CASE REPORT

# Safe manual therapy with instant pain relief in the acute central low back pain

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## Abstract

Fifty five year old, previously healthy gentleman presented to the physical therapy, outpatient department (OPD) with complaint of severe low back pain. He sustained injury to his back after pulling a table and was seen 3 hours after the onset. He had a forward stooped posture and could hardly walk. He was on a wheel chair. The force he exerted was a pulling and twisting movement simultaneously. Key finding during the assessment were pain 10/10 on numeric pain rating scale, inability to extend his back, limited ranges of side flexion, normal range of flexion and severe tenderness at L5S1 level centrally. The rest of the examination findings were normal.

He was treated successfully through novice manual therapy interventions and reported 75% (2.5 on NPRS) reduction in pain. Extension range returned to the normal with marked improvement in his ability to walk. The case was seen on 8th September, 2016.

**Keywords:** Mechanical back pain, Novice manual therapy, Dramatic pain relief.

## Introduction

Back pain is the commonest among musculoskeletal conditions and affects 60-80 percent of the population in one form or another. Of these, 23% becomes chronic pain and results in loss of working hours and significant negative economic impact.[1] Bed rest for more than two days is not recommended, as rest and splinting leads to decondition, disuse atrophy of muscles, demineralization of bone, stiffness of the facets and other joints.[2,3] Conversely, early mobility has been correlated with good prognosis.[4,5] Numerous therapeutic choices[5] for the management of acute low back pain are available but a simple, noninvasive, safe approach associated with rapid recovery is yet to be determined. This case report highlights the safe, inexpensive and non-invasive manual therapy techniques which are associated with rapid pain relief.

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## Case Presentation

We present a case of a 55 years old gentleman, who attended the physical therapy OPD of Helping Hand Institute of Rehabilitation Sciences. He was complaining of severe low back pain for the previous 3 hours. The pain was central and localized to L5S1 level. The patient was otherwise fit and healthy. He had a sudden severe back pain after pulling a heavy table in the morning. He had no significant activity over the previous day and had a good night sleep. The force which he exerted was of pulling and twisting nature and was from right to left side. He had back pain last year which resolved completely with conservative treatment. His past medical and surgical histories were otherwise unremarkable. He was a business man with a sedentary life style.

The pain was constant and aggravated by movements and relieved by rest. He requested for a wheel chair for his mobility and needed assistance to walk. The pain was rated as 10/10 on numeric pain rating scale.

On examination he had an antalgic gait with a stooped posture and slight bending towards the right side. Flexion in standing was within functional limits but he could not extend from stooped posture and an attempt to extend aggravated his pain. Side flexion towards each side was mildly restricted with minimal pain. He was able to lift his weight when asked to planter flex in standing. He could assume a supine position and could flex his legs beyond 70 degrees bilaterally. Myotomal strength was assessed and strength recorded as 5/5 on manual muscle testing in all the muscle groups of the lower limbs. FABER test which is a combination of hip flexion, abduction and external rotation and Shear tests, both were negative for Sacro iliac Joint dysfunction. No pain or abnormality was detected on passive range of motion of the hip joint and he exhibited normal reflex response. His spinal levels were palpated in prone lying position and there was severe tenderness at the L5S1 level. Facets joints from L1 level to L5 were palpated and severe tenderness was found at the L5S1 level.

## Treatment

Since the lumbar spine was locked into flexion and the

pain was localized, the manual therapy interventions were administered with the aim of improving lumbar extension. The maneuver was performed as follows. A gradual intervention strategy was adopted while the L5S1 level was stabilized and assisted passively to approximate the spinous process. The patient was asked to take a deep diaphragmatic breath and then slowly exhale. The force was applied at the end of expiration in an inferior-anterior direction. The amount of force was adjusted as tolerated by the patient. He was then asked to actively extend his back slightly. With each grade of extension 3 repetitions of mobilization were administered and the over pressure was maintained for at least 10 seconds. Extension range gradually improved during the maneuvers until full range was regained. He reported 2.5/10 (25%) constant pain at the end of treatment session. Core stability exercises, extension exercises and postural education were given to continue at home. Extension movement returned to the normal limits with independent pain free mobility. He was advised to attend the next day if the pain got worse or there was no further improvement.

He returned to his full functional level when asked by phone two days after the physiotherapy session.

## Discussion

Central lumbar spine pain, absence of radicular and red flag signs, made this patient ideal for this novel spinal extension maneuver which effectively alleviated the patient's symptoms.

Extension of the spine is rarely associated with harm[6] unless secondary to traumatic events where spinal fractures may cause harm to the spinal cord. Even a large disc prolapse has been reported to regress as a result of the spinal extension and the intervention is reported to be safe.[7] Addition of inferior-anterior force at the effected level has multiple benefits. It approximates the spinous processes and the facets joint and generates a negative pressure within the region of the nucleus polyposis. This occurs due to approximation of the posterior margins of vertebral bodies and distraction of the anterior margins, thus allowing the discal material to regress into the space.[7]

Disc prolapse are reported to be the result of axial compressive load, flexion & twisting simultaneously, and disc saturation with water content as occurs in the morning.[8] Since the pain started suddenly in the early morning by pulling a heavy object and the movement was pulling and twisting simultaneously, therefore the following were the prime suspicions. It was the clinical suspicion that the flexion position lock was due to the tear in the annulus and subsequent disc protrusion without central and foraminal stenosis. A facet joint sprain and subsequent subluxation at the zygapophyseal joint was another suspicion. It is believed that if the sprain is left untreated and the articular mobility is not restored early, adhesions at facet joint may form and chronic back pain will ensue.[9] Therefore, timely return to the functional activities ensured to ameliorate adhesive changes.

Perception of pain inhibits muscle contraction and the muscles go into spasm giving rise to additional pain and restricting the general mobility of the spine and exercises reduces the occurrence of muscle spasm.[10] Core stability exercises are advocated for strengthening lumbar multifidus muscles and adequate strength of these muscles affords segmental stability. This prevents abnormal translation of the articular surfaces, thereby averting the occurrence of back pain in the future.[7] Our patient was advised the same and probably it helped his early return to functional activities.

Patient education with respect to back care is highly recommended[5] and significant time was spent to educate the patient in relation to his condition, immobility, posture, activities of daily living and prognosis of his condition.

## Conclusion and Recommendation

The maneuvers used for the treatment of central low back pain in this report provide preliminary evidence of their effectiveness. Studies with inclusion criteria of "central back pain" without "Neurological sign" in the acute care setting are recommended to explore the benefits of this type of manual therapy maneuver.

**Disclaimer:** None to declare.

**Patient Consent:** Patient consent for publication of this case was taken.

**Conflict of Interest:** None to declare.

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