

Efficacy of Epidural Steroid as a Pain Management Modality In Scoliotic Patient

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I. Introduction

Degenerative lumbar scoliosis is usually accompanied by spinal stenosis. Therefore, it becomes increasingly prevalent in the elderly, older than 50yrs of age. Most patients present with radiating pain, axial back pain, neurogenic claudication. So pain management becomes vital and giving epidural steroid injection poses a great challenging task.

II. Case Report

A 60yrs old female with left lumbar scoliosis with severe spinal stenosis involving L2 -S1, complaining of radiating pain to left lower limb, since 1yr posted for epidural steroid injection for palliative pain management. The risk and procedure outcome were explained to patient.

Pre-anaesthetic assessment was done. No co-morbidities were found. Pre-operative instructions given. Patient was shifted to OT, connected to standard monitors, i.v line 20G secured to right upper limb connected to 1point Ringer lactate, baseline vitals checked.

The patient was placed in sitting position, with pillow over chest and abdomen, bending the head forward to reduce lumbar lordosis. The desired thoracolumbar region T12-L1 palpated and selected. The target region was disinfected and 18Gauge TUOHYS epidural needle was used, epidural space identified with LORA technique, midline approach with difficulty. once the needle was placed in the final position, a fine aspiration was performed to check for the presence of blood or CSF. Then the drug (depomedrol) Inj.methylprednisolone 80mg was injected into the epidural space. Hemodynamic parameters were all stable through out the procedures. Patient was shifted to post operative ward for further monitoring, telephonic follow ups were scheduled.





III. Discussion

Degenerative lumbar scoliosis is usually accompanied by axial back pain and spinal stenosis. It is known that radiating pain is mostly caused by nerve compression resulting from foraminal stenosis, which is caused by the contact of the facet joint after the intervertebral discs collapse from disc herniation and lateral reposition of the vertebral body. Therefore, the radicular pain is associated with various mechanisms, such as inflammatory changes around the nerve roots, venous congestion or circulation disturbances. When injected into the epidural space, steroids ease pain by inhibiting prostaglandin synthesis, blocking the conduction of nociceptive C fibers and controlling the edema around nerve roots. For this reason, steroid injections are used in patients diagnosed with radicular pain elicited by lumbar scoliosis with spinal stenosis.

The scoliotic spine poses a unique challenge for the anaesthesia provider, and giving epidural steroid injection.

Scoliosis is broadly classified into three categories: congenital, neuromuscular, degenerative or idiopathic. Scoliosis is defined as lateral curvature of the spine. The degree of lateral curvature is determined by the Cobb angle. The Cobb angle is measured between the most tilted vertebral bodies in the coronal plane.

A line is drawn parallel to the superior end plate of the cephalad vertebrae with the greatest angulation. A second line is drawn parallel to the inferior end plate of the caudal vertebrae with the greatest angulation. A perpendicular line is drawn from each of these lines, which creates the Cobb angle. In addition to the lateral curvature in idiopathic scoliosis, there is also rotation of the vertebral bodies. Anatomically, the spinous processes point towards the midline (concave-side) and the vertebral bodies rotate towards the convex-side of the curve. A strong linear relationship exists between the Cobb angle and vertebral rotation in both thoracic and lumbar curves in untreated patients, and maximum rotation occurs at the apex of the scoliotic curve.

This procedure involves injection of corticosteroids into the epidural space around the spinal cord and nerves. It is most often used to treat spinal disorders of the low back (lumbar spine), and also may be used to treat disorders in the neck (cervical spine). Corticosteroids are believed to relieve low back pain by reducing inflammation.

Steroid injections also may be helpful for foraminal stenosis (narrowing of space through which nerves exit the spine, causing nerve compression), but it is currently unclear how people with this disorder will respond to the treatment. Central canal stenosis (narrowing of the space in the vertebrae through which the spinal cord passes) is a fairly weak indication for epidural steroids; however, that doesn't mean that epidural steroids shouldn't be considered at all if the only other alternative is surgery. Patients with degenerative lumbar scoliotic stenosis and radiculopathy treated with epidural steroid injections (ESIs). The aim of our study was to answer the following three questions: (1) if a patient with degenerative lumbar scoliotic stenosis presents with radiculopathy, what degree of improvement may she anticipate if she is treated with ESI, and how long will that improvement last? If epidural steroid injection is unsuccessful in providing lasting symptom relief, what is the prognosis of a repeat injection.

Short-term relief from pain and increase in function is clinically significant, especially as Epidural steroid injection, may be repeated safely for four times per year.

Some people get relief for years with 1 to 3 injections. On the other hand, some people only get relief that lasts a few weeks.

In a classic patient with relatively new back pain radiating into the leg, a fairly good response is expected in approximately 70% of patients.

Side effects may include an increased blood sugar, anxiety, sleeping problems, water retention (bloating), facial flushing, infection, and suppression of the HPA axis (a system in your body that controls response to stress and regulates many body processes). Repeated use of epidural steroid injections may cause local osteoporosis (bone thinning) and weakening of the surrounding tissues that may cause further spinal degeneration over the years. Severe side effects are rare, but may include an allergic reaction, infection, nerve damage, and paralysis.

IV. Conclusion

Epidural steroid injection can be a good pain management modality for palliation in radiculopathies due to scoliotic degenerative changes in the elderly though the technique might be a challenge due to the pathology. Though other less invasive modalities of pain management are available, epidural steroid injection proves to be relatively effective and with fewer complications. In our case patient has reported significant reduction in pain during our telephonic follow-ups for a period of 6 months.

References

- [1]. Vad VB, Bhat AL, Lutz GE, Cammisa F. Transforaminal epidural steroid injections in lumbosacral radiculopathy: a prospective randomized study. *Spine*. 2002;27:11
- [2]. Dawson E, Bernbeck J. The surgical treatment of low back pain. *Phys Med Rehabil Clin N Am*. 1998;9:489-495.
- [3]. Grubb SA, Lipscomb HJ. Diagnostic findings in painful adult scoliosis. *Spine*. 1992;17:518-52

- [4]. Simotas AC, Dorey FJ, Hansraj KK, Cammisa F., Jr Nonoperative treatment for lumbar spinal stenosis. Clinical and outcome results and a 3-year survivorship analysis. *Spine*. 2000;25:197–203.
- [5]. Schwab FJ, Smith VA, Biserni M, Gamez L, Farcy JP, Pagala M. Adult scoliosis: a quantitative radiographic and clinical analysis. *Spine*. 2002;27:387–392. .
- [6]. Johansson A, Hao J, Sjolund B. Local corticosteroid application blocks transmission in normal nociceptor C-fibres. *Acta Anaesthesiol Scand*. 1990;34:335–338.
- [7]. Delport EG, Cucuzzella AR, Marley JK, Pruitt CM, Fisher JR. Treatment of lumbar spinal stenosis with epidural steroid injections: a retrospective outcome study. *Arch Phys Med Rehabil*. 2004;85:479–48.
- [8]. Riew KD, Yin Y, Gilula L, Bridwell KH, Lenke LG, Laurysen C, Goette K. The effect of nerve-root injections on the need for operative treatment of lumbar radicular pain. A prospective, randomized, controlled, double-blind study. *J Bone Joint Surg Am*. 2000;82:1589–1593.
- [9]. Cannon DT, Aprill CN. Lumbosacral epidural steroid injections. *Arch Phys Med Rehabil*. 2000;81(3 Suppl 1):S87–S98.
- [10]. Miyamoto H, Sumi M, Uno K, Tadokoro K, Mizuno K. Clinical outcome of nonoperative treatment for lumbar spinal stenosis, and predictive factors relating to prognosis, in a 5-year minimum follow-up. *J Spinal Disord Tech*. 2008;21:563–568.
- [11]. Cooper G, Lutz GE, Boachie-Adjei O, Lin J. Effectiveness of transforaminal epidural steroid injections in patients with degenerative lumbar scoliotic stenosis and radiculopathy. *Pain Physician*. 2004;7:311–317.

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