



Cost analysis of spinal and general anesthesia for the surgical treatment of lumbar spondylosis

Brian Patrick Walcott MD; Arjun Khanna BS; Vijay Yanamadala MD; Jean-Valery Coumans MD; Robert A Peterfreund MD

PhD

Introduction

Lumbar spine surgery is typically performed under general anesthesia, although spinal anesthesia can also be used. Given the prevalence of lumbar spine surgery, small differences in cost between the two anesthetic techniques have the potential to make a large impact on overall healthcare costs. We sought to perform a cost comparison analysis of spinal versus general anesthesia for lumbar spine operations.

Methods

Following IRB approval, a retrospective case control study was performed from 2009-2012 on consecutive patients undergoing non-instrumented, elective lumbar spine surgery for spondylosis by a single surgeon. Each patient was evaluated for both types of anesthesia, with the decision for anesthetic method being made based on a combination of physical status, anatomical considerations, and ultimately a consensus agreement between patient, surgeon, and anesthesiologist. Patient demographics and clinical characteristics were compared between the two groups. Operating room costs were calculated blind to clinical outcomes and reported in percentage difference. An intention to treat analysis was used.

Results

General anesthesia (n=319) and spinal anesthesia (n=81) cases had significantly different median operative times of 180 ± 39 and 160 ± 32 minutes, respectively ($p < 0.001$, Mann-Whitney U test). Operating room costs were 10.33% higher for general anesthesia compared to spinal anesthesia ($p = 0.003$, Mann-Whitney U test). Complications of spinal anesthesia included excessive movement (n=1), failed spinal attempt (n=3), intraoperative conversion to general anesthesia (n=2), and a high spinal level (n=1).

Conclusions

Spinal anesthesia can be performed safely in patients undergoing lumbar spine surgery. It has the potential to reduce operative times, costs, and possibly complications. Further prospective evaluation will help to validate these findings.

Learning Objectives

By the conclusion of this session, participants should be able to 1) identify the relative cost of spine surgery performed under general anesthesia versus spinal anesthesia, 2) identify relative contraindications to spinal anesthesia, & 3) identify possible complications of spinal anesthesia.

[DEFAULT POSTER]