TWIN CITIES ORTHOPEDICS

Ryan J. Hoel, MD

Care Coordinator Phone: 952-456-7423

Lateral Lumbar Interbody Fusion

WHAT DOES THE SURGERY INVOLVE?

- A fusion surgery is one where two or more bones of the spine are induced to heal together into one larger block of bone. This type of fusion surgery done from the side of the abdomen to remove the remnant of the disc and place a metal “cage” in its place, and then from the back to place screws and rods to hold the bones in the right place while they heal together.
- The screws and rods are placed in the back to hold the bones in the correct position while they heal together. Once the bones have successfully fused together the screws no longer need to be in place, however it requires another surgery to remove them, so most of the time the screws and rods are permanently left in place because very few people develop symptoms from having them remain in place.
- This surgery is done under general anesthesia (fully asleep).

WHAT ARE THE ADVANTAGES OF THIS FUSION TECHNIQUE?

- This technique is less invasive that a traditional (posterolateral) fusion, in that it does not disrupt as much of the muscle along the spine, with the goal of a faster recovery.
- The reason to go in from the side is that it allows a very large “cage” (block of metal) to be put in place where the disc used to be. The cages that are put in from the side are bigger than what can be put in by having surgery from the back alone. There are several benefits to having a larger cage put into place: it has a lower risk of subsidence (sinking into the bone), does a great job of restoring ideal spinal alignment, and has a high rate of successful fusion (the bones successfully grow together as they are encouraged to). The better the alignment of the spine after surgery, the lower the chance of the disc above the fusion wearing out in the future.

WHAT ARE SOME REASONS FOR WHICH THIS PROCEDURE IS DONE?

- The most common reasons for this surgery are spondylolisthesis (two bones slipping out of position on each other), or foraminal stenosis (a nerve to the leg is being squished between two of the spine bones because the disc has worn out). Other reasons include trauma, scoliosis, and severe arthritic changes causing pain.

DESCRIPTION OF THE SURGERY:

- To perform the part of the surgery from the side, Dr. Hoel makes one or two small incisions on the side of your abdomen. He then places a tube down onto the spine which spreads apart the hip flexor muscle (psoas) without cutting the muscle fibers. This then allows him to visualize the disc that he is treating. He removes the remnant of the worn-out disc. He then places the metal cage where the disc used to be. This cage is filled with allograft (bone graft that has been processed) and BMP to encourage a chemical to tell the body to make the two bones to heal together.
- While you are asleep, Dr. Hoel also makes two small incisions on the back to allow him to place screws into the bones in a minimally-invasive fashion. For high accuracy of screw placement, Dr. Hoel places his screws either with Navigation (like GPS for the spine) or with Robotics. The cartilage on the joints in the back of the spine is removed, and allograft is placed in those joints to encourage them to heal together as well. Dr. Hoel then connects the screws with two rods – this holds the bones in place while they heal together.
- If you need to have a decompression as well (i.e. laminotomy), Dr. Hoel would then make a third small incision on the back to remove the portion of the bone that is pressing on nerves in the center of the spine.

WHAT TO EXPECT DURING RECOVERY FROM SURGERY:

- This is a large surgery (similar to a knee replacement), and so it is done in a hospital. Most people stay in the hospital from 1-2 days after surgery, depending on how their pain from the surgery is doing.
- You will be encouraged to be up in a chair, or even up walking, the evening of your surgery. You may notice that your hip flexor on the surgical side is achy when you try to raise your knee up in the air – this is expected from the spreading apart of that muscle that was necessary for the surgery. This typically improves in the first few days after surgery as the muscle calms down.
- You are encouraged to walk as much as you are able after surgery, with a goal of 45 minutes per day. It may take 1-2 weeks to get to that point, but walking is the best exercise you can do to help your recovery along.
- Dr Hoel usually does not have you wear a brace after surgery, but will ask you to refrain from lifting objects >10 lbs, and refrain from dramatic bending or twisting of your low back until after the 6-week postop mark. Golfing is very hard on the low back and the fusion site, and therefore Dr Hoel will ask golfers not to return to golf until the 3-month mark, and then it is a gradual return to sport over several weeks.

WHAT CHANGES IN FUCTION SHOULD I EXPECT AFTER I RECOVERY FROM SURGERY?

- Most patients with a 1-level fusion (two bones) do not notice a substantial change in their motion once they have recovered from surgery. They can typically participate in all of the activities they did prior to surgery. If a fusion involves multiple levels, the more levels that are fused the more the patient will notice the restriction in motion.

VIDEOS FOR PATIENT EDUCATION:

- LLIF (XLIF) technique walkthrough: https://www.youtube.com/watch?v=WCApGjtfsIY&ab_channel=NuVasiveInc
- Robotic-assisted surgery: https://www.youtube.com/watch?v=6PQOVRORwJw&list=PLcQ7wfbnxiIlSKwhhKIwLnMyEG9oMZDLg&index=5&ab_channel=MedtronicSpinal