

ANTERIOR LUMBAR FUSION

Purpose

This booklet is designed to be an information source for you concerning your lumbar fusion. It is not meant to replace any personal conversations that you might wish to have with Dr. Kitchel, his assistant, his office, or other members of the health care team. My hope in preparing this booklet for you is that it will answer some of your questions and serve as a stimulus for you to ask appropriate questions about the surgery.

General Overview

Low back or lumbar fusions have been performed safely around the world for over 70 years. They are indicated for the treatment of instability in the lumbar spine, in certain spine fractures, and to control other conditions causing back pain.

The concept of a lumbar fusion is to make the back rigid over the vertebrae that are being fused. This is done in an attempt to eliminate any instability which is present or could come about as a result of fractures or other pathologic conditions. The joints and discs at the level of the fusion are removed and bone grows solidly across one vertebra to another for prevention of any further motion.

Lumbar fusions have gotten a somewhat bad reputation over the last decade. This is because a great many of them were done for people with low back pain and no evidence of instability or underlying pathologic condition. Fusion surgery for low back pain without instability or other pathologic conditions is not highly successful. In most of the studies that have been done, it is proven to be only about 50% successful in relieving the back pain. However, when patients are selected carefully and the fusions done for specific pathologic conditions, the success rate approaches 90%. Dr. Kitchel will explain to you the underlying condition in your back and the reasons he believes the fusion will be helpful in your particular case.

Indications for Surgery

The indication for lumbar spine fusion is instability in the lumbar spine. This can either be acute instability as a result of a fracture, or instability of a more chronic nature which has come on as a result of previous surgery, degenerative diseases, or diseases which have taken away bone in the lumbar spine, thereby causing abnormal motion. In general, lumbar spine surgery is not indicated simply for the treatment of low back pain.

In most cases, some attempt is made at conservative treatment before fusion is recommended. This will generally include a course of exercises and possibly bracing to stabilize your back. The course of conservative treatment is helpful because it may eliminate the problem and make your body tolerate the surgery better, if it is done.

Often fusion is accompanied by other procedures being done in the lumbar spine. Frequently, it will be necessary to remove pressure from the nerve roots where they are coming out of the back. At the time of removing the bone and ligaments necessary to decompress the nerve roots, the back may be rendered unstable. If this is the case, then the fusion would be done at the same time as the decompressive procedure. Sometimes the instability in the back will not become evident until sometime after the decompressive laminectomy has been done. In that case, the fusion would be suggested at a later date.

Preparation for Surgery

There are a number of things that will allow you to have a better result from your surgery by preplanning them before the surgery is done. The most important of these is that you go into the surgery with a complete understanding of what is to be done and a positive attitude that you are taking the right step. This is best accomplished by being sure that all of your questions are answered.

Please do not hesitate to contact Dr. Kitchel or his assistant with any questions which you think may be too foolish or too trivial to bother them with. We truly want you to understand the procedure at length and to have all of your questions answered.

You should be sure that Dr. Kitchel is aware of any health problems which you may have or medications that you are taking before surgery. He may want to stop some of the medications because of the possibility that they can increase your bleeding at the time of surgery. He may also ask you to see your family doctor or internist so that they can pronounce you fit and a good candidate to undergo the surgery. It is also possible that other medications may interact with the anesthesia and the anesthesiologist may ask you to modify how you are taking them.

If you are a smoker, it is advisable that you stop smoking before the surgery. Smokers have a higher rate of wound problems and also have lower fusion rates than nonsmokers. It is desirable that your body be in the best possible condition for surgery. Your heart, lungs, and spine need to be as strong as possible. It is possible that Dr. Kitchel may recommend a program of aerobic, strengthening, or stretching exercises before surgery. It is also possible that you may be asked to see a physical therapist before surgery to show you a conditioning exercise program.

Lumbar fusion may require blood replacement. If Dr. Kitchel feels there is a possibility that you may need a blood transfusion after your surgery, he will ask you to store some of your own blood ahead of time to avoid the transmission of blood borne diseases such as hepatitis or AIDS. If you are asked to store your own blood, you will be given nutritional supplements such as iron and calcium to maintain your blood balance. The blood will be stored in a blood bank and given to you in the hospital following surgery.

With anterior lumbar surgery, it is desirable to have your stools softened before surgery. I advise that you start on Metamucil, one teaspoon in a glass of juice or water, twice a day, five days before surgery. You should also take Milk of Magnesia the two nights before surgery as directed on the package.

You will be scheduled for a preoperative visit prior to surgery. At that time, you will be given a lumbar corset. Please bring the corset with you at the time of hospital admission.

Surgery

For lumbar fusion you are admitted to the hospital or surgery center the morning of surgery. It is no longer necessary for you to come into the hospital the night before. This allows containment of costs at the time of surgery and also allows you to have a good nights' rest at home before you enter the hospital or surgery center. It is important that you do not eat or drink anything after midnight the night before surgery. This will allow the anesthesia to be safely administered. Please bring the corset with you.

Once you have been admitted to the hospital or surgery center, you will be taken to a room and prepared for surgery. This will include instruction about the surgery, cleansing of your back and abdomen, as well as instruction about the postoperative period. In most instances, you will have spoken with the anesthesiologist before your admission to the hospital and have decided on the type of anesthesia. Dr. Kitchel has no preference as to the type of anesthesia and this should be worked out between you and the anesthesiologist so that you are both comfortable that it is being administered in the safest possible fashion.

About one-half hour before the surgery is actually to begin, you will be taken up to the operating room and put into a holding area. The anesthesiologist

will come and visit you and start your IV at that time. You will then be taken to the operating room and anesthesia will be induced. Once the anesthetic has been successfully administered, you will be positioned for the surgery and surgery will be carried out.

After surgery you will wake up in the recovery room where your vital signs will be monitored and your immediate postoperative condition will be carefully watched. Most people stay in the recovery room between one and three hours after surgery. Once the anesthesiologist feels that you are doing well, you will be returned to your room in the hospital, or if surgery was done in the surgery center, allowed to go home..

The evening of surgery, it is normal for your back and abdomen to be sore. If you remain in the hospital, the nursing staff will be checking to make sure that your vital signs are stable and that there is no problem with either the wound or nerve function in your legs. Dr. Kitchel will be by to see you the evening of surgery to discuss how the surgery went and make sure that things are going as expected.

You will be maintained at bed rest only until you are comfortable and awake. During this time, the nurses will frequently encourage you to turn from side-to-side to avoid the complication of blood clots forming in your legs or possible breathing problems associated with remaining flat in bed. Once awake and comfortable, you will begin to get out of bed with the brace which was fitted for you before surgery. The brace is a means of external support to allow better immobilization of your back and increases the likelihood of you achieving a solid fusion. The physical therapist will come in and help you with your movements and make sure that it is an easy transition from lying to getting your corset on and getting out of bed. Dr. Kitchel has prescribed a specific program of walking and exercises for the first few days after surgery.

Your intravenous catheter will remain in place until you are comfortable taking pain medication by mouth after surgery. This is to give you adequate fluids as well as antibiotics in an attempt to lessen any chance of infection.

You will also have a catheter placed into your bladder. This is simply for your comfort and to allow you to not have to get on and off the bed pan. This will be removed when you can void comfortably

Depending on the specific technique of your surgery, you may go home the day of surgery, or the next day. Dr. Kitchel will see you before you are discharged and discuss with you the medications to take home as well as a prescribed program of activities. In general, you are not to be out of bed without your corset. You should do no bending, lifting, or stooping at home until you are seen back in the office by Dr. Kitchel. You should take your medications as he prescribes. Be sure that Dr. Kitchel answers all of your questions before you go home from the hospital that morning.

Generally, Dr. Kitchel will see you back in the office about ten days to two weeks after surgery take an x-ray, and evaluate you wound. If, during that first week of surgery, you have any questions or problems, you should call him at the office immediately.

The Operation

Lumbar spine fusion attempts to eliminate instability in the back. This is done by fusing the vertebrae together to reduce their motion. The actual technique of accomplishing this is through an abdominal incision over the spine with dissection of the soft tissues to expose the bone and disc. At the levels that have been selected for fusion, all soft tissues will be removed and discs will be excised. Synthetic bone growth compounds as well as aspirate of your own bone marrow

will be used to achieve the fusion. We no longer take large sheets of bone off your pelvis, shortening the recovery, and lessening the pain.

In some cases, the instability is severe enough that further augmentation of the fusion is required. Dr. Kitchel and his assistant will discuss this with you if he thinks that you should have an implant put into your back to give some immediate stability. He might also recommend the use of an external electrical stimulator which is meant to stimulate bone growth and thereby achieve a solid fusion. Dr. Kitchel will discuss both of these options with you if he considers them to be appropriate.

In anterior lumbar fusion surgery, a vascular surgeon will generally be used to safely make the approach to your vertebrae. You will visit with this surgeon ahead of time and they will explain the procedure, risks, and alternatives in detail. Some newer less invasive anterior fusions do not require a vascular surgeon. If you are a candidate for one of these, Dr. Kitchel will discuss it with you.

Risks and Complications

Your decision to undergo surgery should not be made lightly. You need to understand that there are certain risks and complications which accompany any surgical procedure. Thankfully, complications in lumbar spine surgery are rare. The most common complication is an infection. This occurs in approximately 1-2% of all spine surgery. Dr. Kitchel will do everything he can to avoid this complication. A sterile scrub will be performed on your back and the operation will be performed in a sterile room. Gloves, gowns, and masks will be worn by all personnel in the room. You will be given antibiotics during the 48 hours following surgery. Despite all of these precautions, infection does occasionally occur. Infection is generally not a devastating complication, but may require that the patient come back into the hospital for further antibiotics and possibly to

reopen the wound. If you have any personal history of susceptibility to infections, this should be communicated to Dr. Kitchel before surgery.

The complication of blood loss is rarely significant in lumbar spine surgery. The general blood loss will vary with how extensive a procedure must be done. With moving the abdominal blood vessels, rarely catastrophic blood loss and even death can occur. If Dr. Kitchel feels that there is a possibility of enough blood loss to require replacement, you will be asked to predonate some of your own blood ahead of time so that it may be stored and used at the time of surgery. Your blood volume will be monitored carefully while you are in the hospital and if blood replacement is required, this blood will be returned to you. If you are having an open anterior approach with a vascular surgeon, be sure you discuss this with them to your satisfaction.

Nonunion or pseudarthrosis is the complication of the fusion not becoming solid. This occurs between 5-20% of the time, depending on the underlying problem and the surgery. Dr. Kitchel will discuss with you what can be done in your individual case to make this less likely. Should this occur, another operation might be needed to add more bone graft.

New nerve damage is the rarest of all complications. This occurs in approximately 1/1000 cases. If there is new damage to your nerve, it could result in numbness, tingling, or pain. In all likelihood it would not result in paralysis. In males, the nerves that control erection and ejaculation are often encountered in these approaches. Be sure and ask Dr. Kitchel if you have any questions about sexual function.

The risks of anesthesia should be covered in your conversation with the anesthesiologist. It is up to you to be sure that you are comfortable with the form of anesthesia which you have chosen.

Expectations After Lumbar Fusion

The desired result of your lumbar fusion is to eliminate the instability in your back and thereby reduce your back and leg pain. Before we are able to assess the final result it is necessary that the bone heal and become solid. This will take a period of a minimum of three months. You will likely continue to notice improvement in your condition for at least a year. The final result should not be judged for one year.

You will be wearing the light weight brace for at least six weeks after your surgery. You will be started on an exercise program to rehabilitate and strengthen your back at about 2 weeks after surgery.

When you first go home from the hospital, the best form of therapy is simply daily activities and walking. You should always put on your brace when you get out of bed. You should not be out of bed without the brace except when showering. You may wear the brace to the shower, remove it, step in and shower, and then replace the brace after drying yourself. You should not bend over at the waist to dry your lower extremities without the brace. Other than showering, you should be in the brace at all times that you are out of bed. Dr. Kitchel will discuss a walking program with you for while you are wearing the brace. Walking is important and physical activity is important as this will increase the rate of healing of the fusion and also decrease your pain.

When You Go Home

If you have remained in the hospital overnight, Dr. Kitchel will generally tell you the evening before he plans to dismiss you the next morning. The hospital prefers that you go home in the morning before 11:00 a.m. That morning, Dr. Kitchel will come in and visit you to answer any questions as well as discuss your take-home medications and an appointment to see him back in the office.

When you get home, it is important to maintain moderate physical activities. You should not overdo it, but by the same token you should not spend all your time in bed or sitting. Sitting is a particularly difficult position on a lumber fusion as it increases the stresses across your back. It is okay to sit, but you should plan on frequent changes in position and no sitting for more than one-half hour without getting up and moving around.

You will have medications to take home as they are ordered by Dr. Kitchel. It is important that you take all of these on the schedule which he has provided you. His assistant will call you within a day or two of your discharge to make sure everything is going okay.

Unless Dr. Kitchel has specifically told you otherwise, it is all right to shower and cleanse the wound with simple soap and water. Simply dry the wound well after showering. It is not necessary to cover the wound unless there is any drainage. You should avoid movements of your lumbar spine when you are out of the brace showering.