



ROLE OF SOME UNIQUE APPROACHES OF PHYSIOTHERAPY FOR THE MANAGEMENT OF GRIDHRASI (SCIATICA)

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ABSTRACT

Gridhrasi (Sciatica) involves lower back pain due to the compression of sciatic nerve. It possess shooting or burning pain from the lower back from hip to the feet resulting difficulty in to sit, to walk and to lay in bed. Sciatic pain may be occurring due to the damaged discs, inflamed tissues around the nerve and most commonly due to the compression of nerve. The traditional science of medicine ayurveda described many treatment options for sciatica including *yoga* and physiotherapy. The physical exercise offers significant relief in symptoms associated with lower back pain and even many studies have proved the efficacy of physiotherapy in sciatica pain, considering this fact there is a need to explore the role of physiotherapy in sciatica as non-invasive and non-medicated approach of medical science thus this article summarizes contribution of physical exercise for the treatment of sciatica.

KEYWORDS: Sciatica, physiotherapy, lower back pain, nerve.

INTRODUCTION

Gridhrasi (Sciatica) is characterized by pain in the lumbo-sacral region, radiating to the lower limb through buttock, and thigh. Sciatica occurs more in men as compared to women after the age of 30 years or over. *Gridhrasi* symptomatically involve onset of *ruka* (pain), *stambha* (stiffness) and *toda* (pricking sensation) initially

in *sphika* and then radiating distally to *kati-prishtha*, *janu*, *jangha* and *pada*. As per ayurveda *gridhrasi* occurs due to the *kapha* & *vata dosha* which together produces symptoms like *tandra*, *gaurava* and *arochaka*. *Gridhrasi* can be classified into two types; *Vataja* and *Vatakaphaja Gridhrasi*^[1-3].

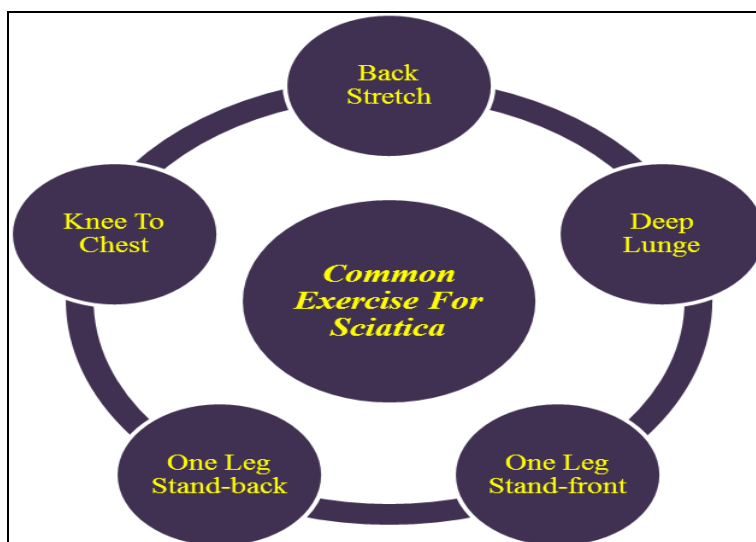


Figure 1. Some Common Exercise for Sciatica

Ayurveda suggested various therapeutic approaches for the treatment of disease along with yoga or physiotherapy. The present article emphasizes role of physical means for the treatment of sciatica:

NEURAL MOBILISATION

The term sciatica used to describe symptoms of pain of the lower limb. It is caused by the compression of nerve. Various researchers mentioned neural mobilization as manual therapy to combat sciatica. This manual method utilizes to restore the mechanical function of impaired neural tissue (intra and extra neural impairment). Sarkari et.al. conducted a study to observe efficacy of neural mobilization in sciatica, patients were treated with neural mobilization along with conventional treatment and pain was assessed using goniometer and visual analog scale.

Procedure

Neural mobilization was given for 10 minutes including 30 sec hold and 1 min rest. The longitudinal tension was induced by straight leg rising, the leg was lifted upward for maintaining extension at the knee. The leg was raised past 35 degrees to induce dural motion through the sciatic nerve; in order to take up slack in the nerve. Hip adduction was added to the straight leg raise to introduce additional sensitization into the proximal aspect of the sciatic nerve. The total average treatment time was 30-40 minutes per session and the whole treatment was given for 9 sessions.

The result of study concluded neural mobilization as effective technique to increase range of hip motion and decreasing pain thus reducing the symptoms of sciatica. The efficacy of neural mobilization may be attributed to the fact that it restores normal mobility and length relationship. Neural mobilization also maintains blood flow and axonal transport dynamics in compromised neural tissue, it was found to be effective in breaking up the adhesions and bringing about mobility. Study proved that neural mobilization along with conventional treatment is very effective in relieving low back pain associated with sciatica^[4].

INVERSION THERAPY

The negative effects of gravity on spine due to compression which causes back pain and sciatica. The traditional science mentioned inversion therapy to overcome this problem. Inversion is used from ancient times for acquiring health benefits such as; re-balance body, increase blood circulations, stimulate brain, relieves pressure on abdominal organ, etc. Inversion therapy not only reduces pain but it also realigns vertebrae, rehydrate intervertebral discs and relax muscles.

Procedure

Inversion table is an adjustable platform which allows upright or inverted positioning of body. Basically it is done over a tilt table with a highly-polished slippery top on which the patient was attached by a pelvic harness that after body positioning inverted by tilting the table.

The construction of table allow patient to remain inverted for certain period of time.

Inversion therapy neutralizes gravity pressure on spine and it gives many health benefits including relief in backache and sciatica. Study proved inversion therapy as good alternative for spine related disease, the inversion condition cause gravitational pressure to be placed on the nerve roots, resulting in shooting pains in the back, buttocks, legs and feet. Inversion therapy turn body upside down to increase the space and reduce pressure between the vertebrae and nerve roots which gives decompression to the spine resulting abolishment of back pain which arise due to compression^[5].

TRANSCUTANEOUS ELECTRICAL NERVE STIMULATION

Study proved the efficacy of “transcutaneous electrical nerve stimulation” in sciatica patients. Transcutaneous Electrical Nerve Stimulation is a simple, non-invasive analgesic technique used exclusively by physiotherapists for the treatment of sciatica. The concept of this treatment is based on the gate-control theory of pain, which suggested that counter stimulation of the nervous system could modify the perception of pain.

Procedure

Patients received “Transcutaneous Electrical Nerve Stimulation” with frequency of 2Hz pulse duration of 0.2 ms intensity. Electrodes placed with Velcro straps on the affected leg as well as back in the course of Sciatic nerve. The angle and intensity of pain was measured by goniometer and visual analogue scale respectively.

Study proved that “Transcutaneous Electrical Nerve Stimulation” offers relief in Sciatica pain. The nerve stimulation also possesses significant improvement in the parameters like pain magnitude, neurological deficit, functional ability and functional disability, study observed improvement in the range of “Straight Leg Raising Test” in sciatica patient^[6].

PHYSIOTHERAPY^[7-8]

Physiotherapy exercises offers great relief in sciatic nerve pain and strengthen the back and core abdominal muscles:

Single knee to chest

Lay on back with straight legs using a pillow under knees. Knee Pull out into chest to feel stretch through the hip, buttock and into the back. The posture should be maintain for 30 seconds and repeat on the other side.

Back massaging circles

Lay on back, legs pulled towards chest. Circle knees in order to allow lower back for gentle massage.

Core muscle contractions

Lay on back with straight legs using a pillow under knees. Contract deep muscle which stabilizes spine. Hold for few seconds then release.

Lying twist

Lay on back with bent knees, flat feet on the floor. Stretch arms at shoulder height, away from body. Drop knees to one side and turn head to the other. Hold for 30 seconds and repeat on the other side.

Balance ball bridge

Lay on back with a balance ball under calves. Keep shoulders and neck on the ground and raise pelvis so that back and upper legs are in a straight line. Drop pelvis slowly to the ground. Repeat 10-15 times.

SOME PAIN RELIEVING YOGA POSES AS PER AYURVEDA

- **Marjariasana**
Cat-cow pose relieves pressure and increases mobility in the back.
- **Uttanasana**
Standing forward bend loosens the hips, stretching the hamstrings and lower back.
- **Janu Sirsasana**
Head to knee pose stretches the lower back and hips.
- **Supta Padangusthana**
Big-toe pose stretches the hamstrings and relieves lower back pain.
- **Baddha Konnasana**
A butterfly leg pose opens and loosens the hips.
- **Agnistambhasana**
Fire-log pose opens the hips.
- **Bharadvajasana**
Lower back twist loosens the back muscles.
- **Marichyasana**
Sage's pose loosens the back muscles.

REFERENCES

1. Vatavyadhi Chikitsa , Yog ratnakar with Vidyotini Hindi Commentary^{1st} edition 1998, by Dr. Indradev Tripathy & Dr. D.S. Tripathy published by Krishnadas academy, Varanasi.
2. Hilderth JC. Sciatica. JAMA, 2009; 302(2): 216.
3. Pt. Shastry KN, Chaturvedi GN. Charaka Samhita of Agnivesha (Vidyotini Hindi Vyakhya) Sutra Sthana, Maharoga Adhyaya, 20/11, Chaukhamba Bharati Academy, Varanasi, 2008; I: 399.
4. Sarkari, E. and Multani, N.K., Efficacy of Neural Mobilisation in Sciatica, Journal of Exercise Science and Physiotherapy, 2007; 3(2): 136-141.
5. Abhijeet A. Raut, S. T. Bagde, Inversion Therapy & Zero Gravity Concept: For All Back Pain Problems, International Conference on Advances in Engineering & Technology, 2014; 18.
6. Sabnam Hashmi, Abdul Rahim Shaik, Padma Kumar, Somasekharan Pillai, Comparison of Transcutaneous Electrical Nerve Stimulation and Kati Basti for Patients with Sciatica, Int J Cur Res Rev, 2015; 7(15): 44-48.
7. Moffett JK, Torgerson D, Bell-Syer S, Randomised controlled Trial of Exercise for Low Back Pain: Clinical Outcomes, Cost and Preferences. British Medical Journal, 1999; 319(7205): 279-283.
8. Nyiendo J, Haas M, Goodwin P. Patient Characteristics, Practice Activities, and One-Month Outcomes for Chronic, Recurrent Low-Back Pain Treated by Chiropractors and Family Medical Physicians: A Practice-Based Feasibility Study. Journal of Manipulative and Physiological Therapeutics, 2000; 23(4): 239-45.