Posterior Cervical Laminoplasty

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Introduction

I prepared this handout to help review and answer some common questions about spine surgery. Some aspects of this guide may not apply exactly to your case and it is not intended to supersede our discussion. Please feel free to reach out to me if you have any questions.

What Is My Diagnosis?

Posterior cervical laminoplasty is performed for compressed nerves in the neck including the spinal cord. There are several different causes of nerve compression, including a herniated disc, facet cyst, instability (a slipped vertebrate), spondylolisthesis, and arthritis. When there is compression on nerves in the neck, the diagnosis is called "stenosis." Stenosis can be caused by herniated discs, arthritis, slipped vertebrates, joint cysts.

Compression of the spinal cord is called myelopathy and can affect your manual dexterity, balance, and/or your ability to control bowel and bladder function. Compression of the nerve roots can cause pain, numbness, and/or weakness in your arm (termed radiculopathy).

When Is Surgery the Right Option for Me?

Your surgery is necessary because with in the cervical spine there is compression of nerves roots, the spinal cord, or both in your neck. Compression of the spinal cord is called myelopathy and can affect your manual dexterity, balance, and/or your ability to

control bowel and bladder function. Compression of the nerve roots can cause pain, numbness, and/or weakness in your arm.

In general, you should have had symptoms for a reasonable period of time (usually 6 weeks) before surgery is considered. Sometimes the symptoms will improve on their own in less than 3 months. In most cases, surgery is performed on patients who have not improved with conservative, non-operative care.

What Are Other Options to Treat My Condition?
Other than surgery, you could do nothing/live with it, try non-invasive non-operative treatment (such as physical therapy), try injections, or try a spinal cord stimulator. I would be happy to provide additional information about any of these options if you are interested.

Conservative care can include:

1. Physical therapy,
2. Chiropractic,
3. Acupuncture,
4. Anti-inflammation medication (Ibuprofen/Naproxen),
5. Pain medication (Acetaminophen/Aspirin),
6. Mild Opioid Medication (Tylenol #3, Tramadol),
7. Strong Opioid Medications (Oxycodone or Hydrocodone),
8. Epidural Injections (which are a cortisone shot into the spinal canal also called a nerve block),
9. Facet Injections/Medial Branch Blocks (which are a cortisone shot into the small joins on the sides of the spine),
10. Nerve Ablation (burning or otherwise removing pain nerves in a small injection procedure)
11. Spinal Cord Stimulator (an electrical device to intercept pain signals before they reach your brain).

What Are the Types of Surgery That Are Available to Treat This Condition?
Surgery is generally either a decompression alone (to take the pressure off of the spinal nerves), a fusion, or an alternative procedure such as a disc replacement.

There are specific potential benefits and risks with each approach. In this case, due to your diagnosis, I recommend a laminoplasty. A laminoplasty is performed on the back of the neck.

What is the Goal of Surgery?
The goal of surgery here is to prevent progression of the spinal cord compression called myelopathy. As discussed previously, myelopathy can affect your manual dexterity, balance, and/or your ability to control bowel and bladder function; as opposed to

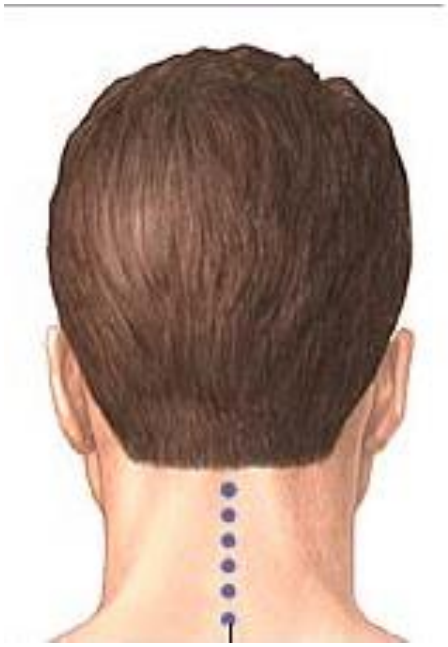
radiculopathy which can cause pain, numbness, and/or weakness in your arm due to compression of the nerve roots.

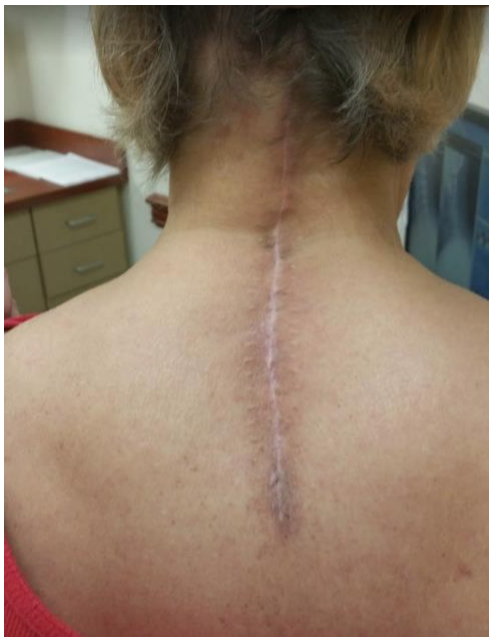
Other goals of surgery include reducing arm pain. Neck pain may be unchanged, slightly decreased, or even worse after surgery. Surgery does not necessarily reverse nerve damage. Surgery generally stops future nerve damage from occurring.

What is a laminoplasty?
A laminoplasty is a special type of spine surgery in which the bones of the spine are carefully fractured and then re-aligned to create more room for the spinal cord and nerves. A laminoplasty does not involve connecting the bones of the spine into a fusion.

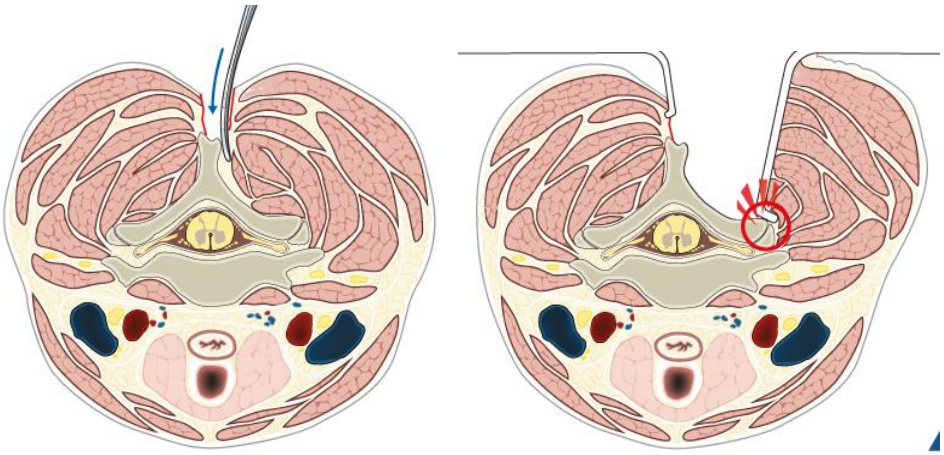
PROCEDURE
Will I have an incision?
Yes. You will have a small incision on the back of your neck. I will have to cut your hair in the back of the neck to remove hair from the region of the surgical field.

How big is my incision?
The skin incision is 6-8 inches. The length depends on how many levels must be fixed.

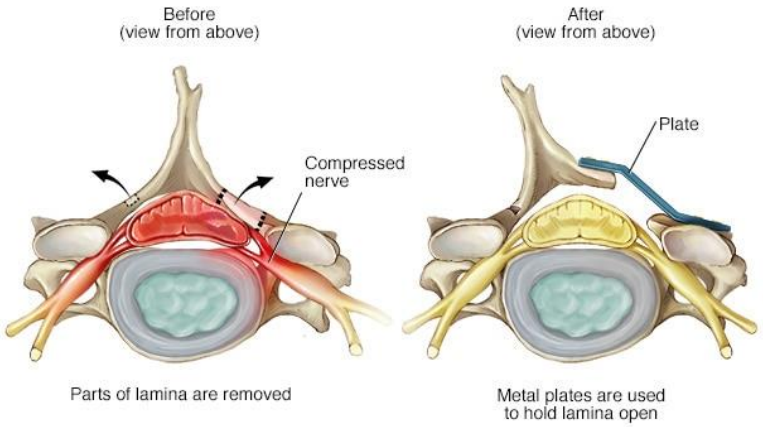


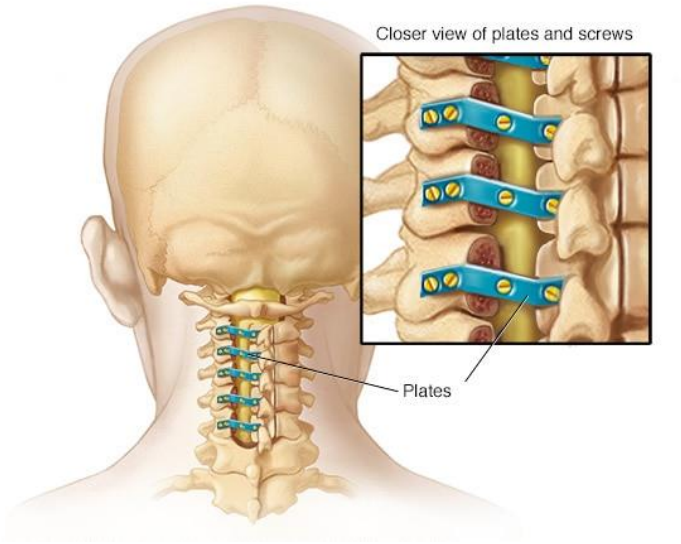


What do you have to move around in my neck to get to the spine?
I will gently dissect the muscles off of the bones to have a good view of the muscles on the back of the spine.



How do you perform a laminoplasty?
I carefully use a drill to fracture the bones that make up back wall of the spinal canal. I cut the lamina on one side of the spinal canal (usually the side with the worst compression and pain). Next I create a hinge (just like a door) using the newly fractured bone and keep that "door" propped open with the plate and screws, which in turn increases the circumference of the spinal canal. The additional length of the plate therefore adds additional area within the spinal canal for the spinal cord and nerves.

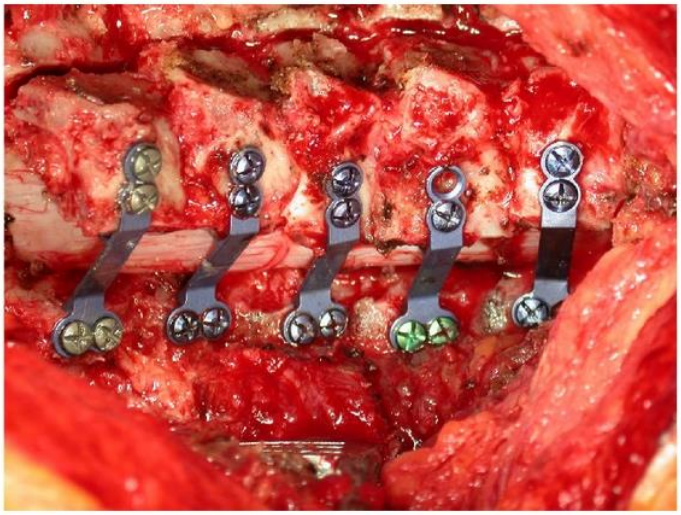




Are there plates and screws?
Yes. The plate and screws hold open the spinal canal.

Will I Have Cages
No.

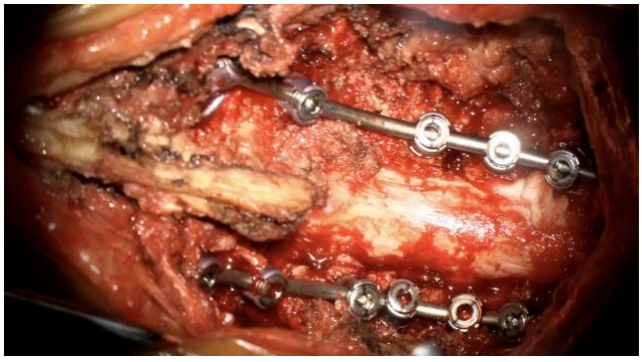
What does the plate and screws do?
The plate and screws keeps the enlarged spinal canal from closing down again. Surgery can be performed without instrumentation. However, the risk of the laminoplasty closing down is increased.

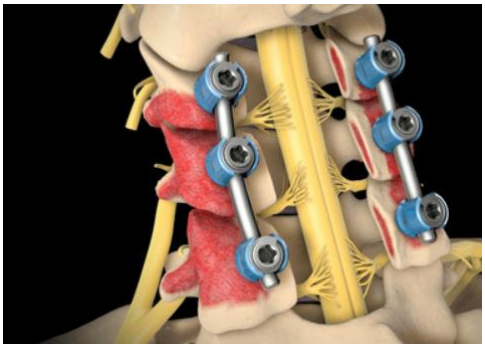


What are the downsides of a plate and screws?
Any fixation device may fail or break. If the laminoplasty does not heal, the rod and screws can break. The rod and screws can also become dislodged from your bone. This rarely may cause injury to the surrounding soft tissue structures, such as the muscles or tissues. Also, there exists the possibility of injury to the bones, nerves or adjacent tissues such as blood vessels, tendons or ligaments. Plates and screws also increase the chance of infection, as they are artificial. There also is the possibility that these devices may need to be removed at a later date.

What does fusion mean?
Fusion means that two or more bones merge together and become a single bone. Fusion is an operation designed to eliminate movement between two or more adjacent vertebrae.

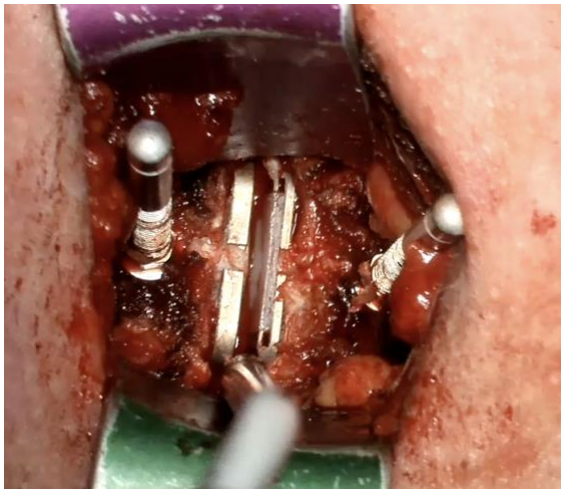
Is a plate and screws the same as screws and rods?
No. Screws and rods connect different bones together and cause the bones the fuse together. A fusion reduces motion.

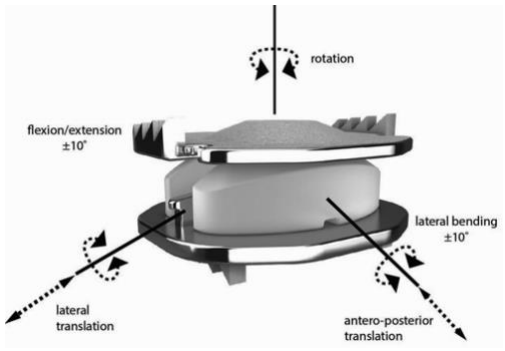




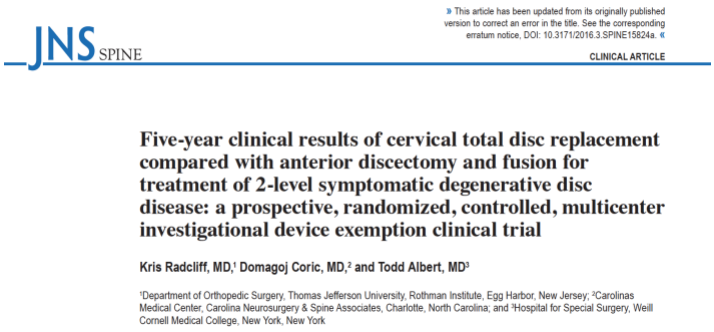
Is a laminoplasty a type of fusion surgery?
No. A laminoplasty does not involve a fusion. You should not lose motion after a laminoplasty. The plates and screws do not connect different bones.

What is a disc replacement?
Instead of placing a metallic cage and a plate and screws, I would place a ball and socket joint into the disc space. Disc replacements are intended to preserve motion at the operative level, as opposed to fusions where the goal is to eliminate all motion at the operative level. In general, disc replacements do not work well if someone has a great deal of pre-existing arthritis, bone spurs, disc space collapse. If I recommended a laminoplasty or fusion, it means that I do not believe that you are a good candidate for a disc replacement.





Are you familiar with disc replacements? Do you do disc replacements?
Yes and yes. I do disc replacements (most commonly with the Mobi-C Cervical Disc – Zimmer- Biomet). I have done extensive research on disc replacements and I am actually the lead author on both the 5 -year and 6 -year Mobi-C publications.



JNS SPINE

» This article has been updated from its originally published version to correct an error in the title. See the corresponding erratum notice, DOI: 10.3171/2016.3.SPINE1582a. «

CLINICAL ARTICLE

Five-year clinical results of cervical total disc replacement compared with anterior discectomy and fusion for treatment of 2-level symptomatic degenerative disc disease: a prospective, randomized, controlled, multicenter investigational device exemption clinical trial

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Is there bone graft?
No. There is no graft from either your own spine or from a donor.

What happens if the fracture fails to heal?
That is called a "pseudarthrosis." Failure to heal may result in persistent symptoms necessitating additional surgery.

What are some risk factors for not healing properly?
Excessive motion, smoking, diabetes, renal disease, soft bone (osteopenia or osteoporosis), steroid use, and the use of non-steroidal anti-inflammatory medications within six to ten weeks of surgery, can all contribute to poor healing.

How do you stop bleeding near the spine?
I have coagulation instruments and a special foam to stop bleeding.

Will you see other areas that need fixing and decide during the surgery to address other levels?
Generally speaking no. The nature of the surgery is that you only see the levels that you plan to operate on. I usually cannot tell at the time of surgery if there are problems at other levels (unidentified on pre-operative imaging) that need to be fixed. In some rare cases, there are unforeseen anatomical issues not visualized on MRI and the surgical plan is slightly amended. In this event, either you and I would discuss it prior to the surgery, or in even more rare situations, I would consult with your designated family member(s).

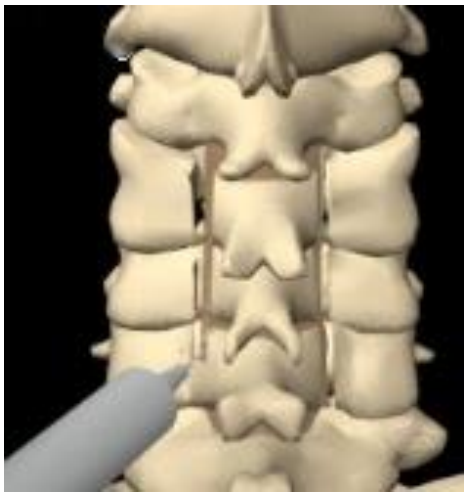
Can you see nerve damage at the time of surgery?
No. The nerves are encased within a thin membrane called dura. I do not see the nerves directly. Furthermore, I do not have a good way to check nerve conduction in the surgery which would indicate nerve damage.

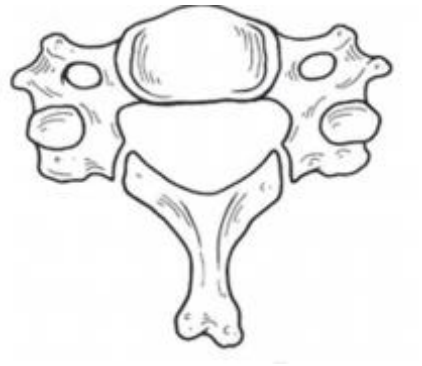
Can I have an MRI with all of that metal?
Yes. The titanium plate, screws, and cage are MRI compatible.

Will I go off in the airport?
Not sure. It is possible. I can give you a note if you would like, but in my experience, notes do not help.

What are the alternatives to a laminoplasty?
The alternative is an anterior cervical discectomy and fusion. Anterior cervical discectomy and fusion involves an approach through the front of the neck. The spine is identified. The discs are removed and a plate and screws are applied.

Another alternative is a posterior cervical laminectomy and fusion. A laminectomy involves cutting the bones on the back of the spine to completely remove them.





Can you see nerve damage at the time of surgery?
No. The nerves are encased within a thin membrane called dura. I do not see the nerves directly. Sometimes, I can see if the side of the nerve tube is indented. You can see the wrinkles and indentations in the nerve tube in this photo just at the tip of this suction tool.

What is inside of that balloon?
The spinal cord itself is inside of the balloon.

How thick and tough is that balloon membrane that holds the fluid and nerves?
You can see through it. It is very delicate.

If that membrane is cut or tears, what happens?
Some clear spinal fluid will spill out. Then I will suture the membrane and I may place you on bedrest. You may have headaches while the fluid is leaking. It usually heals once sutured.

How often does the membrane tear in the medical literature?
It tears about 10-20% of the time in patients with spinal stenosis.

Can that membrane tear after surgery even if it did not tear in the operating room?
Yes! If you cough, sneeze, or lift something heavy, it can tear and start weeping fluid. If that happens you will get headaches. If that happens please call me.

Does anything make me more likely to have a tear occur?
Yes. If you have spinal stenosis for a long time, severe pressure on the nerves, several injections, a CT myelogram, previous surgery or scar tissue, or other congenital conditions can cause it to tear.

Can you also remove the disc?
Yes. If necessary, I can remove some herniated discs from the back of the spine.

Will the surgery address bone spurs and stenosis also?
Yes. I will remove the bone spurs (if present). By creating a larger channel for the nerves, the spinal cord will also drift backwards away from the disc herniations and bone spurs. This procedure is called a foraminotomy. I have special biting tools to delicately remove bone next to the tubes where the nerves pass.

What happens then?
The incision will be thoroughly cleaned to reduce the risk of infection. The incision will be closed with dissolvable sutures. I place antibiotics in the neck at the time of surgery.

Will Be Paralyzed After This Surgery?
Very unlikely. The surgery is very safe and commonly performed. Severe neurological injury causing paralysis is extremely rare. However, technically speaking, anytime a surgery is being performed there is a chance of a neurological injury or paralysis. In some cases, if the spinal cord is very damaged before surgery, the risk of paralysis is higher than normal.

What technology is available to help make the surgery safer?
I use neuromonitoring on all cervical spine surgeries. There is a computer that is monitoring your spinal cord from the moment that you go under anesthesia until you wake up.

Who operates the neuromonitoring technology? How do you do that and perform surgery at the same time?
There is a neurophysiologist present who sets up the monitoring equipment (it is similar to an EKG). There is another doctor (a neurologist in most cases) who reviews the computer information and is in constant communication with me throughout the surgery. The technology enables us to identify neurological problems before they become permanent.

What is the neuromonitoring company's name and information? I would like to ensure that they take my insurance.
https://www.accurateneuromonitoring.com/for-patient/
Address: 700 US Highway 46 East, Suite 420, Fairfield, NJ, 07004
Phone: 973-882-3456
Fax: 973-882-3450
Email: info@accurateiom.com

What other technology is available to help make the surgery safer?
I use an operating microscope to see the spinal cord and nerves more precisely. There are a host of special instruments and tools. I have my own dedicated operating room team

with whom I work on a regular basis.

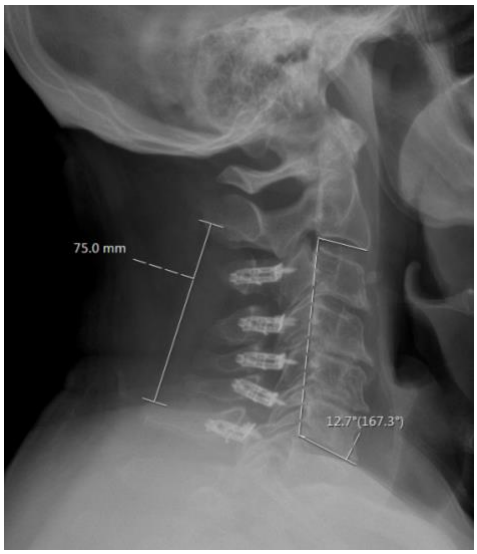
How Long Does the Surgery Take?
The surgery takes about 3-4 hours

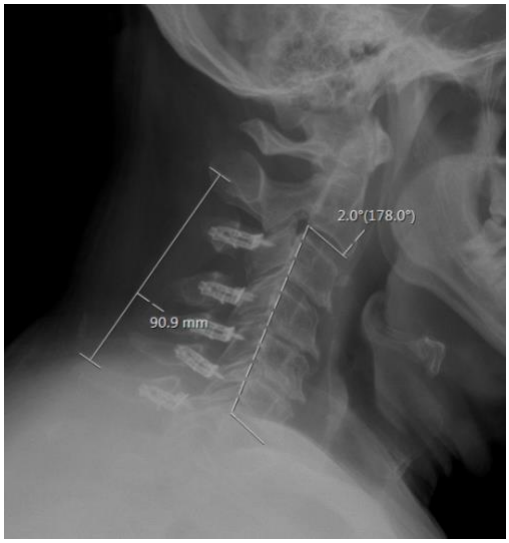
What kind of anesthesia is used?
You will be under general anesthesia.

How long do I stay in the hospital?
Two to three days

Is the Surgery Minimally Invasive?
No.

How Much Motion Will I Lose?
You should not lose motion from the bones and joints, but will be stiff in the first few post-operative weeks. In the example below, my patient is able to bend his neck forwards and backwards after the laminoplasty. You can see the difference in the separation of the bones on the back of the spine (90mm to 75mm).



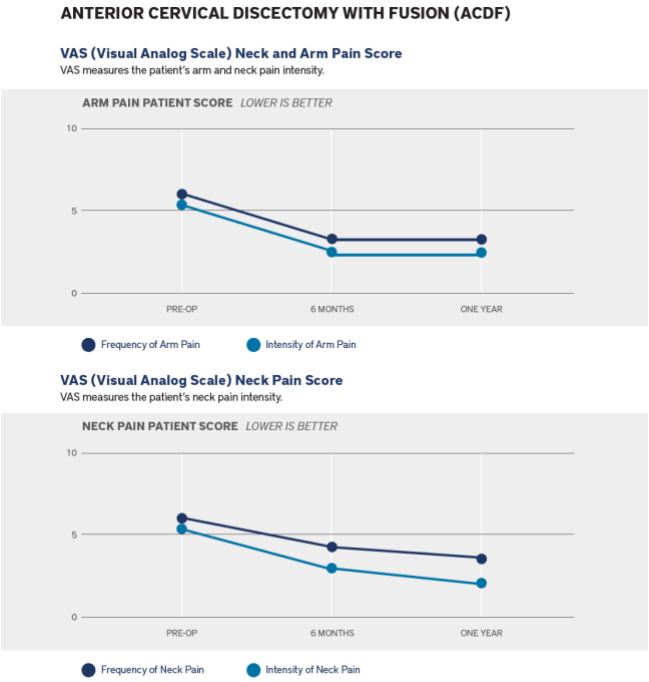


OUTCOME
What Is the Expected Outcome?
Unrealistic expectations, such as a “perfect neck” and “perfect life” are not helpful to the healing process. Surgery can help improve function and decrease pain, but surgery is fundamentally fixing something “broken.” I cannot create something good as new. It is important to focus on this and to mentally prepare yourself so that you put yourself on a reasonably successful path to recovery.

How does pain improve after surgery?
In general, surgery is less effective for the treatment of neck pain than for arm pain. Cervical surgery is, overall, more effective for the treatment of arm pain. At 8-10 years approximately 60% of patient are satisfied with the results of surgery for cervical disc herniations and spinal stenosis. In general, about 70% of pain improves. For example, patient who have 10/10 pain prior to surgery improve to about 3/10 pain after surgery. Overall activity and physical function improves gradually after surgery, with the understanding that patients who are de-conditioned before surgery may require longer postoperative rehabilitation.

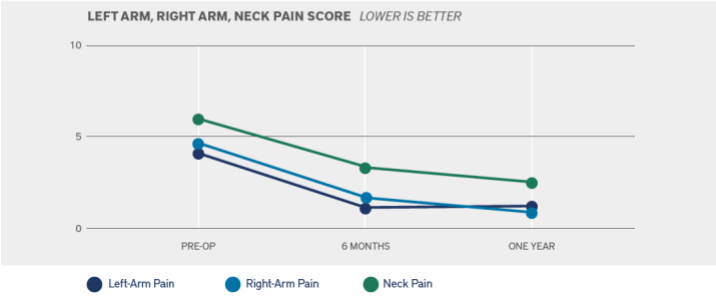
Do statistics guarantee that a specific amount of improvement for me?
No. Although the statistics are helpful to understand the overall outcome for many patients, they do not guarantee the odds of success or failure in any individual case. With any surgical procedure, some patients are improved, some patients are unchanged, and some patients have worse symptoms. There is some variability in how quickly patients improve following surgery.

What is the overall recovery period from a cervical spine surgery?
The overall recovery period is 3-6 months is the typical recovery period. We published a Rothman Outcome book which describes the improvement in symptoms following a slightly different type of neck surgery (anterior cervical discectomy and fusion). You can see the data below.

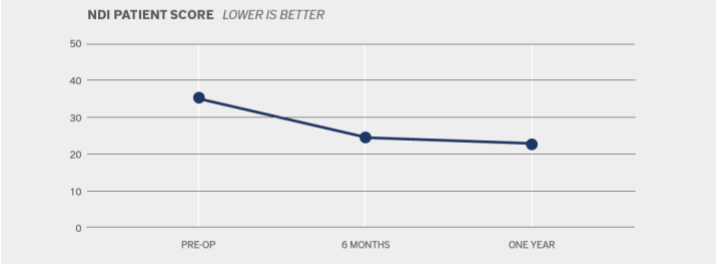


ANTERIOR CERVICAL DISCECTOMY WITH FUSION (ACDF)

VAS (Visual Analog Scale) Left Leg, Right Leg, Neck Pain Score
VAS measures the patient's left leg, right leg, neck pain intensity.



NDI (Neck Disability Index)
NDI is a questionnaire intended to be used to assess patients' opinions about their neck pain.



When can I expect pain to be reduced?
Patients' arm pain is usually improved/reduced immediately after surgery. About 10-20% of patient's pain will continue until the nerves start to heal.

When can I expect weakness to improve?
Weakness can take 3-6 months to improve. The amount of improvement in weakness is also dependent on how weak the patient is prior to surgery. Other factors, such as age, overall physical condition, and severity of nerve damage affect weakness recovery. Your weakness may never improve after surgery. In addition, the amount of time that your nerves have been compressed can influence how quickly you recover after surgery. In the setting of severe compression which has been present for greater than 1 year, nerves may never fully recovery or take some time to do so.

When can I expect numbness to improve?
Numbness can take 6-12 months to improve. The amount of improvement in numbness is also dependent on the numbness prior to surgery. Other factors, such as age, diabetes, overall physical condition, and severity of nerve damage affect numbness recovery. Your numbness may never improve after surgery. In addition, the amount of time that your nerves have been compressed can influence how quickly you recover after surgery. In the setting of severe compression which has been present for greater than 1 year, nerves may never fully recovery or take some time to do so.

Is it possible that I will have new nerve symptoms after surgery?
Yes. Operating around nerves sometimes causes inflammation which may cause some temporary pain, weakness, and numbness that is worse than the preoperative symptoms. Immediately after surgery, patients may temporarily have new symptoms, including pain, weakness, and numbness that were not present before surgery due to intraoperative nerve manipulation. These new symptoms, if present, likely represent inflammation or edema in the nerves that occurs as a result of surgical manipulation and decompression. One common such new transient symptoms that occurs after cervical spine surgery is a C5 palsy (temporary inability to raise arm out to the side/ abduction).

What If I Have More Numbness After Surgery?
After surgery you may experience pain in the region of the incision. You may also experience hand or arm numbness. Initially it may be of greater intensity than pre-operatively, but will subside over time as the healing process occurs. Please report any new sensations or numbness.

Will my neck hurt more after surgery?
Yes. People often have more pain in the back of the neck over the muscles. That pain is most likely due to realignment of the spine and stretching the muscles. Your muscles need time to adjust to that.

What can I take for the neck pain and stiffness?
You will be given muscle relaxers to treat the pain and stiffness in the back of the neck. I suggest that you use them instead of opioid medications.

What factors can contribute to a poor outcome after surgery?
It is impossible to list all of the factors that may increase your risk of a poor outcome from surgery.

What factors related to my spine may contribute to a poor outcome after surgery?
Some common factors related to the spine include previous surgery, scar tissue, the size of the disc herniation (and ensuing necessity for nerve root retraction), the duration of symptoms, response to previous treatments such as epidurals, arachnoiditis, migrated or extruded fragments, calcified disc or epidural scarring (due to previous epidurals or intrathecal procedures such as myelograms), or congenital abnormalities such as arachnoid blebs or a myelomeningocele.

Do my medical conditions affect the outcome of surgery?
To some extent. Some conditions such as obesity, nicotine exposure, osteoporosis, scoliosis or deformity, history of cancer, history of previous spine surgery, poor nutrition, noncompliance, diabetes, autoimmune conditions, and being on blood thinners affect the outcome of surgery and the risk of complications. For example, being on blood thinners increases your risk of epidural hematoma and bleeding.

Does myelopathy get better?
Sometimes. In some cases, myelopathy (spinal cord damage causing balance problems, finger coordination issues, and bladder problems) does not necessarily improve after surgery. Also, severe weakness or longstanding weakness do not necessarily improve after surgery. The goal of surgery in these cases is to prevent further loss of nerve function.

Can you predict prior to surgery whether nerve damage will heal?
No.

Does surgery reverse nerve damage that has already occurred?
No but it increase the chances your body will be able heal the damage.

Is there a chance that I will need a second surgery?
Yes. In some cases, I will do an anterior approach first then a posterior surgery at a second setting.

AFTER THE OPERATION
Will you speak to my family?
Yes. After surgery, I will meet with your family in the surgical waiting room unless otherwise arranged. If I miss them, don't worry-- I will find them later.

Will Other Doctors See Me After Surgery?
Yes. We have two medical doctors who look over your heart, lungs, and general health after surgery. We also have a rehab medicine specialist who will see you to determine your therapy needs post-operatively.

What do the medical doctors do?
They will see you before surgery in Preadmission testing. These two providers have almost two decades of experience caring for patients who have undergone spine surgery. They will check your "non-spinal" parts including your heart, lungs, kidneys, etc. They will order all of the labs that they believe are necessary for you to safely get through surgery. They will review your clearance. They may order additional tests (EKG, echocardiograms, etc.).

Do I need a clearance from my own primary care or cardiologist?
Yes. You should check with them and have them send over a clearance letter. However, you will still have to go to preadmission testing and undergo a second clearance process based upon our hospital standards.

So, my clearance from my primary care doctor or cardiologist may not be enough?
Correct. Each hospital has different rules and standards. Part of our success has been with increased scrutiny for preadmission testing. Your internist or cardiologist may not be as familiar with the surgery as our hospital doctors are. Our medical specialists often order

additional tests to ensure that you will be safe in surgery based upon their knowledge of the surgery.

Can these medical doctors become my new primary care physicians if I need one?
Unfortunately, no. They only do perioperative medicine for our orthopedic patients. They are not trying to replace your primary care physician or outpatient cardiologist.

How long does it take to get cleared for surgery?
It depends on your health. If you are healthy and regularly see a physician, it could be only 5-7 days. If you have severe health problems, it could take a month or more.

How can I reach the hospital for preadmission testing questions?
AtlantiCare
Pre-admission Testing
2500 English Creek Ave
Building 200, Suite 222
Egg Harbor Township, NJ 08234
Phone: (609)677-7760
Fax: (609)677-6001

Who will tell me about my medicines (diabetes medicines, blood pressure medicines, blood thinners, etc.) before surgery?
The medical doctors in the preadmission testing center will give you specific recommendations.

Do I need to stop aspirin for my heart before surgery?
No. Please continue to take aspirin.

Will a medical doctor see me in the hospital after surgery?
Yes. The same doctors who saw you in the pre-admission testing center will also see you while you are in the hospital. I believe that the best possible outcome occurs when the medical doctors meet you beforehand, learn about your medical needs, and then follow you after surgery. They will function like your primary care doctors in the hospital.

Will a rehab specialist see me in the hospital after surgery?
Yes. I will have a rehabilitation medicine specialist see you (Dr. Falcone). He will evaluate you and help to determine, based on how you feel after surgery, whether you can go home verses transfer to an inpatient rehab facilty.

Is the surgery very painful?
I am committed to making your surgery as painless as possible. I helped developed an advanced protocol to control your pain after surgery as much as possible. A group of doctors, including our anesthesiologists, medical doctors, nurses, physician assistants,

and myself reviewed medical studies and created a comprehensive protocol to control your pain. We start advanced pain medications before your surgery even begins! During surgery, we run specialized intravenous continuous drips (including intravenous lidocaine!) that prevent your body's pain receptor nerves from ever becoming activated. We feel that pain is much easier to control if you do not experience it in the first place.

With this protocol in place, we have achieved postoperative pain scores that are in the **97-99th percentile** for hospitals within the United States based on a recent survey. We also reduced patient's opioid consumption 30%.

If needed, you will have access to Percocet, Roxicodone, or Vicodin. I will also prescribe Dilaudid for intravenous pain medication if needed. However, the narcotic medications can create constipation and urinary retention, so use them with care!

When does the pain management protocol start?
We start giving you pain medications prior to surgery to prevent the pain of surgery from ever registering in your brain.

Will I have access to opioid medication if I need it?
Narcotic pain medication will be available for pain relief after surgery. Narcotics are very effective for pain relief but may cause other side effects. The possible effects vary among patients and may include: sleepiness, nausea, constipation, flushing, sweating, and occasionally euphoria or confused feelings. If these occur notify your nurse. For your protection, you will receive opioid medication only when you request it.

What can I do before surgery to control my pain after surgery?
It is really important that you reduce or eliminate any opioid medications for pain management. Patients taking these opioids develop a known tolerance to the medication, meaning the pain receptors in the brain allow the narcotics to have progressively less control of the pain. The patients then require more and more pain medications to get the same level of control they previously had. You can better your chances of having adequate pain control by slowly decreasing your narcotic pain medication over the weeks just before surgery. By decreasing your tolerance your body may respond better to postoperative pain medications such as these narcotics.

Will I Have to Wear A Collar?
No

What can I do to prepare for activities after surgery?

It is very common to feel run down a couple weeks after surgery because your body is getting acclimated to the new changes in your body. You are encouraged to walk around to help increase blood flow throughout your body. Shifting positions frequently between

standing, sitting, and lying down are good to help avoid pain/stiffness. Gradually increasing physical activities are good, but should be stopped if you start to experience increasing pain or exhaustion. You should not do activities that require bending at the waist and/or lifting anything over 10 pounds (approximately a gallon of milk). Activities that include bending/twisting/lifting (laundry, grocery shopping, caring for pets, etc…), should be avoided. Find a family member or friend to do them and enjoy the break! Possible items to create a safer environment are listed below.

- **A "grabber" device**. Bending and reaching up can be avoided with this lightweight tool. There are some on Amazon for as low as $8, and local pharmacies often carry them as well.
- **Toilet and shower equipment**. Adding a shower mat, toilet riser, and a shower seat makes the bathroom safer and easier to use. Home health equipment is often covered by insurance, so check with your carrier about reimbursement should you decide to purchase those items through a site like Amazon. Stores like Lincoln Medical Supply in Pleasantville can assist you with getting insurance coverage.
- **A cane or walker**. Patients who think a cane or walker would help them feel more stable can discuss this option with the surgeon.
- **A mini-fridge or cooler**. Keeping cool drinks and ice packs close at hand helps patients avoid climbing stairs more than necessary.
- **A recliner or extra cushions**. The seating position in a recliner takes some pressure off the lower back. Sitting on a cushioned surface is also likely to be more comfortable.
- **Fall prevention**. It is best to remove anything that may be a tripping hazard, such as loose rugs or clutter. Some people also install handrails as needed, such as on stairs or in the shower.

Do I have sleep in a recliner?
No. Sleep in whatever position is most comfortable. If you like to sleep in a recliner feel free to do so.

Can I have sleep in my bed?
Yes. Sleep in whatever position is most comfortable. If you like to sleep in your bed feel free to do so.

Do I need to sleep in a hospital bed?
No. Most patients are most comfortable in their own beds.

Can I move when I sleep? Can I sleep on my side?
Yes. You can't control the position that you sleep in. You will not do damage to your neck just from sleeping in a certain position or turning when you sleep.

Can I damage my neck from turning my neck when I sleep?
No. You will not do damage to your neck just from sleeping in a certain position or turning when you sleep.

Are there specific pillows or mattresses that you recommend?
No. Pillows and mattresses are very individualized.

Will I need physical therapy?
Perhaps. Regular exercise, including physical therapy, is thought to help prevent binding of the cervical roots through fibrous adhesions called epidural fibrosis. Specific stretches can help reduce effects of postoperative scarring around the nerve root resulting in better outcomes. Therapy can also improve blood flow which will help your nerve heal and muscle heal. You will begin exercising and moving immediately after surgery. You may be able to do the exercises on your own to recondition your spine. If you have special circumstances, then I will order physical therapy.

Will I need inpatient rehab?
I cannot usually tell before surgery. This is a popular question. Rehab may seem necessary, but in many cases the patient is able to do a lot of the rehab on their own. The most important rehab is to walk as much as possible. I encourage my patients to go home whenever possible since we are all most comfortable in our own homes. In the hospital you will be accessed by the Physical Therapist, along with Dr. Falcone, to determine if it is safe for you to go home versus a formal rehab facility. This decision is made on a patient-by-patient basis.

If I need inpatient rehab where should I go?
I usually recommend Betty Bacharach. It connects to ARMC, Mainland campus and I have privileges there. You can call Bacharach if you would like to learn more at 609-652-7000.

When will you prescribe physical therapy?
I usually wait for the incision to heal and for early deeper, internal healing to occur. If necessary, I will prescribe physical therapy at about one month after surgery.

Do you have an online rehab program/exercise program that I can use?
Yes. You will receive information electronically from a company called Force Rehab. Force Rehab has an online exercise program that has been proven to be very effective in helping to supplement the rehab that you receive from a physical therapist. Best of all, Force rehab program can be done in the comfort and convenience of your home. You

will receive information from Force Rehab about two weeks prior to surgery with pre-operative strengthening exercises.

Will I be able to stand and walk after surgery?
Yes. The nurse or therapist will assist you in getting out of bed a few hours after surgery. You will be instructed to be up walking every 2 to 3 hours during the day and evening. The nurse will allow you to do this independently once you are steady and feel comfortable.

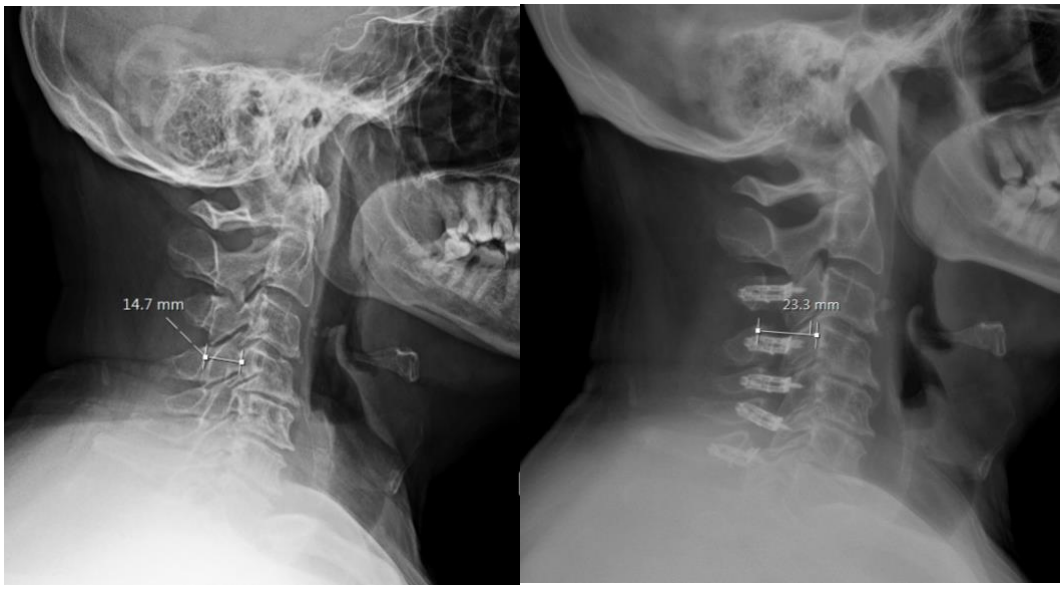
Is activity helpful for my recovery?
Yes. Early activity after surgery is extremely important to help prevent the complications of prolonged bed rest such as pneumonia and blood clots. It also promotes recovery, relieves muscle stiffness, allows for development of a well-organized scar, and improves your outlook.

Can I start my own exercise program with a trainer or someone?
Do not start any programs of exercise or physical therapy unless discussed with me.

What are the lifting restrictions after surgery?
10- 15lbs for the first six weeks. Lifting weights increases stress and pressure on the cervical spine and surgical site. I would like the area to heal before we increase your activity tolerance.

What do postoperative x-rays show?
The x-rays show the position of the bones and the hardware. It is not possible to see evidence of fracture healing on x-rays until about six months after surgery.

However, it is possible to see the spinal canal diameter and enlargement on x-rays. The spinal canal at C4 increased from 14mm before surgery to 23mm after surgery. The increase in room means that there is less pressure on and compression of the spinal cord.



What can you see on postop x-rays? Why take them at all if you can't see fracture healing?
On x-rays, I can see signs of failure healing, such as hardware pullout, loosening, or subsidence. If I do not see those signs, that is very encouraging and is suggestive that you are healing well.

Do I need to have x-rays to advance my weight limit and tolerance?
No. By the time your x-rays show healing (at six months), you will have forgotten about all of this! I base the decision to advance your weightbearing on your pain, activity tolerance, bone quality, and your preferences.

Can I damage my neck from turning my neck doing routine things such as talking or driving?
No. You will not do damage to your neck just from routine activities and driving. In fact, the motion will help to recondition your neck muscles.

Why is there a limit on neck motion (90 degrees) if I cannot damage the neck with activity?
I worry about extreme bending and craning your neck. You will not do damage to your neck just from routine activities such as talking on the telephone, typing, and minor recreational activities.

When can I resume running and bicycling?
I worry about the repetitive loading to your neck. I suggest that you wait six weeks at least.

When can I resume sedentary (office) work with a 10lb limit?
The earliest is 2-3 weeks to resume desk (sedentary) work. Most patients do not get back to light work until about six weeks.

When can I resume heavy work with a 50lb or more limit?
The earliest is 10 weeks to resume heavy work. Most patients do not get back to heavy work until about 4 months after surgery. It is possible that you will never be able to resume heavy work.

Will you do disability forms for me?
Yes. If your employer requires documentation of your work status, our office will provide the necessary information to your employer or other concerned parties. All disability matters have to be handled through the office (so that the paperwork is filed and stamped in the Rothman charts). Please do not bring disability paperwork to the hospital for this reason.

When can I go out of work?
In general, I will take you out of work from the date of surgery. Another physician (usually the primary care or pain management specialist) takes you out of work from the date of onset of pain until surgery. I can never take you out of work prior to the date of my initial visit with you.

What can I eat after surgery?
Your diet will begin with clear liquids, and be advanced to a mechanical soft diet as soon as your condition permits. You should eat foods that are easy to swallow.

What are examples of GOOD foods to eat?
Typical good choices include ground foods (such as chili or meat sauce), scrambled eggs, pudding, and shakes. You want to select foods that do not require a lot of chewing.

What are examples of BAD foods to eat?
Typical bad choices include foods that need a lot of chewing (such as a large piece of meat or bread), large pills, and thin liquids. Make sure that you have a drink available to help if you have trouble swallowing.

When does the IV come out?
Your IV will be removed as soon as we are reasonably certain it will no longer be required for medications and hydration.

Why will swallowing be difficult after this surgery?
Pain impairs swallowing. Also, the loss of motion from the muscle spasm may affect neck movement during swallowing in the early post-operative period.

What is the worst-case scenario for swallowing problems?
It is possible that you may need a feeding tube (PEG) in your stomach and not be allowed to eat anything by mouth after surgery. I have never personally seen this complication from a cervical laminoplasty, but have seen in with anterior cervical surgeries.

How long do swallowing problems after surgery last?
Everyone has trouble swallowing at 2 weeks (over 95% of patients). By six weeks about 40% of patients report trouble swallowing. At three months, only about 10% of patients have trouble swallowing.

What do you do if I have trouble swallowing?
I usually wait for three months, because the swallowing often improves by three months anyway. Most other doctors (such as ENT specialists) will not intervene before three months.

What if I have problems at three months?
Then I will order a barium swallow evaluation, an ENT consultation, and a speech therapy consultation in most cases. The ENT doctors can look down your throat to see if there is something affecting your swallowing.

What can you do to help my swallowing?
If necessary, once you heal, I can remove your hardware. However, that is very rare (once every three or four years).

Can I have new hoarseness after this surgery?
Not usually.

Will I have a catheter in my bladder?
Usually no. If you have a history of trouble urinating (prostate problems, etc.) then the anesthesiologists and hospitalists may recommend it.

What if I cannot urinate after surgery?
Some patients may have difficulty urinating after surgery. If this occurs, notify your nurse who may assist you in voiding techniques. This may require placing a catheter in your bladder.

What if I cannot move my bowels after surgery?
After surgery, constipation frequently occurs from inactivity and the side effects of pain medication. Stool softeners and laxatives will be available from your nurse. Once you go home, you can also take some over the counter stool softeners and laxatives. Use of narcotic pain medication and prolonged rest may cause constipation. Drinking plenty of fluids and eating high fiber foods (whole grains, raw fruits and vegetables) will help regain normal bowel function.

What can I do to help move my bowels?
Chewing gum! Chewing gum helps to activate the bowels.

What if I lose control of my urination or bowels after surgery?
That could be an emergency! Tell your nurse or call me immediately.

What if I am numb around my genital (private area)? Is that normal?
No! That is never normal. Tell your nurse or call me immediately.

What can I do to help my breathing after surgery?
Deep breathing is very important after surgery to maintain lung expansion and reduce the risk of pneumonia. You will be provided with an incentive spirometer and instructed about its use. This device should be used every 15 to 30 minutes during your wakeful hours initially, then every 1 to 2 hours as your activity returns to normal. This device is yours to take home. Continue to use it at home for at least 1 week after your discharge. Consider setting timers on your phone to help you remember to use it!

Can I smoke nicotine products?
Smoking is absolutely forbidden. There is clear evidence that smoking dramatically increases your risk of post-operative complications. There is also evidence that smoking adversely effects bone healing and nerve recovery.

Can I use smokeless tobacco?
You should avoid tobacco exposure for at least six weeks prior to surgery and for two years after surgery. Second hand smoke also applies.

Can I use cannabis?
I do not know. There is little research on cannabis either way because it remains a federally illegal substance. I do not have a license to prescribe cannabis.

When can I bathe?
You should sponge bath only for the first week after surgery. You can take a shower on day 3 after surgery.

Should I get the incision wet?
No. You will have a special, silver impregnated dressing called Aquacel. That dressing may be left in place for 5-7 days. It is a waterproof barrier that also has anti-viral and bacterial properties. If necessary, we will change the dressing prior to discharge as it can roll up at the bottom.

Can I soak the incision underwater?
Please do not immerse the incision under water (either in a bath tub, swimming pool, or ocean) prior to the postoperative check at two weeks.

Can I apply ointments to the incision?
No. Do not apply any ointments or creams while the incision is healing.

What will hold the skin together?
Absorbable sutures which are buried deep in the tissues of the neck. On the outside there will be essentially medical grade crazy glue, most commonly the brand Dermabond.

When are the postop appointments?
2 weeks, 6 weeks, 3 months, 6 months, 1 year and 2 years from surgery.

Do I see Dr. Radcliff at every visit?
No. The 2-week visit is usually a wound check done with my physician assistant. I am of course always around and available should there be questions or concerns.

When should I call?
Please take your temperature every afternoon for the first week after you are discharged from the hospital. Call your physician at 609-952-5243 if:

1. Your temperature is more than 101.5 degrees,
2. Your incision becomes reddened, swollen
3. You develop any problems urinating or passing bowel movements.
4. You develop any worsening numbness or weakness, especially numbness on your buttocks.
5. Any increase or change in drainage occurs.
6. You develop headaches, light sensitivity, or other serious concerns?
7. You have any other serious concerns.

Does diet affect my healing?
Yes. A well-balanced diet is necessary for good healing and recovery. Include adequate protein, carbohydrates and fats. If you are concerned your aren't getting adequate nutrition, consider scheduling an appointment with one of our registered dietitians.

Are specific vitamins necessary for healing?
You should take a multivitamin. You should also take a combination Vitamin D supplement/calcium supplement daily for six months. During this healing period, your calcium and Vitamin D requirements are increased. One brand that I commonly recommend is Os-Cal D.

Why does my pain not go away immediately?
When I relieve pressure on an inflamed, damaged nerve, it does not recover instantaneously. In most cases, by reducing pressure on the nerve, the nerve stops giving off painful stimuli.

Does the surgical procedure heal the nerve directly?

The surgical procedure does not heal the nerve, only the body is capable of that. The goal of surgery is to create the best possible environment for the body to heal itself and to prevent further damage. This will take a variable length of time depending on the duration and degree of nerve damage, and the body's own healing abilities. Most of the healing occurs in the first few months.

When should I begin weaning pain medications?
Everyone has a different pain tolerance that will dictate the amount of pain medication required. A decreased dose and less frequent use of pain medication will occur during your recovery period. A gradual weaning of medications should begin as soon as possible, generally within 2 to 4 weeks.

Can I use opioid medications?
Please limit your use of narcotic ("opioid") pain medication. While using narcotic pain medication you SHOULD NOT drive. Please try non-narcotic medications such as Tylenol, and reserve narcotics for only the difficult times.

Can you call in a refill of opioid medications after hours?
Opioid pain medications ("Narcotics" such as Percocet, Vicodin, Norco, Oxycontin, Fentanyl, Dilaudid, etc.) will NOT be considered for refills at night or over the weekend, or holiday.

What are the laws in New Jersey about pain medications?
In New Jersey, there is a recent law that only **five day prescriptions** of opioid pain medications can be given to a patient in moderate to severe acute pain (http://www.nj.com/politics/index.ssf/2017/02/bill_limitig_painkiller_prescription_on_christies.html).

How bad is the opioid problem in New Jersey?
New Jersey is ranked 45th in the nation in the number of opioid prescriptions, but third in the nation in overdoses, primarily overdoses of heroin, either alone in combination with Fentanyl. Published data from the New Jersey Medical Examiner's Office shows there were 1,587 drug overdose deaths in 2015, up 21 percent from the year before. Heroin deaths also rose significantly, to 918, the highest level since official records were kept in New Jersey. More than 30,000 Americans died in 2015 from overdoses of prescription opioids and heroin, an epidemic widely considered by many to be the product of overprescribing of pain medicines. Data from the CDC show that the rate of heroin and fentanyl deaths in New Jersey have started to far outpace the national average. In 2015, nearly 1600 people drug of drug overdose representing a 22% increase from the previous year.

What are the key takeaways of SB 3 which sets up a 5-day limit on initial opioid prescriptions? (See http://www.njleg.state.nj.us/2016/Bills/S0500/3_R1.PDF)

This 35-page Bill institutes an initial 5-day dosage limit for patients prescribed opioid drugs. This contrasts with the national norm of 7 days instituted elsewhere. The Bill requires a prescribing practitioner to take a thorough medical history including a history of substance abuse and patient's medication experiences, and develop a pain treatment plan.

How does the law compare to other states?

The new legislation limits initial opioid prescriptions to a 5-day supply, making New Jersey's limit one of the strictest in the country. Nine other states, including New York and Massachusetts, currently have legislation that limits opioid prescription to 7 days or less.

What if the patient needs more than 5 days of pain medication?
To address concerns about patients with pain that exceeds 5 days, the law allows physicians to easily add another 5 days to the original opioid prescription if the patient's pain has not subsided.

Where can I read more about the New Jersey opioid law?
1. http://newyork.cbslocal.com/2016/05/16/new-jersey-opioid-bill/
2. http://www.pharmacytimes.com/contributor/timothy-o-shea/2017/02/new-jersey-enacts-strict-opioid-prescribing-law
3. https://www.lexisnexis.com/legalnewsroom/workers-compensation/b/recent-cases-news-trends-developments/archive/2017/02/23/new-jersey-s-new-opioid-law-concerns-for-injured-workers.aspx?Redirected=true
4. http://www.njleg.state.nj.us/2016/Bills/S0500/3_R1.PDF

When will you refer me to a pain management specialist?
I may refer you to a pain management specialist
1. If you still need opioid pain medication OR
2. If you need strong, long acting pain medication OR
3. IF you have a history of treating with a pain management physician

INSURANCE
Are you in most major insurance networks?
Yes. We take all major insurances. In general, if you are able to see me in the office, I am in your insurance network. Before surgery, my office will precertify the surgery codes with your insurance and will notify you of potential charges and insurance participation.

Is the hospital in network?
Yes. All of the hospital physicians, including the ER doctors, radiologists, anesthesiologists, hospitalists, etc. are also in network.

Do you have any out of network assistants?

No

What are the insurance company criteria for surgery? Who writes them?
Surprisingly, the criteria that insurances require to approve surgery varies between different insurance companies and even plans (so Blue Cross criteria for an PCDF may differ from that of Cigna, for example). The criteria may be published online or they may not be available. The criteria are written by the insurance company and are generally very self-serving.

What are general criteria for surgery?
In response to the variability in coverage criteria (one payer requires 4 weeks and one requires 8 weeks of symptoms, for example), a large society of doctors who take care of spine patients (the North American Spine Society) published coverage recommendations which are more objective and transparent based upon the best medical literature.

NASS Coverage Criteria for Cervical Laminoplasty (NASS consider these criteria to be acceptable standards for spine surgery)

Cervical laminoplasty, *also described as* ***Cervical laminaplasty,*** *is a decompressive and reconstructive procedure of the cervical spine. It is utilized to access and/or decompress the cervical spinal canal. It may be performed with or without reconstruction of the posterior cervical elements. Each spinal level (eg. C3, C4, C5) represents a single level of laminoplasty with or without reconstruction.*

Cervical Laminoplasty may be combined with cervical laminectomy but both procedures cannot be performed at the same level (eg. C3 laminectomy, C4-6 laminoplasty, C7 laminectomy).

Cervical Laminoplasty may be combined with cervical foraminotomy at either the same levels or at different levels (eg. C4-6 laminoplasty with C4-5 foraminotomy).

Cervical laminoplasty *(also defined as* ***Cervical laminaplasty****) may be indicated for the following diagnoses with qualifying criteria, when appropriate.*

1. Spinal Stenosis *in the cervical spine including recurrent spinal stenosis, congenital stenosis, or stenosis caused by cervical spondylosis or ossification of the posterior longitudinal ligament (OPLL) meeting the following criteria:*
- *a. Signs and symptoms of cervical myelopathy correlated with diagnostic imaging*
- *b. Neutral to Lordotic Cervical alignment with no greater than 13 degrees of kyphosis*
- *c. Decompression of the neural elements as an adjunct to stabilization when indicated for mechanical spinal column instability*

2. Cervical disc herniation *including recurrent disc herniation meeting the following criteria:*
- *a. Signs and symptoms of cervical myelopathy correlated with diagnostic imaging*

3. Tumor *in any of the following cases:*
- *a. In order to perform an open biopsy for tissue diagnosis*
- *b. In order to remove tumor to decompress the spinal canal or neural elements*

4. Trauma *to the cervical spinal cord, without spinal instability, in any of the following cases*
- *a. In order to decompress the spinal canal*
- *b. In order to access the thecal sac to repair a traumatic dural tear/CSF leak*

5. Epidural Hematoma *in the following case:*

a. In order to evacuate a symptomatic epidural hematoma causing neural compression

6. Infection *in the following case:*

a. In order to perform a spinal canal decompression and debridement if ANY of the following is present:

i. Lack of clinical response to an appropriate course of antibiotics
ii. Epidural abscess with associated neurological deficits
iii. Signs of systemic sepsis associated with spinal infection
iv. Need to obtain tissue diagnosis
v. Decompression of the neural elements as an adjunct to stabilization when indicated for mechanical spinal column instability

Cervical Laminoplasty *is NOT indicated in cases that do not fulfill the following criteria. Of note, Cervical Laminoplasty alone is not indicated in the following scenarios:*

1. Patients with asymptomatic spinal stenosis with complaints of isolated neck pain (i.e. patients without signs or symptoms of cervical myelopathy) without MRI evidence of myelomelacia (intrinsic spinal cord signal)
2. Patients without confirmatory cross-sectional imaging showing neurological compression
3. Patients with spinal instability including that caused by trauma, tumor, infection, rheumatoid arthritis, or other destructive spondyloarthropathies, who do not have symptomatic cervical myelopathy
4. Patients with greater than 13° cervical kyphotic alignment

What is the point of showing the coverage recommendations?

I would like my patients to see how strictly the criteria for laminoplasty are written. For example, you have to have 6-12 weeks of symptoms. There is very little room for negotiation or bending of the criteria. The criteria also specifically say that cervical laminoplasty is not indicated for isolated neck pain.

What if surgery is denied?

If that happens, I will do a call with another physician to review your case. Usually that first level appeal occurs with a non-spine physician such as a pediatrician or gynecologist. If that appeal is unsuccessful, then the second level appeal occurs with a spine specialist. It can take over a month.

COMPLICATIONS

What Kinds of Complications Can Occur?

There are three categories of complications after spine surgery: perioperative complications (which generally occur immediately after surgery), long term outcome (at six to twelve months after surgery), and the risk of additional procedures in the future. Although I endeavor to list all complications that a reasonable person would want to know, there is always a possibility of other, unforeseen and rare complications occurring. There are other, more rare complications, that can occur that are not always possible to anticipate or list.

What are anesthesia related complications of cervical spine surgery?

Some complications that can occur after anesthesia include blindness, shoulder injury, brachial plexus injury, anesthesia reaction, transfusion reaction, and even death. Some patients may need a special type of intubation such as indirect laryngoscopy (Glide scope) or awake fiber optic intubation.

What are the general complications that can occur after any surgery?
Some complications that can occur after any surgery include pneumonia, deep venous thrombosis (blood clots), phlebitis, pulmonary embolism, renal failure, heart attack, cardiac arrest, stroke, aspiration pneumonia, delayed bowel function (ileus), urinary retention (from genitourinary problems other than neurogenic bladder), C. Diff infection, diarrhea, worsening vision or blindness, blood loss, allergic reaction to medications, and even death.

What are the specific complications of a posterior cervical surgery?
Some complications that specifically occur after a posterior cervical surgery include including C5 palsy, infection(wound, discitis, osteomyelitis, epidural abscess), spinal fluid leak, dural tear, new numbness/weakness in other nerves, airway hematoma, epidural hematoma, failure to heal, symptomatic instrumentation, swallowing difficulty, voice difficulty, development of symptoms at another part of the spine, dysphagia, dysphonia, paralysis (it is extremely rare), esophagus injury, blood vessel injury (either carotid or vertebral artery), Horner's syndrome, ptosis, implant malposition or migration, nerve root injury, allergy to metal, pseudarthrosis, adjacent level ossification disease, heterotopic ossification, subsidence, recurrence of stenosis at the operative level.

What are the other complications that can occur following a spinal surgery?
Some of the possible complications following any surgery on the spine include persistent pain/failure to alleviate symptoms or worsening symptoms, worse postoperative pain, other organ injury, neurogenic bladder (usually from spinal cord injury), neurogenic bowel, sexual dysfunction, instability of the spine, need for further surgery/reoperation,), non-improvement or worsening myelopathy, prolonged intubation, arachnoid cyst, and arachnoiditis (i.e., scarring of the nerves in the dural sac).

How do you find the correct operative level? Is it possible to operate at the wrong level?
I will take all available precautions to operate at the correct spinal level. Some risk factors for wrong level surgery include severe obesity, severe osteoporosis, unusual anatomy, and thoracic surgery.

What if you slip and lose control of the instruments?
I am trained to handle the surgical instruments around the spine in a manner that is safe and avoids injury to vital structures. Until all surgery is completely robotic, mistakes will occur. It is possible that anyone can slip or lose control of the instruments and cause injury to the spinal cord or vital structures. Some factors that may increase risk of injury

include unusual tissues (such as scar tissue, hard bone, very soft bone), deformity (severe scoliosis), bleeding, or other unforeseen circumstances.

Ok. That is a lot of possible complications. What are the ones that I should really worry about?
Swallowing difficulty and hoarseness are discussed above, most specifically for anterior cervical surgeries. Those are the most common complications. I also really worry about bleeding (a hematoma) that can affect the windpipe (airway hematoma) or spinal cord (epidural hematoma). If you have any difficulty breathing after surgery or worsening weakness please contact me immediately. Being on blood thinners increases my risk of hematoma.

I also worry about infection. An infection may present with wound drainage, fevers, chills, worsening pain, redness, weakness, numbness, tingling, or worsening trouble swallowing. I have some expertise in the diagnosis and treatment of spine-related surgical site infections. It is not possible to completely eliminate infections, but I have developed several unique procedures that serve to reduce your risk of infection and make the overall surgery safer.

1. I use a microscope so that I am not leaning over the surgical field which could introduce bacteria into the surgical field.
2. I irrigate the incision with antibiotics and/or iodine in many cases
3. I apply topical antibiotics to the surgical site when necessary
4. I test your nose prior to surgery for staphylococcus aureus.
5. I use specialized wipes and soap to prepare the skin prior to surgery to reduce bacteria.

Is it possible that I will need another surgery in the future?
Yes. You may need another surgery in the future, either to treat a complication (such as an infection) or to treat pain, or another spinal problem. In the case of an anterior cervical discectomy and fusion, more surgery is necessary about 14% of the time at about 5 years. Possible reasons for additional surgery include failure of the healing at the first level, development of problems at another level, broken instrumentation, spondylolisthesis, instability, scar tissue buildup, or junctional breakdown.

The First Week

- Early to bed, late to rise and frequent rest periods throughout the day. Get at least 8 hours of sleep each night. A disrupted sleep pattern is common after discharge from the hospital and will return to normal over time.
- You may not drive, but you may be driven, for short distances, using proper restraints such as shoulder and lap belts for 2-4 WEEKS.
- No lifting of more than 15 pounds.
- May climb stairs with hand rail
- Begin a daily walking program with 1 to 2 blocks initially; schedule a daily time and increase distance daily.

- Eat a regular, balanced diet.
- Take medications as prescribed, using narcotics as needed.

The Second Week

- Resume normal rising and retiring schedule, but continue to rest throughout the day.
- You may not drive.
- No lifting of anything weighing more than 15 pounds.
- May climb stairs with hand rail
- Continue scheduled walking, increasing distance and frequency as able.
- May resume sexual relations when comfortable.
- Begin narcotic weaning as pain diminishes, relying mainly on non-narcotic medications
- Follow-up in the office as scheduled, for further instructions.

The Third Week

- Resume normal rising and retiring schedule, resting as needed.
- May resume light work around the home; lifting not to exceed 15 pounds.
- Continue scheduled walking.

The Fourth Week

- Resume normal rising and retiring schedule, resting as needed.
- May resume light work around the home; lifting not to exceed 15 pounds.
- Continue scheduled walking.

The Sixth Week

- Follow-up visit.
- Discontinue weight limit. Ok to lift more than 15 pounds but less than 30 lbs.
- Resume sedentary work
- Initiate physical therapy

The Twelfth Week

- Follow-up visit.
- Assess physical therapy
- Resume physically demanding work