

Study shows surgery is more effective than other treatments for common back problem

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When it comes to low back pain, physicians generally advise exhausting nonsurgical options before resorting to surgery. But a new study shows that for degenerative spondylolisthesis with spinal stenosis, surgery provides significantly better results than nonsurgical alternatives.

The study, published in the May 31 issue of the *New England Journal of Medicine*, is the second in a series reporting findings of the Spine Patients Outcomes Research Trial (SPORT), a five-year, multicenter study supported by the National Institute of Arthritis and Musculoskeletal and Skin Diseases (NIAMS), a part of the National Institutes of Health.

Degenerative spondylolisthesis is a condition in which breakdown of the cartilage between the vertebrae of the spine causes one vertebra to slip over the one below. This can result in narrowing of the spinal column (spinal stenosis), which can put pressure on the nerves, resulting in pain in the buttocks or legs with walking or standing. The condition generally occurs after age 50 and it affects six times as many women as men.

The management of degenerative spondylolisthesis with spinal stenosis is controversial, says James N. Weinstein, D.O., M.Sc., lead author and chairman of the Departments of Orthopaedics at Dartmouth-Hitchcock Medical Center and Dartmouth Medical School. Surgery is widely used, but its effectiveness in comparison with nonsurgical treatment had not been demonstrated in controlled clinical trials. The purpose of this arm of the SPORT trial was to make that comparison.

SPORT followed 601 patients diagnosed with degenerative spondylolisthesis and symptomatic spinal stenosis. Of those, 372 received a surgery called decompressive laminectomy, which involved removing bone and soft tissue to relieve pressure on the nerves. The remaining 235 pursued nonoperative treatments such as physical therapy, steroid injections and analgesic medications. Two years after enrollment in the trial, patients in the nonoperative groups reported modest improvement in their condition; however, patients who had the surgery reported significantly reduced pain and improved function. Furthermore, for the surgery group, relief from symptoms came quickly; some reported significant improvement as early as six weeks after the procedure.

“The SPORT study was undertaken with one purpose in mind: to give physicians and patients solid information that would allow them to make informed choices when faced with a decision of how to treat their back condition,” says Dr. Weinstein. “As a surgeon, it’s very important to me that I have evidence that I can share with my patients as they are trying to decide how to proceed with treatment. Up until now, we suspected surgery produced better results, but we had little objective data to support that. With the results of this study, we can now discuss much more fully the surgical and nonsurgical options available to our patients so that they can make an informed choice.”

The study initially intended to randomize patients into either a surgical or nonsurgical group and then observe and compare the results of the two groups. Unfortunately, a comparison of the two groups wasn’t as easy as hoped. The researchers found that 40 percent of patients crossed over from the group into which they were randomized. That is, members of the nonoperative group chose to have surgery and members of the surgical group decided to forgo surgery for nonsurgical treatments. For that reason, the researchers compared groups based on the treatment they actually received instead of the treatment group to which they were

assigned. Because the scientists were also studying similar patients who wanted to select which treatment they would receive (instead of being randomly assigned to a surgical or nonsurgical option), they were able to pool results from both studies, essentially creating a more powerful observational study at the expense of information gained from the statistically rigorous study design originally planned.

Patient crossover was also an issue in the first arm of the SPORT trial, which showed that patients who underwent surgery for another common back problem — herniated discs — experienced slightly more improvement than those who opted for nonsurgical treatments. Results of that trial were published in the *Journal of the American Medical Association* last November.

Results from the third major SPORT study, on the effectiveness of surgery vs. nonsurgical options for spinal stenosis without spondylolisthesis, are expected to be released later this year.

NIAMS Director Stephen I. Katz, M.D., Ph.D., applauds the SPORT trial, saying its findings are beneficial for people with these common back problems. “While it is generally not a good idea to rush into back surgery, the SPORT trial shows there are conditions for which surgery clearly is the most effective treatment choice. These findings will help doctors better counsel their patients about treatment options.”

Source: National Institute of Arthritis and Musculoskeletal and Skin Diseases

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