

EFFECTS OF LUMBAR STABILIZATION EXERCISES COMBINED WITH A FOAM ROLLER IN NON SPECIFIC LOW BACK PAIN.

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STUDY DESIGN: Case Study

BACKGROUND: Low back pain is a common overuse injury in both male and female population. It has been suggested that lumbar muscle weakness may be an important factor for low back pain. This case study describes the effect of lumbar stabilization exercises combined with a foam roller helps in treating non specific low back pain.

CASE DISCRIPTION: A patient is diagnosed having non specific low back pain and is treated with a three weeks exercise program of lumbar stabilization exercises combined with a foam roller. The outcome measures used to capture change in patient status included the Visual Analog Scale and modified – modified schober’s test for measuring the pain intensity and lumbar ROM respectively.

DISCUSSION: A patient of age 34 with non specific low back pain was included in this prospective case. The patient got statistical significant improvement in VAS after three week exercise program. The patient shows improvement than the baseline but it is not statistically significant.

CONCLUSION: This case study provides data to support further investigation to understand that non specific low back pain responds to lumbar strengthening exercises combined with a foam roller.

INTRODUCTION

Low back pain (LBP) is one of the most common problem of the lumbar region seen in the physical therapy outpatient clinic. The prevalence of LBP in Indian population has been found to range from 6.2% to 92% and found to increase with age and more common among females (1). The lack of spinal core stability is supposed to be one of the most important factor that causes recurrent low back pain, hence more of spinal stabilizing muscles have to be trained in subjects with low back pain(2). Low back pain has also been accounted as a functional disability that results in loss of number of days at work and is considered as an economic burden to the community(3). Foam rolling is commonly used as a recovery tool after physical activity claiming that it corrects muscular imbalance, improves neuromuscular efficiency and improves the range of motion. Foam roller can be implemented in many areas of rehabilitation and training programs to enhance joint ROM and optimal skeletal muscle functioning(4). Foam rollers are commonly used within physical therapy for rehabilitation exercises such as Pilates(5). The International Classification of Functioning, Disability and Health classifies low back pain as a disability that involves dysfunction at the level of impairments, activity limitation and participation restriction. Range of motion is an impairment factor that needs attention in a follow up LBP patients (6).

CASE DISCRPTION

A patient was referred to a single physical therapy outpatient clinic with a diagnosis of non specific low back pain and was screened for the eligibility criteria for the case study. The participant satisfied the inclusion criteria; 30 to 45 years of age, restricted lumbar ROM, difficulty in sleeping at night, lifting heavy weights . Exclusion criteria for this study included previous spinal surgery, lumbar radiculopathy, spinal fractures, IVDP.The subject agreed to participate and providesan informed consent.

EXAMINATION

Patient completed a standardized history and physical examination. The subjective examination included screening for serious pathology and standardized interview questions. This patient was a 34-year-old male with non specific low back pain of 2 months duration, who reported pain in bending forward and lifting heavy weights, and changing positions during sleep. He rated the type of pain as dull acheconcederingthe above mentionedactivities.Thepre test examinationincluded forward bending by and touching the toes and backward bending in standing with hands on hips. By using the modified – modified schober’s test it was reduced and the values were 3cm and 1cm in lumbar flexion and extension respectively and rated the pain on a visual analog scale as 6/10.

INTERVENTION

For the exercise program, the patient with non specific low back pain visited the outpatient clinic 3 times a week during three week period. The physiotherapist was responsible for administering the rehabilitation protocol for the patient, and he demonstrated all the exercises and made clinic-based decisions about the weekly progression of exercises. Progression of exercises, increase or decrease of sets and repetitions , duration of exercises, type of foam roller, placement of the foam roller used were at the decision of the physiotherapist, based on patient feedback and symptoms during rehabilitation progression. Lumbar stabilization exercises combined with a foam roller were aimed at facilitating the core and lumbar musculature. The physiotherapist chose the type of lumbar stabilization exercise to be performed on a foam roller based on the patient’s ability to complete 10 repetitions of the exercise and also maintaining each exercise for 10 seconds.

OUTCOME MEASURES

The outcome measures utilized in this study included the Visual Analog Scale (VAS), the modified – modified schober’s (MMST), were collected at pre and post- test evaluation.To measure pain a 10-point Visual Analog Scale (VAS),its interpretation are 0 corresponded to “no pain” and 0 - 3 corresponded to “mild pain,” 4 - 6corresponded to “moderate pain” while 7 – 10 corresponded to “severe pain”. The lumbar ROM wasmeasured with help of the modified –modified schober’s test (MMST).The normal values of the MMST are 5-7 cm for lumbar flexion and 2 cm for lumbar extension.The difference between the pre and post test measurements for the parameters of VAS and Lumbar ROM are as follows :-

PARAMETERS	PRE TEST	POST TEST
VAS	6/10	2/10
LUMBAR FLEXION	3cm	5cm
LUMBAR EXTENSION	1cm	1.5cm

RESULTS

This case study concluded that there was a reduction in pain intensity and an improved lumbar ROM evaluated by VAS and MMST as a pre and post test evaluation. Thus helping to prove that lumbar stabilization exercises combined with a foam roller helps in treating non-specific low back pain.

CONCLUSION

This case study presents preliminary finding to support a novel intervention of strengthening lumbar musculatures by lumbar stabilization exercises combined with a foam roller in males with non-specific low back pain. A three week exercise program of lumbar strengthening decrease the pain and improves the lumbar ROM.

