by physiotherapy depending upon the cause. Physical therapy is one of the treatment for various low back pain. To manage low back pain the cause plays a major role, the therapist should take some efforts to know the cause and treat accordingly. Manual therapy is very useful for improving range of motion and tightness of the muscle.

Keywords- low back pain, rehabilitation, physiotherapy

INTRODUCTION

Low back pain is a common condition due to many possible causes. The causes include improper lifting, improper posture, lack of regular exercise and fracture. Low back pain is experienced by everyone atleast once in there lifespan. Proper management of low back pain is very important to prevent furthur complications. Low back pain can be managed by medication, surgery or by physiotherapy. Depending upon the cause physiotherapy approach differs.

Postural and traumatic back pain is common. Low back pain may be acute or chronic .Acute low back pain is the pain which lasts for few days to few months, chronic low back pain is the pain which lasts for more than 6 months. Acute pain related to definite episode of trauma or spontaneous in onset and chronic low back pain it is due to inflammation or mechanical alterations like inclined posture [5]. Hyperlordosis and lordosis are postural effect on the spine [8]. Low back pain recurrence percentage of one year is 54 percent to 90 percent [2].The goal of physical

therapist is to assess and rehabilitate the patient. In a study performed by Rekha Chaturvedi, et al; showed significant improvement in pain in group that received core strengthening exercises. Therefore, core strengthening exercises might be recommended for reducing pain in patients with chronic low back pain. Which helped us to set long term goals.

Patient Information

The patient was 47 years old female who had been experiencing low back pain from 1 year and she is farm worker .The patient was very limited in activities of daily living and she was unable to walk for long time as she had pain in both legs which was radiating in nature. Tingling sensation on both legs occur due to farm work .The patient reported no significant orthopedic issue. Tingling and numbness in tarsal and metatarsal region is present.

Clinical presentation

She was examined in supine with both the shoulders in level. Upon inspection, the patient maintains both legs abducted and slightly internally rotated, knee extended with pillow support below both knees, legs and ankle, both ankles slightly plantar flexed. She complained of dull aching pain which was 7/10 on numerical pain rating scale (NPRS) on rest and 9/10 on standing or unsupported sitting for 10 minutes with Oswestry disability index (ODI)(with permission) score of 80% disability. On observation there is no swelling, no deformity. Range of motion and manual muscle testing was done.

Table 1- Range Of Motion

Joint	Right	Left
Hip flexion	0 to 120	0-110

Hip extension	25	20

Table 2- Manual Muscle Testing

Joint	Right	Left
Hip flexion	Grade 3	Grade 3
Hip extension	Grade 4	Grade 4
Trunk forward flexion	Grade 3	
Trunk extension	Grade 4	

Activities of daily living:-

Patient specific functional scale was used to measure functional outcome. 5 activities was selected and the score was 4/10.

Therapeutic Intervention

Treatment starts on the first day of the visit to the hospital after filling consent form from the patient. The primary goal was to reduce the pain of the patient and to train the patient for activities of daily living

Day 1-14

Hydrocollateral pack was given for 10 minutes for instance heat increases joint temperature, improves the circulation and helps in the muscle relaxation and muscle spasm and helps in relaxing the tightness of the muscle. Interferential therapy was set up in the treatment protocol, Ift helps in pain relief,and increses the local blood flow of that are and relieves the oedema also .Application of Interferential therapy is for only for 10 minutes in four pole method and intensity depends on

patient tolerance level. Traction is also given to the patient for low back pain to treat the condition of the spine

Day14- 30

The aim was to maintain the goals achieved in first 14 days and to strengthen the back and lower limb muscles for which exercise were given

Exercises like back extension exercises, straight leg raise, pelvic bridging. Each exercises should perform for 2 sets of 10 repetitions.

Back extension exercises can strengthen the lower back muscles which include erector spinae. Straight leg exercise helps in assesment of sciatic pain and for herniated disc. Pelvic bridging exercises help in trunk stability and increases muscular strength. This protocol should follow for a week. Avoid bending and heavy lifting activities.

Day 30- 60-

The patient was continued with the exercised given in initial phase and core strengthening was started

Core Strengthening

For static exercises (Each exercise was repeated for 10 times with hold time of 10 sec in one set.)

The subjects were asked to hold the core muscle by drawing in maneuverer.

The subjects were asked to perform abdominal drawing-in manoeuvre [5].

Quadrupedal stance (Birddog exercise): Subjects were required to remain in a quadruped position with both hands and knees flat on the surface; a leg and the contralateral arm were raised at a moderate velocity in horizontal position. Cross curl-ups: Subjects were asked to lie in a supine position, hands folded behind the back, elbows pointed towards the sides, knees in a flexed position, feet resting on a mat; subjects rolled up until the scapulae left the mat, then rotated at a mild velocity to the left and right [17,18].

Outcomes Measures

Table 3- Range of Motion post 2 months of intervention

Joint	Right	Left
Hip flexion	0 to 160	0-150
Hip extension	35	30

Table 4- Manual muscle testing post 2 months of intervention

Joint	Right	Left
Hip flexion	Grade 4	Grade 4
Hip extension	Grade 4	Grade 4
Trunk forward flexion	Grade 4	
Trunk extension	Grade 5	

DISCUSSION:

The patient was 47 years old female who had been experiencing lbp from 1 year ago and she is farm worker. The patient was very limited in activities of daily living and she was unable to walk for long time as she had pain on both legs .radiating pain occur on both legs tingling sensation on both legs occur due to farm work she has to go to farm daily but cannot able to walk for long time .

Specific exercise training is necessary for chronic low back pain to produce functional improvement [4].various manual therapy should be given. There is impact of low back pain on functional activities. It affect on activities a lot. And while treating the patient fear and pain are the two main factors and kinesiophobia is one of the factor in the patient. The patient get scared of the doing movements. So Tampa kinesiophobia scale are used for acute and chronic low back pain. Kinesiophobia creates a very adverse effects on the patient. Things should keep in mind that

patient should not get panic.and and while giving exercies the patient should not have anxiety while doing exercises. And kinesiophobia it act on acute and chronic low back pain it effect on both

There are so many surveys to check the kinesiophobia. And its rating will measure the outcomes plays a very crucial role in the low back pain. kinesiophobia is more in people who don't do exercises because of this it create phobia in people and the people who exercises they have less experience of kinesiophobia [7].sensory testing and reflexes are the components of physical examination draws attention to radiculopathy pain [9].while applying strecting technique proper duration and frequency are required [10].

A systemic review on non- specific low back pain done by Rebecca Gordon; et al; found that improving the flexibility of the muscle-tendon and ligaments in the back increases the range of motion and assists with the patient's functional movement. Increasing core muscular strength can assist in supporting the lumbar spine. Which was mainly achieved by ART as it simultaneously locating and breaking down of scarred tissue and adhesion, since that is the primary cause of pain, stiffness, weakness, as well as physical dysfunction that are typically associated with soft tissue injuries.

CONCLUSION:

Low back pain is very common condition in mostly in females. The clinical course of low back pain presented in general practice, for the most patients, clearly is less favorable than favorable than looking forward too, it takes more than just a few weeks to relapses and recover takes place within a year in most cases. Manual therapy are very useful for improving range of motion and tightness of the muscle. Physiotherapy plays an important role in treating low back pain. Regular physiotherapy treatment is needed.

REFERENCES:

1. Maleki S. Low back pain: case study
2. Holy D, Brooks P, Blyth F, Buchbinder R, the epidemiology of low back pain Best Practices Clin Rheumatol Rheumatol.2010 Dec. 1;24(6):769-81.
3. Frost H, Lamb SE, Doll HA, Carver PT, Stewart-Brown S. Randomised controlled trial of physiotherapy compared with advice for low back pain. BMJ. 2004 Sep 23;329(7468):708.
4. Moseley L. Combined physiotherapy and education is efficacious for chronic low back pain. Aust J Physiother. 2002 Jan 1;48(4):297–302.

5. Brumagne S, Janssens L, Janssens E, Goddyn L. Altered postural control in anticipation of postural instability in persons with recurrent low back pain. Gait Posture. 2008 Nov 1;28(4):657 62.
6. Deshmukh MK, Phansopkar PA, Kumar K. Effect of Muscle Energy Technique on Piriformis Tightness in Chronic Low Back Pain with Radiation. J Evol Med Dent Sci. 2020 Nov 2;9(44):3284–9.
7. Naqvi WM, Vaidya L, Kumar K. Impact of Low Back Pain on Fear of Movement and Functional Activities. International Journal of Research in Pharmaceutical Sciences. 2020;11:4830-35.
8. Goyal CV, Naqvi WM. Lordoscoliosis and hyperlordosis in quadriplegic cerebral palsy. The Pan African Medical Journal. 2020;36.
9. Bais AS, Mishra SA, Darda PP, Naqvi WM. Physiotherapy Rehabilitation in Sensory Motor Polyneuropathy along with lumbar Radiculopathy: A Novel Case Report. European Journal of Molecular & Clinical Medicine. 2020 Dec 25;7(11):2653-68.
10. Bais A, Bawiskar D, Naqvi WM, Sahu A. A case study on the impact of physiotherapy on unilateral foot drop after lumbar fusion and discectomy. Medical Science. 2020;24(103):1773-9.