

NEW STUDY OF COX® DISTRACTION MANIPULATION IN THE TREATMENT OF LUMBAR SPINE STENOSIS:

LUMBAR SPINAL STENOSIS PATIENTS IMPROVED BY 76% AND DISABILITY IMPROVED IN 73%

Murphy, DR; Hurwitz, EL; Gregory, AA; Clary, R: A non-surgical approach to the management of lumbar spinal stenosis: A prospective observational cohort study. BMC MUSCULOSKELETAL DISORDERS 2006; 7. FEB 23 2006: p.NIL_1-NIL_8

ABSTRACT:

Background: While it is widely held that non-surgical management should be the first line of approach in patients with lumbar spinal stenosis (LSS), little is known about the efficacy of non-surgical treatments for this condition. Data are needed to determine the most efficacious and safe non-surgical treatment options for patients with LSS. The purpose of this paper is to describe the clinical outcomes of a novel approach to patients with LSS that focuses on distraction manipulation (DM) and neural mobilization (NM).

Interventions: Patients were treated according to the usual protocol utilized at the Rhode Island Spine Center for patients with radiculopathy secondary to LSS. The primary interventions, which were utilized in all patients, were:

- **Distraction manipulation (DM)** - This is a manipulative technique developed by Cox [18]. Although other forms of manipulation are believed to be effective in patients with LSS [19], no form other than DM was used with the patients in this study. In applying DM, the patient lay prone on a table that allows for distraction of the spine through inferiorward and flexion movement of the lower body (figure 1). This maneuver has been demonstrated to decrease intradiscal pressure [20] and is believed to create vertebral motions and increase the intervertebral foramen [21].
- **Neural mobilization (NM)** - This a manual and exercise oriented method that is theorized to mobilize nerve roots that are suspected to be the source of nerve root pain [22,23]. Distal mobilization was applied by having the patient lie supine while the doctor or therapist dorsiflexed the ankle and flexed the hip with the knee extended. The leg was raised until the practitioner felt the "barrier" [24], i.e., the point at which tension is initially felt. The foot is then moved alternately into plantar flexion and dorsiflexion repeatedly for several cycles.

Methods: This is a prospective consecutive case series with long term follow up (FU) of fifty-seven consecutive patients who were diagnosed with LSS. Two were excluded because of absence of baseline data or failure to remain in treatment to FU. Disability was measured using the Roland Morris Disability Questionnaire (RM) and pain intensity was measured using the Three Level Numerical Rating Scale (NRS). Patients were also asked to rate their perceived percentage improvement.

Results: The mean patient-rated percentage improvement from baseline to the end to treatment was 65.1%. The mean improvement in disability from baseline to the end of treatment was 5.1 points. This was considered to be clinically meaningful. Clinically meaningful improvement in disability from baseline to the end of treatment was seen in 66.7% of patients. The mean improvement in "on average" pain intensity was 1.6 points. This did not reach the threshold for clinical meaningfulness. The mean improvement in "at worst" pain was 3.1 points. This was considered to be clinically meaningful.

The mean duration of FU was 16.5 months. The mean patient-rated percentage improvement from baseline to long term FU was 75.6%. The mean improvement in disability was 5.2 points. This was considered to be clinically meaningful. Clinically meaningful improvement in disability was seen in 73.2% of patients. The mean improvement in "on average" pain intensity from baseline to long term FU was 3.0 points. This was considered to be clinically meaningful. The mean improvement in "at worst" pain was 4.2 points. This was considered to be clinically meaningful. Only two patients went on to require surgery.

No major complications to treatment were noted.

Conclusion: A treatment approach focusing on DM and NM may be useful in bringing about clinically meaningful improvement in disability in patients with LSS.