

Implications of anesthetic approach for the treatment of spinal disc herniation, spinal vs general anesthesia

Nikhil Sharma; Matthew Piazza MD; William Charles Welch MD, FACS, FICS; Neil R. Malhotra MD

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Introduction

Health care costs continue to escalate. Treatment approaches to care that have comparable outcomes and complications are increasingly assessed for cost and quality. Efforts to identify components of care to reduce length of stay (LOS) have been ongoing, and in particular, spinal anesthesia (SA), for select lumbar spine cases, has garnered interest as an alternative anesthetic to general anesthesia (GA). While clinical outcomes with spinal anesthesia or general anesthesia have been studied, few authors have looked at the cost-analysis in relation with clinical outcomes.

Methods

We retrospectively analyzed 550 patients who underwent hemilaminotomy for disc herniation and who received either spinal anesthesia (n=91) or general anesthesia (n=459). All clinical and billing data was obtained via the patient's electronic medical records and the hospital's billing database, respectively. We studied outcomes measures in a small prospective pilot cohort (n=75) and assessed quality adjusted life year (QALY) gains.

Results

Direct costs for patients receiving SA were 40% higher than for patients who received GA ($p < 0.0001$). Further, there was a significant difference in regards to length of stay, where patients receiving SA required care for an additional 1.2 hours, a 27% increase ($p < 0.0001$). Patients undergoing SA had more comorbidities ($p = 0.0053$), specifically diabetes and hypertension. However, metrics of complication including readmission ($p = 0.3038$) and ER visits at 30 days ($p = 1.0$) were no different. Further, in a small pilot group, QALY gain was statistically no different (n=75, $p = 0.6708$).

Conclusions

Both SA and GA exhibit the qualities of a good anesthetic and the utilization of these modalities for lumbar spine surgery is safe and effective. However, this work suggests that SA is associated with increased LOS and higher direct costs.

Learning Objectives

Although both SA and GA are safe and effective, SA may pose a higher financial burden than GA.

References