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The Effect of Core Strengthening Exercises and Sciatic Nerve Glides on 65 Year-Old Female with Low Back Pain and Lower Extremity Radicular Symptoms: A Case Report

Alex Bennett
Governors State University

THE EFFECT OF CORE STRENGTHENING EXERCISES AND SCIATIC NERVE GLIDES ON 65 YEAR-OLD FEMALE WITH LOW BACK PAIN AND LOWER EXTREMITY RADICULAR SYMPTOMS: A CASE REPORT

By

Alex Bennett

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Governors State University

University Park, IL 60484

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ABSTRACT

Background/purpose*:* Low back pain is the single leading cause of disability worldwide and is frequently accompanied by numbness, tingling, and burning sensation in the lower extremities. Oftentimes, LBP with lower extremity symptoms is treated with core stabilization exercises and nerve gliding activities, but limited research exists for the use of nerve glides for radicular lower extremity pain*.*

Case Description*:* The patient was a 67 year-old female with a chronic episode of LBP and left lower extremity sciatic pain. The patient's symptoms included pain in the lower back and posterior thigh after sitting, standing, or ambulating for more than 10 minutes.

Outcomes*:* Patient completed 15 outpatient treatment sessions and showed a considerable decrease in LBP as evidenced by a clinically significant improvement in score on the Modified Oswestry survey. She also demonstrated an increase in bilateral multifidus strength as well as reports of decreased pain and reduction in lower extremity symptoms after the use of sciatic nerve glides.

Discussion*:* The subject's decreased pain and reduced frequency of lower extremity radicular symptoms are indicators of increased core stability and improved postural habits. Sciatic nerve glides helped reduce lower extremity radicular symptoms and pain. Future research can help to determine the preferred treatment methods for patients with LBP and lower extremity radicular symptoms.

BACKGROUND AND PURPOSE

Low back pain (LBP) has been determined to be the single leading cause of disability worldwide.[1] Moreover, LBP is most prevalent in women and in people between the ages of 40 to 80 years old.[1] LBP has been connected to adults with decreased physical and mental health when compared to adults without LBP.[2] Additionally, LBP has been shown to result in restrictions in social activities as well as alterations in lifestyles of those affected.[3,4]

Causes of LBP include pathophysiological mechanisms such as hernia nuclei pulposi, infection, osteoporosis, rheumatoid arthritis, fracture, or tumor, or other non-specific mechanisms that are without a clear cause.[5] LBP is often described with an assortment of accompanying symptoms. These symptoms might include numbness, tingling, or burning pain into the lower extremities, tightness in the low back, or even bladder and bowel difficulties.[6] It is recommended to classify LBP under one of three categories: non-specific LBP, back pain potentially associated with radiculopathy or spinal stenosis, or back pain associated with another spinal cause.[7] By doing this, it becomes easier for the physical therapist to formulate a plan of care and choose appropriate interventions to assist in the rehabilitative process.

Certainly, the effects of LBP and its symptoms have been well-documented. Exercise plans have commonly been prescribed as a method to reduce and eliminate chronic LBP along with any accompanying symptoms.[8] Most of the research in existence supports the use of core stability exercise in the treatment of chronic LBP.[9] In particular, core stabilization exercise regimens have been found to be more effective than exercise programs in treating pain and chronic LBP in the short-term although no long-term differences have been documented.[10]

Yet, scarce research exists regarding physical therapy interventions on patients with LBP and accompanying radicular symptoms in the lower extremities. Overall, no research exists investigating lower extremity nerve glides. Particularly, the use of sciatic nerve glides to reduce and eliminate radicular symptoms in the lower extremities has received very little attention. Thus, the use of a core stabilization regimen as well as sciatic nerve glides can serve to increase the current literature available with regard to interventions in patients with LBP and lower extremity radicular symptoms.

The purpose of this case report is to add to the existing body of literature in patients with LBP and radicular symptoms as well as describe unique core and trunk stabilization regimens that incorporate sciatic nerve

glides in an effort to reduce patient symptoms and return patient to prior level of function.

CASE DESCRIPTION

Subject History

Patient was a 67 year-old Caucasian female that fell in her driveway one year ago and fractured one of her left ribs. The patient began experiencing pain in her left hip and down into her left ankle two months later. At that time, the patient sought the care of her primary physician and was referred to a specialist. An MRI was completed by the specialist at that time and revealed a bulging disc in the lower back. The patient received a cortisone injection to decrease her symptoms, and subsequently sought care from a chiropractor. Initially, the techniques of the chiropractor reduced her symptoms, but the relief was temporary as the patient's previous symptoms returned 2 months prior to seeking current physical therapy recommended by her primary physician.

The patient had been living with her son and grandson in a 3-story home, and she had been going to the gym 3 times per week until 2 weeks prior to the PT evaluation. Her exercises at the gym primarily consisted of the elliptical machine, upright stationary bike, and occasional use of resistance machines. Prior medical history included gastric bypass surgery

40 years prior, a left shoulder fracture 15 years ago, and history of asymptomatic asthma. At the initial evaluation, the patient reported pain in the left posterior thigh down through the posterior lower leg and into the ankle that worsened when sitting, standing, or walking for greater than 10 minutes. The patient expressed difficulty with cooking, household chores, and ADLs. Additionally, the patient reported that radicular symptoms were present four to five times per week. Because of the patient's year-long duration with her symptoms as well as the knowledge of her injury and its repercussions, the patient was highly motivated to complete the necessary physical therapy to return to her prior level of function and reduce the pain she had been experiencing. Ultimately, the patient's goals included reducing and eliminating her pain as well as being able to complete household chores and activities in a timely manner without limitations.

Systems Review

The patient had a normal cardiopulmonary and integument profile. The neuromuscular system was impaired as seen with some deficits in gross coordinated movements, specifically with balance and gait. Musculoskeletal deficits were observed with patient's slouched posture during ambulation, standing, and sitting. Neuromuscular deficits were also observed in gross coordination with some gait disturbances as seen in difficulty maintaining balance. The patient had difficulty moving from a seated to standing position as evidenced by shakiness and trunk rotation to assist in the transfer. The

patient described symptoms of pain in her lower back and throughout the posterior aspect of her left lower extremity with a rating of 5/10 on the Numerical Pain Rating Scale.[11] The patient demonstrated unimpaired cognition levels for person, place, and time.

In order to determine the extent of SI joint involvement, the standing shear test, sidelying shear test, and compression test were all assessed for positive results. The shear tests, also referred to as the posterior pelvic pain provocation test or the thigh thrust test, have strong sensitivity(.88) and moderate specificity(.69).[12] Additionally, the compression test reports moderate sensitivity(.69) as well as moderate specificity(.69).[12]

Examination

The study commenced by recording findings from the initial evaluation and subsequent evaluations at each visit depending on the exam. The Modified Oswestry score was employed at the first and tenth visit to compare objective measurements of the patient's low back pain in her daily life.

Tests & Measures

The patient had positive tests for the standing shear test, sidelying shear test, and the compression test. Additionally, the patient demonstrated poor body mechanics as seen with poor sitting and standing posture as well as difficulty with transitions from sitting to standing. Due to potential weak

core and trunk musculature as evidenced by poor postural control, the patient presented as a strong candidate to receive core strengthening exercises in an attempt to decrease LBP.

MMT for the lower abdominal muscles or any of the abdominal musculature was not performed, however. Also, the patient was able to reach towards the ground with legs straight and touch the ground with her palms, which is a common symptom of hypermobility.[13]

The patient had a chart depicting the posterior aspect of the human body and she was instructed to color in the areas where she experienced her symptoms. The patient described tingling and numbness in the posterior aspect of the left lower extremity, and she also filled this in on her chart. The patient's poor body mechanics with standing and sitting posture as well as stiffness and tingling or numbness feelings were suggestive of hypermobility in the lumbar vertebrae. As a result, the tests & measures as well as the interventions were focused on measures of stabilization of the lumbar segments and strengthening of the surrounding musculature.[14]

Pain

This score was taken from the Numeric Pain Rating Scale (NPRS), which rates pain from 0 to 10 (0 being no pain and 10 being extreme and unbearable pain).[11] Total scores for the NPRS can range from 0 to 50 with 50 indicating severe impairment or disruption in ADLs. The minimal

detectable change (MDC) is valued at 2 points while the minimally clinically importance difference (MCID) equals 1.5 points after 1 week and 2.2 points after 4 weeks.[11] The NPRS has been found to have excellent responsiveness (effect size of 0.95 to 1.20) in patients receiving PT for LBP as well as excellent internal consistency (0.84).[11,15] Patient rated pain as 5/10 for the first visit.

Adverse Neural Tension

This rating was taken with the patient in sitting and having the patient extend one leg. The patient was instructed towards trunk flexion and cervical flexion. The physical therapist applied overpressure with dorsiflexion of the extended leg and increased cervical flexion. If the patient experienced pain near the back of the knee or in the posterior lower leg, the patient was asked to extend her head from this position. If the pain diminished, this meant the relief stemmed from decreased nerve tension rather than hamstring stretch.[16] Ratings could either be positive or negative. This test has been shown to have excellent sensitivity (0.84) as well as excellent specificity (0.83).[17] Additionally, this test has been found to have strong correlation (r=0.64) to the straight leg raise in patients with leg pain that is intensified with dorsiflexion.[18] Patient showed positive results on the left side at first visit, indicating a reduction in symptoms through cervical extension with passive gliding of the left sciatic nerve.

MMT for Multifidus

Although the psychometrics of MMT in patients with LBP has not previously been investigated, MMT has been found to have excellent test-retest reliability in patients with osteoarthritis for right and left grip strength (0.98 and 0.97, respectively).[19] Contraction of the unilateral multifidus was measured with the patient in prone. The patient was asked to raise her contralateral leg while the PT palpated the unilateral multifidus with techniques described by Kendall.[20] The PT was able to apply force to the leg to judge the strength of the multifidus. Initially, the patient was a 3/5 for multifidus strength.

Modified Oswestry

This is a 10-item questionnaire designed to objectively demonstrate how low back pain is affecting one's everyday life. Each question can be answered on a scale ranging from 0-5 with 0 being none or relatively mild impairment and 5 being the high levels of impairment. The questions are sorted into 10 categories and include *pain intensity, personal care, lifting, walking, sitting, standing, sleeping, social life, traveling, and employment/homemaking*.[21] Research indicates that the Modified Oswestry has a minimally clinically important difference of 6 as well as greater test-retest reliability and responsiveness compared to the Quebec Back Pain Disability Scale.[21] The patient scored an 18/50 on the first day.

Goals

Goals were initiated based on the results of the systems review and tests & measures taken at the initial exam. The structure of the goals was as follows:

1. Reduce pain on the NPRS by 4 points in 8 weeks in order to complete ADLs without pain
2. Decrease score on the Modified Oswestry survey by 10 points in 8 weeks in order to more safely complete ADLs
3. Increase bilateral multifidus MMT from 3/5 to 4+/5 in 8 weeks in order to improve postural control in all situations

PT Diagnosis

The patient's symptoms suggest diagnoses of poor postural control and maintenance as seen with slouched or non-upright posture, impaired posture during sitting and ambulation, moderate levels of pain, decreased ability to complete ADLs, and low back limitations and restrictions (Modified Oswestry score of 18/50). The patient also showed gait disturbances as she had poor motor control in the lower extremities and lost her balance. Because of the patient's segmental hypermobility of the lumbar spine and the difficulty returning to upright standing after bending forward, this is suggestive of lumbar instability.[22]

Prognosis

The patient had relatively few comorbidities, a high prior level of function with very few restrictions and limitations, experience with working out at her local gym, and motivation to reduce her pain and complete home exercises. Thus, the patient demonstrated good rehabilitation potential and 8 weeks of physical therapy began at 2X/week for an hour each visit in an effort to reduce pain and improve ability to perform ADLs immediately.

Clinical Impression

According to the Guide to Physical Therapy Practice, the appropriate category for this patient is Musculoskeletal Practice Pattern 4F: Impaired Joint Mobility, Motor Function, Muscle Performance, ROM, and Reflex Integrity Associated with Spinal Disorders.[23] Disc herniation accompanied by abnormal neural tension can be categorized here. Other listed impairments can include difficulty sitting for prolonged periods and muscle weakness.

The patient's symptoms, although moderate, restricted her from completing ADLs without pain. Moreover, she was able to complete exercises and showed the potential for being able to perform home exercises without constant supervision. The patient agreed to begin outpatient PT with the goals of reducing her low back pain, eliminating the radicular symptoms in her left lower extremity, and returning to prior level of function.

Interventions

After each session, all interventions were documented as the interventions that were utilized at that date. The patient attended approximately 15 of her 20 sessions, missing 5 sessions for personal reasons. However, the missed visits are not listed. In table 1 below, the numbers to the left represent visit number while the letters on top indicate the applied interventions. These are marked by the letter "X". An intervention key is below the chart.

Table 1. Applied Interventions by Visit

	A	B	C	D	E	F	G	H	I	J	K
1	X	X	X								
2	X	X	X	X	X		X				
3	X	X	X	X	X		X				
4	X	X	X	X	X			X			
5	X	X	X	X	X			X			
6	X		X	X	X			X			
7	X	X	X	X	X			X			
8	X							X	X		
9	X		X	X				X	X		
10	X					X		X	X	X	
11	X					X		X	X	X	X
12	X					X		X	X	X	
13	X		X			X		X	X	X	

14	**X**		**X**	**X**		**X**			**X**	**X**	**X**
15	**X**					**X**		**X**	**X**	**X**	

Intervention Key for the Above Chart

A = Core Stabilization, **B** = Segmental Mob, **C** = Sciatic Nerve Glides, **D** = Stretching and AROM, **E** = Treadmill Training, **F** = Quadruped Rocking, **G** = Electrical Stimulation **H** = Trunk Stabilization on the Swiss Ball, **I** = Warm-Up Activity, **J** = Trunk Stabilization with Multifidus Sets **K** = Trunk Stabilization with Upper Quadrant or Leg Press Activities

Core stabilization exercises were considered of primary importance in the patient's treatment regimen. When treating low back pain, the transversus abdominus and multifidus muscles are typically thought of as the initial core stabilizers. Essential exercises to teach patients these concepts can include pelvic tilts, transversus abdominis contraction exercises by having a patient "blowing out a candle" exercises, and blood pressure cuff exercises in supine.[24,25]

Segmental mobilization at the lumbar segments was performed with the patient in sidelying and one hand at the identified lumbar vertebra spinous process where the patient described pain. The techniques were performed in concordance with the methods described by Cramer et al..[26] Oftentimes contra-indicated in patients with hypermobility, these were primarily utilized in an effort to provide gentle distraction and alleviate LBP.

Sciatic nerve glides were utilized in many instances in an effort to reduce lower extremity radicular symptoms in the posterior thigh. These

were performed with the patient in either supine or sidelying, depending on patient comfort. The lower extremity that was experiencing symptoms was brought into hip flexion until either symptoms occurred or the muscle became taut. The physical therapist then passively provided dorsiflexion and plantarflexion in an attempt to mobilize the sciatic nerve in efforts to alleviate any irritation or symptoms.[17]

Stretching was performed when the patient complained of tightness in the hip musculature. Emphasis was placed on the bilateral hamstrings as well as the external rotators of the hips. This was carried out in supine and was performed similar to the techniques described in Kisner & Colby.[27] The patient was passively stretched, maintaining a 15 to 30 second hold for 2 repetitions, bilaterally. AROM exercises focused on hip movement on all kinematic planes as well as some knee ROM. Some of the exercises to incorporate this movement included heel slides as well as hip abduction while in supine. These exercises were performed in 3 sets of 10 repetitions.

Body weight-supported treadmill training was a frequent component of treatment, initially. With treadmill training, the patient was placed in a harness with approximately 20 pounds of unloading and set to a walking speed that felt comfortable and did not elicit any of her symptoms.[28] The treadmill training served to offload the lower back and lumbar spine in an effort to mitigate pain.[28] This was an effective method for promoting a functional activity and incorporating core muscle activation.

Quadruped rocking was also used in an effort to stretch any of the lower back muscles and provide gentle relief to the lower back structures.[29] Sometimes, quadruped rocking incorporated functional movement patterns to reduce some of the pain or radicular symptoms the patient was experiencing. The functional movement patterns could be incorporated with the patient during quadruped or in a seated position. Functional movement patterns were performed by the physical therapist sliding the knuckles of both hands from the bilateral thoracolumbar junction near transverse processes down to the transverse processes of the superior aspect of the sacrum while the patient flexed forward at the lumbar spine. Quadruped rocking and exercises included tasks such as balancing a stick on the lumbar spine throughout the duration of the rocking.

Electrical stimulation in the form of interferential current has been found to be more effective for reducing pain than a control treatment as well as a placebo treatment according to a systematic review and meta-analysis.[30] Interferential current was administered as a means of pain reduction in the lower back after the patient reported soreness following treatment. 4 Electrodes were placed at the lower back, bilaterally, at the levels of L2 and S1 and 3 inches away from the spinous process. Additionally, the settings were adjusted to 1 mHz for the frequency and an amount between 1.0 and 1.5 W/cm^2 for intensity based on the patient tolerance. Electrical stimulation was set for 15 minutes.

Trunk stabilization exercises while sitting on the Swiss ball primarily consisted of upper extremity activity exercises rather than specific, active core strengthening exercises.[31] These upper extremity exercises incorporated light weights, usually around 2 pounds, since the point of emphasis was on the trunk stabilization and maintaining proper posture, neutral pelvic positioning, and decreased lumbar lordosis. Upper extremity exercises included shoulder press, shoulder flexion, shoulder abduction, shoulder horizontal abduction, scapular retraction, upper trapezius raises, bicep flexion, and trunk rotation. Throughout these exercises, focus was placed on maintaining upright posture and trunk stability.

Warm-up activity consisted of peddling at self-selected speed and resistance on the stationary bike for between 5 to 10 minutes. This was performed on days where the patient reported soreness before treatment.

Trunk stabilization with multifidus sets was performed with the patient in either prone position or quadruped positioning when the patient had advanced further. Prone positioning allowed for the patient to advance with one arm at a time followed by one leg at a time and opposite leg/opposite arm when the physical therapist determined that sufficient trunk stabilization was demonstrated at each level. The physical therapist palpated the multifidus to assure the patient was activating the multifidus during movements. Quadruped positioning allowed for the same advancement in

movements. The patient was instructed to complete 1 set of 10 repetitions with 5 second holds for each movement.

Trunk stabilization with upper quadrant of leg press activities included single leg press or double leg press activity on the weighted leg press machine with emphasis on maintaining activated core and trunk muscles. Other strengthening exercises such as upper quadrant activity with the upper trapezius or latissimus dorsi stretches were given. Upper quadrant activity for the upper traps was done with the patient standing with a rolled-up towel between her forehead and a wall. The patient was instructed to raise her arms up and reach as high as possible while maintaining full arm contact with the wall. Upper quadrant activity for the latissimus dorsi was performed with the patient standing next to a wall but facing away. The patient was instructed to bring her arms upward and above her head while reaching towards the wall behind her. 10 repetitions of each exercise were performed. Both upper quadrant activities placed a priority in maintaining active trunk and core musculature.

OUTCOMES

Typically, the patient attended physical therapy sessions twice per week for an hour each visit although, as she progressed and was able to perform more exercises independently, the patient was attending sessions

once per week. Occasionally, the patient was not able to attend her sessions due to various personal reasons. In total, the patient attended 15 sessions of the 20 she had scheduled. The patient was seen by the same physical therapist, but the physical therapist aide would sometimes assist to assure exercises were being completed properly. The patient returned for physical therapy once per week and had not yet been discharged upon my clinical termination.

Additionally, the patient exhibited greater bilateral multifidus strength as demonstrated by MMT ratings as well as greater trunk control and core strength seen with improved posture during sitting and ambulation and core stability exercises. The patient also described decreased severity and frequency of pain. The patient reported being able to complete activities of daily living and activities with her son without pain or symptom exacerbation.

By the final visit, the patient rated her pain as a 1/10 and reported it very rarely affected her daily routine. The patient also reported her radicular symptoms were happening only once a week, markedly less than reports of 3-4 times per week in her initial visit. By her last session, the patient had progressed to multifidus muscle strength of 4+/5 and showed greater endurance with her exercises. Initially, the patient scored an 18/50 on the Modified Oswestry. On the tenth visit, the patient scored a 5/50 and

demonstrated significant improvement as seen with the minimally clinically important difference needing to be at least 6.[18]

Table 2 is indicative of outcome measures of pain, adverse neural tension, MMT for the multifidus, and *Modified Oswestry* score on particular visit numbers. The initial evaluation was visit number 1 and so forth. Pain ratings were taken daily while adverse neural tension was taken upon the initial evaluation as well as the 15th treatment session. MMT for the multifidus was taken at each session, and the *Modified Oswestry* score was recorded in the initial evaluation and 10th visit in order to justify continued PT session to the insurance company.

Table 2. Outcomes by Treatment Session

Visit #	Pain (NPRS):0-10	Adverse Neural Tissue Tension	MMT Multifidus	*Modified Oswestry* Score
Initial Eval	5/10	(+)	3/5	18/50=36%
4	3/10		3/5	
8	2/10		3+/5	
10	2/10		4/5	5/50=10%
13	1/10		4/5	
15	1/10	(+)	4+/5	

Discussion

The above case represents a unique and individualized intervention plan consisting of 15 visits for 1 hour intervals over the course of 2 months for a patient with LBP and radicular symptoms in the left lower extremity.

The literature supports the use of core stability and core strengthening exercises in the treatment of LBP.[5,7,9,11] Nerve glides have received more attention in the treatment of upper extremity conditions. One study found the use of nerve glides in patients with carpal tunnel syndrome lead to quicker pain reduction and improved functional performance than conservative treatment alone.[32] Another case report found nerve glides reduced and eliminated radicular pain and improved functional ability in a patient with cubital tunnel syndrome.[33] However, nerve glides have been scarcely investigated in the treatment of lower extremity radicular symptoms. In this particular case report, the subject was experiencing chronic LBP accompanied by radicular symptoms in the left lower extremity.

Decreased pain, increased multifidus strength and trunk coordination, and a significant improvement in Modified Oswestry score suggest the patient made improvements and was able to carry out activities of daily living with much less difficulty. The patient was able to perform exercises on a regular basis at home. Moreover, the patient reported incorporating core stability emphasis while sitting and during ambulation during her days. The patient was adherent to prescribed exercises throughout the duration of her plan of care. Also, the patient demonstrated consistent upright posture and improved core strength and endurance as seen during ability to perform more repetitions and activate multifidus muscles detected through palpation during core stabilization exercises.

Although the patient made strides as seen in her decreased levels of pain, decreased frequency of radicular symptoms, increased core strength and trunk stabilization, as well as improved Modified Oswestry score, it is important to understand these results should not be generalized. Because this is a case report, it is essential to treat each patient individually based on his or her symptoms as well as the response he or she displays based on various methods of treatment.

An alternate explanation for the patient's success was that core and trunk stabilization exercises were the primary reason for improvement, as the patient improved postural endurance which could have taken pressure off of the nerve and lessened radicular symptoms. Thus, future research should be allocated to a greater population of individuals with LBP and radicular symptoms to determine the efficacy of a core stabilization program in conjunction with sciatic nerve glides.

Nerve glides, individually, in the treatment of lower extremity radicular symptoms have gone relatively uninvestigated. More research needs to be put forth into the role of nerve glides in the treatment of radicular symptoms. One study, using questionnaires, found that nearly 40% of people in an urban population experienced LBP while nearly 25% reported sciatic pain during the previous 6-month duration.[34] Thus, adding to the body of literature in existence with regard to physical therapy and sciatic nerve pain is imperative. Interestingly, more research exists in the

investigation of upper extremity nerve glides.[35] It is not clear if this is because more nerve injuries occur in the upper extremities or if occupational therapists consider the use of nerve glides for the upper extremities a commonality. A systematic review of randomized control trials investigating neural mobilization found that 8 of an identified 11 studies garnered positive benefits from the utilization of neural mobilization in treating neurodynamic dysfunction.[35] In this systematic review, only 1 of the studies used some form of lower extremity neural mobilization[36], but that study was 1 of the 3 to find inconclusive results for the efficacy of neural mobilization. Furthermore, the participants of the study were all post-op for lumbar discectomy, fusion, or laminectomy with no descriptions of radicular symptoms, which is a prime difference between this case report and that individual study.

This particular case report yielded support for the use of nerve glides in the treatment of lower extremity radicular symptoms. In order to clarify the results further, the primary exercise program could have consisted of traditional core stabilization exercises and nerve glides. Either way, more research should be put forth to investigate sciatic nerve glides and core stabilization exercises in their efforts to reduce LBP and radicular symptoms.

The purpose of this case study was to outline an individualized set of interventions focused on core stabilization, core strengthening, and nerve glides for a patient with LBP and lower extremity sciatic nerve pain. A

weakness of the case report was the patient did not attend all scheduled sessions. Additionally, case reports should not be generalized. Although the results of this case report cannot be generalized, it still serves as a strong reference for anyone wishing to carry out a randomized, control trial for patients with similar symptoms. This case study outlines an individual treatment plan based on the responses of a particular patient. More research still needs to be done to objectively establish the efficacy or nerve glides in reducing lower extremity radicular symptoms.

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