

CASE STUDY:

REHABILITATION OF A PATIENT WITH CERVICAL SPINAL STENOSIS AND RADICULAR SYMPTOMS INTO BILATERAL UPPER EXTREMITIES

PATIENT:

49-year-old, right-handed male with a 2-month history of neck pain, right medial forearm and right hand 4th and 5th digit tingling/numbness and right hand weakness. He developed left forearm tingling during course of physical therapy.

Medical history: Patient has degenerative arthritis, had a hernia as an infant and is a former smoker who quit approximately 13 years ago.

Special tests/physician management: The patient initially saw his family physician and received manipulative techniques to his neck, which resulted in a significant increase in pain. His blood work was normal. Cervical spine radiographs revealed degenerative changes of the cervical spine. Cervical spine MRI revealed moderate sized central disc herniation at C6-C7, causing bilateral moderate foraminal narrowing and mild to moderate spinal stenosis. The MRI also revealed moderate to severe left foraminal narrowing and moderate right foraminal narrowing at C7-T1 from bilateral foraminal disc osteophyte complexes. The patient was seen by pain management and twice received cervical spine injections.

Employment: The patient works full time as a field service engineer, and the work involves significant driving and equipment servicing.

REHABILITATION:

Initial functional limitations included difficulty fully opening right hand, overuse of left hand to compensate for right hand weakness and significant sleep disturbances. Patient assessed quality of life as fair.

Initial evaluation findings included: moderate postural deviations when sitting and standing; forward head and rounded shoulders; a tendency to sit on the sacrum with a slouched posture; and a forward head, rounded shoulders and protracted scapulae in standing. The bilateral upper-extremity range of motion was within normal limits. The cervical spine active range of motion was within functional to normal limits throughout, except the backbending was limited to half of the range with pain at the end-range. Left wrist and hand strength was 5/5 throughout. Right wrist and hand strength 4- to 4+/5 throughout. Right grip strength 9# weaker than left. The bilateral upper extremity reflexes were symmetrical. The pain rating range was 2-9/10. The patient continued working full time despite pain, paresthesias and weakness.

The patient participated in 13 skilled physical therapy sessions consisting of postural education and retraining, intermittent mechanical cervical spine traction, self-stretching, strengthening of cervical spine, shoulder muscles and right hand, upper extremity overhead endurance activities, instruction in a comprehensive home exercise program and instruction in the use of a home cervical spine traction unit.

RESULTS:

The patient was able to discontinue use of prescription pain medications and joined a local fitness gym at the encouragement of his therapist to maintain and enhance gains achieved in skilled physical therapy. The patient reported a pain rating of 1/10 related to residual stiffness of neck. Cervical spine active backbending improved to within functional limits and was pain-free. Right wrist and hand strength were 4 to 5/5 throughout, with right grip strength greater than left by 10#. There was markedly decreased pain and symptoms into bilateral upper extremities. Plus, there was improved posture and the ability to self-correct compromised positions for optimal comfort and performance. The patient reported improved sleep with use of a soft cervical pillow, improved use of right hand and digits and the adherence to a home exercise program.

PATIENT TESTIMONIAL:

“My problem has become progressively better over the course of physical therapy. I feel that a combination of interventions has been beneficial, including physical therapy, medications and injections. Mechanical cervical traction has really helped alleviate my symptoms. I am much more aware of posture and compromised positions and am now able to self-correct to alleviate pain and paresthesias. My right forearm and hand are 90 percent improved, and the left forearm tingling is better.”

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