

Buttermann GR. Treatment of Lumbar Disc Herniation: Epidural Steroid Injection Compared With Discectomy. JBJS 2004;86A;670-679.

Study hypothesis: Epidural steroid injections can successfully treat large lumbar disc herniation and avoid need for surgery

Design: Randomized clinical trial

Population/sample size/setting:

- 169 pts age 18-70 (mean age 40) referred to author at Midwest Spine Clinic for treatment of large lumbar disc herniation over three year period
- Herniation encompassed more than 25% of cross-sectional area of spinal canal on axial MRI or CT
- Exclusion criteria were pregnancy, cauda equina syndrome, pars defect at level of herniation, far lateral herniation, multilevel symptomatic disc herniations, or recurrent disc herniation

Main outcome measures:

- All were followed with conservative therapy for 6 weeks (PT, chiropractic, rest, pain medication)
- Conservative treatment produced symptomatic relief in 69 pts
- Remaining 100 pts randomized by computer to intralaminar injections of epidural betamethasone (n=50) or discectomy done by author (n=50)
- Injections done up to 3 times one week apart by a radiologist or anesthesiologist; 38/50 pts received injections under fluoroscopic guidance
- If epidural injections were considered by patient to be a failure, pts were crossed over to receive discectomy
- Follow-up evaluations completed at 3 mo, 6 mo, 12 mo, 1 yr, and 3 yr; variables included low back pain VAS, leg VAS, Oswestry, area of pain drawing, and motor strength assessed by author
- Only 3 patients not assessed at final 3 year follow-up period
- Other outcomes included use of narcotics, self-assessment of treatment success, and whether pts would recommend treatment to others
- Of the 50 epidural steroid pts, 27 crossed over to discectomy before end of study, predominantly for continued pain, mostly within first 6 months
- All groups improved in function, pain, use of narcotics, and motor strength at end of study period
- Discectomy group had earlier relief of pain, improvement in Oswestry, increase of motor strength, and decrease in area of pain drawing at 3 mo
- Crossover group improvement equal to improvement in group originally assigned to discectomy; delay in surgery due to epidural steroid trial did not result in poorer outcome
- At the end of 3 year study period, discectomy, crossover, and epidural steroid groups had equal Oswestry, pain scores, and motor strength outcomes

Author's conclusions:

- Six weeks of conservative treatment is reasonable prior to invasive treatment in back pain due to large disc herniation
- When response to noninvasive and successful epidural steroid injections are combined, rate of success of nonoperative treatment is 69%
- Nearly half of pts with large disc herniations who remain symptomatic at the end of 6 weeks of noninvasive treatment will respond to epidural steroid injection, supporting its use in such patients
- Delaying surgery has no significant effect on final result

Comments:

- Study not blinded, which may influence optimistic view of epidural steroid injection by author
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