Intervertebral Disc Prolapse: Comparison between Two Manual Techniques

Tanushree Neral, Monalisa Pattnaik and Patitapaban Mohanty*

Department of Physical Therapy, Swami Vivekanand National Institute of Rehabilitation Training and Research, Cuttack, India

***Corresponding author:** Patitapaban Mohanty, Ph. D, Associate Professor, Department of Physical Therapy, Swami Vivekanand National Institute of Rehabilitation Training and Research, Olatpur, Bairoi, Cuttack, India, Tel: +91-9437487139; Fax: +91-671-2805862; E-mail: ppmphysio@rediffmail.com

Rec date: June 03, 2016**; Acc date:** July 12, 2016**; Pub date:** July 22, 2016

Abstract

Background: Low Back pain is one of the most common medical problems and lumbar disc prolapse is estimated to account for approximately 37% of cases of low back pain.

Purpose: To compare McKenzie repeated extension and Cyriax concept in intervertebral disc prolapse.

Method: 30 subjects with acute or subacute low back pain were recruited and randomly divided into two groups. Group I received McKenzie listing correction followed by repeated extension exercises and Extension Mobilization. Group II received Cyriax listing correction followed by Traction. Total duration of treatment was 2 weeks i.e., 5 days/ week.

Results: Both the groups showed reduction in pain and improvement in ROM over time but there was no significant difference between the 2 groups.

Conclusion: The study suggests that both McKenzie and Cyriax approaches are effective without significant difference between them in managing low back pain, function and range of motion of lumbar spine in patients with Prolapsed Intervertebral Disc.

Keywords: Low Back pain; Lumbar spine; Iliac spines; Muscle tension; Sciatic nerve; Intervertebral disc

Low Back pain is one of the most common medical problems that cause a signiŽcant amount of disability and incapability. Being the most common structure to be affected, the intervertebral disc is prevalent source of low back pain. The main feature of back pain is pain in the lumbar region, often accompanied by restriction in range of motion and functional limitations.

Lumbar disc prolapse is estimated to account for approximately 37% of cases of low back pain. Back pain and its related disability cause an important socioeconomic burden to society [1]. It is a signiŽcant cause of time of work [2].

Over the last decades there has been increasing evidence of links between manual therapy and its effect on acute low back pain due to prolapsed intervertebral disc.

McKenzie developed a system of assessment and treatment for back pain based on symptom response to spinal loading [3]. According to

Patient diagnosed as low back pain due to prolapsed intervertebral disc in the Magnetic Resonance Image (MRI), presence of dermatomal pain distribution radiating below knee or leg characterized by unilateral radiculopathy and obliterated lumbar lordosis, acute or subacute, i.e. low back pain less than 12 weeks of duration or recurrent episodes of pain, positive straight leg raise, patient's symptoms centralizing with repeated extension movements.

Contraindications to manual therapy.

Random.

Pain by VAS: Horizontal visual analog scale (VAS) was used. It is shown to be valid and sensitive [5,6] and has a reasonable degree of reproducibility [7].

Dependent variable		Effect for Time	Effect for Group	Group x Time interaction
Pain (VAS)		F(1,28,0.05)=297.654, P=0.000	F(1,28,0.05)= 1.493, P=0.232	F(1,28,0.05)=4.651, P = 0.052.
ROM	Flexion	F(1,28,0.05)=673.273,P=0.000	F(1,28,0.05)=0.384,P=0.541	F(1,28,0.05)=0.766, P=0.389
	Extension	F(1,28,0.05)=233.739,P=.000	F(1,28,0.05)=0.150,P=0.701	F(1,28,0.05)=0.766, P=0.389
Oswestry Disability		F(1,28,0.05)=293.528,P=0.000	F(1,28,0.05)=1.034,P=0.318	F(1,28,0.05)=3.130, P=0.088

Table 1: Main effect for the time.

At least the outer third of the annulus Ẑbrosus is innervated and there are evidences that in painful and degenerated discs, the innervation is more extensive. Internally displaced disc tissue, perhaps a precursor to full herniation, may press directly on the painful outer

Mechanism by which McKenzie group improved in extension range of motion may be attributed to the fact that, correction of lateral shi f

15. Meszaros TF, Olson R, Kulig K, Creighton D, Czarnecki E (2000) E f ect of 10%, 30%, and 60% body weight traction on the straight leg raise test of symptomatic patients with low back pain. J Orthop Sports Phys T er 30: 595-601.
16. Wieting JM (2005) Massage, Traction, and Manipulation. Medscape.
17. Werners R, Pynsent PB, Bulstrode CJ (1999) Randomised trial comparing interferential therapy with motorized lumbar traction and massage in management of low back pain in a primary care setting. Spine (Phila Pa 1976) 24: 1579-1581.
18. Armstrong JR (1965) Lumbar disc lesions, (3rd edtn). Williams and Wilkins, Edinburgh, Livingstone.
19. McKenzie RA (1981) T e lumbar spine. Mechanical diagnosis and therapy. Spinal publications, Waikanae, New Zealand.
20. Youssef J, Davidson B, Zhou BH, Lu Y, Patel V, et al. (2008) Neuromuscular neutral zones response to static lumbar ẑexion: Muscular stability compensator. Clin Biomech (Bristol, Avon) 23: 870-880.
21. Laslett M (2009) Manual correction of an acute lumbar lateral shi f : maintenance of correction and rehabilitation: a case report with video. J Man Manip T er 17: 78-85.
22. McGill SM, Kippers V (1994) Transfer of loads between lumbar tissues during ẑexion-relaxation phenomenon. Spine (Phila Pa 1976) 19: 2190-2196.
23. McKenzie RA (1972) Manual correction of sciatic scoliosis. N Z Med J 76: 194-199.
24. Santolin SM (2003) McKenzie diagnosis and therapy in the evaluation and management of a lumbar disc derangement syndrome: A case study. J Chiropr Med 2: 60-65.
25.