

Prospective Evaluation

Fluoroscopically Guided Caudal Epidural Steroid Injections in Degenerative Lumbar Spinal Stenosis

Kenneth Botwin, MD¹, Lee Ann Brown, MD¹, Mark Fishman, DO², and Sanjiv Rao³

From: ¹Florida Spine Institute, Clearwater, FL, ²South Florida Institute of Sports Medicine, Westin, FL, ³Nova Southeastern University College of Medicine, Fort Lauderdale, FL

Dr. Botwin¹ is Fellowship Director, Florida Spine Institute, Clearwater, FL. Dr. Brown¹ is a psychiatrist at the Florida Spine Institute, Clearwater, FL. Dr. Fishman² is with the South Florida Institute of Sports Medicine, Westin, FL. Rao³ is a student, Nova Southeastern University College of Osteopathic Medicine, Fort Lauderdale, FL.

Address correspondence:
Kenneth P. Botwin, MD
Fellowship Director
Florida Spine Institute
2250 Drew Street
Clearwater, FL 33765

E-mail: contactus@floridaspineinstitute.com

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Background: Caudal epidural steroid injections are commonly utilized to help reduce radicular pain in lumbar spinal stenosis. There have been studies done to evaluate the effectiveness of this procedure non-fluoroscopically guided. Search revealed no prospective studies evaluating the effectiveness of fluoroscopically guided caudal epidural injections on patients with bilateral radicular pain from degenerative lumbar spinal stenosis.

Objective: To evaluate the therapeutic benefit of fluoroscopically guided caudal epidural steroid injections in the treatment of bilateral radicular pain from symptomatic Degenerative Lumbar Spinal Stenosis (DLSS).

Design: This prospective cohort study was performed on 34 patients with bilateral radicular pain from lumbar spinal stenosis who received fluoroscopically guided caudal epidural injections at a multidisciplinary spine center as they did not improve with conservative care. The patients' degenerative lumbar spinal stenosis was confirmed by magnetic resonance imaging and classified as mild, moderate, or severe. The patients were evaluated by an independent observer and completed questionnaires, prior to initial injection, at 6 weeks, 6 months and 12 months after the injections.

Outcome Measures: Visual analog scale, patient satisfaction scale, standing/walking tolerance scale and Oswestry low back pain disability questionnaire.

Results: A total of 34 patients met our inclusion criteria and were followed at 6 weeks, 6 months, and 12 months. Sixty-five percent of patients at 6 weeks, 62% at 6 months, and 54% at 12 months had a successful outcome, reporting at least a >50% reduction between pre-injection and post injection visual analog pain scores. Fifty nine percent of patients had an improved walking tolerance at 6 weeks ($P < 0.0001$), 56% at 6 months ($P < 0.0001$), and 51% at 12 months ($P = 0.0005$). Fifty percent of patients had an improved standing tolerance at 6 weeks ($P = 0.0002$), 54% at 6 months ($P < 0.0001$), and 51% at 12 months ($P = 0.0005$). The patient satisfaction scale revealed 64% of patients felt completely or somewhat better at 6 weeks, 59% at 6 months and 52% at 12 months. Oswestry low back pain disability questionnaire scores showed statistically significant improvement from initial scores to 6 weeks ($P < 0.0001$), initial to 6 months ($P = 0.0095$), and initial to 12 months ($P = 0.00015$). The outcome was statistically significant even in severe stenotic patients when comparing initial mean scores to 12 month mean scores in standing tolerance ($P = 0.2956$), walking tolerance ($P = 0.0250$), and VAS ($P = 0.0199$).

Conclusion: Fluoroscopically guided caudal epidural steroid injections may help reduce bilateral radicular pain and improve standing and walking tolerance in patients with DLSS.

Key words: Injections, epidural radiculopathy, lumbar spinal stenosis, rehabilitation

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