Why Is My Arm So Weak?

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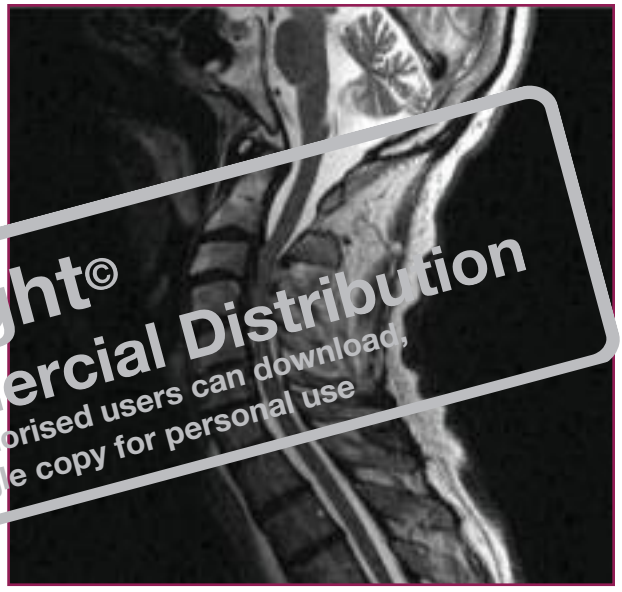
Jack, a 58-year-old, male, right-handed construction worker, has developed a burning pain in his left arm and scapula that radiates to his elbow after heavy lifting at work. His pain worsens when he is engaged in activity, but he continued to work with discomfort until he was unable to lift his arm past shoulder height. Over the same period of time, he developed significant weakness in his arms. The left arm is significantly worse than the right; he is no longer able to abduct his left shoulder and has no left bicep function.



Medical History

- Has three healthy adult children
- Smokes ten cigarettes per day; he started at age 14
- Drinks at least two to three beers a day
- Is not currently taking any medications
- Denies having any allergies to medications
- Past medical history is remarkable for several minor traumas

Physical Examination

- BP is 122/80
- Physical examination is mostly normal except that Jack has a whole body tremor. There are wasted left shoulder muscles, in supra and infraspinatus, posterior and lateral deltoid, biceps, and triceps. Manual muscle testing reveals weakness of trapezius, deltoid, infraspinatus, biceps, and triceps. There is tenderness over these muscles. Specific motor testing reveals grade 1/5 strength in his left deltoid and biceps, but, on the right, he has 4/5 strength in his deltoid and biceps. There is a relatively significant decrease of the left biceps muscle compared to the right. The bicep's reflex was also absent on the left and diminished on the right. There is no evidence of shoulder-hand syndrome. Finally, Jack has a fairly limited range of motion about his cervical spine.

Clinical Investigation

- Blood work, CBC, chemistry, EKG, and chest X-ray are all normal
- EMG
- MRI-cervical spine

What is your diagnosis?

a. Left brachial plexopathy
b. Vertebral dislocation
c. Cervical spinal stenosis
d. Cervical metastases

Answer: Cervical Stenosis

Jack's MRI showed severe cervical spinal stenosis at the C4-5 level with marked spinal cord compression. The EMG was mostly suggestive of a C5 lesion. The patient underwent posterior C3 through C5 bilateral laminectomies for decompression of his left C4 and C5 roots as well as posterior C3 through C5 fusion using a lateral mass plate mainly to prevent progression to myelopathy. He is doing well and has had complete resolution of the tingling and burning sensations in his left shoulder and arm. He feels that he has more liberal movements of his arm, though he has not noticed any increased strength yet.

About Cervical Stenosis

Spinal stenosis of the cervical spine has causes similar to lumbar spinal stenosis and can occur in the same area of the vertebra: central canal, lateral recess, or intervertebral foramen. The most common place for spinal stenosis to occur in the cervical spine is at the fourth, fifth, and sixth cervical vertebrae. The most common symptoms of cervical spinal stenosis are radiculopathy or myelopathy. Radiculopathy is a symptom usually caused by lateral recess or foraminal stenosis. Patients describe sharp pain, tingling, or burning sensations in the area supplied by the cervical nerve root or roots. The symptoms of cervical myelopathy include a deterioration of fine motor skills, intermittent shooting pain into the extremities, inability to walk quickly, heavy feeling in the legs, arm pain, loss of balance, and bowel and bladder dysfunction. Cervical spinal stenosis with myelopathy is more common in elderly patients. It is important to note that cervical stenosis does not always get worse and cause progressive symptoms. Many people have mild-stenosis and never become symptomatic or have mild symptoms that are not bothersome enough to seek treatment. Even if symptoms occur that are severe enough to seek treatment, they can usually be controlled with a combination of medication and physical therapy. Cervical myelopathy is a serious problem. The pressure on the spinal cord will not usually go away without surgery, and the symptoms will most likely continue to get worse. If surgery is ultimately necessary, there are two basic surgeries that are performed, with several variations to each one. Depending on the cause and location of the stenosis, surgery may be performed from the front, known as anterior-cervical-fusion. This operation allows the surgeon to remove the vertebral body of the vertebra, along with any bone spurs pushing into the spinal cord. The vertebrae are then replaced with a solid piece of bone graft, called a strut graft. The strut graft heals over time to create a spinal fusion where the vertebral bodies have been removed. If performed from the back of the neck this procedure is commonly called a posterior laminectomy. A diagnosis of cervical spinal stenosis is usually based on your history of symptoms and a physical examination. Imaging tests that may be used include cervical X-ray, CT-scan of the neck, and MRI of the neck. A MRI is the preferred method of diagnosis for cervical spinal stenosis due to its accuracy. Dx

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