Intraoperative Corticosteroid Administration Does Not Improve Pain, Functional Outcomes, or Decrease Postoperative Opioid Use

Aatif Sayeed, Stephanie Choo, Elizabeth Cole Durante, Abdul Fettah Buyuk, Theodore J Choma[1], Don K Moore[1]
[1]University of Missouri

INTRODUCTION:
Intraoperative application of epidural steroid is proposed to decrease postoperative pain following discectomy for lumbar disc herniations. We conducted a prospective randomized controlled trial to evaluate the benefit of direct intraoperative steroid application during lumbar discectomy. Our secondary goal was to determine which patients are more likely to achieve benefit from steroid, and we report the results of our interim study analysis.
METHODS:
Consenting adult patients undergoing lumbar discectomy for single level lumbar disc herniations were randomized to receive either corticosteroid or saline solution intraoperatively following discectomy. Intraoperative photographs were taken and nerve root inflammation graded by the operating surgeon. VAS Pain scores, ODI scores, and opioid use were assessed until 1 month postop. Improvement in clinical outcomes with steroid administration if present was to be further stratified by intraoperative nerve root inflammation.
RESULTS:
Of 70 recruited patients, 33 were randomized to receive steroid and 37 to receive saline. There was no statistically significant difference in pain scores, ODI, or VAS scores at 3, 7, or 30 days postoperatively between the groups. Opioids were still being used postoperatively by 54.5% vs 37.9% ($p=0.25$) of patients in steroid vs saline group at POD3, which decreased to 6.5% vs 8.6% respectively at POD30 ($p=1.0$). Given the lack of significant improvement in any measured outcomes with steroid, further analysis by nerve root inflammation was deferred.
DISCUSSION AND CONCLUSION:
Intraoperative steroid application during lumbar discectomy did not produce measurable improvement in postoperative pain, ODI, or opioid use. Planned stratification by degree of nerve root inflammation deferred due to the absence of any measurable improvement in outcomes with steroid administration at this time.