

Neck Pain

By Syed A. Razvi, MD, Pain Management Center

Neck pain, also known as cervicalgia, is a common and usually benign condition. It is estimated that two-thirds of individuals will suffer neck pain at some point in their life, and about 10% of these cases become chronic. Neck pain is associated with significant cost to society from work days lost as well as a financial burden. Whiplash injury costs alone are estimated at \$29 billion annually in the United States. In 2005, a study found that Americans spent nearly \$100 billion looking for relief from back and neck pain.

The main function of the neck is to support the head, which weighs roughly 18 pounds. There are 14 pairs of muscles that help coordinate the complex movements of the neck. Five joints, including the facet joints, allow mobility between the second and seventh vertebrae. Neck pain may come from many different areas. It may emanate from the soft tissues surrounding spine, discs and joints between the vertebrae, compression of the spinal cord or nerves, or referred pain from other areas of the body. The pain may be derived from degenerative changes, autoimmune disorders, trauma, infection, or cancer. Even though the majority of neck pain is self-limited, there are certain instances where neck pain may indicate a more serious or life-threatening condition. Individuals should seek medical attention if neck pain is associated with recent infection, fever, IV drug use, neck pain which is worse at rest, unexplained weight loss, weakness or paralysis, loss of bowel or bladder control, shortness of breath, or recent significant trauma.

The causes of neck pain are many and often the cause multifactorial. Here we discuss 5+ potential causes of neck pain:

1. Cervical myofascial pain is one of the most common causes of neck pain. Cervical myofascial pain, which cause tender areas of muscle that are often referred to as knots and are sensitive to the touch. These are often known as trigger points because palpation of these areas or pressure in these areas can trigger your typical pain. Cervical muscle strain may also be caused by daily activities such as poor posture, poor sleeping position that leads to muscle overuse and spasm, and is often associated with stiffness and tightness in the upper back or shoulder.



2. Cervical spondylosis is the result of wear and tear on the discs and bony anatomy of the neck and can often cause disc space narrowing and bony overgrowth called bone spurs. The combination of narrowed disc spaces and bone spurs can often lead to pressure on surrounding nerves, and can cause pain and even weakness and numbness in the arms, shoulders, and head. Problems with the cervical joints (also called facet joints) are frequently associated with degenerative changes of the cervical spine and spondylosis. Pain is often felt in the middle or side of the neck or into the shoulders.

3. Whiplash injury, which is also known as a cervical hyperextension injury, is another common cause of neck pain. This is often caused by motor vehicle accident due to rapid forward and backward movement of the head. This usually presents with severe pain, muscle spasm, loss of range of motion, and usually involves the facet joints as well as surrounding soft tissue.

4. Discogenic pain is caused by the discs themselves which are in between the vertebrae. This can be caused by degenerative changes, disc tares, disc bulges, herniated discs, and disc protrusions. Muscle tightness and spasm and pain radiating to the arms is often a symptom of these problems.

5. Cervical radiculopathy or cervical stenosis, is when arthritic, bulging, or herniated discs, or other structures press against nerves, causing pain and often weakness and change in sensation in the arms. Another cause of radiating pain into the arms and head is cervical foraminal stenosis, in which the foraminal spaces where the nerves exit the spinal canal between the vertebrae are narrowed due to herniated discs or arthritic changes of the bones that form the canal. There is also a condition known as diffuse idiopathic skeletal hyperostosis (DISH) syndrome, which is when the ligaments and tendons of the cervical spine become calcified and hardened, leading to stiffness and loss of mobility and pain.

The diagnosis of neck pain starts with a thorough history and physical examination including a full neurologic examination to

look for nerve injury. Many types of neck pain can be diagnosed solely from the physical examination, but oftentimes imaging studies are needed to help with the differential diagnosis or to confirm a suspected diagnosis. Patients who are otherwise healthy should be treated conservatively for several weeks before imaging studies are considered, and once conservative measures have failed, oftentimes plain x-rays are the first of imaging study indicated. MRI or CT scanning is indicated for patients with neurologic symptoms or disabling pain or weakness presenting with neck pain. It is generally recommended that otherwise healthy patients wait 6 weeks before advanced imaging techniques are utilized unless significant neurologic symptoms present themselves. Occasionally, when the physical exam and imaging studies do not correlate, neurophysiologic studies are needed, such as electromyography or nerve conduction studies. Occasionally, interventional pain management can be used for the determination of the etiology of neck pain. Selective nerve root blocks can help determine which nerve is causing symptoms in the arms or head. Medial branch blocks or facet blocks may be used to determine if the joints are causing the pain. Trigger point injections can help diagnose muscle spasm as a source of neck pain. And, discography can be used to determine whether or not a disc is causing the pain in the cervical region.

There are a plethora of treatments for neck pain. Initial treatment for new onset neck pain usually involves nonsteroidal anti-inflammatory medications such as ibuprofen or over-the-counter analgesics such as acetaminophen. Physical therapy is often of significant benefit for both rehabilitation from an injury and prevention of future injuries. Passive physical therapy includes heat and ice packs, transcutaneous electrical nerve stimulation (TENS) electrical stimulation and ultrasound. Active physical therapy includes stretching and strengthening exercises as well as traction. Mechanical neck pain, in particular, can benefit greatly from physical therapy. If these treatments fail, then prescription medications may be necessary, such as muscle relaxants, anticonvulsant medications for the treatment of nerve irritation pain, oral steroid medications such as prednisone, and even opioid medication if the pain is more severe. There are many complementary and alternative treatment options for neck pain as well, including physical therapy, chiropractic manipulation, nutritional supplementation, acupuncture, biofeedback, TENS, massage therapy, and prolotherapy.

When more conservative measures fail, it is often necessary to proceed to minimally invasive interventions for neck pain treatments. These treatments include epidural steroid injections, which are commonly used to treat nerve pain symptoms or pain which radiates from an irritated nerve root. The goal of epidural

steroid injection is to allow sufficient pain relief to permit more active physical therapy and functional recovery. The procedure involves injecting corticosteroids under x-ray guidance into the epidural space which surrounds the spinal cord and allows the steroids to act directly on the nerve roots as they branch from the spinal cord and decrease the inflammation and irritation of the nerve roots. Facet joint injections are also often to treat neck pain caused by facet joint pain. Oftentimes the medial branch nerves, which are the nerves that supply the facet joints, are the actual structures that are blocked by the anesthetic. The goal is to relieve the pain and allow functional status improvement and allow more aggressive physical therapy.

Radiofrequency ablation is also used for a longer-term relief when the facet joint injections or medial branch blocks allow relief, but for only a short amount of time. The radiofrequency ablation uses electrical energy to cauterize or "burn" the nerves that innervate the joints, thus rendering them unable to send painful signals. Trigger point injections are also used to help treat the pain from muscle that are hyperirritable and suffering from excessive spasm. This involves injecting local anesthetic into the hyperirritable area of the muscle to help break the spasm.

All of the interventions described above are available at the Pain Management Center at River's Edge.

If all of these measures fail and the patient is still suffering from significant pain or disability, there are a number of surgical interventions which are offered. There are many types of spinal decompression for the treatment of neck pain including removing parts of the disc, removing bone or disc that encroaches upon the exiting nerves, called foraminotomy, and laminectomies to help widen the canal when it has become narrowed and thus compressing on the nerves. There are also spinal stabilization procedures that involve fusing two vertebrae together to limit their motion and stabilize the neck to allow a decrease in pain.

As you can see, there are many anatomic structures within the neck that can cause pain and the complex interplay between these structures often makes the diagnosis and treatment of painful neck conditions difficult. The importance of a good history and physical, diagnostic studies, and conservative and interventional treatments all play a crucial role in the diagnosis and treatment of painful cervical conditions.



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