



Comparing Outcomes of Fusion versus Discectomy Alone for One-time Recurrent Lumbar Disc Herniation:  
A Systematic Review and Meta-analysis

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Introduction

Recurrent lumbar disc herniation (RLDH) occurs in approximately 25% of patients undergoing primary discectomy for lumbar disc herniation. Current surgical treatment options include repeat discectomy or discectomy supplemented with fusion. Significant contention exists within the surgical spine community with regard to the most effective treatment modality. Herein, we sought to compare postoperative surgical and patient reported outcomes following fusion versus discectomy alone for RLDH

Methods

The electronic literature search was performed in Ovid Medline/Pubmed, EMBASE and Cochrane, Scopus and China National Knowledge Infrastructure for human studies directly comparing repeat discectomy with fusion for ipsilateral or contralateral RLDH. Random effects meta-analysis was conducted to pool the estimates of effect, using mean differences (MD) and odds ratio(OR) for continuous and categorical outcomes, respectively.

Results

A total of 1405 patients (746 fusions and 659 discectomies alone) from 15 studies (13 observational and 2 randomized controlled trials) were analyzed. Mean time to reherniation was 54.4 ± 30.4 months, while average follow-up time was 40 ± 11.7 months (range: 12-92.6). Fusions were associated with significantly longer operative time (MD: 67 minutes, 95% CI: 50 to 85), higher estimated blood loss(MD: 222 ml; 95% CI: 164 to 280) as well as longer hospitalizations(MD: 2.7 days, 95% CI: 1.6 to 3.8) compared to discectomies. Changes in PRO scores from baseline to last follow-up were similar between the two groups, including VAS-back pain (MD, -0.3; 95% CI, -1.4 to 0.7), VAS-leg pain (MD, -0.3; 95% CI, -1.4 to 0.7), ODI (MD, 0.6; 95% CI, -0.2 to 1.4), JOA (MD: 1.0; 95% CI: 0.02 to 2.0) and McNab satisfaction (OR: 1.5; 95% CI, 0.9 to 2.3).

Conclusions

Available evidence shows that fusion is associated with longer hospital stays, operative times and higher intraoperative blood loss. Future longitudinal, randomized controlled trials should be completed to validate any associations found in this study.

Learning Objectives

By the conclusion of this session, participants will be able to

- 1) Discuss the magnitude of the impact that recurrent lumbar disc herniation has on patients in terms of health and cost burden.
- 2) Discuss the features, indications, and outcomes of 2 types of surgeries for recurrent lumbar disc herniation.

References