Epidural Steroid Injections/Selective Nerve Root Blocks

General Information

Epidural Steroid Injections (ESI's) are a common method of treating inflammation associated with neck pain, mid-back pain, low back pain, pinched nerves and some causes of headaches.

Why Get an Epidural Steroid Injection?

Narrowing of the spinal passages can occur from a variety of causes, including disc herniation, bone spurs, thickening of the ligaments in the spine, joint cysts, or even abnormal alignment of the vertebrae ('slipped vertebrae', also known as spondylolisthesis). The epidural space is a fat filled 'sleeve' that surrounds the spinal sac and provides cushioning for the nerves and spinal cord. Steroids ('cortisone') placed into the epidural space have a very potent anti-inflammatory action that can decrease pain and allow patients to improve function. Although steroids do not change the underlying condition, they can break the cycle of pain and inflammation and allow the body to compensate for the condition. In this way, the injections can provide benefits that outlast the effects of the steroid itself.

How Are Epidural Steroid Injections Performed?

There are three common methods for delivering steroid into the epidural space: the interlaminar, caudal, and transforaminal approaches. All three approaches entail placing a thin needle into position using fluoroscopic (x-ray) guidance. Prior to the injection of steroid, contrast dye is usually used (provided the patient does not have other medical conditions that would prevent its use, like an allergy to contrast) to confirm that the medication is traveling into the desired area. Frequently, a local anesthetic (numbing medicine) is added along with the steroid to provide temporary pain relief.

An interlaminar ESI, often referred to simply as an 'epidural injection', involves placing the needle into the back of the epidural space and delivering the steroid over a wider area. Similarly, the caudal approach uses the sacral hiatus (a small boney opening just above the tailbone) to allow for needle placement into the very bottom of the epidural space. With both approaches, the steroid will often spread over several spinal segments and cover both sides of the spinal canal. With a transforaminal ESI, often referred to as a 'nerve block', the needle is placed alongside the nerve as it exits the spine and medication is placed around the nerve. The medication then travels up the nerve and into the epidural space from the side. This allows for a more concentrated delivery of steroid into one affected area (usually one segment and one side). Transforaminal ESIs can also be modified slightly to allow for more specific coverage of a single nerve and can provide diagnostic benefit (referred to as a **Selective Nerve Root Block**), in addition to improved pain and function.

All three procedures are performed on an outpatient basis, and you can usually return to your pre-injection level of activities the following day. Some patients request mild sedation for the procedure, but many patients undergo the injection using only local anesthetic at the skin.

What Happens After the Injection?

The steroid will usually begin working within a few days, but in some cases it can take up to a week to feel the benefits. Although uncommon, some patients will experience an increase in their usual pain for several days following the procedure. The steroids are generally very well

tolerated, however, some patients may experience side effects, including a ‘steroid flush’ (flushing of the face and chest that can last several days and can be accompanied by a feeling of warmth or even a low grade increase in temperature), anxiety, trouble sleeping, changes in menstrual cycle, or temporary water retention. These side effects are usually mild and will often resolve within a few days. If you are diabetic, have an allergy to contrast dyes, or have other serious medical conditions, you should discuss these with your doctor prior to the injection.

Epidural steroid injections have been performed for many decades, and are generally considered as a very safe and effective treatment for back, leg pain, neck and arm pain. Serious complications are rare, but could include allergic reaction, bleeding, infection, nerve damage, or paralysis. When performed by an experienced physician using fluoroscopic guidance, the risk of experiencing a serious complication is minimized. Overall, ESI’s are usually very well tolerated.

Although not everyone obtains pain relief with ESI’s, often the injections can provide you with improvement in pain and function that last several months or longer. If you get significant benefit, the injections can be safely repeated periodically to maintain the improvements. Injections are also commonly coupled with other treatments (medications, physical therapy, etc) in an attempt to either maximize the benefit or prolong the effects. You should consult with your doctor to develop a comprehensive care plan.