



Cervical Degenerative Disc Disease

Introduction

Cervical degenerative disc disease is a condition that can compress the spinal cord and nerves in the neck. Intervertebral discs are shock-absorbing pads located between vertebrae, the small bones that make up your spine. Aging can cause the discs to lose fluid, collapse, and sometimes rupture. As the disc deteriorates, it affects the structure of the vertebrae. The structural changes can put pressure on the spinal cord or spinal nerves, resulting in pain and loss of function.

Anatomy

The cervical spine is located in the neck. Your cervical spine supports your head and connects it to your trunk. The cervical spine supports less weight than any other portion of the spine. It also has the greatest amount of mobility and flexibility. Your neck can bend forward and backward, tilt from side to side, and turn or rotate to the right and left.

Seven vertebrae make up the cervical area of your spine. The back part of the vertebra arches to form the lamina. The lamina creates a roof-like cover over the back of the opening in each vertebra. The opening in the center of each vertebra forms the spinal canal.

Intervertebral discs are located between the vertebrae in the cervical spine. The discs are made up of strong connective tissue. Their tough outer layer is called the annulus fibrosus. Their gel-like center is called the nucleus pulposus. A healthy disc contains about 80% water.

The discs and two small joints connect one vertebra to the next. The discs and joints allow movement and provide stability. The discs also act as a shock-absorbing cushion to protect the cervical vertebrae.

The top section of the cervical spinal canal is very spacious. It allows more room for the spinal cord than any other part of the vertebral column. The extra space helps to prevent pressure on the spinal cord when you move your neck.

Your spinal cord, spinal nerves, and arteries that supply blood travel through the protective cervical spinal canal. The spinal cord segments in the neck are indicated by C1-C8. Nerves exit the spine at different levels. Nerves at this level supply the shoulders, arms, and hands.

Causes

Doctors are not sure of the exact cause of degenerative disc disease. It appears that the aging process, trauma, and arthritis may contribute to the condition. Doctors suspect that genetic, environmental and autoimmune factors may play a role. Lifestyle factors, including smoking or strenuous repetitive activities such as gymnastics or lifting, may also contribute to degenerative disc disease.

With age, the discs lose water content. The discs become narrower and less flexible. An injured disc deteriorates. Without the protective disc, the cervical spine can become structurally unstable and unable to tolerate stress. Painful bone on bone rubbing can result.

Without the protective disc, abnormal bone growths, called spurs or osteophytes, can grow in the joint and spinal canal. The bone spurs add to pain while disrupting movement. The changes in spine structure can cause one vertebra to shift forward and out of place, a condition called spondylolisthesis. Without the disc to act as a cushion, the ligaments and facet joints on the vertebrae may enlarge to help compensate for the stress on the spine. The overgrowth can extend into the spinal canal causing it to narrow. The narrowed spinal canal can compress the spinal cord and nerves, resulting in pain and loss of function. This condition is called spinal stenosis.

Degenerative disc disease can lead to a herniated disc. The outer disc layer, the annulus, can tear or rupture under stress. A herniated disc occurs when the annulus ruptures and the inner contents, the nucleus pulposus, comes out of the disc. When the inner contents come in contact with the spinal nerves, they become irritated and swell, resulting in pain.

Symptoms

Degenerative disc disease may or may not cause symptoms. You may have pain in the back of your neck. You may experience sudden pain after an injury or your pain may start gradually and increase over time. Your pain may be so intense that it interferes with your daily activities. You may feel burning pain, pressure, numbness, or tingling. The symptoms may spread to your shoulders, arms, and fingertips.

Diagnosis

Your doctor can diagnose a cervical degenerative disc by reviewing your medical history, performing a physical examination, and viewing medical images of your neck. You should tell your doctor about your symptoms. Your muscle strength, joint motion, and joint stability will be tested. Because the nerves in the cervical spine travel to your arms, your doctor will perform a neurological examination to determine how your nerves are functioning.

X-rays will be used to see the condition of the vertebrae in your neck. This examination procedure is called a myelogram. During a myelogram, an injected dye is used to enhance x-ray images. This procedure can indicate if there is pressure on your spinal cord or nerves from herniated discs, bone spurs, or tumors.

Computed tomography (CT) scans and magnetic resonance imaging (MRI) scans may be used to provide a better view of your cervical structures. CT scans provide a view in layers, like the slices that make up a loaf of bread. CT scans are used to show the shape and size of the spinal canal and the structures in and around it.

Your doctor may inject a dye into the disc in a procedure called a discogram. A discogram provides a view of the internal structure of a disc and can help to identify if it is a source of pain. A CT scan usually immediately follows it. This procedure is performed in an operating room.

MRI scans are very sensitive. They provide the most detailed images of the discs, ligaments, spinal cord and nerve roots. X-rays, CT scans and MRI scans are painless procedures.

Treatment

Symptoms of cervical degenerative disc disease may be relieved with non-surgical methods aimed at pain relief and activity modification. Over-the-counter or prescription medication may be used to ease your pain. If your symptoms do not improve significantly with these medications, your doctor may inject corticosteroid medication (a cortisone shot).

Non-surgical treatments for cervical degenerative disc disease are designed to relieve pain and restore function, but they cannot correct structural deformities, such as narrowing of the spinal canal. Surgery is recommended when non-surgical treatments have provided only minimal or no improvement of symptoms. Surgery is also advised if the disc is pressing directly on a nerve or the spinal cord, causing loss of function.

Anterior cervical decompression and spine fusion (ACDF) surgery is commonly used to treat cervical degenerative disc disease. ACDF surgery is performed through an incision at the front of the neck. Your surgeon will make an incision approximately two inches long on the front of your neck, carefully avoiding your throat and airway. Your muscles and arteries will be moved aside with care to allow access to the vertebrae. Your surgeon will remove abnormal disc and bone structures.

Next, the surgeon places a bone graft or interbody fusion cage to replace the disc and support the cervical spine. Surgical hardware including plates and screws may be used. The surgical hardware secures the vertebrae together and allows the bone grafts to heal.

At the completion of your ACDF surgery, your surgeon will close your incision with stitches. You will receive pain medication immediately following your surgery. You will wear a neck brace or collar while your fusion heals.

You should expect to stay overnight in the hospital. You may need some help from another person during the first few days or weeks at home.

Following surgery, your doctor will initially restrict your activity level and body positioning. You should avoid lifting, housework, and yard-work until your doctor gives you the okay to do so. Once your neck has healed, physical therapists will teach you flexibility and strengthening exercises. You will also learn body mechanics, proper postures for your spine, to use when you stand, sit, and lift objects.

The recovery process is different for everyone. It depends on the particulars of your surgery and the extent of your condition. Your surgeon will let you know what to expect. Generally, the recovery time for ACDF is several weeks. Your arm pain should go away fairly quickly however, it may take weeks to months for arm weakness and numbness to resolve.

Prevention

It is important to adhere to your restrictions and exercise program when you return home. You should use proper body mechanics during all activities. Do not smoke. Smoking increases the risk of surgical complications and may hinder the bone from fusing. If you have difficulty quitting smoking on your own, ask your doctor about medications and resources that may help you.

Am I at Risk?

There are several factors that may increase the risk for developing degenerative disc disease including:

❑ Physically active young adults and middle-aged adults have an increased risk of developing degenerative disc disease.

❑ Trauma increases the risk of the condition.

❑ Arthritis and the natural aging process increase the risk of degenerative disc disease.

• Copyright © 2009 - iHealthSpot, Inc. - www.iHealthSpot.com

This information is intended for educational and informational purposes only. It should not be used in place of an individual consultation or examination or replace the advice of your health care professional and should not be relied upon to determine diagnosis or course of treatment.

For more information on this and other health-related issues, please visit

vermontorthoclinic.org



VERMONT ORTHOPAEDIC CLINIC

3 Albert Cree Drive, Rutland, VT 05701

802.775.2937 • 800.625.2937