Biomark Med. www.neurosurgery-online.com recently published the results of a randomized, controlled, double-blind study compared epidural steroid injections as an area requiring further research.

Friedly et al. recently published the results of the Lumbar Epidural Steroid Injections (LESS) trial in the New England Journal of Medicine. This randomized, controlled, double-blind study compared epidural injection of the glucocorticoids plus lidocaine (200 patients) with lidocaine only (200 patients) for the treatment of spinal stenosis. All patients were at least 50 years old, had evidence of central lumbar spinal stenosis on magnetic resonance imaging or computed tomography scan, rated back and leg pain a minimum of 4 on a scale of 0 to 10, and scored a minimum of 7 on the Roland-Morris Disability Questionnaire (RMDQ; maximum score is 24; higher score indicates more severe disability). Exclusion criteria included lumbar epidural injections within the past 6 months and spondylolisthesis requiring surgery. The trial occurred at 16 sites in the United States, and injections were performed by 26 physicians trained to perform the procedure in a standardized fashion via a fluoroscopically guided interlaminar or foraminal approach. Primary outcome measures included RMDQ score and back and leg pain rating. Secondary measures included several pain, quality of life, and clinical improvement indexes. Outcomes were measured at 3 and 6 weeks after injection. Patients were allowed to undergo repeat injections at the 3-week time point. The results of the study demonstrated symptomatic improvement in both groups at 6 weeks after injection; however, there was no significant difference in the degree of improvement between the glucocorticoid plus lidocaine group and the lidocaine only group as measured by either RMDQ or pain scores. At 3 weeks, patients receiving glucocorticoid plus lidocaine showed a small improvement in RMDQ and pain scores compared with the lidocaine only group, but the benefit was not observed at the 6-week time point. In terms of secondary outcome measures, the glucocorticoid plus lidocaine group members reported greater satisfaction with their treatment and less depressive symptoms. The study group interpreted this to be a result of the relatively greater improvement in pain symptoms the glucocorticoid plus lidocaine group experienced at 3 weeks after injection. Additionally, evidence of cortisol suppression in this group indicates systemic absorption of the epidurally injected steroid, which may have affected patient responses.

On the basis of these results, epidural steroid injections should be used sparingly or not at all in symptomatic spinal stenosis patients. Unlike spinal decompression surgery, which has been shown to be effective and durable over years, the real long-term durability of spinal injections in improving symptoms of spinal stenosis has yet to be demonstrated. Its cost-effectiveness in the treatment of this common disorder is also unknown. Although they certainly have a beneficial effect for some period of time, epidural injections have become a prerequisite for many spinal surgery insurance authorizations, potentially resulting in unnecessary cost and time consumption and misallocation of resources for patients and doctors alike. The LESS trial provides important insight into the effectiveness of the current management of spinal stenosis, prompting further evaluation to ensure that patients are receiving the best possible treatment at the lowest risk and highest value.

Epidural Steroid Injections for Spinal Stenosis

Developing some degree of spinal stenosis is virtually guaranteed if one lives long enough and continues to be physically active. Overall incidence rates continue to rise, as does the number of interventions used to treat it, resulting in significant cost burden and resource allocation. Steroids are thought to reduce inflammation and irritation when injected into the spine for stenosis, but as a chronic compressive process, the degree to which swelling contributes to symptoms of pain and functional disability vs direct nerve compression is unclear. Epidural injections have long been synonymous with steroid shots as glucocorticoids mixed with an anesthetic such as lidocaine have become the mainstay of treatment for many spinal ailments, including symptomatic spinal stenosis. However, steroids are not harmless, and the compounding of such cocktails of medicine has yielded serious complications in recent years. This risk, combined with uncertainty efficacy, designates epidural steroid injections as an area requiring further research.

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REFERENCE

Bipolar vs Monopolar Stimulation for Cortical Mapping: Which Is Better?

Extraoperative cortical stimulation (CS) is widely used to map eloquent cortex in patients with epilepsy before they are offered resective treatment. However, this technique is not standardized across centers, and it can be performed in bipolar format, in which adjacent pairs of electrodes are stimulated, or in monopolar format, which involves stimulation through 1 electrode with reference to a distant electrode overlying noneloquent cortex. Bipolar CS may result in more localized current flow than monopolar CS, which typically stimulates a larger amount of tissue. In their recent article, Kovac et al. compared these 2 modes of stimulation in 5 patients undergoing intracranial monitoring for presurgical evaluation of intractable epilepsy to determine (1) whether both modes produce similar mapping of the eloquent cortex, (2) how safe they are with respect to producing afterdischarges that could potentially evolve into seizures, and (3) whether they produce similar movements (stimulating motor cortex) when the same electrodes are stimulated with either method.

All patients involved in this study had frontal lobe epilepsy and had electrodes covering the precentral and postcentral gyri. Both bipolar CS and monopolar CS were done to identify motor and language areas of the cortex. In 4 of the 5 patients, the bipolar CS and monopolar CS were performed in different sessions with the patients on their antiepileptic medications. In both of the CS modes, the authors used 5-second trains of 50-Hz unipolar biphasic square wave pulses (pulse width, 500 microseconds). They gradually increased the current intensity from 1 to 7.5 mA, until the occurrence of a clinical sign...