

What is Cervical Myelopathy?

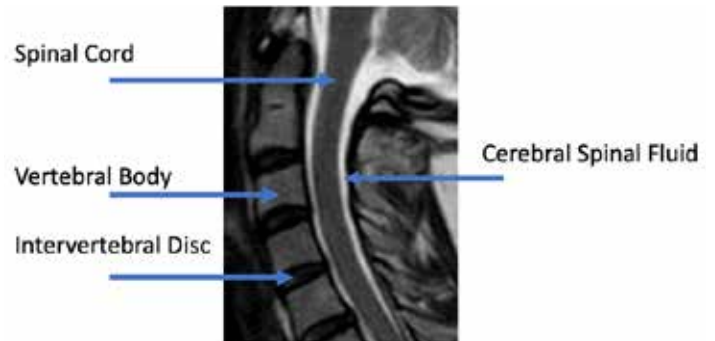
PATIENT RESOURCES

Cervical myelopathy refers to the symptoms and signs associated with compression of the portion of the spinal cord that passes through in the cervical spine (i.e. the 'neck'). The spinal cord serves as the information highway between the brain and the body. Signals are transmitted from the brain to the arms/legs through the spinal cord. When the spinal cord is compressed, these signals may not be effectively transmitted, resulting in a loss of function which can get progressively worse if untreated over time. Typically, cervical myelopathy can affect balance, manual dexterity, and strength in the arms and legs. Patients with myelopathy may have fine motor control issues such as buttoning buttons, manipulating small objects, and/or difficulty with balance when walking. Numbness of the arms and legs and/or bowel and bladder control difficulties may also occur. Varying degrees of arm or leg weakness may be present. In relatively rare but severe cases, patients may become paralyzed, meaning that they are unable to walk at all or use their arms. Cervical myelopathy can be difficult to diagnose because it is not always associated with neck and arm pain. In addition, early, milder stages of myelopathy can present with subtle loss of function that may mistakenly be attributed to "getting older," when in fact it is due to spinal cord compression and resulting nerve damage.

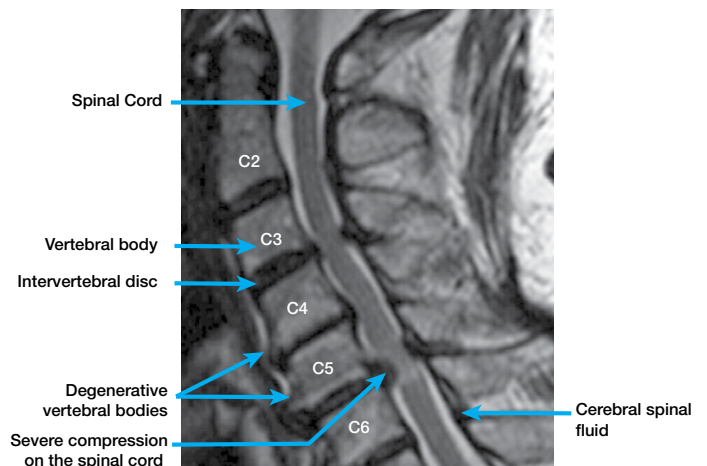
What are the causes of cervical myelopathy?

Cervical myelopathy is most commonly caused by age-related degenerative changes to the cushioning discs and supporting ligaments between the bones (i.e., vertebrae) of the cervical spine. These degenerative changes (alternatively referred to as "degenerative disc disease," "spondylosis," or "arthritis") can create bulging discs, bone spurs, ligament thickening, and even unstable motion between the vertebrae, all of which may then lead to a narrowing of the space available for the spinal cord, otherwise known as "cervical stenosis." Myelopathy occurs when the stenosis is significant enough to compromise normal spinal cord function.

While degenerative changes are the most common cause of spinal cord compression in older patients, in younger patients, large disc herniations and congenital stenosis (ie, being born with a spinal canal that is narrow to begin with) can also cause spinal cord compression and cervical myelopathy. Ossification of the posterior longitudinal ligament, or OPLL, is a less common condition in which myelopathy can arise as ligaments in the spine abnormally turn into bone and enlarge.



MRI of a healthy cervical spine.



MRI of a cervical spine with severe compression on the spinal cord.

Why is it important to treat myelopathy?

Natural history studies have shown that people who have myelopathy generally get worse in terms of nerve function over time. This worsening may happen slowly and in a stepwise fashion, or it may occur much more rapidly. Whether the worsening happens slowly versus quickly is not possible to predict. In addition, even properly performed surgery might not be able to reverse damage done to the spinal cord once it is injured. Therefore, for most patients with myelopathy, surgery is usually recommended in a timely manner to remove pressure off the spinal cord to prevent ongoing damage or injury.

Many patients with myelopathy notice improvement in some, or even all, of their symptoms after surgery. However, improvement does not always happen immediately, and sometimes it may not happen at all, even with properly performed surgery, because too much nerve damage may have already occurred. Thus, the primary goal of surgery is always to prevent further worsening. Thankfully, well-executed surgery is generally very successful in preventing further worsening and halting the progression of myelopathy. The extent of symptom improvement depends on many factors, including chronicity (ie, how long the spinal cord has been compressed), severity, and patient-specific factors (such as smoking and diabetes) which can affect the ability of the damaged portions of the spinal cord to heal.

How is Myelopathy treated?

Although nonoperative treatments (such as physical therapy, short term immobilization by wearing a soft collar, and anti-inflammatory medications) may be employed to treat symptoms of mild myelopathy, none of these interventions have been shown to improve or delay progression of the myelopathy. The only treatment that has been scientifically proven to prevent the progressive worsening of myelopathy, especially in moderate or more advanced cases, is surgery. Therefore, when patients have significant compression on their spinal cord and significant symptoms, surgery is recommended. If patients have very mild symptoms and mild spinal cord compression, or they are not candidates for surgery because of other medical conditions, careful watchful waiting may sometimes be appropriate.

There are a number of techniques which can be used to successfully treat cervical myelopathy. As noted above, the goals of surgery are to remove pressure from the spinal cord and prevent further spinal cord damage. Surgery may be performed from the front of the neck (ie, "anteriorly"), or from the back of the neck (ie, "posteriorly"), depending on a number of different factors as recommended by your surgeon. On some occasions, a combined approach with both an incision on the front and one the back of the neck is necessary. The choice of surgical approach should be tailored to your specific condition. One type of approach is not always superior to others in all circumstances. You should seek a fellowship trained spine surgeon to be evaluated and discuss the options in a timely manner.

About CSRS

The Cervical Spine Research Society is a multidisciplinary organization of individuals interested in clinical and research problems of the cervical spine. Its purpose is to provide a forum for the exchange and development of ideas and philosophy regarding the diagnosis and treatment of cervical spine injury and disease. The organization values collegial interaction and strong scientific principles. Founded in 1973, the CSRS is the internationally recognized authority focused on the research and education of cervical spine disorders.

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