

## **Cervical Disc Herniation/Cervical Radiculopathy**

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A common cause of neck, shoulder and arm pain is a ruptured or herniated cervical disc. Cervical disc herniation occurs as a result of a tear in the outer layer of the disc (annulus) allowing the gelatinous material (nucleus pulposus) to escape. A cervical radiculopathy can develop when an exiting nerve root becomes irritated or compressed as a result of a cervical disc herniation. Most often a disc herniation develops as a result of progressive degenerative changes of the cervical spine including a loss of disc space height and associated peripheral bulging of the disc itself. Symptoms of radiculopathy include radiating arm pain or numbness (paresthesia) and sometimes weakness, with or without associated neck pain. The classic presentation of a cervical disc herniation includes neck and radiating arm pain. Sometimes the patient describes pain which travels in a specific nerve root pattern, but often the complaint is of diffuse pain which originates in the region of the neck and radiates down the arm and into the hand. A patient may, on occasion, identify the onset of symptoms with an inciting trauma or injury, but more often than not, no specific event is identified.

On physical exam we look for loss of reflexes, muscle weakness or atrophy, and pain or paresthesia which follows a specific nerve root distribution. There are eight cervical nerve roots. The nerve roots most commonly affected are C5, C6 and C7. It is the pressure on the spinal cord or the nerve roots which produces pain. In more than 85% of patients the symptoms of an acute cervical radiculopathy will improve with conservative treatment. The body has the ability to shrink or resorb a soft disc herniation thereby allowing the secondary inflammation of the compressed nerve root to resolve.

When evaluating neck pain plain, radiographs (x-rays) may be used to assess overall spinal alignment and to guide in initiating conservative care. An MRI may be obtained to confirm the diagnosis of a disc herniation and to help direct more aggressive treatment. The management of neck pain and cervical radiculopathy begins with conservative, non-surgical care including physical therapy, activity modification, allowing the passage of time and taking certain medications. Physical therapy typically emphasizes isometric techniques, increasing range of motion and traction. Non-steroidal anti-inflammatory medications like ibuprofen and naproxen can often alleviate acute pain and, on occasion, oral steroids (prednisone) may be prescribed for a significant exacerbation of symptoms. Narcotics, when prescribed, are used on a limited basis for pain. Epidural steroid injections and selective nerve root blocks may be used on both a diagnostic and therapeutic basis.

Cervical radiculopathy responds well to a variety of surgical treatments with a greater than 90% success rate. Surgery is often recommended if a patient fails to respond to conservative care on a sustained basis or has a progressive neurologic deficit. A decision must be made whether to approach the disc from the front (anteriorly) or back (posteriorly) of the spine. Options include a posterior cervical foraminotomy, anterior cervical disc excision and fusion, and cervical artificial disc replacement. The procedure is determined by the location and extent of cervical pathology.