

Case Report

High-Risk Conditions Presenting as Back Pain

Urgent message: That back pain is common and typically without serious sequelae may result in misdiagnosis and mistreatment.

ERICA MARSHBURN, BS, BA, AND JOHN SHUFELDT, MD, JD, MBA, FACEP

Overview

Many high-risk conditions can present as back pain, is a very frequent presenting complaint in urgent care medicine. Most back pain is muscular in origin and responds well to conservative intervention. However, because of the frequency of the complaint and infrequency of serious sequelae, providers may be prone to medical misadventures.

Case Presentation

A 49-year-old male presents with a complaint of right-hand grip-strength weakness. He noticed that the club flew out of his hands during his golf game. In addition, he has pain in the right shoulder radiating to his hand but no known trauma. On presentation, the patient is mildly tachycardic; his other vital signs are normal.

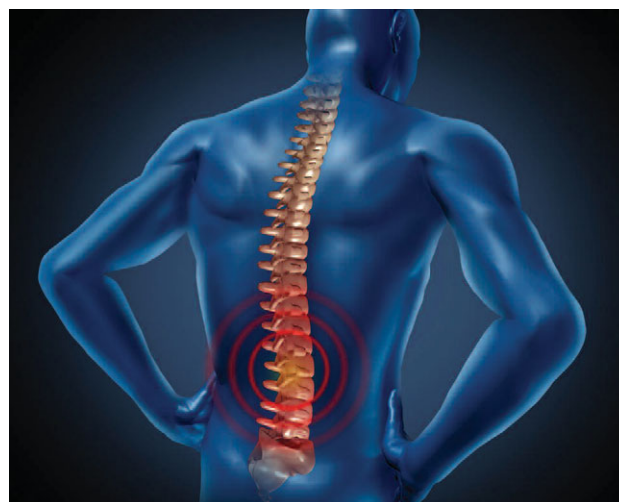
Pertinent Physical Exam

General: Awake and alert; no obvious distress.

Neurological exam: CNII-XII intact; normal sensation to light touch; 3+/5 strength on R wrist extension and index and thumb flexion. DTR's are symmetrical and intact. Remaining exam is normal.

Labs/Imaging

A cervical spine radiograph may be obtained at the center; however, this will likely not be diagnostic given



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the history. To that end, outpatient CT myelography or MRI of his C-spine should be obtained to properly evaluate the cause of the patient's weakness.

CT scanning can be helpful in assessing acute fractures. CT scanning with myelography provides even more valuable imaging by showing better detail of the spinal canal. But MRI is best for detecting soft-tissue pathology like disc herniation. MRI is currently the study of choice in most patients for the initial neuroimaging evaluation of the cervical spine, unless there is a contraindication. In this case, the lateral view of the MRI shows disc-space narrowing (**Figure 1** and **Figure 2**).

Magnetic resonance of the cervical spine is usually abnormal in patients with compressive radiculopathy. However, imaging may be completely normal in non-compressive radiculopathy.

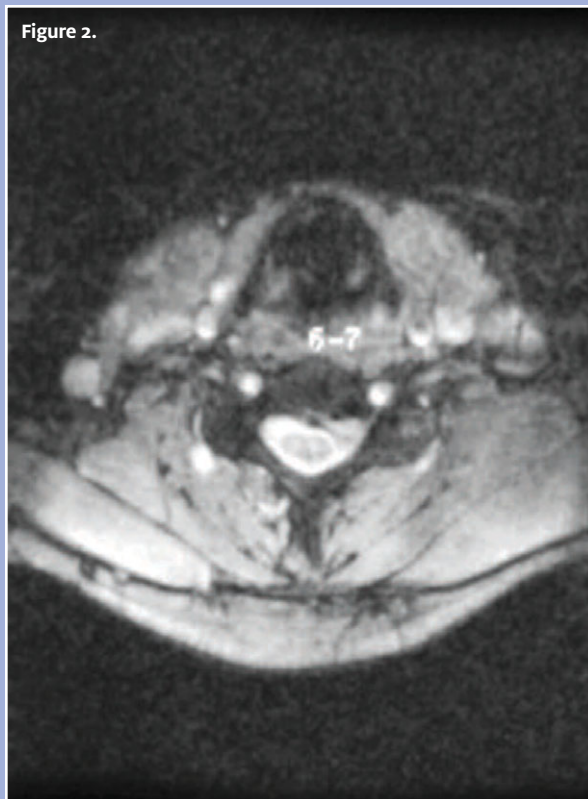
Erica Marshburn is an independent business consultant and the principal of Medical Business Technologies in Scottsdale, Arizona. She plans on entering medical school in the fall. **John Shufeldt** is principal of Shufeldt Consulting and sits on the Editorial Board of *JUCM*. He may be contacted at jshufeldt@shufeldtconsulting.com.

Figure 1.



Lateral view of MRI shows disc-space narrowing.

Figure 2.



MRI shows compression of the spinal cord by the cervical disc.

Diagnosis

Cervical radiculopathy is a dysfunction of a nerve root emanating from cervical spine. Its causes can be divided into compressive and non-compressive etiologies.

The majority of radiculopathies arise from nerve root compression. The two predominant mechanisms of compressive cervical radiculopathy are cervical spondylosis and disc herniation. Disc herniation counts for 20%-25% of cervical radiculopathy cases. In the older patient, cervical radiculopathy is often a result of foraminal narrowing from osteophyte formation, decreased disc height, and degenerative changes of the vertebral joints anteriorly and of the facet joints posteriorly.

The foraminal compression test, or Spurling's test, is probably the best test for confirming the diagnosis of cervical radiculopathy. It is performed by positioning the patient with the neck extended and the head rotated and then applying downward pressure on the head. The test is considered positive if pain radiates into the limb on the same side to which the head is rotated.

Neurologic problems that do not involve nerve root

compression must be considered when evaluating a patient with neck pain. Differential diagnoses that should be considered include brachial plexus injury, cervical disc injuries, cervical discogenic pain syndrome, cervical facet syndrome, cervical spine sprain/strain injuries, and rotator cuff injury.

A radiculopathy is inferred by pain with *unilateral* signs or symptoms usually involving the posterior aspect of the extremity on the side of the nerve encroachment. It would be extremely rare for a disc herniation to protrude on both sides, causing bilateral extremity symptoms. But, a posterior disc herniation can cause the signs and symptoms of a transverse myelopathy.

Cauda equina or a conus medullaris syndrome has a much more ominous prognosis because cord viability is jeopardized secondary to spinal stenosis. Signs of spinal stenosis are usually bilateral. Any time urinary or fecal incontinence is a complaint and bilateral leg signs or symptoms are elicited in a patient with back pain, spinal cord function should be tested and the patient referred for an emergent MRI of the LS spine.

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Course and Treatment

Initially treatment should be directed at reducing pain and inflammation, including NSAIDs, local icing, rest, and any measures that can reduce the compression forces on the nerve root. A temporary cervical collar can be used for comfort and support. Cervical epidural steroids and acupuncture may be useful if other treatment methods have not succeeded. Surgical intervention may be sought as a last resort. The end point of treatment occurs when the patient regains full pain-free range of movement and normal neurologic function and has a negative Spurling's test.

Discussion

Onset of symptoms is most frequently acute when caused by a herniated disk and typically has a slower onset when caused by degeneration of spinal vertebra via osteoarthritis. Pain in the neck or arm occurs in nearly all patients with cervical radiculopathy, but it is usually not of value to try to determine the nerve root. Pain may be in the cervical region or referred to the upper limb, the shoulder, or the interscapular region. In addition, the pain may be atypical and present as chest pain (pseudo-angina), breast pain, or pain in the face.

Paresthesia, or numbness in a nerve root distribution, occurs in 80% of patients, but it also is frequently non-localizing. Because of extensive overlap of dermatomes, it is unusual to have well-demarcated, dense sensory loss in lesions of a single root, even if the radiculopathy is severe. Subjective weakness is less common than paresthesias.

Tenderness is usually noted on palpation of the cervical paraspinal muscles and is more pronounced along the ipsilateral side of the affected nerve root. Patients can have muscle tenderness in the muscles where symptoms are referred. Manual muscle testing is important for determining the affected nerve root level and detecting subtle weakness. Sensory examination shows a decrease of loss of sensation in a gross dermatomal distribution.

A history of difficulty walking, lower extremity or trunk symptoms, or bowel and bladder dysfunction are suggestive of myelopathy rather than radiculopathy. A history of fever, chills, unexplained weight loss, immunosuppression, cancer, or intravenous drug use should raise suspicion for tumor or infection as the cause of the radiculopathy.

Reported antecedent events with cervical radiculopathy have included physical exertion or trauma immediately preceding symptom onset. Playing golf, shoveling snow, and diving from a board have also been reported to be antecedent events, although most cases have no readily identifiable precipitant.

Cervical and lumbar pain are frequent presenting complaints in urgent care; providers can be lulled into a false sense of security given the relative rarity of significant pathology. Document all potential diagnoses you have considered before arriving at the ultimate discharge diagnosis.

The few extra minutes it takes to consider and document the pertinent negatives or add them to the differential may save you from liability and your patient from harm. ■