Surgical versus nonoperative treatment for lumbar disc herniation: four-year results for the Spine Patient Outcomes Research Trial (SPORT).


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Abstract

STUDY DESIGN:

Concurrent, prospective, randomized, and observational cohort study.

OBJECTIVE:

To assess the 4-year outcomes of surgery versus nonoperative care.

SUMMARY OF BACKGROUND DATA:

Although randomized trials have demonstrated small short-term differences in favor of surgery, long-term outcomes comparing surgical to nonoperative treatment remain controversial.
METHODS:

Surgical candidates with imaging-confirmed lumbar intervertebral disc herniation meeting SPORT eligibility criteria enrolled into prospective, randomized (501 participants), and observational cohorts (743 participants) at 13 spine clinics in 11 US states. Interventions were standard open discectomy versus usual nonoperative care. Main outcome measures were changes from baseline in the SF-36 Bodily Pain (BP) and Physical Function (PF) scales and the modified Oswestry Disability Index (ODI - AAOS/Modems version) assessed at 6 weeks, 3 months, 6 months, and annually thereafter.

RESULTS:

Nonadherence to treatment assignment caused the intent-to-treat analyses to underestimate the treatment effects. In the 4-year combined as-treated analysis, those receiving surgery demonstrated significantly greater improvement in all the primary outcome measures (mean change surgery vs. nonoperative; treatment effect; 95% CI): BP (45.6 vs. 30.7; 15.0; 11.8 to 18.1), PF (44.6 vs. 29.7; 14.9;12.0 to 17.8) and ODI (-38.1 vs. -24.9; -13.2; -15.6 to -10.9). The percent working was similar between the surgery and nonoperative groups, 84.4% versus 78.4% respectively.

CONCLUSION:

In a combined as-treated analysis at 4 years, patients who underwent surgery for a lumbar disc herniation achieved greater improvement than nonoperatively treated patients in all primary and secondary outcomes except work status.

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