Neurodynamic Test of Peroneal Nerve: Study of the Sensory Response in Patients with Lumbar Radiculopathy

Darshana Pravin Fursule*, Dr. Sanket Mungikar, Dr. Kapil Garg, Dr. Surendra K. Wani

MGM Institute of Physiotherapy, N-6 Cidco, Aurangabad-431003

*Corresponding author

ABSTRACT

Introduction: Neurodynamic tests (NDT) have shown to be useful in evaluating neural tissue involvement. Clinicians evaluate NDT using range of motion, sensory responses like location or quality of symptoms, Nerve conduction values and compare its results with normal values. Currently, there are no studies in lumbar radiculopathy patients that define the normal response to peroneal neurodynamic test (NDT_{PER}). The aim of the study was to study the sensory responses to neurodynamic testing of peroneal nerve in patients with lumbar radiculopathy.

Methods: It is cross sectional study design. NDT_{PER} was performed on 57 patients with lumbar radiculopathy. Hip flexion angle was taken at the onset of symptoms (P1) and point of maximally tolerated symptoms (P2), quality and distribution of symptoms were recorded. Sensory nerve conduction velocity (SNCV) measure was also noted in those patients.

Results: The descriptor of nature of sensory responses most often used by patients was tingling (28.07%) in the lateral foot (26.32%). Hip flexion was significantly higher at P2 than P1 (mean difference: 22.54 ± 3.73 º; 95% CI: 21.55 º, 23.54 º; p <0.0001). The SNCV of affected limb was marginally reduced but not statistically significant compared to contralateral limb (mean difference: -1.467 ± 0.8013; 95% CI: -3.054, 0.1209; p = 0.0698).

Conclusion: This study describes the hip angle at which symptoms are reproduced, nature and distribution of sensory responses to the NDT_{PER} in patients with lumbar radiculopathy. However, the sensory nerve conduction velocity of affected limb was reduced marginally but not statistically significant as compared to unaffected limb.

Keywords: NDT, Peroneal nerve, Lumbar radiculopathy

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