

## Navigation and robotics in spine surgery

by Alexander R. Vaccaro, Jaykar R. Panchmatia, I. David Kaye, and Srinivas K. Prasad, 1st edition, 2019, New York, Thieme, 230 p., Print ISBN: 9781684200313; E-Book ISBN: 9781684200320

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## BOOK REVIEW

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Many technological innovations have been developed in spine surgery over the past several decades. Among them, spinal robotics and navigation represent recent promising potential for improving spinal surgery. Both may be particularly useful in patients with challenging anatomy or substantial deformities. Their use is not reserved only in guiding thoracolumbar pedicle screw placement, but also in cases of cervical and pelvic instrumentation as well as spinal tumor resection. Moreover, there is a potential benefit by reducing exposures to ionizing radiation for the patient and the medical staff.

'Navigation and Robotics in Spine Surgery' by master spine surgeon Alexander Vaccaro and co-editors Jaykar Panchmatia, I. David Kaye, and Srinivas Prasad is a well-documented book addressing technical challenges as well as economical and practical issues. A cadre of global international spine surgeons who pioneered navigation and robotic surgery techniques share invaluable tricks of the trade in this book.


The book is divided into six sections. It begins with evidence-based fundamentals of navigated spine surgery and robotics including discussion of instrumentation and mechanics. The use of fluoroscopy- and intraoperative CT-based platforms, applications for

intraoperative sonography, and radiation exposure and minimization strategies are also discussed. The next 4 sections describe the techniques from routine procedures, such as navigated and robotic minimally invasive TLIF to complex approaches like intraoperative ultrasound-guided intradural spinal tumor resection or stereotactic radiosurgery. The last section presents the future directions such as the influence of artificial intelligence and lessons learned from industrial partners.

Since image guidance and robotics systems will become more widespread, this book will be an essential reading for neurosurgeons and orthopaedists who wish to learn about and incorporate these technologies into their practice.

This book includes complimentary access to a digital version.

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