

Objective Study Of Neurosurgery

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“Practical Handbook of Neurosurgery” invites readers to take part in a journey through the vast field of neurosurgery, in the company of internationally renowned experts. At a time when the discipline is experiencing a (detrimental) tendency to segment into various subfields and scatter in the process, it can be worthwhile to collect a number of practical lessons gleaned from experienced and leading neurosurgeons. The book also aims to present numerous important figures in the neurosurgical community, with a brief overview of the vitae and main contributions for each. We must confess that we were sad that some of the most active members were unable to participate, likely due to time constraints. We are however fortunate that the majority were able to take part. As such, though not exhaustive, the book does represent an anthology of contemporary neurosurgeons. From the preface: At the very beginning of the project, our intention was to make a “poetbook”. But month after month it became obvious that the work would be much more expansive; ultimately we produced three volumes. Nevertheless we hope that all the three volumes together will remain easily

accessible and a daily companion. The pocket has to be more like a travel bag! We would like to thank all of the contributors; they have sacrificed their valuable time to deliver sound and critical views, and above all useful guidelines.

This two volume set is a comprehensive guide to neurosurgery. Each section covers neurological disorders in different parts of the body, beginning with an introduction and ending with key practice points for quick review, integrating theory and practice. Genetics, ethics and physiotherapy are also discussed. With contributions from recognised specialists in the USA and Europe, this practical manual includes more than 1000 images and illustrations to assist learning and understanding. Key Features Comprehensive two volume set giving complete review of field of neurosurgery Covers numerous neurological disorders in different parts of the body Each section feature key practice points for quick review Integrates theory and practice More than 1000 images and illustrations Contributions from US and European specialists This book provides a detailed guide to neonatal surgery and its related disciplines including: fetal medicine, fetal surgery, radiology, newborn anaesthesia, intensive care, neonatal medicine, medical genetics, pathology, cardiac surgery, and urology. The book aims to cover all the latest advances in newborn surgery, with contributions from the basic sciences and laboratory research to reflect the steady progress in our current working knowledge and understanding of many neonatal surgical disorders. As huge advances have been made in neonatal surgery in the past decades, ethical issues, long term outcomes, and quality of life are also emphasised. This book is an authoritative reference for surgical residents in training, consultant surgeons, general surgeons with an interest in paediatric surgery, neonatologists, paediatricians, intensive care specialists, and nursing staff.

This textbook aims to examine some of the most controversial areas of neurological surgery by applying the current evidence to illuminate our understanding of the pathophysiology of each disease and the outcomes from surgical and non-surgical treatments. The Evidence for Neurosurgery is a textbook that will challenge current dogmas in many instances, provide an organized framework for understanding where current evidence can be applied clinically, and illustrate where gaps in the evidence exist and how these deficiencies may be filled in the future. In the first chapter, "Clinical Evidence", the reader will gain an understanding of the levels of clinical evidence and will learn what types of study designs are appropriate and in which situations. The textbook is then divided into six sections: Spine, Vascular, Tumor, Pediatrics, Functional, and Trauma.

'Guiding Neurosurgery' by Evidence provides it readers with a succinct review of contemporary neurosurgical practice when evaluated by evidence-based medicine standards. It begins with an introduction of concept and principles of evidence-based medicine. The subsequent chapters address the topics of brain tumor epidemiology, benign adult brain tumore, pediatric neurosurgery, endovascular treatment of cerebrovascular disorders, lumbar spine surgery, minimally invasive spine surgery, stereotactic radiosurgery, trauma, and the treatment of chronic pain disorders by neurostimulation. Each chapter summarizes the available literature and grades it according to the quality of the evidence-based medicine in neurosurgical highlights not only the usefulness of evidence-based medicine in neurosurgical practice, but also its limitations with regard to neurosurgical disorders that are frequently rare and therefore impossible to evaluate in randomized clinical trials. Neurological surgeons and neurologists, both practicing physicians and residents in training, will find in this publication valuable information about the practice of the different neurosurgical subspecialties by evidence-based medicine standards.

Volume 51 of Clinical Neurosurgery is the official compendium of the platform presentations at the 53rd Annual Meeting of the Congress of Neurological Surgeons

held in October, 2003.

Soon after neurosurgery had advanced past the stage of that older neurosurgeons will consider their craniotomy removing lesions on the surface of the brain, it became craniotomies quite adequate for the relief of many neurosurgical lesions that subcortical diseased tissue could not be removed by craniotomy. Professor Kandell shows so excised safely by the usual surgical techniques because clearly to be amenable to stereotactic intervention, of the risk of damaging overlying normal structures. There are many lesions that undoubtedly can be reached. Various means of reaching deep-seated lesions were more easily and with less risk to life and limb by stereotactically devised, most of which attempted to approach the stereotactic than by open procedures. Pathological tissue through "silent areas" of the brain. This book is not just a description of operative neurosurgery. However, these operations often resulted in serious neurological deficits, although it does give clear accounts of neurological deficits. Spiegel and Wycis's modifications of surgical techniques. It presents the postoperative histology of the Horsley-Clarke apparatus to reach targets deep in the human brain. Patients who have been cured or markedly relieved of long-standing afflictions; these persons have subcortical surgery. True, as Professor Edward Kandell has been followed for 10 to 15 or more years, so that the results, Russian surgeons had pioneered in the field, results may be considered more or less permanent.

"The Congress of Neurological Surgeons (CNS) Essential Papers in Neurosurgery brings to the neurosurgical community a unique collection of critically appraised neurosurgical papers shedding light on some of the most impactful studies in the history of neurosurgery. The "CNS Essential Papers" project is rooted in the culture of evidence-based medicine and data-driven decision making"--

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This issue of Neurosurgery Clinics, guest edited by Dr. Michael A. Vogelbaum, is devoted to Glioblastoma, Part I: Surgical Management and Adjuncts. This is one of four issues selected each year by the series Consulting Editors, Russell R. Lonser and Daniel K. Resnick. Articles in this issue include: Perioperative Management of Patients with Glioblastoma, Role of Resection in Glioblastoma Management, Advancing Imaging to Enhance Surgery, Intraoperative Imaging for High-Grade Glioma Surgery, Use of Intraoperative Fluorophores, Extent of Resection of Glioblastoma, Functional Mapping for Glioma Surgery: Preoperative Mapping Tools, Functional Mapping for Glioma Surgery: Intraoperative Mapping Tools, Surgical Adjuncts for Glioblastoma, Window of Opportunity Clinical Trials to Evaluate Novel Therapies for Brain Tumors, Stereotactic Laser Ablation of Glioblastoma, Radiosurgery for Glioblastoma, Challenges Associated with Reoperation in Patients with Glioma, and Surgery for Glioblastoma in Elderly Patients.

Good neurosurgical practice is based not only on evidence, skills, and modern equipment, but also on good values. This book is the first to discuss specifically the ethical issues that arise during the daily practice of neurosurgery. It is divided into three parts addressing patients' rights, ethical issues relating to the working environment, and wider societal aspects such as dealings of neurosurgeons with the legal system, the media, and companies. The authors are well-established neurosurgeons who present the ethical problems that they have encountered during their careers and explain what they have learned in confronting these problems. In all, more than 50 neurosurgical cases drawn from real life are reported and discussed from an ethical point of view. This book will be especially informative for young neurosurgeons and will provide all who work in this very special field with a road map on how to avoid violations of medical ethics in neurosurgical practice.

The last ten years has witnessed a resurgence of interest in stereotactic surgery although this has been mainly in the field of the comparatively simple stereotactic biopsy of intracranial tumours. There is also evidence of a returning interest in functional neurosurgery other than pain which has always sustained high levels of endeavour. The present work comprises selected papers from a much larger group of interesting and important communications to the European Society for Stereotactic and Functional Neurosurgery. They represent modern views on a wide variety of stereotactic surgical topics from internationally acclaimed experts in this field. The neurosurgeon who has little or no acquaintance with this fruitful sub-specialty will be surprised to find very broad applications of the technique which is gradually replacing many conventional neurosurgical procedures. This is particularly evident in the papers on tumours but there is also a section on the treatment of vascular disease which marks an extension of neurosurgical practice. The Society has always regarded technical advances as important and some of the most recent developments appear in this book. Finally, an exciting

new development of neural transplantation marks the beginning of what may be an important part of neurological surgery in the future.

This second edition of Samii's Essentials in Neurosurgery contains revised and updated versions of chapters from the first edition plus contributions on new topics written by leading neurosurgeons who were trained by Professor Madjid Samii in Hannover, Germany. Almost all fields of neurosurgery are covered. The authors follow the traditional principles of Samii's philosophy in the diagnosis and management of various neurosurgical pathologies, while presenting their own personal experiences. The extensively illustrated texts document clearly how cutting-edge technology in neurosurgery is being applied in new approaches and techniques. This book will greatly assist neurosurgeons, ENT surgeons, neuroradiologists, neurologists, and neurophysiotherapists in their everyday practice.

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This Acta Neurochirurgica supplement distills the accomplishments of the Joint Convention of the Academia Eurasania Neurochirurgica and the German Academy of Neurosurgery held in Bamberg, Germany from Sept. 1-3 2005. The main focus is "Medical Technologies for Neurosurgery," including: imaging, image processing, robotics, workflow analysis and ethics. Coverage extends from an overview of medical technologies, to robotic-assisted systems in neurosurgical operating rooms, to intraoperative MRI.

This book covers stereotactic principles as well as functional stereotaxis, covering the history and uses of the techniques, treatments for specific conditions, and future developments. Includes a DVD demonstrating surgical procedures.

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On this occasion we look back on 25 years of the Deutsche Gesellschaft für Neurochirurgie. They hold a great deal: founding and development of the society, completion and extension, communication between the individual members and contacts to other societies beyond our borders. They also stand for close co-operation with those who transfer their patients to u- the neurologists and specialists in internal medicine, the ophthalmologists and ear nose-and throat specialists as well as the general surgeons. This 25th annual meeting will deal with two examples of diseases that present common problems to the neurologist and to the neurosurgeon, namely meningiomas and multiple sclerosis. In view of their long histories often going back over many years, both of these lesions lead to diagnostic errors and inadequate treatment. And yet it should be possible to recognize meningiomas at an early date and to initiate the only possible treatment, the operation, if all diagnostic measures are repeatedly carried out. The diagnosis MS, on the other hand, with the multiplicity of symptoms which are peculiar to this disease, should continue to be re-examined until every other lesion has been excluded with certainty. The increasing number of legal proceedings because of diagnostic and therapeutic measures as well as the doctor-patient talk preceding the written consent for these measures are further problems in need of discussion. For this reason, the topic "medical liability in special reference to the neurosurgeon" was chosen for this meeting. Many questions necessitate many answers.

This book describes contemporary clinical practice in the application of neurosurgical methods to the treatment of psychiatric disorders. It covers diverse topics such as neuroimaging, ethics and a historical review, Gamma Knife and High Frequency Ultrasound ablation, deep brain electrical stimulation and preoperative evaluation and postoperative follow-up. Its application in Obsessive Compulsive Disorder, Major Depression, Tourette syndrome, Addiction, Anorexia, Aggression and Schizophrenia are discussed in separated chapters. This book presents concise information provided by clinical and academic practitioners and will facilitate the application of neurosurgical treatment techniques to patients.

"Series Editor's Preface Dear Reader, I am delighted to introduce this volume of *Neurosurgery by Example: Key Cases and Fundamental Principles*. Neurosurgical training and practice are based on managing a wide range of complex clinical cases with expert knowledge, sound judgment, and skilled technical execution. Our goal in this series is to present exemplary cases in the manner they are actually encountered in the neurosurgical clinic, hospital emergency department, and operating room. In this volume, Drs. Ahmed Raslan and Ashwin Viswanathan invited a broad range of expert contributors to share their extensive wisdom and experience in all major areas of

functional neurosurgery. Each chapter contains a classic presentation of an important clinical entity, guiding readers through the assessment and planning, decision making, surgical procedure, after care, and complication management. 'Pivot points' illuminate the changes required to manage patients in alternate or atypical situations. Each chapter also presents lists of pearls for the accurate diagnosis, successful treatment, and effective complication management of each clinical problem. These three focus areas will be especially helpful to neurosurgeons preparing to sit for the American Board of Neurological Surgery oral examination, which bases scoring on these three topics. Finally, each chapter contains focused reviews of medical evidence and expected outcomes, helpful for counseling patients and setting accurate expectations. Rather than exhaustive reference lists, chapter authors provide focused lists of high priority additional reading recommended to deepen understanding. The resulting volume should provide you with a dynamic tour through the practice of functional neurosurgery, guided by some of the leading experts in North America. Additional volumes cover each subspecialty area of neurosurgery, using the same case-based approach and board review features. Nathan R. Selden, MD, PhD Campagna Professor and Chair Department of Neurological Surgery Oregon Health & Science University"--

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This book is intended as a practical manual on the use of intraoperative ultrasound (IOUS) as a tool for imaging guidance during cranial and spinal neurosurgical procedures. Full account is taken of the emergence of novel clinical applications and recent technical advances, with extensive coverage of the impact of developments such as improved probe technology, fusion imaging and virtual navigation, 3D ultrasound imaging, contrast-enhanced ultrasound, and elastosonography. Basic principles of ultrasound are elucidated in order to assist in the optimal use of IOUS and clear guidance is provided on the interpretation of imaging findings in various pathologies. Informative comparisons are also made of the use of techniques such as fusion imaging and contrast-enhanced ultrasound in general radiology and neurosurgery. The aim of the authors is to enhance the general knowledge regarding intra-operative ultrasound brain imaging, standardizing its use and exploring new techniques, leading in some way toward compensating the lack of specific training in the application of ultrasound among the neurosurgical community. IOUS is a sensitive tool that can improve surgical precision and help to reduce morbidity.

Lectures on Conditioned Reflexes
Twenty-five Years of Objective Study of the Higher Nervous Activity (behaviour) of Animals
Neurosurgical Ethics in Practice: Value-based

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Evidence-based medicine is a concept that has come to the fore in the past few years. Clinicians are increasingly encouraged to practise patient management based on available evidence in the scientific literature. For example, new pharmacological therapies are only used when large randomized trials have 'proven' that a particular drug is better than existing ones. This is also the case in surgical specialties, although surgery has traditionally seen a lack of use of this information, with individual surgeon's preferences being most influential in treatment choices. However, more recently, there has been a large expansion of trials and studies aimed at providing surgeons with information to guide their choices using firm evidence. This book provides a detailed summary of the most important trials and studies in neurosurgery, allowing the reader to rapidly extract key results. Each chapter is written by a prominent international neurosurgeon in that particular field, making this book essential reading for all neurosurgeons and trainees in the field.

Quality in an invasive discipline such as neurosurgery comprises evidence based medicine, cost effectiveness and also risk control. Risk control and quality management have become a science on their own, combining the expertise of many specialists such as psychologists, mathematicians and also economists. Intensive communication with basic safety scientists as well as safety experts from the industry and traffic promises ideas and concepts than can be adopted for neurosurgery. An international conference was held in Munich in October 2000 bringing together neurosurgeons and safety experts from outside medicine in order to discuss basic aspects of risk control and quality management and to develop structures applicable to neurosurgery. Basic aspects such as principles of risk and safety management, the human factor as well as standards of neurosurgical patient care, proficiency of staff and residents, and industrial quality standards were discussed. The presentations and discussions resulted in a wealth of new ideas and concepts. This book contains this material and thus provides a unique and comprehensive source of information on the current possibilities of quality management in neurosurgery.

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"The dominant method of training and assessment of neurosurgical trainees is in traditional apprenticeship settings where students learn from their more experienced mentors. Objective assessment of neurosurgical technical skills in the operating room is difficult and educators have emphasized the need to develop and use objective and meaningful assessment tools that are reliable and valid to assess the acquisition and progress of trainees' surgical skills. Novel technologies, such as simulation, may play important roles in the training of future expert neurosurgeons. The purpose of this study was to validate new objective measures (metrics) of neurosurgical technical skills performance during simulated brain tumor resection using a virtual reality simulator (NeuroTouch). A total of 112 participants were recruited for this study including 16 experts (neurosurgery staff) and 96 novices (15 neurosurgery residents, and 81 medical students). Each participant performed 18 simulated brain tumor resections. The metrics for assessing performance in this study were completed through activities using the simulator and consisted of assessing: percentage of brain tumor resected, volume of surrounding normal brain tissue removed, sum of force applied during tumor resection, instrument path length, frequency of pedal activation, and duration for task completion. The results demonstrated that this system has face and content validity. NeuroTouch can be used to differentiate between experts and novices based on their technical performance and this component can potentially be beneficial for neurosurgery residency candidates screening procedures. Expert neurosurgeons (neurosurgery staff) resected statistically less tumor tissue and statistically less surrounding simulated normal brain tissue than novices did. This information suggests that experts focused more on safety of the surgical procedure compared to novices. By

analyzing experts' neurosurgical technical skills performance on these different metrics we were able to establish benchmarks for goal proficiency-based training of neurosurgery residents. We conclude that examining expert neurosurgical performance in simulated settings such as NeuroTouch provides researchers with novel metrics for assessment. Identification of expert proficiency can lead to improvements in resident training and assessment." --

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