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Frank M. Phillips  
Isador H. Lieberman  
David W. Polly Jr.  
*Editors*

# Minimally Invasive Spine Surgery



Surgical Techniques and  
Disease Management

 Springer

# Minimally Invasive Spine Surgery Surgical Techniques And Disease Management

**Keith H. Bridwell, Munish Gupta**



## **Minimally Invasive Spine Surgery Surgical Techniques And Disease Management:**

Minimally Invasive Spine Surgery Frank Phillips, Isador Lieberman, David Polly, 2014-06-23 Over the past decade minimally invasive techniques have developed rapidly and are widely applied in the management of spine disorders With the development of enabling technologies including specifically designed spinal retractor systems intraoperative imaging and navigation technologies and real time neural monitoring minimally invasive spine surgery MISS techniques are safe effective and reproducible Indeed studies have confirmed the clinical and economic advantages of these procedures Minimally Invasive Spine Surgery includes detailed discussions of enabling technologies surgical techniques including posterior decompression and fusion approaches to specific diseases and conditions as well as strategies to manage the unique risks and complications of MISS Generously illustrated this will be an essential reference for orthopedic surgeons neurosurgeons and all health care professionals who treat the spine *Minimally Invasive Spine Surgery: An Algorithmic Approach* Kern Singh, 2013-06-30 This book is a concise guide to minimally invasive spine surgery MISS with emphasis on techniques procedures and equipment Divided into five sections the authors discuss MISS for different areas of the spine cervical thoracic and lumbar Each section is presented with a step by step approach with an introduction clinical evaluation intraoperative positioning surgical techniques and potential pitfalls The final sections discuss the instruments used for MISS and some special topics Written by a highly experienced author team from the USA this book covers all aspects of MISS including tumours trauma and deformity Nearly 120 full colour images and illustrations are included to enhance learning Key points Concise guide to minimally invasive spine surgery MISS emphasising techniques procedures and equipment Covers all aspects of MISS tumours trauma and deformity in all areas of the spine cervical thoracic and lumbar Highly experienced author team from the USA Includes nearly 120 full colour images and illustrations *Minimally Invasive Spine Surgery* Frank M. Phillips, Isador H. Lieberman, David W. Polly Jr., Michael Y. Wang, 2020-01-13 The use of minimally invasive spine surgery MISS has grown rapidly over the last decade and remains the fastest growing area in spine surgery Now in a revised and expanded second edition including 19 new chapters this comprehensive textbook provides an updated presentation of the field of MISS highlighting surgical techniques and clinical outcomes as well as providing a unique focus on how these techniques are applied for specific spinal conditions Minimally Invasive Spine Surgery Second Edition includes detailed discussions of enabling technologies surgical techniques approaches to specific diseases and conditions a new section on outpatient ambulatory spine surgery and strategies to manage the unique risks and complications associated with MISS Each chapter whether revised or new is formatted in a consistent manner including bulleted key learning points as well as review questions pearls and pitfalls and generous illustrations and intra operative photographs Written and edited by thought leaders in the field this user friendly textbook will be an essential resource for orthopedic and neurosurgery trainees as well as a valuable reference and review for spine surgeons and health care professionals who treat the spine **Minimally**

**Invasive Spine Surgery** H. Michael Mayer, 2006-01-26 Don't miss it! The second completely revised and expanded edition of the successful surgical manual on minimally invasive spine surgery includes 51 chapters including more than 20 new chapters covering all current minimally invasive techniques in spine surgery. A complete survey of all microsurgical and endoscopic techniques with a special focus on semi-invasive injection techniques for diagnostic and therapeutic purposes in low back pain is given. The clear chapter structure with terminology, history, surgical principles, advantages, disadvantages, indications, access principles, complications, and results facilitates navigation through the manual. Topics include the principles of microsurgical and endoscopic treatment, spinal navigation and computer-assisted surgery, minimally invasive reconstruction, fusion, dynamic stabilization in fractures, degenerative disc disease, spinal stenosis, low back pain, and deformities. The didactic presentation of surgical steps makes the reader familiar with all types of new minimally invasive techniques in clinical use or still in ongoing clinical trials, such as minimally invasive spine arthroplasty. *Rothman-Simeone The Spine E-Book* Steven R. Garfin, Frank J. Eismont, Gordon R. Bell, Christopher M. Bono, Jeffrey S. Fischgrund, 2017-09-11 Get comprehensive practical coverage of both surgical and non-surgical treatment approaches from the world's most trusted authorities in spine surgery and care. Rothman, Simeone, and Herkowitz's *The Spine*, 7th Edition, edited by Drs. Steven R. Garfin, Frank J. Eismont, Gordon R. Bell, Jeffrey S. Fischgrund, and Christopher M. Bono, presents state-of-the-art techniques helping you apply today's newest developments in your practice. Highlights critical information through the use of pearls, pitfalls, and key points throughout the text, as well as more than 2,300 full-color photographs and illustrations. Offers a newly revised, streamlined format that makes it easier than ever to find the information you need. Contains new chapters on the clinical relevance of finite element modeling and SI joint surgery. Includes an expanded section on minimally invasive spine surgery, including recent developments and future directions. Provides the latest evidence-based research from high-quality studies, including new randomized controlled trials for lumbar stenosis surgery, fusion, and injections. Presents the knowledge and expertise of new international contributors, as well as new editorial leadership from Dr. Steven Garfin. Expert Consult™ eBook version included with purchase. This enhanced eBook experience allows you to search all of the text, figures, and references from the book on a variety of devices. *Minimally Invasive Spine Surgery, An Issue of Neurosurgery Clinics of North America* Richard G. Fessler, 2014-04-28 This issue of *Neurosurgery Clinics of North America* is devoted to Minimally Invasive Spine Surgery and is edited by Zachary A. Smith, MD, and Richard G. Fessler, MD, PhD. Articles in this issue include: Complications and complication avoidance of minimally invasive spine surgery; Radiation exposure risk and avoidance; Current techniques in the management of cervical myelopathy and radiculopathy; Thoracic disc pathology management through minimally invasive routes; Transforaminal lumbar interbody fusion; Long-term outcomes and complications; Computer-assisted navigation technique for minimally invasive transforaminal lumbar interbody fusion and lateral interbody fusion; Safety and the anatomy of the retroperitoneal lateral corridor; Minimally invasive extracavitary transpedicular corpectomy.

for the management of spinal tumors Minimally invasive anterolateral corpectomy for spinal tumors Minimally invasive approaches for the management of intramedullary spinal tumors Percutaneous fixation of thoracolumbar fractures Advances and feasibility of advanced minimally invasive techniques in deformity correction Direct lateral approach Outcomes and Deformity Correction and Evidence basis and outcomes *Bridwell and DeWald's Textbook of Spinal Surgery* Keith H. Bridwell, Munish Gupta, 2019-11-04 Written by experts from around the world the latest edition of this leading reference features contributions from both neurosurgeons and orthopaedic surgeons Presenting the full scope of spinal surgery chapters discuss anatomy biomechanics complications instrumentation preoperative and postoperative care and other core topics for surgeons And numerous illustrations and clinical video clips provide critical visual context *Novel techniques of minimally invasive spine surgery for various pathologies* Yutong Gu, Qingquan Kong, William F Lavelle, 2023-10-03

*Minimally Invasive Surgery of the Lumbar Spine* Pier Paolo Maria Menchetti, 2013-10-01 Minimally invasive procedures are increasingly utilized and are replacing open surgery to reduce scarring and pain enhance patient recovery and minimize cost This guide provides step by step guidance expert instruction and detailed illustration of the most recent minimally invasive orthopedic spine procedures With a variety of chapters covering critical developments in the field including the utilization of biologic materials image guided surgery and bone fusion this guide delves into discussions of indications methods for preoperative planning complication avoidance strategies and patient outcomes **Lateral Access Minimally Invasive Spine Surgery** Michael Y. Wang, Andrew A. Sama, Juan S. Uribe, 2016-11-26 This well illustrated textbook is the first comprehensive and authoritative source of information on minimally invasive lateral access spine surgery It covers all aspects of the subject including patient selection approach and monitoring techniques soft tissue management application in a variety of pathologies technical nuances and the prevention and management of complications In addition current controversies in the field are discussed and the biomechanics of lateral spinal reconstruction the physiologic benefits and cost implications are explained As use of the lateral approach in spinal surgery has become more popular so its diversity and complexity have increased Nevertheless publications devoted entirely to the technique are lacking and Lateral Access Minimally Invasive Spine Surgery is designed to fill this vacuum Written by the world's experts on the topic it will be an excellent resource for both beginning and experienced surgeons **Minimally Invasive Spine Surgery** Alexander R. Vaccaro, Christopher M. Bono, 2007-05-22 Minimally invasive procedures are increasingly utilized and are replacing open surgery to reduce scarring and pain enhance patient recovery and minimize cost Minimally Invasive Spine Surgery provides step by step guidance expert instruction and detailed illustration of current minimally invasive orthopedic spine procedures With a variety of c **Dr Mazda Turel - Creative Writing Repository** Editors Panel - PROJECT GBA&C, 2020-05-16 PROJECT GBA C Gallery for Books on Arts Culture recognizes and celebrates the accomplishments of world's renowned artists who have made and are making significant contributions in the field of art producing powerful imagery that continues

to captivate educate inspire and heal humanity Art Exhibit Repository is one such initiative showcasing the best moments captured by artists across the globe encapsulating the sheer joy of subtle self expression behind every art Editors Panel

*Minimally Invasive Spine Surgery* Mick Perez-Cruet, 2022-09-28 This book illustrates some of the latest advances in minimally invasive surgical techniques and technology to treat a variety of spinal disorders Written by some of the leading minimally invasive spine surgeons this book teaches surgeons how to perform these procedures safely and effectively The goal is to advance the field of spinal surgery and ultimately improve the lives of patients suffering from spinal disorders The book reviews cervical thoracic and lumbar approaches

*Minimally Invasive Spine Surgery* Luis Manuel Tumialan, 2020-10-01 Unique resource provides spine surgeons with the right tools and mindset to perform minimally invasive surgery *Minimally Invasive Spine Surgery A Primer* by Luis Manuel Tumialan is the ideal introduction to minimally invasive spine approaches especially for neurosurgery and orthopedic residents fellows and spine surgeons who want to incorporate minimally invasive approaches into their practice The Primer offers a treasure trove of 3D illustrations and animations that virtually brings the aspiring minimally invasive spine surgeon into the operating room alongside their professor The text starts with a discussion of open spine surgery versus minimally invasive procedures and the optimal mindset required to convert from one to the other The book is divided into lumbar cervical and thoracic spine sections and a fourth section dedicated to the fundamentals of fluoroscopy and radiation exposure The text begins with an overview history and evolution of each procedure followed by a discussion of the anatomical basis for using a minimally invasive approach Each anatomical section starts with the least complicated surgeries thereby laying the foundation for more complex procedures discussed in subsequent chapters The third section focuses on thoracic decompression nerve sheath tumors in the lumbar and thoracic spine and management of metastatic disease and intradural extramedullary lesions Key Features Single authored text provides uniform readability and philosophy cover to cover Lumbar approaches include microdiscectomy laminectomy transforaminal interbody fusions and the transpoas approach Cervical procedures encompass posterior foraminotomy laminectomy and anterior discectomy Superb illustrations high fidelity anatomical animations based on computer modeling and procedural videos enhance understanding of minimally invasive spine principles This unique single author Primer is a must have resource for early career spine surgeons who wish to learn minimally invasive principles as well as veteran surgeons who have a desire to incorporate minimally invasive spine surgery into clinical practice

*Benzel's Spine Surgery E-Book* Michael P Steinmetz, Edward C. Benzel, 2016-06-29 In the latest edition of Benzel's Spine Surgery renowned neurosurgery authority Dr Edward C Benzel along with new editor Dr Michael P Steinmetz deliver the most up to date information available on every aspect of spine surgery Improved visuals and over 100 brand new illustrations enhance your understanding of the text while 26 new chapters cover today's hot topics in the field A must have resource for every neurosurgeon and orthopedic spine surgeon Benzel's Spine Surgery provides the expert step by step guidance required

for successful surgical outcomes Glean essential up to date information in one comprehensive reference that explores the full spectrum of techniques used in spine surgery Covers today s hot topics in spine surgery such as pelvic parameters in planning for lumbar fusion minimally invasive strategies for the treatment of tumors and trauma of the spine and biologics and stem cells A total of 18 intraoperative videos allow you to hone your skills and techniques New editor Michael P Steinmetz brings fresh insights and improvements to the text Features the addition of 26 chapters including Biologics in Spine Fusion Surgery Endoscopic and Transnasal Approaches to the Craniocervical Junction Cellular Injection Techniques for Discogenic Pain Minimally Invasive Techniques for Thoracolumbar Deformity Spinal Cord Herniation and Spontaneous Cerebrospinal Fluid Leak MIS Versus Open Spine Surgery Extensive revisions to many of the existing chapters present all of the most up to date information available on every aspect of spine surgery Improved visuals and over 100 brand new illustrations enhance learning and retention Spine Surgery 2-Vol Set E-Book Edward C. Benzel,2012-05-14 Build a solid foundation of knowledge based on the fundamentals and employ step by step instruction from Spine Surgery Edited by Edward C Benzel this best selling medical reference explores the full spectrum of surgical techniques used in spine surgery and delivers the comprehensive cutting edge guidance you need to achieve successful outcomes Online access thorough updates contributions by leading international authorities an abundance of detailed illustrations and procedural video clips provide everything you need to avoid and manage complex problems Glean essential up to date need to know information in one comprehensive reference that explores the full spectrum of surgical techniques used in spine surgery Hone your surgical skills and technique with intraoperative videos and more than 800 outstanding illustrations demonstrating each technique step by step Grasp and apply the latest knowledge from more than 25 brand new chapters as well as extensive revisions or total rewrites to the majority of existing chapters to present all of the most up to date information available on every aspect of spine surgery including motion preservation technologies endovascular management back pain and psychosocial interactions biomechanics and more Consult with the best Renowned neurosurgery authority Edward C Benzel leads an international team of accomplished neurosurgeons and orthopedic surgeons many new to this edition who provide dependable guidance and share innovative approaches to surgical techniques and complications management Equip yourself to address increasing occurrences of pain among aging and physically active patients Access the information you need where you need it on your laptop or mobile device via expertconsult.com with fully searchable text a wealth of procedural videos online updates from the experts downloadable image gallery and links to PubMed **Cancer Metastasis Through the Lymphovascular System** Stanley P. Leong,S. David Nathanson,Jonathan S. Zager,2022-06-24 This textbook describes in detail the process of cancer metastasis from a single cell in the primary site through its arduous journey to the sentinel lymph node as the main gateway and beyond to distant sites The most up to date knowledge on key topics in the molecular biology diagnosis and treatment of metastatic cancer is highlighted by a large panel of experts The book begins with a

comprehensive overview of the genetic and molecular mechanisms that promote or inhibit cancer metastasis through lymphatic pathways to lymph nodes or through vascular pathways to distant sites providing the reader with an essential basic knowledge This is followed by further details on the role of the immune system within the primary tumor and the lymph node and the importance of the microenvironment at the metastatic site The role of the sentinel lymph node in cancer metastasis is emphasized Special attention is also given to state of the art imaging techniques for the detection of early stage cancer and cancer metastases as well as the use of liquid biopsies in sarcoma prostate gastrointestinal and lung cancer Clinical patterns of malignant tumors arising in different organ systems are compared described and discussed with the goal of determining what similarities and or differences exist The book concludes with a detailed discussion of surgical intervention radiation and systemic therapy of primary and metastatic cancer and briefly previews several emerging topics such as the latest findings on personalized cancer therapy cancer stem cells unique molecular mechanisms of virus induced cancer the impact of the microbiome on cancer metastasis and the application of artificial intelligence in cancer metastasis research By providing fundamental knowledge of the biological and clinical aspects of cancer metastasis this book will be an important reference for cancer researchers clinical oncologists teachers and students Written by experts in the field each chapter includes a summary of the chapter s key points and open ended questions that address pressing issues in the field and encourage the reader to consider future directions

The Spine: Medical & Surgical Management Alexander Vaccaro,2019-04-30 The Spine Medical and Surgical Conditions is a complete two volume evidence based study edited by an internationally recognised team of spine surgeons based in the USA China Canada Germany Japan Brazil Egypt and India The two volumes are divided into 137 chapters across fourteen sections The first section covers general topics in spinal medicine including anatomy biomechanics physical and neurological examination interventional diagnostics and therapeutics and anaesthesia This is followed by sections on the development of the spine metabolic disorders and bone grafting Subsequent sections focus on surgery for particular parts of the spine including cervical lumbar and thoracic as well as sections on spinal cord injuries and motor preservation Later sections in the book provide information on the spine in paediatrics adult deformity tumours vascular malformations and infections complications of spinal surgery and a final section on minimally invasive techniques Enhanced by 1500 full colour images The Spine Medical and Surgical Conditions is also made available online complete with text images and video with each physical copy Key Points Comprehensive two volume guide to spinal medicine Covers anatomy biomechanics examination diagnostics therapeutics anaesthesia surgery and complications Enhanced by 1500 full colour images Includes access to online version with complete text images and video

*Minimally Invasive Spinal Surgery* Kai-Uwe Lewandrowski,Michael Schubert,Jorge F Ramírez León,Richard G Fessler,2018-03-13 This book provides a timely comprehensive and evidence based review of minimally invasive surgery of the cervical thoracic and lumbar spine Minimally invasive techniques are now aided by more advanced endoscopic instruments video and computerised navigation systems



broadening the range of surgical procedures that can be carried out with similar efficacy as traditional open spinal surgeries without the significant burden on the patient recovery and rehabilitation This book thoroughly reviews the preclinical and clinical data on minimally invasive spinal surgery and describes and illustrates the current effective techniques An authoritative international team of contributors add their clinical experience and expertise to provide a clear authoritative and practical guide The book is organised in four sections covering cervical thoracic and lumbar spine regions with a final section on the latest advances in technologies and the cost effectiveness of current treatments Technical Advances in Minimally Invasive Spine Surgery Jin-Sung Kim,Roger Härtl,Michael Y. Wang,Adrian Elmi-Terander,2022-06-15 This book is a comprehensive guide to the application of recently introduced and emerging technologies in minimally invasive spine surgery MISS These technologies including 2D and 3D navigation endoscopy virtual and augmented reality robotics and 3D printing are helping to overcome previous limitations of MISS such as the steep learning curve and the need for a great deal of experience in order to achieve optimal outcomes Compared with traditional techniques their use is designed to reduce local operative tissue damage alleviate systemic surgical stress and enable earlier return to function The book provides detailed and extensively illustrated accounts of the role of the new technologies and techniques in a wide range of indications In essence all spine conditions whether degenerative traumatic or oncologic will in the near future be amenable to MISS using these approaches The book will be a source of insight and practical assistance for all surgeons who perform MISS regardless of their level of experience

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