



# Anand Veeravagu and Michael Y. Wang: robotic and navigated spine surgery, surgical techniques and advancements (2023)

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Navigation in spine surgery, although popular, is still a topic of debate and not uniformly adopted among spine surgeons. Nonetheless, the increasing use of and demand for minimally invasive techniques requires the simultaneous development and application of advanced navigational technologies. Moreover, the use of navigation has paved the way for the introduction of surgical robots. Current surgical robots remain as navigation dependent motorized instrument holders to support and provide accuracy to tasks performed by the surgeon.

Elsevier has recently published *Robotic and Navigated Spine Surgery*, a comprehensive review of current spinal navigation and robotic applications. This book is a hardcover that in 17 chapters covers surgeries from the occipitocervical junction to the lumbar spine and discusses the state-of-the-art management of degenerative, traumatic and deformity cases. Fifty experts from across the globe contribute their expertise, experience and insight to illustrate and discuss the most important features of navigation, robotics and machine learning technologies.

The first 7 chapters cover different aspects of navigation and describe its use within different spinal subspecialties. The following 5 chapters discuss robotics from practical use to the important questions of cost-effectiveness. The last 5 chapters are dedicated to the latest developments in the field, new technologies, novel scientific approaches

and how the combination of these techniques push the boundaries forward.

The book is richly illustrated and contains numerous intraoperative photographs, high-quality schematic drawings and radiological images. Detailed tables and meticulous referencing provide readers with the opportunity for in-depth studies. The language is flawless and homogenous. Step-by-step descriptions of workflows are provided in chapters covering clinical aspects, including background, preoperative imaging, surgical planning, intraoperative imaging, postoperative recovery and possible pitfalls and complications. Clinical cases are used for illustration where appropriate. Future directions are provided at the end of each chapter.

The index is detailed and easy to navigate in search of areas of interest.

In summary, this comprehensive book on navigation and robotics in spine surgery is recommended to all spine surgeons, whether expert or in training, looking to understand, adopt or introduce the latest technologies to improve outcomes in complex spinal procedures.

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