

Surgical treatment in patients with lumbar spinal stenosis: better than nonsurgical treatment

Alexandru BURLACU, MD

Cardiology Department, Emergency University Hospital, Bucharest, Romania

Spinal stenosis is a narrowing of the spinal canal with encroachment on the neural structures by surrounding bone and soft tissue. Patients typically present with radicular leg pain or with neurogenic claudication. Spinal stenosis is the most common reason for lumbar spine surgery in adults over the age of 65 years. Indications for surgery vary widely and the paucity and heterogeneity of evidence limited conclusions regarding surgical efficacy for spinal stenosis.

In the Spine Patient Outcomes Research Trial (SPORT), the authors report the 2-year outcomes of patients with spinal stenosis without degenerative spondylolisthesis and analyze the relative efficacy of surgical versus nonsurgical treatment. The protocol surgery was standard posterior decompressive laminectomy. The nonsurgical protocol was "usual care," which was recommended to include at least active physical therapy, education or counseling with home exercise instruction, and the administration of nonsteroidal antiinflammatory drugs. The primary outcomes were measures of bodily pain and physical function on two short surveys at 6 weeks, 3 months, 6 months, and 1 and 2 years.

A total of 654 patients were enrolled: 289 in the randomized cohort and 365 in the observational cohort. In the randomized cohort,

138 patients were assigned to the surgical group, and 151 were assigned to the nonsurgical group. In the surgery group, 63% had undergone surgery at 1 year and 67% at 2 years. In the nonsurgical group, 42% had undergone surgery at 1 year and 43% at 2 years. In the observational cohort, 219 patients initially chose surgery and 146 patients initially chose nonsurgical care. Of those who initially chose surgery, 95% had undergone surgery at 1 year and 96% at 2 years. Of those who initially chose nonsurgical treatment, 17% had undergone surgery at 1 year and 22% at 2 years. In the two cohorts combined, 400 patients received surgery at some point during the first 2 years, and 254 received nonsurgical treatment.

In the intention-to-treat analysis, a significant treatment effect favoring surgery was seen at 2 years, with a mean difference in change from baseline of 7.8 (95% CI, 1.5 to 14.1) on the scale for bodily pain; at earlier times, there was a smaller nonsignificant effect in favor of surgery. However, at 2 years, there were no significant differences between the surgical group and the nonsurgical group on the first scale for physical function (0.1; 95% CI, -6.4 to 6.5) or on the second one (-3.5; 95% CI, -8.7 to 1.7)

In the as-treated analysis, the mean differences in change from baseline in the randomized and observational cohorts were

similar at 2 years: bodily pain, 11.7 (95% CI, 6.2 to 17.2) in the randomized group versus 15.3 (95% CI, 10.4 to 20.2) in the observational group; physical function, 8.1 (95% CI, 2.8 to 13.5) in the randomized group versus 13.6 (95% CI, 8.7 to 18.4) in the observational group; and the disability index, -8.7 (95% CI, -13.3 to -4.0) in the randomized group versus -13.1 (95% CI, -16.9 to -9.2) in the observational group.

In conclusion, in the as-treated analysis, if combining the randomized and observational cohorts, carefully adjusting for potentially confounding baseline factors, patients with spinal stenosis without degenerative spondylolisthesis who underwent surgery showed significantly greater improvement in pain, function, satisfaction, and self-rated progress than did patients who were treated nonsurgically.



Comment on the paper:

Weinstein JN, Tosteson TD, Lurie JD, et al., for the SPORT Investigators – Surgical versus nonsurgical therapy for lumbar spinal stenosis. *N Engl J Med* 2008; 358(8):794-810