

Case Report

# Integrated Manual Therapy Management of Acute Mechanical Low Back Pain: A Case Report

Naveen Ganer<sup>1</sup>, Aman Raj<sup>2</sup>

<sup>1</sup>Senior Manual Therapist, <sup>2</sup>Manual Therapist,  
Jindal institute of Medical Sciences, Hisar, Haryana (India).  
Jindal institute of Medical Sciences, Hisar, Haryana (India).

Corresponding Author: Naveen Ganer

Received: 24/12/2016

Revised: 09/01/2017

Accepted: 16/01/2017

## ABSTRACT

Low back pain (LBP) is one of the most common disabling musculoskeletal conditions dealt by the physiotherapists worldwide with different means or modalities. The Integrated Manual Therapy (IMT) is a rising concept which is a combination of various manual therapy concepts or philosophies for managing various musculoskeletal conditions. Present case study describes a 42 year-old mesomorphic male with a history of acute mechanical low back pain. Application of IMT in his condition resulted in better outcome in minimum possible time.

**Key words:** integrated manual therapy, low back pain, acute, mechanical.

## INTRODUCTION

Low back pain (LBP) is the pain localised below the twelfth rib and above the inferior gluteal fold with or without leg pain (Anderson JA, 1986). <sup>[1]</sup> LBP can be specific or non-specific. Epidemiologically (Frymoyer, 1988) it can be acute (<6 weeks), subacute (>6 weeks but <3 months) and chronic (>3 months). 60-80% of population must have experienced low back pain once in their lives. <sup>[2]</sup> In India Bindra et al reviewed 42 researches via computer based data analysis that have been published from 2001-2013. They found a prevalence of 6.2% to 92% of back pain depending upon the population under study. There was gradual increase in pain with increase in the age. Females were affected more than males. <sup>[3]</sup> Hameed PS screened 400 IT professionals (age: 25-40 years, time spent on computer: >5 hours) from Coimbatore (Tamil Nadu) via questionnaire. In that study they found 54% of male and 42% of

females was suffering from low back pain. <sup>[4]</sup> So the LBP is quite common disabling musculoskeletal condition worldwide.

## CASE REPORT

The following case describes a 42 year-old mesomorphic male with a history of an acute LBP which was mechanical in nature. The pain was more on left side. The pain was worse on bending backward or forward or at sides, transition from sitting to standing, sitting more than 15 minutes, standing more than 30 minutes and walking for a distance of approximately 50 metres. The pain was settle down once the patient lay down on bed or by application of any ointment on lower back. There was no neurological deficiency and SIN was moderate.

## Physical Examination

On examination he was having flat back posture but it was not classical as he

had flat lower lumbar with hyperlordotic lower thoracic and upper lumbar segments. On deep palpation paraspinal muscles were tight and painful especially on left side of lower back and pain radiated upto the left hip. Rest of the information is given below.

**Pain and Disability [5-7]**

We had used Leeds Assessment of Neurological Signs and Symptoms (LANSS) score to check suitability of patient to manual therapy. We had also used Visual Analogue Scale (VAS) for measuring pain and Modified Oswesrty Disability Questionnaire for measuring disability of the patient. His LANSS, VAS and MODQ scores were 5, 8 and 46% respectively on day one still severity, intensity and nature of pain was moderate.

**Active Movements (refer figure-1)**

- ▶ Forward bending: Initial range restriction
- ▶ Backward bending: Initial range restriction
- ▶ Side bending right: End range stretch
- ▶ Side bending left: Mid-range pain
- ▶ Rotation right: End range restriction
- ▶ Rotation left: Full and pain free

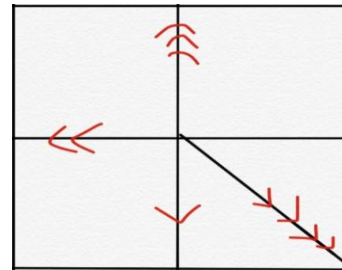


Figure-1 Showing Movement Graph

**Combined Provocative Movements(refer figure-2)**

Extension + side bending to left + rotation to right

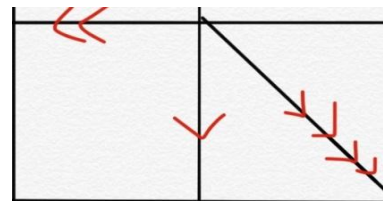


Figure-2 Showing Provocative Combined Movement Graph

**Passive Physiological Intervertebral Movements (PPIVMs) and Passive Accessory Intervertebral Movements (PAIVMs) [8,9]**

Restricted movement at L3/4, L4/5, L5/S1. PAIVMs (refer figure-3)

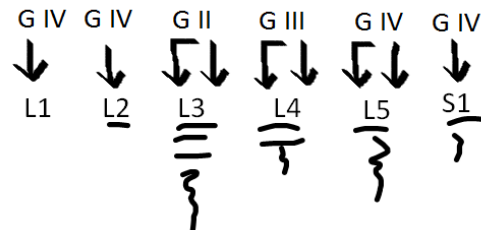


Figure-3 showing the PAIVMs at reference vertebrae

Table-1 showing treatment strategies

Session 1	Session 2	Session 3
<ul style="list-style-type: none"> <li>➤ Grade 3 PA and left lateral glides (except for L3) in neutral</li> <li>➤ Extension SNAG in prone for extension</li> <li>➤ Extension SNAG in prone for side bending</li> <li>➤ Side bending to left in side lying</li> <li>➤ Right Rotational thrust in side lying</li> <li>➤ Active side bending with right rotation</li> <li>➤ Exercises:                             <ul style="list-style-type: none"> <li>➤ Active extension on elbows in prone</li> <li>➤ Active extension in standing</li> <li>➤ Active side bending to either side</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>➤ Grade 3 PA and left lateral glides in extension</li> <li>➤ Extension SNAG in prone for extension</li> <li>➤ Extension SNAG in prone for side bending</li> <li>➤ Side bending to left in side lying</li> <li>➤ Right Rotation in side lying</li> <li>➤ Self-SNAG for extension in standing</li> <li>➤ Exercises:                             <ul style="list-style-type: none"> <li>➤ Core activation</li> <li>➤ Prone on elbow</li> <li>➤ Bridging</li> <li>➤ Lumbar rolls</li> <li>➤ SLR in prone with gluts squeeze</li> <li>➤ Active extension</li> <li>➤ Active side bending</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>➤ Grade 4 PA and left lateral glides in extension and left side bending</li> <li>➤ SNAG in standing                             <ul style="list-style-type: none"> <li>➤ Extension</li> <li>➤ Side bending</li> <li>➤ Flexion</li> </ul> </li> <li>➤ Exercises:                             <ul style="list-style-type: none"> <li>➤ Core activation</li> <li>➤ Prone on elbow</li> <li>➤ Bridging</li> <li>➤ Lumbar rolls</li> <li>➤ SLR in prone with gluts squeeze</li> <li>➤ Active extension</li> <li>➤ Active side bending</li> </ul> </li> </ul>

### Treatment strategies [8,10-12]

The patient was offered Integrated Manual Therapy (IMT) every alternate day for his condition. IMT included Maitland's graded mobilisations, Mulligan's movement with mobilisation (MWM), high velocity low amplitude thrust manipulation (HVLATM) and McKenzie's extension exercise with core activation (refer table-1).

### RESULTS

At the end of third session (within one week) all movements were functionally full and pain-free moreover pain as well as disability went down dramatically (refer figure-4).

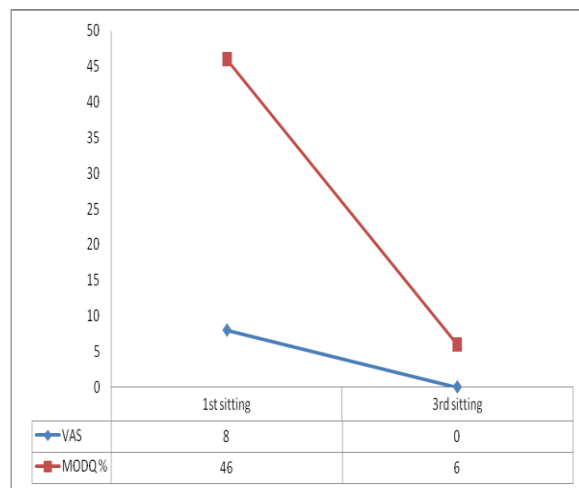


Figure-4 showing changes in the pain and disability

### DISCUSSION

Physiotherapists in developed countries are following orthopaedic manual therapy concepts like McKenzie protocol, Maitland's protocol etc. along with therapeutic exercises and reassurance to return their clients to normal activity. A data from 186 Indian physiotherapists with a clinical experience: 5-10 years explored treatment choices among them. The study showed that Indian physiotherapists prefer thermoelectric modalities, ergonomic advices and exercises more as a choice for treatment to their clients while only few physiotherapists reported the use of manual therapy. [13] But now a days their preference is changing. Indian physiotherapy is changing upside down since last decades.

Present case study is an example of this change.

This study showed with just three treatment sessions of IMT there were dramatic improvement in patient's physiological movements, pain and disabilities. Similar results were reported when combination of HVLATM in combination with non-thrust manipulation and mobilization were applied in numerous clinical condition of human spine i.e. cervicogenic headache, neck pain, dorsal pain, low back pain etc. [14-16] but acute musculoskeletal conditions were hardly reviewed. This case study demonstrates the importance of IMT which combined different streams simultaneously for diagnosing and treating acute mechanical LBP.

### REFERENCES

1. Wolf AD & Pflieger B. Bone and joint decade 2000-2010. Bulletin of WHO 2003; 81(9):646-656.
2. Truchon M. Determinants of chronic disability related to the low back pain: Towards an integrated biopsychological model. Disability rehabilitation 2001; 23(17): 758-767.
3. Bibndra S, Sinha AGK, Benjamin AI. Epidemiology of low back pain in Indian population: A review. International journal of basic and applied medical sciences 2015; 5(1): 166-179.
4. Hameed PS. Prevalence of work related low back pain among Informational technology professionals in India: cross sectional study. International journal of scientific and technology research 2013; 2(7): 80-85.
5. Bennet M. The LANSS pain scale: the leads assessment of neuropathic symptoms and signs. Pain 2001; 92:147-157.
6. Myles PS, Troydel S, Boquest M. The pain visual analogue scale: is it linear or non-linear? Anesthesianalg 2005; 89:517-520.
7. Davidson M, Keating JL. A five low back disability questionnaires: reliability and responsiveness. Physical therapy 2002; 82(1): 8-24.

8. Olson KA. Manual therapy of spine. Saunders publications, Elsevier 2009.
9. Abbott JH, McCane B, Herbison P, Moginie G, Chapple C, Hogarty T. Lumbar segmental instability: a criterion related validity study of manual therapy assessment. *BMC Musculoskeletal disorders* 2005; 6:56.
10. Hing W, Hall T, Rivvet D, Vicenzino B, Mulligan B. *The Mulligan concept of manual therapy: textbook of techniques.* Elsevier 2014; Chapter 10: 485-546.
11. Nambi SG, Inbasekaran D , Khuman R, Devi S, Satani K. Clinical effects of short and long lever spinal thrust manipulation in non-specific chronic low back pain: A biomechanical perspective. *International Journal of Health & Allied Sciences* 2013; 2(4): 230-236.
12. Dunsford A, Kumar S, Clarke S. Integrating evidence into practice: use of McKenzie based treatment of mechanical low back pain. *Journal of multidisciplinary healthcare* 2011; 4: 393-402.
13. Fidvi N & May S. Physiotherapy management of low back pain in India- a survey of self- reported practice. *Physiotherapy research international* 2010; 15(3):150-159.
14. Ganer N. Multidisciplinary manual therapy management of cervicogenic headache: a case report. *International journal of health sciences and research* 2015; 5(5):562-569.
15. Ganer N, Kulandaivelan S, Malik M. Thoracic spine manual therapy and regional interdependence. *International journal of health sciences and research* 2016; 6(5): 337-344.
16. Ganer N. Non-thrust manipulation for cervicogenic headache: a case report. National conference of recent advancement in Allied Health Sciences organised by department of physiotherapy of Guru Jambheshwar University of Science & Technology in 2015.

How to cite this article: Ganer N, Raj A. Integrated manual therapy management of acute mechanical low back pain: a case report. *Int J Health Sci Res.* 2017; 7(2):362-365.

\*\*\*\*\*