Anterior Cervical Discectomy and Fusion

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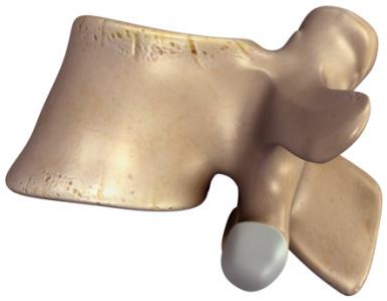
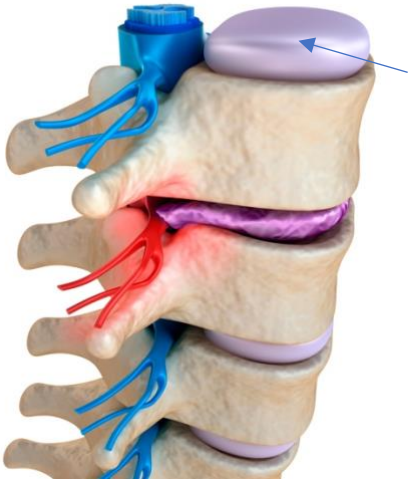
Neck pain caused by ligament or muscle strains can often be relieved with rest, medication or physical therapy. However, neck pain associated with pain or weakness in the arms may indicate compression of the spinal cord or nerves. This condition is more serious than a strain and may not improve without surgery. Pressure on the spinal cord or nerves may be due to a ruptured disc or bone spurs present in an arthritic spine.

Before surgery is recommended, several tests are performed to determine the exact cause and severity of the neck or arm pain. Tests may include X-rays, MRI scans, CT scans, EMG tests or myelograms. If these tests show that you have significant compression of the spinal cord or nerves, you may need an anterior cervical discectomy, fusion and instrumentation to relieve your symptoms.

BASIC SPINE ANATOMY



Vertebra
A vertebra is a bone found in the spine. The human spine contains 33 vertebrae. These bones are the building blocks of the spine. They stack one on top of the other. Each vertebra is separated from the next by a cushion (disc). Many muscles, ligaments, and tendons attach to these bones.



Disc
A disc is the soft cushion found between the vertebrae. Its purpose is to protect the vertebrae by absorbing stresses and shocks that travel down the spine. The disc is made mostly of water. It has a soft center portion, which is contained by thick outer rings that act like rubber bands.

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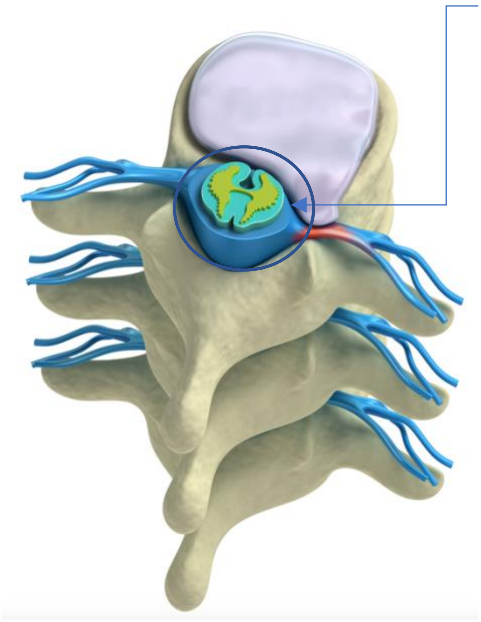
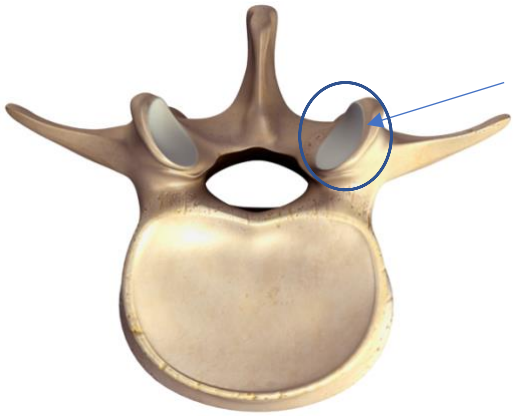


Spinal Canal
Each vertebra has an opening in the back portion to allow the spinal cord to pass through. These openings make up the spinal canal.

Spinal Cord
The spinal cord starts at the base of the brain and passes down through the cervical and thoracic regions of the spine and ends between the first and second lumbar vertebrae. The spinal cord relays information between the brain and the rest of your body.

Nerve Root
Nerve roots extend directly from the spinal cord and escape the spinal canal through small openings between the vertebrae. The nerve roots then branch out as smaller nerves that travel to specific places throughout the body. Information is constantly transmitted from nerves in the body, through the spinal cord, to the brain. The brain interprets the information and sends signals back to direct the body's response to the information.



Facet Joints
The facet joints are made where two pieces of the vertebra above a disc come in contact with two pieces of the vertebra below the disc. These joints allow the vertebrae to fit together like an intricate puzzle and allow slight movement to occur between the vertebrae.

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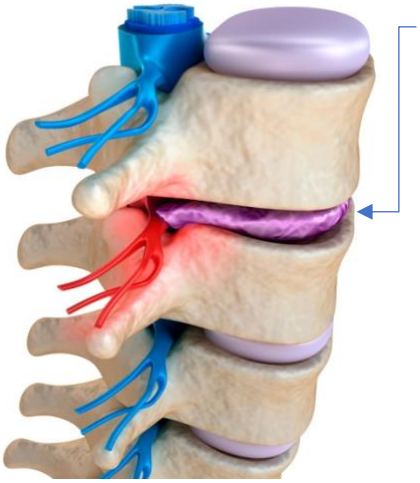
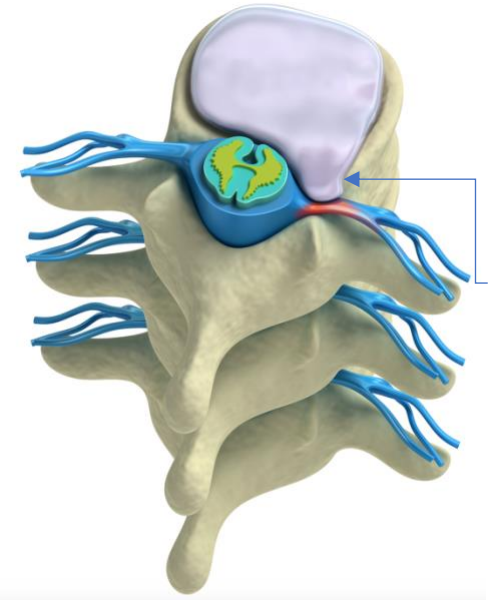
WHAT CAUSES NERVE COMPRESSION?

There are several common conditions that occur in the spine that may cause nerve or spinal cord compression. These conditions are usually a result of the natural aging process. As we mature, our bodies slowly begin to show signs of wear and tear. A recent injury may speed up the degenerative process.



Degenerative Disc Disease

Discs are usually the first structures to show signs of aging. The degenerative process starts as a disc slowly begins to lose water. Over time, structural changes happen within the disc. This causes the disc to lose its elasticity and to flatten out. It is unable to effectively cushion the vertebrae or to maintain adequate space between them. Therefore, the vertebrae bear more stress and shock, which then leads to changes such as disc herniations, arthritis in the facet joints or formation of osteophytes (also known as bone spurs).



Spinal Stenosis

Spinal stenosis is a narrowing of the openings where the spinal cord or nerve roots pass through the vertebrae. The narrowing may be caused by thickened edges of bone known as bone spurs. Spinal stenosis may also be caused by a herniated disc or a thickened spinal ligament.

Herniated Disc

A herniation of the disc occurs when the thick outer rings of the disc tear and some of the soft center portion escapes into or through the outer rings of the disc. This condition may also be described as a bulging, slipped, or ruptured disc. When the herniated disc material comes in contact with the nerve root or spinal cord, irritation progresses and symptoms can develop.

PREPARING FOR SURGERY

If you have any health problems, you should see your family physician prior to the surgery so that your doctor can do a complete medical examination. If you do not have a family physician, please call my office. I will be happy to recommend one for you.

You may be required to wear a cervical collar (also known as a neck brace) after surgery. If you did not receive the prescription or you have questions concerning the collar, please call (512) 314-3888 to speak with the surgical scheduler.

One to two weeks prior to your surgery, a nurse from the surgery center will call you to ask questions about your health and medical history. You may be asked to come to the hospital for testing. By completing this testing a few days in advance, you will save time the day of surgery.

It is important to review your current medications before your surgery. Certain medications may cause excessive bleeding during surgery. Please review the following information carefully.

Medication, Herbal & Dietary Supplements

► **STOP TAKING** aspirin, anti-inflammatory drugs (Ibuprofen, Advil, Motrin, Aleve, Naprosyn, Celebrex, Mobic, Arthrotec, Voltaren, etc.), Vitamin E and Glucosamine for 2 weeks prior to surgery.

► **STOP TAKING** all prescription diet medication or herbal supplements for 2 weeks prior to surgery.

► **NOTIFY YOUR SURGEON** if you are taking "blood thinning" medications and follow these recommendations:

Coumadin	**Stop 5 days prior to surgery**
Plavix, Persantine, Ticlid, Aspirin	**Stop 2 weeks prior to surgery**

►► **NOTIFY YOUR INTERNIST OR CARDIOLOGIST** of the above recommendation to insure it is safe for your situation.

► **YOU SHOULD CONTINUE** all other medications that you normally take.

► The Anesthesia Department will let you know in advance which medications you are to take the morning of surgery. If you are advised to take your medication, swallow only the smallest amount of water.

► **IF YOU ARE DIABETIC,** the Anesthesia Department will advise you on how to take your oral medication or the amount of insulin to take on the morning of surgery.

► **Please let your surgeon and your anesthesiologist know about alcohol use.** If you drink more than 2 alcoholic beverages a day, you may experience withdrawal symptoms after surgery. Symptoms may include mild shakiness, sweating, hallucinations and other more serious side effects. Interventions can be taken before surgery to minimize withdrawal symptoms. **The best goal is for you to stop drinking alcohol for at least 2 weeks prior to surgery.**

► **STOP SMOKING. Smoking prevents fusions and soft tissue from healing.**

SURGICAL CHECKLIST

- Schedule an appointment with your family doctor or cardiologist if you have been told that you need a medical clearance for your surgery.
- If you take your MRI, CT scan, or myelogram films from my office, you must return them to the office prior to surgery.

THE DAY BEFORE SURGERY

Do not eat or drink anything after midnight the night before your surgery.

THE DAY OF YOUR SURGERY

Do not eat breakfast or drink anything the day of your surgery.

If you were given a cervical collar please bring it with you to the hospital.

When you arrive at the hospital, go to the registration area and tell the staff that you are my patient and are scheduled for surgery. You will then be escorted to the surgical waiting area. Your family and friends may wait there during the surgery.

You will be taken to the pre-op area about one hour before your scheduled surgery. You will be given fluids through an IV and a sedative to help you relax. Once you are in the operating room, the anesthesiologist will administer a general anesthetic.

General anesthesia is a medically induced and controlled loss of consciousness and sensation. You will not be in pain or discomfort during the surgery. The medications for the general anesthesia will be given through your IV or inhaled.

Once you are anesthetized, the actual surgery will begin. A small incision will be made on the front part of your neck. Disc and bone material compressing the nerves will be removed. A small piece of bone, known as the bone graft, is inserted between the vertebrae. Your bone cells will grow in and around the bone graft to eventually form the fusion. A small metal plate will then be attached to the front of the vertebrae with small screws. This plate and screws are referred to as the instrumentation portion of the

surgery. They help to keep the bone graft in place and give added support to the area while the fusion is healing. A small drain tube may be placed in the incision to help manage post-operative wound drainage. The incision is usually closed with dissolving sutures under the skin. Small strips of tape or skin glue are applied over the incision. These may begin to peel off before your post-operative appointment. If not, the tape will be removed at your appointment.

SURGICAL RISKS

Anterior cervical discectomy and fusion is generally a very safe and effective surgery. However, as with any surgical procedure, there are potential risks. Risks of the operation include, but are not limited to: Excessive bleeding (rare), infection, anesthesia complications, injury to the nerves and spinal cord, hoarseness, injury to the esophagus, difficulty swallowing, incomplete resolution of pain, failure of the fusion to heal, failure or dislodgement of the instrumentation, and dislodgement of the graft. Up to one quarter of patients will develop continuing degenerative changes at adjacent levels by ten years after the surgery. These changes at adjacent levels may require surgery. The surgery is normally highly effective at relieving or reducing arm pain. Neck pain does not always go away completely and weakness does not always improve. As with any surgery, results cannot be guaranteed.

General medical complications include pneumonia, heart attack, blood clots in the legs, stroke and death. These complications are uncommon, and many precautions are taken to prevent any problems.

HOSPITAL CARE

After the surgery, you will be taken to the recovery room where your blood pressure, temperature, pulse and respirations will be checked frequently. You will stay in the recovery room until you are fully awake. Then you will be moved to your hospital room. Meanwhile, I will speak with your family and friends in the waiting room regarding your condition. Once you have moved to your hospital room, they may visit you.

On the night of surgery, you will be allowed to walk with assistance from the nursing staff. You will also be allowed to drink liquids and may even eat soft foods as tolerated. It is common for your throat to be sore after surgery. This usually improves gradually over several days. In some cases however, the soreness may improve more slowly.

Some people may feel like it is difficult to swallow after surgery. This is also common. The sensation is usually described as “feels like there is a lump in my throat”. This is caused by typical tissue swelling. People usually find it easier to swallow soft foods such as yogurt, pudding, Jell-O, soup, apple sauce, etc. Dry or crumbly foods such as baked or roasted meat, muffins, cake, or toast can be particularly difficult to swallow right after surgery. Be sure to take small bites and chew the food very well. Also, always have

water on hand to help clear your throat. This sensation usually improves gradually over several days. In some cases however, it may improve more slowly.

Although the nerve has been freed, it is still injured from being in contact with the disc material. The pain, numbness, or tingling in your arm usually begins to improve shortly after the surgery. In some cases, it may take several days before an improvement is really noticed. Occasionally, it may even take a few weeks before the symptoms show a notable improvement. Nerves heal very slowly. Every patient experiences this healing process differently.

Most patients are discharged from the hospital one day after surgery.

AT HOME

You must see me in the office approximately two weeks after surgery. Your first post-operative appointment should be made when you schedule your surgery. If you do not have a post-operative appointment, please call the surgical scheduler immediately to schedule your appointment at (512) 314 3888.

The post-operative instructions outlined below have been designed to help give you the best possible chance to have a positive outcome from this surgery.

POST-OPERATIVE INSTRUCTIONS

When you return home after your surgery, you should:

- Please leave your dressing on for three days after surgery
- **IF** your dressing is occlusive using a clear plastic-like covering called Tegaderm you may shower, with your dressing on, beginning post op day #1.
- **IF** you have DermaBond on your incision, a waxy skin protectant, you do no need a dressing and you may shower one day after surgery. Your skin protectant can be removed 7-10 days after surgery.
- Otherwise you may shower with the dressing off on day 4 after surgery.
    - you may gently wash the incision with soap and water
    - rinse the incision well
    - blot the wound dry, do not rub.
    - do not apply lotions or creams to the incision
    - you may cover the incision with a light dressing, using a small amount of tape

- You may have small tapes across your incision, called Steri-Strips. Please remove these strips one week after surgery. (occasionally, the adhesive from these tapes can cause skin irritation if the tapes are left on too long)

Please follow these instructions for 12 weeks after surgery:

- Avoid all strenuous activities, including but not limited to the following examples:
    - pushing or pulling motions
        - lawn mowers and riding mowers
        - pushing grocery carts, strollers
        - pulling luggage
        - walking dogs on leashes
        - using a vacuum
    - activities requiring repetitive shoulder and upper arm motions
        - painting large surfaces
        - washing walls, windows, mirrors, floors, showers, tubs
        - gardening, snow shoveling, raking
    - lifting anything over 10 pounds
    - overhead work
- **NO driving until after your first post-op visit.**
- DO NOT use anti-inflammatory medication such as Mobic, ibuprofen (Advil, Motrin), naproxen (Aleve), or aspirin for pain relief.
- If supplied a cervical collar you must wear your collar at all times except to shower, unless I instruct you otherwise. While the collar is off, you may look forward or downward, but you must not look up. This motion extends your neck and can cause the bone graft to dislodge. Most people will need to wear the collar until the first post-operative appointment. At that time, I will determine if you are able to stop using the collar. If so, I will have you begin doing isometric exercises for your neck. Some patients may have to continue to wear the collar for a longer period of time and will need to wait to start the neck exercises.
- Gradually increase the amount of walking you do each day. Two to three short walks a day are easier to tolerate than one long walk. You may use a treadmill.
- After your post-operative appointment, you may apply Vitamin E lotion or cocoa butter to your incision to soften it.
- You may resume sexual activity as your comfort allows. Please keep in mind the activity restrictions listed above.

RETURNING TO WORK

Returning to work depends on your occupation and your employer's acceptance of your activity restrictions.

REASONS TO CALL THE OFFICE

- Temperature elevation greater than 101° F.
- Redness or drainage from the incision.
- If the pain and/or numbness in your neck, shoulders, arms, or hands is becoming unbearable.
- If it is becoming more difficult to swallow instead of slowly getting easier.

Call 911 immediately:

- If it is getting harder to breathe because of the swelling in and around your throat.
- If you have shortness of breath or chest pain.

A FINAL NOTE

If you have any questions or concerns, please do not hesitate to call me or my staff during regular business hours, which are 9:00am – 4:30pm, Monday through Friday. In an emergency after hours, our answering service will take your call and notify me.

OFFICE PHONE NUMBER: (512) 314 3888