SOUTHEASTERN NEUROSURGICAL SPECIALISTS

Pre & Post op Instructions for **LUMBAR LAMINECTOMY / MICRODISCECTOMY**

Please read these instructions carefully. This document will not only review the preoperative instructions, but also address a lot of questions you may have about your post-operative course. Your significant other or your caretaker should also read these instructions. Understanding what to expect after surgery, what is normal and what is not, will help alleviate any fears or concerns. This document is specific for patients undergoing any kind of lumbar laminectomy /microdiscectomy, but some variation may exist in your specific case and will be discussed at your pre-op appointment.

PRE-OPERATIVE INSTRUCTIONS:

Your admission will be registered with the hospital by our office. We will contact your insurance company for pre-certification requirements. You will be responsible for inquiring whether a second surgical opinion is required by your insurance. If you have any questions regarding insurance pre-certification, please contact our office.

You will be given Hibiclens solution to use to wash the skin where we plan to make your incision. For your surgery this will be your lower back from the bottom of your shoulder blades to the top of your buttocks.

Use the Hibiclens solution on a washrag or scrubby and wash the area gently for about 5 minutes. Then rinse thoroughly. If you are not given this at the preadmission testing area, it can be purchased at most any pharmacy.

The evening before your surgery, DO NOT EAT OR DRINK ANYTHING AFTER MIDNIGHT. This includes gum, mints, and your morning coffee. The anesthesiologist will not administer anesthesia if you have had anything by mouth after midnight, and your surgery will have to be postponed.

If you are on any medications, please check with the anesthesiologist to see whether you should take them on the morning of surgery. In general, you will be able to take all medications except some diabetes medicines, some blood pressure medicines and all blood thinners. If you are on any blood thinners or steroids, please contact our office. Unless otherwise instructed, you should stop using any anti-inflammatory medications such as NSAIDS (Ibuprofen, Motrin, Advil, Naprosyn, Celebrex, Meloxicam, Diclofenac, Mobic, etc.), any product containing aspirin, and any herbal supplements (such as: St. John's Wort, fish oil or other sources of Omega -3 fats, Vitamin E, etc.), 7 days before your surgery. These substances can cause bleeding problems and serious anesthetic reactions. If your cardiologist or neurologist requires you to take aspirin this may be able to be continued before surgery, and in most cases can be resumed immediately after surgery. Please discuss all your medications with Dr. Khajavi's office.

You should consider stocking up on groceries, including easy-to-prepare meals before you are admitted, so that your return home will be as smooth as possible.

PLEASE REMEMBER: It is important for you to be prepared for your discharge so that non-medical issues (like a ride home or someone at home to care for you) do not delay your discharge from the hospital. You will be discharged when the doctor feels you are stable, not when it may be convenient. Plan ahead to avoid any problems!

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THE DAY OF SURGERY:

Please bring the following items with you to the hospital:
- your insurance card or information
- a list of your medications and dosages
- a list of allergies
- any paperwork given to you by the hospital
- a living will, if you have one prepared (you may prepare one at the hospital if you wish)
- Photo ID
- Comfortable clothes to wear home
- Any discs containing X-rays, CT's, or MRI's that you have not turned into the office

Important note: If our office gives you a time to arrive at the hospital, and the hospital gives you a different time, please go with the time given to you by our office. It is best to show up early, since schedule changes can occur due to emergencies or medical issues that may arise with other patients. Although you may be told that your surgery is at a specific time, keep in mind that that unless you are the first case of the day, the time you are given for your surgery is just an estimate. The actual time of surgery will depend how much time it takes to complete the cases before you.

Upon arrival to the hospital, you will be given a hospital gown to change into. Do not wear or bring jewelry. Do not wear make-up. Do not wear dark fingernail polish. You will be asked to remove dentures and contact lenses before surgery. You will be discharged from the hospital when you are medically stable to go home or to a rehabilitation facility. It is important for you to be prepared for your discharge so that non-medical issues (like a ride home or someone at home to care for you) do not delay your discharge from the hospital. Please note that in this time of Covid-19 pandemic spikes, family members may not be allowed to visit you if you are admitted to the hospital.

Therapy/Rehab:

If admitted to the hospital, you will be evaluated by physical therapy and/or occupational therapy. They will make recommendations on assistive devices such as walkers, canes, and bedside commodes. They will also make recommendations on rehabilitation requirements if needed such as inpatient rehabilitation, home rehabilitation or outpatient rehabilitation.

POST-OPERATIVE INSTRUCTIONS:

You will likely receive general discharge instructions from the hospital when you are discharged. If there is any discrepancy between those instructions and our instructions below, please default to our instructions.

After you are discharged from the hospital you will need to call our office to set up your first post-op appointment, if this was not already done pre-op. This will typically be 10-14 days after surgery.

MEDICATIONS:

You will be given a prescription for an opioid (narcotic) pain medication like Norco (hydrocodone/acetaminophen) or less commonly Percocet (oxycodone/acetaminophen). You may also receive a muscle relaxer (like Robaxin or Tizanidine), and a nerve pain medication like Neurontin (gabapentin) or Lyrica (pregabalin), prior to discharge. If you are taking medications other than those prescribed by Dr. Khajavi, you should discuss possible drug interactions with your pharmacist or primary care physician.

Opioid pain medication should only be taken when you have pain, and muscle relaxers should only be taken when you have muscle spasm. Nerve pain medication should be taken exactly as directed (usually 3x/day), and should never be abruptly stopped, but rather should be weaned off slowly based on Dr. Khajavi's recommendations.

Prescriptions are called in and refilled during office hours only (Mon-Thurs 8am - 4:30 pm, Fri 8am - noon), and you can expect a 24 to 48 hour turn-around time for prescription refills. Do not wait until the last minute to request medications. It is your responsibility to keep up with your medication needs. Due to FDA/DEA regulations, we are unable to call in any controlled substances including opioid pain medications. Opioids require a signed script from a physician and generally must be picked up from our office in person, although the process of being able to electronically prescribe them may be an option in some cases.

You should begin tapering off the pain medications within 2 weeks of your discharge. As soon as you are comfortable, take a nonprescription pain medication such as Tylenol for pain relief. Please keep in mind that the maximum amount of Tylenol (acetaminophen) that you can take in a 24-hour period is 4000 mg, and that there is usually already some Tylenol in the opioid pain medication you are given. You may also take an anti-inflammatory such as Aleve or Motrin. Resume medications you were taking for other pre-existing medical conditions before you came into the hospital, unless otherwise advised by Dr. Khajavi. Do not resume blood thinners until cleared by Dr. Khajavi, usually 7 days after surgery. There are also over-the-counter medications that can thin your blood, such as NSAIDs (ibuprofen/Motrin, Naprosyn/Aleve, diclofenac, meloxicam, celebrex), fish oil, vitamin E, and omega-3 fatty acids among others, and these medications should not be restarted until one week after surgery. The one exception to this rule is baby aspirin. If you have a heart condition Dr. Khajavi may recommend that you continue daily baby aspirin before and after surgery without missing any doses. Please discuss this with Dr. Khajavi and/or his assistants.

Constipation is a common side effect of opioid pain medication. You should use an over-the-counter stool softener, and if you do become constipated, you should try Milk of Magnesia, a Fleet's enema, a rectal suppository, or if necessary, Magnesium Citrate. These are all available over the counter at most pharmacies. Walking as much as possible will also help you have a bowel movement. Please notify the office if your constipation becomes severe.

DRESSING/WOUND CARE:

Your incision may or may not be covered by a dressing. We often use a liquid surgical adhesive to seal the wound after closure instead of sutures or staples. If your incision was closed with a liquid surgical adhesive, you may shower immediately after surgery. If a dressing covers your glued incision, you may remove it as soon as you get home.

If you have staples or sutures and a gauze dressing instead of a liquid surgical adhesive, the dressing may be removed 2 days after surgery. There is no need to reapply another dressing(s) or use any special ointment. If there is some slight drainage for a few days after the dressing is removed, then apply clean 4 x 4 gauze with a few pieces of tape until the drainage stops. Wait another 2 days before you get the wound wet in the shower. Staples will be removed in about 10-15 days post op at your first postoperative appointment.

When showering, you can use whatever products you normally use. There are no special requirements, except you cannot take a bath or go in a pool for 1 month after surgery.

Finally, if you were told that there was a durotomy at the time of surgery, there are specific instructions regarding bedrest, sitting limitations, and wound drainage precautions which will be given to you at the time of discharge.

PREVENTION OF PNEUMONIA AND BLOOD CLOTS IN THE LEGS:

Pneumonia can occur after surgery when patients do not take big, deep breaths, and from inactivity (sitting too long or even worse, laying down too much). Blood clots (DVT) can also occur after surgery and inactivity plays a major role in

their formation. A blood clot in your leg can cause pain and swelling in the affected leg (calf usually), and if its breaks off, can travel to your lungs (PE) and be fatal. Using the incentive spirometer you received in the hospital frequently helps prevent pneumonia but walking as much as possible helps prevent both pneumonia and DVT/PE.

WHAT TO EXPECT AFTER SURGERY:

It is normal for your incision to be sensitive for a few days and for a little redness to occur. A small amount of drainage it's also not uncommon, even if the incision is glued closed. The drainage is usually yellowish or pinkish color, and if it occurs you should just put a sterile 4 x 4 gauze on the incision with a couple pieces of tape. Change the dressing once a day until the drainage stops, which will usually be in a few days. If you notice any excessive redness, swelling, or warmth around the incision, or the drainage is excessive, or appears purulent (pus like), then please call the office. Some bruising around the incision is not uncommon and will improve with time.

It is normal to run a low-grade fever after surgery and is usually due to atelectasis. Atelectasis is when very small areas of the lung are not fully inflated, which causes the temperature. Reasons for atelectasis include not taking enough deep breaths and not walking enough. This can be prevented by performing the deep breathing exercises using the incentive spirometer you were given in the hospital and increasing your activity. You should use the incentive spirometer 15-20 times (deep breaths) /hour while you are awake. Several (4-6) short walks a day are encouraged. If you have a fever over 102 or chills, please call the office.

The goal of the operation was to take the pressure off the nerves to improve your lower extremity pain. Numbness is usually the last symptom to resolve and can take several weeks. In general, most of your leg pain should improve over a period of 4 weeks. If you continue to have significant leg pain at the time of your one-month post op visit, Dr. Khajavi may prescribe medications or therapy, or may order a new MRI.

Back pain is expected after this type of procedure. This surgery is not intended to address your back pain, but rather your leg pain. Treat your incisional pain with pain medication and muscle relaxers. You can also use ice or heat (do not place directly on the incision) for 10 minutes four times a day. DO NOT SLEEP ON A HEATING PAD. In general, most of your incisional pain should improve over a period of about 4 weeks. Finally, we generally inject a medication called Exparel around the incision, which is a long-acting numbing medicine like the Novocain you get at the dentist's office. It does not eliminate the incisional pain but reduces it for 3-4 days. Consequently, if 3-4 days after surgery you feel a little bit more pain around your decision, that is quite normal.

Although the nerve compression has been corrected with surgery, it will take time for the nerves, muscle, and tissues around the area of the incision to heal. Therefore, you may experience symptoms very similar to your pre-operative conditions. These symptoms can sometimes worsen temporarily and occasionally symptoms do not improve at all due to permanent damage to the spinal nerves.

It is not uncommon for patients after surgery to feel tired or have a lack of energy. There are several reasons for this, including medication side effects, alteration in sleep cycle, and change in activity level. The best way to combat this is to go for plenty of short walks (preferably outside), minimize the amount of opioid medication taken, and to try not to take naps during the day (so that nighttime sleep is better), and staying involved socially with friends and family. Returning to work is also very helpful, although the timing of that will depend on your surgery any type of work you do. Finally, some patients, particularly older patients, may experience some confusion or memory problems after surgery. This too is usually related to some of the previously mentioned factors that affect energy level. The confusion is usually worse in the hospital and often worse at nighttime, but should improve with time. Contrary to popular belief, surgery and anesthesia do not cause dementia/Alzheimer's, so if the patient's confusion or memory problems do not improve, there was likely some unrecognized memory deficits prior to surgery.

RETURN TO DAILY ACTIVITIES:

For about the first week following surgery, you will need to rest and do as little activity as possible, other than walking as much as possible. As previously mentioned, you may feel sore and stiff. By the second week, however, you should begin to feel less pain and stiffness. During your second post op week, you should be able to take more walks, go out to eat, or go shopping. We would advise you not to walk on the treadmill for the first 1-3 months after surgery and not to walk the dog, as these activities could lead to unintended falls. Do not do any strenuous activities including lifting, stretching, bending, pushing, or pulling. Gradually, over the next couple of weeks you will be able to progressively increase your activities. Use the following as a guideline:

1. Driving. You should not drive for 1-2 weeks after surgery, but this may vary. You may drive sooner if you are not taking opioid pain medication. You may ride in a car on short trips. If you must ride over 30 miles, get out and walk every 30-45 minutes. It can be more comfortable for you to lay your seat back when traveling long distances. You should not plan to travel for long distances for at least a month after surgery.

2. Working. If you have a manual labor type job, you should not plan to return to work for 8 weeks or more following surgery. If you have a predominantly sedentary job, you can plan to return to work in a part-time capacity after 2-4 weeks. At your one month return office visit, Dr. Khajavi will assess you and determine at what point you may return to work. Caution and common sense should be used to determine whether you should engage in any activity.

3. Activity. No lifting, pulling, or pushing objects over than 15 pounds. (Examples: infants, grocery bags, vacuum cleaners, lawn mowers.) Avoid bending at the waist; rather bend with the knees and hips. Avoid traditional abdominal or back strengthening exercises during the first 2-3 weeks. You may climb stairs at any time but use the handrails. It may be advisable to have someone with you the first few times. Avoid sitting for more than 30 minutes at a time as longer periods may aggravate your back pain. When you sit, try to use some type of lumbar support. Remember to maintain good posture. Rest between activities, as you may find that you tire more easily after surgery. This is to be expected, and it may take some time before your energy level returns to normal. You should abstain from sexual activity for at least 2-4 weeks following surgery. Sexual relations are permissible after this period but should not be too vigorous. Use your judgment. Remember: the above lengths of time for sitting and walking will vary with each patient.

4. Exercising. Resuming exercise should be done carefully. Walking is one of the best exercises to improve your overall fitness and endurance level. Start with a few small trips a day and gradually increase the distance according to your tolerance. Don't try to do too much too soon! Do not participate in any aerobic type of activity (including tennis and golf) or contact sports for two to three weeks following surgery. Formal physical therapy will not begin until 2-3 weeks after surgery, to give time for you to heal.

PLEASE NOTE: CONDITIONS WILL VARY BETWEEN INDIVIDUAL PATIENTS. IT IS VERY IMPORTANT TO DISCUSS YOUR PARTICULAR SYMPTOMS WITH DR KHAJAVI OR HIS MEDICAL STAFF. THIS INFORMATION SHOULD BE USED AS A GENERAL INFORMATION SHEET ONLY AND SHOULD NOT BE USED IN LIEU OF MEDICAL TREATMENT. THE POST-OPERATIVE INSTRUCTIONS LISTED ABOVE ARE GUIDELINES. DR. KHAJAVI MAY HAVE SPECIFIC DO'S AND DON'TS IN YOUR CASE.

Disclosure / Conflict of Interest Statement:

Collaboration between surgeons and medical device industry has contributed to important advances in spinal surgery. However, some of the collaborations can create situations in which the care of the patient is affected. Dr. Khajavi has served as a consultant for NuVasive, a spinal instrumentation company, since 2004. As one of the earliest surgeons to perform minimally invasive lateral lumbar fusion surgery, Dr. Khajavi receives compensation for activities directly related to teaching and sharing of his experience / results, including reimbursement for travel expenses, meeting registration fees, and a fair honorarium if applicable. Dr. Khajavi also receives payment and/or royalties for product

development activities. Dr. Khajavi occasionally receives compensation for certain clinical research projects, but the vast majority of his clinical research receives no compensation or funding. All compensation is at fair market value, and accurately reflects Dr. Khajavi's time, effort, and expertise committed to the activity.

Dr. Khajavi staunchly believes that the patient's interests always come first, and his recommendation regarding surgery is never influenced by his relationship with medical industry. Dr. Khajavi feels patients need to understand a surgeon's exact relationship with medical industry, and to determine whether any conflict of interest exists. Dr. Khajavi welcomes any questions or conversations regarding your specific surgery, but instrumentation is generally not utilized in lumbar laminectomies and microdiscectomies.