

H. M. Mayer  
*Editor*

# Minimally Invasive Spine Surgery



A Surgical Manual  
**Second Edition**

 Springer

# Minimally Invasive Spine Surgery A Surgical Manual

**Uwe Vieweg, Frank Grochulla**



## **Minimally Invasive Spine Surgery A Surgical Manual:**

**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

Minimally Invasive Spine Surgery H.M. Mayer, 2013-03-09 In the past few years spine surgery has undergone revolutionary changes leading towards minimally invasive techniques This book is a survey of microsurgical as well as endoscopic surgical techniques for the treatment of a variety of spinal disorders The structure of the individual chapters includes terminology history surgical principles advantages disadvantages indications surgical technique complications and hazards as well as results However all chapters are focused on a very didactic presentation of surgical steps Thus the reader will get familiar with a variety of new techniques some of which are already integrated into clinical routine others still being part of ongoing clinical trials and development

**Handbook of Minimally Invasive and Percutaneous Spine Surgery** Michael Wang, David Greg Anderson, Steven Ludwig, Praveen V Mummaneni, 2011-04-30 Handbook of Minimally Invasive and Percutaneous Spine Surgery edited by Drs Wang Anderson Ludwig and Mummaneni is destined to become a favorite with all students of spine surgery whether residents in training or experienced practitioners Small enough to fit in a lab coat pocket this exceptional manual is just the resource you need It will prove invaluable as a quick reference in daily practice or simply as a refresher when confronting a difficult clinical problem This fully illustrated fundamental guide focuses on procedures and techniques that require minimal exposure Presented in a concise and readable format this text delivers the basics for those new to minimally invasive surgery as well as pointers and tips for more advanced surgeons It is destined to become a favorite with all students of spine surgery Composed of 11 chapters this practical manual begins with the true foundation of minimally invasive surgery imaging Safe and effective surgery performed through minimal exposures demands a thorough mind's eye understanding of anatomy without visualization Moreover it requires a keen ability to mentally translate two dimensional imaging into three dimensional anatomy Next the most common techniques of cannulation are covered in a logical step by step fashion just as it is taught in the operating room Minimally invasive options for pedicle screw placement

are completed with a chapter describing the mini open technique The second half of this book focuses on fusion and pedicle screw insertion Finally this handbook does not ignore the endpoint of all these techniques achieving successful fusion Techniques to enhance the success of this outcome are discussed in Chapter 9 whereas potential complications and methods to avoid them are outlined in Chapter 8 Each chapter concludes with Surgical Pearls and Pitfalls which provide summaries of the salient points discussed in the chapter Unique to this text are highlighted boxes outlining Bailouts Alternative Strategies for completing the task when classic techniques fail Furthermore each chapter is well illustrated with step by step images that clearly demonstrate the points being made Written by world recognized minimally invasive spine surgeons this handbook provides essential coverage of key topics

**Minimally Invasive Spine Surgery** Burak Ozgur,Edward Benzel,Steven Garfin,2009-10-08 Minimally Invasive Spine Surgery is a beautifully illustrated atlas describing the 18 most widely accepted minimally invasive procedures in spine surgery Written by leaders in both neurologic and orthopedic spine surgery this book offers the most up to date material and the broadest perspective on the subject Procedures range from simple to complex and cover the cervical thoracic and lumbar regions of the spine

*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 out patient 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 Percutaneous Spinal Techniques E-Book Daniel H. Kim,2010-09-28 Minimally Invasive Percutaneous Spinal Techniques by Daniel H Kim MD FACS Kyung Hoon Kim MD and Yong Chul Kim MD helps you apply methods of spinal pain relief that involve less risk and shorter recovery times Focusing on the broad appeal of this goal for you and your patients this volume will help surgeons and specialists in various areas of pain management provide less invasive alternatives and faster recovery procedures for those suffering with spinal injuries Step by step techniques are well illustrated in the book and demonstrated extensively online Get accurate step by step guidance by reviewing full color richly illustrated descriptions of various techniques Make the most of extensive surgical videos demonstrating many of the procedures from the book on

expertconsult.com Reduce the risk associated with invasive spinal procedures by considering new perspectives on pain management techniques that can be used by specialists from various disciplines Address the growing need for less invasive surgeries with shorter recovery times among a large and aging population with musculoskeletal problems *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 *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 Advances in Minimally Invasive Surgery and Therapy for Spine and Nerves Alberto Alexandre, Marcos Masini, Pier Paolo Maria Menchetti, 2010-11-25 Radiologists orthopedic and neurological surgeons present the different minimally invasive methods Peripheral nerve problems and problems concerning differential diagnosis in special situations such as between radicular and peripheral nerve trunk lesions are discussed pinpointing the significance of different diagnostic tools Minimally invasive techniques utilized nowadays to minimize bone demolition scarring and risk of recurrence are analyzed Microdiscectomy is compared with the results of intradiscal techniques and new methods are discussed facing problems such as epidural fibrotisation microinstability osteoporotic or neoplastic or posttraumatic vertebral lesions **Minimally Invasive Thoracic Spine Surgery** Sang-Ho Lee, Junseok Bae, Sang-Hyeop Jeon, 2020-12-12 This book describes and illustrates a variety of minimally invasive approaches to the thoracic spine covering procedures applicable in not only degenerative diseases but also deformities and trauma Surgery to the thoracic spine is demanding because of the surrounding ribs lungs heart and large blood vessels and the challenges posed by the vulnerable spinal cord within a relatively small spinal canal Consequently postsurgical morbidity is often high In this context minimally invasive surgery offers significant benefits but to date comprehensive coverage in textbooks is lacking owing to the limited experience in the use of minimally invasive surgical techniques This book will be ideal for all who are searching for clear guidance that is faithful to the established principles of spine surgery and evidence based medicine In addition to the comprehensive coverage of procedures appropriate in different pathologies including thoracic disc herniation ossification of the posterior longitudinal ligament ossification of the ligamentum flavum and stenosis individual chapters address the transforaminal endoscopic approach interventional treatment intraoperative neuromonitoring and navigation for thoracic spine surgery The ^ASpine Handbook Mehul Desai, Joseph O'Brien, 2018-05-04 The Spine Handbook provides a thorough overview of the entire spine and interdisciplinary treatment of common spinal conditions Sections build from the foundations of history and examination radiological imaging and behavioral assessment through the core topics of both interventional and surgical options as well as exploring emerging and special conditions and neuromodulation This comprehensive handbook provides the fundamental diagnostic and therapeutic information needed to effectively deliver best practice care for spinal disorders making it a must read for physicians of any training level that may encounter or treat spinal disorders

**Anesthesiologist's Manual of Surgical Procedures** Richard A. Jaffe, 2014-06-11 This practical reference is a comprehensive guide to the anesthetic and perioperative management of patients before and during all procedures performed by general and subspecialist surgeons requiring anesthetic management The book explains each procedure from

both the surgeon and anesthesiologist perspectives presents details on anesthetic technique and guides the anesthesiologist and surgeon through the decisions that must be made before during and after surgery Emphasis is on factors that impact the anesthesiologist including patient positioning duration of surgery and complications New topics include Irreversible Electroporation IRE Ablation ERCP Management of the difficult airway and Anticoagulation Guidelines for Neuraxial Procedures Key Features Anesthetic Considerations are presented in templated format for both preoperative and intraoperative Concise treatment of all procedures including subspecialties Each procedure is reviewed from both the surgeon s and anesthesiologist s perspective Easy to review tables summarize each procedure New to this Edition New procedures on ERCP Irreversible Electroporation IRE Ablation Difficult Airway Management and Anticoagulation Guidelines for Neuraxial Procedures Expanded discussion of intraoperative monitoring

Handbook of Spine Surgery Ali A. Baaj,Praveen Mummaneni,Juan S. Uribe,Alexander R. Vaccaro,Mark S. Greenberg,2024-10-02 The go to handbook on the current evaluation and surgical management of spinal disorders Handbook of Spine Surgery Third Edition edited by renowned spine surgeons Ali A Baaj Praveen V Mummaneni Juan S Uribe Alexander R Vaccaro and Mark S Greenberg reflects new techniques introduced into the practice since publication of the last edition along with four color images and videos The book is organized into four parts and 66 chapters starting with basic spinal anatomy Part II covers the physical exam electrodiagnostic testing imaging safety issues intraoperative monitoring bedside procedures and the use of orthotics pharmacology and biologics Part III discusses a full range of spinal pathologies and the final section concludes with 34 succinct procedural chapters Key Highlights Contributions from an expanded who s who of spine surgery experts New chapters cover state of the art techniques including endoscopy CT guided navigation robotics augmented reality and vertebral body tethering Procedural chapters include key points indications diagnosis preoperative management anatomic considerations techniques surgical pearls and more This is an invaluable resource for neurosurgical and orthopaedic residents spinal surgical fellows and practicing orthopaedic surgeons and neurosurgeons who specialize in spine surgery

*Manual of Spine Surgery* Uwe Vieweg,Frank Grochulla,2012-10-23 The success of any spinal operation depends on good definition of the indications consideration of the contraindications technical and organizational factors good operating technique and correct preoperative preparation and positioning of the patient These points are presented in this book as clearly as possible and are illustrated with detailed high quality artwork

Mastering Orthopedic Techniques Spine Surgery Garg Bhavuk,Malhotra Rajesh,2013-12-15 Spine surgery has come to the age into the new millennium This is an efficient technical guide designed easy to use concise and accurate how to reference for spine surgeons and residents in training who wish to attack a broad range of challenges in techniques of spine surgery The world s foremost spine surgeons from USA UK Europe and Asia describe their preferred techniques in step by step approach explaining the indications and contraindications identifying pitfalls and potential complications Improvement in technology and innovation has given spine

surgery a new vision as well as a practical proposition The book has been written in an atlas format and this one of a kind book offers a comprehensive coverage of all practical aspects of operative spine surgery Covering the conventional as well as modern minimally invasive techniques to address various spine pathologies all masters in the field present a clear layout more than 400 high quality excellent illustrations and masterly tips and pearls to make a difficult spine surgery possible even for an average spine surgeon The detailed operative steps plus all the images make the book a handy companion for all involved in operative spine care **Medical Nanotechnology and Nanomedicine** Harry F. Tibbals,2017-12-19

Considering the fluid nature of nano breakthroughs and the delicate balance between benefits and consequences as they apply to medicine readers at all levels require a practical understandable base of information about these developments to take greatest advantage of them Medical Nanotechnology and Nanomedicine meets that need by introducing non experts to nanomedicine and its evolving organizational infrastructure This practical reference investigates the impact of nanotechnology on applications in medicine and biomedical sciences and the broader societal and economic effects Eschewing technological details it focuses on enhancing awareness of the business regulatory and administrative aspects of medical applications It gives readers a critical balanced and realistic evaluation of existing nanomedicine developments and future prospects an ideal foundation upon which to plan and make decisions Covers the use of nanotechnology in medical applications including imaging diagnosis and monitoring drug delivery systems surgery tissue regeneration and prosthetics Part of the Perspectives in Nanotechnology series which contains broader coverage of the societal implications of nanotechnology this book can be used as a standalone reference Organized by historical perspective current status and future prospects this powerful book Explores background definitions and terms and recent trends and forces in nanomedicine Surveys the landscape of nanomedicine in government academia and the private sector Reviews projected future directions capabilities sustainability and equity of nanomedicine and choices to be made regarding its use Includes graphical illustrations references and keywords to reinforce concepts and aid further research In its assessment of alternative and sometimes conflicting concepts proposed for the application of nanotechnology to medicine this book surveys major initiatives and the work of leading labs and innovators It uses informative examples and case summaries to illustrate proven accomplishments and imagined possibilities in research and development Manual of Spine Surgery Uwe Vieweg, Frank Grochulla,2023-10-16 This manual has been compiled in response to the rapid expansion of instrumented spinal surgery using minimally invasive and non fusion techniques with a view to meeting the needs of spinal surgeons orthopaedic and neurosurgeons The various open less invasive and minimally invasive techniques are presented step by step in a clear and instructive way with the aid of more than 600 high quality illustrations Careful attention is paid to all aspects vital to the success of any spinal operation precise definition of indications and contraindications technical and organizational factors good operating technique and correct preoperative preparation and positioning of the patient This second edition of the



manual takes full account of the latest developments in spinal instrumentation and implants and new surgical techniques It is authoritative concise and portable ideal for use in a fast paced clinical setting and will serve as a daily companion for spinal surgeons and others who care for patients with spinal disorders      **Laser Spine Surgery** Junseok Bae,Sang-Ho

Lee,2021-07-06 This book describes and illustrates state of the art techniques in laser spine surgery Laser technology has revolutionized surgeries in many specialties to perform minimally invasive and cutting edge procedures Recent advances in spinal surgery have led to the increasingly widespread use of minimally invasive techniques based on endoscopy and microscopy Nevertheless the application of laser in the context of spinal surgery remains less well known and the aim of this book is to present practical usage of laser in spine surgery to our readers A wide variety of minimally invasive approaches to spine surgery using CO2 Ho YAG and Nd YAG lasers are presented in detail with a discussion of equipment and specific recommendations on laser settings Care has been taken to ensure that the content is faithful to the fundamental principles of spine surgery and evidence based medicine The book will be an essential resource for all who use or are intending to use lasers in spine surgery      **Grainger & Allison's Diagnostic Radiology: The Spine** Jonathan H Gillard,H. Rolf

Jager,2015-11-20 The 6 chapters in this book have been selected from the contents of the Spine section in Grainger Allison s Diagnostic Radiology 6e These chapters provide a succinct up to date overview of current imaging techniques and their clinical applications in daily practice and it is hoped that with this concise format the user will quickly grasp the fundamentals they need to know Throughout these chapters the relative merits of different imaging investigations are described variations are discussed and recent imaging advances are detailed      **Rothman-Simeone The Spine E-Book** Harry N. Herkowitz,Steven R. Garfin, Frank J. Eismont,Gordon R. Bell,Richard A. Balderston,2011-02-10 Rothman Simeone The Spine helps you achieve optimal outcomes in the clinical practice of spine surgery in adults and children Drs Harry N Herkowitz Steven R Garfin Frank J Eismont Gordon R Bell Richard Balderston and an internationally diverse group of authorities help you keep up with the fast paced field and get the best results from state of the art treatments and surgical techniques such as spinal arthroplasty and the latest spinal implants and equipment An all new full color design and surgical videos online at [www.expertconsult.com](http://www.expertconsult.com) make this classic text more invaluable than ever before Get the best results from the full range of both surgical and non surgical treatment approaches with guidance from the world s most trusted authorities in orthopaedic spine surgery Find important information quickly through pearls pitfalls and key points that highlight critical points Watch experts perform key techniques in real time with videos on DVD and online demonstrating minimally invasive surgery SED procedure thorascopic techniques lumbar discectomy pedicle subtraction osteotomy PSO C1 C2 fusion intradural tumor cervical laminoforaminotomy and much more Apply the newest developments in the field thanks to expert advice on minimally invasive surgery spinal arthroplasty and the latest spinal implants and equipments See procedures clearly through an all new full color design with 2300 color photographs and illustrations placed in context Access the fully

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