

ARTICLE: “Beyond Injections—Surgical Techniques Of The Spine”

This week we are going delve further into the treatment of spinal disc disorders. Last week we left off speaking of spinal injections and nerve root techniques which are designed to alleviate disc related nerve pain in the spine. This week we are going to talk about the surgical treatment of spinal disc disorders and the techniques involved.

Laminectomy: The first and foremost common treatment surgically for a disc disorder is the spinal laminectomy. The lamina is an arch of bone which covers the neural tissue of the spine and often is a barrier by which the nerve is compressed against resulting in pain, numbness, tingling and weakness in the legs or arms. The laminectomy is a technique in which the lamina of the spinal vertebra is removed in order to relieve pressure on the nerve and alleviate symptoms. When the surgeon choose the level of surgery, this is done by both considering the patient’s symptoms, location, and direction as well as the location of the disc derangement on the magnetic resonance image (MRI) Additionally, the surgeon is able to see the derangement and can determine the level needing surgery via a visual confirmation as well. Laminectomy is effective in relieving nerve pain in the limb and in many cases, alleviates the spinal pain as well.

Fusion: When the discs degenerate to the point that an instability is caused, the structural stability of the vertebra is compromised in such a way that the excess motion causes back pain and the loss of disc height causes nerve root compression. This excess movement plus compression necessitates fusion of the specific level or levels involved. The procedure often chosen in the lumbar spine is the PLIF (posterior lumbar interbody fusion) which is a technique utilizing both bone grafts between the suspect vertebra and a metal plate in order to stabilize the offending area. Because the discs provide structural stability between the vertebra when they lose height, the ligaments slacken and this degenerative instability results in movement and increased joint pain in other areas such as the spinal facet joints which must bear more weight when the intervertebral discs do not support the load. The instability which results is both a result of increased compression and increased motion at that level.

Fusion using plates and bone graft both increases the motion and stabilizes the segments reducing pain locally as well as the resultant nerve root change down the limb. Following a PLIF, the patient is not allowed to bend, twist or lift for several months and must follow these spinal precautions in order to allow the bone graft to “take” and fusion to successfully heal. Patients can do some exercise in the pool as well as therapeutic exercises in a neutral spinal position called core stabilization exercises. These exercises are designed to strengthen the abdomen and lumbar muscles without stressing the fusion and should be carefully prescribed by physical therapist following this surgical procedure.

A third type of spinal surgery which is similar to a PLIF/fusion but different in one main function is the spinal disc replacement. In the spinal disc replacement rather than a

solid fusion of the joint using bone grafts and plates, a pivot type mechanism is used between the vertebra allowing sparing of the spinal motion while stabilizing the segment and separating the vertebral segments essentially unpinching the nerve. The disc replacement is a relatively new procedure which can be an effective alternative to spinal fusion. Disc replacements are done in specific instances and are not appropriate for all degenerative instabilities.

As you can see, spinal surgery is nothing to rush into, but rather something that is often a last resort following the failure of other conservative treatments. Manipulation, traction, ultrasound, massage and therapeutic exercise can fix most spinal conditions. However, in the most severe of cases, the surgical intervention is sometimes needed to alleviate patient's symptoms. For more information on spinal surgery and post operative surgical exercise, make use of the no cost consultation at our clinic to learn more about procedures. Have a great week!