Anterior Cervical Discectomy and Fusion (ACDF), Pre-op and Procedure

Anterior cervical discectomy is surgery done on the upper spine to relieve pressure on one or more nerve roots, or on the spinal cord. There are 7 bones in your neck, called the cervical spine. These 7 bones (*vertebrae*) sit one on top of the other. Cushions (*intervertebral discs*) separate the vertebrae and act like shock absorbers. As we age, degeneration of our bones, joints, and disks can cause neck pain and tightening around the spinal cord and nerve roots. This causes arm pain and weakness.

Degeneration involves:

- **Herniated Disk**. With age, the disks dry up and can rupture. In this condition, the center of the disc bulges out (*disk herniation*). This can cause pressure on a nerve, which produces pain or weakness in the arm.
- **Bone spurs and spinal stenosis**. As we age, growths often develop on our bones. These growths are called bone spurs (*osteophytes*). A bone spur is a collection of calcium. As bone spurs grow and extend, the vertebral openings become narrow. The spinal canal and/or the foramen (*opening for nerve passageways*) become smaller. This narrowing (*stenosis*) may cause pinching (*compression*) of the spinal cord or the spinal nerve root. The nerve injury can cause pain, weakness, numbness, and loss of coordination in the upper limbs. Often, patients have difficulty with their hand writing or they start dropping things, because their hand grip is weaker. The spinal cord damage can cause increased stiffness, more frequent falls, electric shooting pain, and changes in bowel and bladder control.

Degeneration in the neck results in three common problems:

- **Radiculopathy** - Nerve compression that results in weakness or pain that radiates down the arm.
- **Myelopathy** - Spinal cord compression that causes stiffness, difficulty with walking, coordination, and trouble with bowel or bladder habits.
- **Neck pain** - Worn out joints cause pain as the neck moves.

Treatment:

- **Radiculopathy** - Surgery is performed to remove the bony and disk material that is pushing on the nerve.
- **Myelopathy** - Surgery is performed to remove the bony and disk material that pushes on the spinal cord.
- **Neck pain** - Surgery is performed to combine (*fuse*) the joints of the neck together, so they cannot move or cause pain.

Surgery can be done from the front or the back of the neck. When it is done from the front, it is called an anterior (*front*) cervical (*neck*) discectomy (*removal of the disk*) and fusion.

BEFORE THE PROCEDURE

- You will be given medicine to help you sleep (*general anesthetic*), and a breathing tube will be placed.
- You will be given medicine to kill germs (*antibiotics*), to keep the infection rate down.
- The incision site on your neck will be marked.
- Your neck will be cleaned, to reduce the risk of infection.

LET YOUR CAREGIVER KNOW ABOUT:

- Recent infections.
- Any shooting pains down your leg, when you move your neck.
- Any difficulty swallowing.
- If you smoke.
- If you are taking any blood thinners or anti-inflammatory drugs.
- Any history of injury to your shoulders.

- Any history of injury to your vocal cords.
- Any foreign objects in your body from a previous surgery.
- Any recent fevers or illness.
- Past medical history (diabetes, strokes).
- Past problems with anesthetics.
- Possibility of pregnancy.
- History of blood clots (*deep vein thrombosis*).
- History of bleeding or blood problems.
- Past surgery.
- Other health problems.
- Allergies.
- Medicines you take, including herbs, eye drops, over-the-counter medicines, and creams.
- Use of steroids (by mouth or creams).

PROCEDURE

An anterior cervical fusion means that the operation is done through the front (*anterior*) part of your neck. The cut made by the surgeon (incision) is usually within a skin fold line on the neck. After pushing aside the neck muscles, the surgeon removes the affected, degenerated disk and bone spurs (*osteophytes*), which takes the pressure off the nerves and spinal cord. This is called a decompression. The area where the disc was removed is then filled with a small piece of plastic. This plastic takes the place of the disk and keeps the nerve passageway (*foramen*) open and clear for the nerves. In most cases, the surgeon uses metal plates or pins (*hardware*) in the neck, to help stabilize the level being fused. The hardware reduces motion at that level, so it can fuse. This provides extra support to the neck. A cervical fusion procedure takes anywhere from a couple to several hours, depending on the size of the neck, history of previous surgery, and number of levels being fused.

RISK AND COMPLICATIONS OF THE PROCEDURE

- Infection.
- Bleeding.
- Injury to the following structures:
  - Carotid artery. This can result in a stroke or significant amount of bleeding.
  - Esophageus, resulting in difficulty swallowing.
  - Recurrent laryngeal nerve, resulting in hoarseness of the voice.
  - Spinal cord injury, ranging from mild to complete quadriparesis (*muscle weakness in all four limbs*).
  - Nerve root injury, resulting in muscle weakness in the upper limb.
  - Leakage of cerebrospinal fluid.

AFTER THE PROCEDURE

- You will likely spend 24-48 hours in the hospital. During this time, your caregivers will look for any signs of complications from the procedure.
- Your caregiver will watch you, to make sure that fluid draining from the surgery slows down. It is important that a large mass of blood does not form in your neck, which would cause difficulty with breathing.
- You will get 24 hours of germ killing medicine (*antibiotics*).
- You can start to eat as soon as you feel comfortable.
- Once you have started eating, walking, urinating (*voiding*) and having bowel movements on your own, your caregiver will discharge you home.

HOME CARE INSTRUCTIONS

- For 2 weeks, **do not** soak the incision site under water. **Do not** swim or take baths. Showers are ok, but rinse off the incision sites.
- **Do not** over exert yourself. Allow time for the incision to heal.
- It can take from 6 weeks to 6 months for fusion to take effect. Your caregiver may ask you to wear a neck

collar during this time, as they check the fusion with multiple (*serial*) x-rays.

Document Released: 12/06/2010 Document Re-Released: 03/14/2011
ExitCare® Patient Information ©2011 ExitCare, LLC.