

CASE STUDY:

REHABILITATION OF A PATIENT WITH LOW BACK PAIN AFTER LUMBAR LAMINECTOMY

PATIENT:

55-year-old male referred to physical therapy for treatment of mechanical low back pain (LBP) and degenerative disc disease (DDD). He previously participated in a 2- month course of physical therapy at another facility, which resulted in the worsening of symptoms.

REHABILITATION:

Medical history: The patient underwent lumbar laminectomy secondary to radicular symptoms into left lower extremity (LLE). Surgery resolved the LLE symptoms, however the patient experienced low-level back pain. He participated in a course of physical therapy post surgically and was able to return to medium level work at a truck manufacturing plant for four months. At this point, the dull low back ache was progressively worsening to a subjective pain rating of 10/10. The patient returned to the surgeon and underwent a lumbar MRI, which revealed a stable surgical site. The patient was referred to physical therapy at another facility for 3 times a week for 8 weeks. During a subsequent follow-up with the surgeon, the patient was referred to a physiatrist for the worsening of the low back symptoms. The physiatrist ordered a work hardening/conditioning program and another course of physical therapy. The patient also sought out chiropractic intervention on his own, secondary to constant LBP. He received 12 sessions of chiropractic intervention, including traction and manipulations. The patient discontinued chiropractic intervention at the recommendation of his most recent physical therapist. The patient's significant medical history includes a hernia at age 6, elevated cholesterol, anxiety and lumbar discectomy, as mentioned previously.

Subjective complaints: The patient complained of chronic LBP along the belt line. He expressed frustration/anxiety about the persistent LBP and the inability to return to work. He stated a strong desire to continue working and noted that the most recent 8-week course of physical therapy at another facility was not beneficial and several prescribed exercises/activities increased pain. The patient stated that he did not notice any specific improvement with chiropractic intervention and reported that LBP increased with prolonged sitting and standing and back extension. The patient noted that he felt the best upon waking in the morning.

Initial evaluation:

- Lumbar MRI impression-prior left hemilaminectomy at L4-L5 with moderate right foraminal narrowing. Moderate bilateral foraminal narrowing at L3-L4. Multi-level degenerative changes.
- Fully functional and independent prior to onset of LLE symptoms and subsequent surgery as previously noted.
- Visual Analog Scale (VAS) was 3-3.5/10 at time of evaluation. It was 1/10 at best and 8/10 at worst.
- Side or back sleeper and no issues sleeping.
- No postural deficits.
- Spinal AROM
 - Flexion with 50% range of motion (ROM) loss and painful at end range.
 - Extension with 75% ROM loss and painful.
 - Sidebending and rotation within functional limits (WFL) bilaterally.
- Bilateral lower extremity (BLE) active ROM WFL throughout with tightness noted into hip internal rotation.
- BLE strength WFL throughout.
- Rectus abdominis strength 3-/5; unable to complete a sit-up from supine position with bilateral upper extremities (BUEs) extended forward.

REHABILITATION CONTINUED:

Initial evaluation continued:

- Fair activation of transverse abdominis (TA) muscles.
- Poor activation of lumbar multifidus muscles.
- Hypertonicity of right lower thoracic/upper lumbar paraspinals in stand and when prone over a pillow in the absence of tenderness to palpation.
- BLE reflexes intact and equal.
- Independent ambulation with decreased bilateral arm swing and thoracic rotation.
- Thoracic posterior-anterior (P-A) springing WFL.
- Lumbar P-A springing of L5 and S1 spinous processes reproduced minimal increase in LBP.
- Bilateral hamstring tightness; straight leg raise testing negative in supine and sit.
- No evidence of leg length discrepancy.
- Patient has worked for current employer for 20 years with an excellent record of attendance.

Treatment diagnoses:

- LBP
- Hypertonicity of right lower thoracic/lumbar paraspinals
- Decreased rectus abdominis strength
- Decreased core strength/stability
- Hamstring tightness

Treatment:

- Manual therapy to address hypertonicity of lower thoracic/upper lumbar paraspinal muscles.
- Core strengthening/stabilization
- Self-stretching
- Gait re-training to normalize arm swing and thoracic rotation
- Avoidance of spinal extension
- Posture and body mechanics education as it applied to work responsibilities and household tasks.
- Instruction in self-management strategies/home exercise program.

RESULTS:

The patient was seen for a total of 15 outpatient physical therapy sessions in conjunction with a work hardening/conditioning program. He was able to return to work full-time and to regular duties without overtime. He was able to self-manage pain symptoms at work and home. He was adherent with his individualized home exercise program. His pain during the work week was stable at a subjective rating of 4-4.5/10, and 2-2.5/10 over the weekend when not working. Spinal active ROM was WFL. The patient was instructed to avoid spinal extension, as this aggravated his symptoms. Abdominal strength was improved, and the patient demonstrated good activation of transverse abdominis and lumbar multifidus muscles for improved core strength/stability. Hamstring flexibility was improved but remained tight. The patient was instructed in self-stretching. He demonstrated normalized arm swing and thoracic rotation during gait and was able to resume recreational walking for physical fitness. The patient was able to self-manage LBP and did not experience a spike in pain since his return to work.

PATIENT TESTIMONY:

“I’m so grateful that I was referred to this facility. I still experience pain, however I have no intense spikes and I now know how to manage my symptoms on my own. Thank you for everything.”

For more information, contact Alicia Shoup, PT, DPT, OCS, STC, regional manager, Good Shepherd Rehabilitation-CedarPointe at ashoup@gsrh.org or 484-788-0747.

