Intracranial Stereotactic Radiosurgery An Issue Of Neurosurgery Clinics 1e The Clinics Surgery

Image-Guided Hypofractionated Stereotactic Radiosurgery **Principles and Practice of Stereotactic Radiosurgery** *Stereotactic Radiosurgery and Stereotactic Body Radiation Therapy* **Handbook of Evidence-Based Stereotactic Radiosurgery and Stereotactic Body Radiotherapy** Stereotactic Body Radiation Therapy **Intracranial Stereotactic Radiosurgery, An Issue of Neurosurgery Clinics** *Intracranial Stereotactic Radiosurgery* **Stereotactic Radiosurgery and Stereotactic Body Radiation Therapy (Sbrt)** Stereotactic Radiosurgery and Stereotactic Body Radiation Therapy Stereotactic Radiosurgery for the Treatment of Central Nervous System Meningiomas **Intracranial Stereotactic Radiosurgery** Stereotactic Radiosurgery for Prostate Cancer **Handbook of Evidence-Based Stereotactic Radiosurgery and Stereotactic Body Radiotherapy Stereotactic Body Radiotherapy Principles and Practice of Stereotactic Radiosurgery Physical Aspects of Stereotactic Radiosurgery** Controversies in Stereotactic Radiosurgery Stereotactic Radiosurgery and Radiotherapy *Radiosurgery Leksell Radiosurgery Uveal Malignant Melanoma and Stereotactic Radiosurgery* **Image-Guided Stereotactic Radiosurgery Stereotactic Radiosurgery (SRS)** *Hypofractionated and Stereotactic Radiation Therapy* **Extracranial Stereotactic Radiotherapy and Radiosurgery** *Robotic Radiosurgery. Treating Tumors that Move with Respiration* **Contemporary Stereotactic Radiosurgery Modern Stereotactic Neurosurgery Extracranial Stereotactic Radiotherapy and Radiosurgery** *Radiation Oncology* **Radiosurgery** Handbook of Radiosurgery in CNS Disease Radiosurgery Stereotactic Body Radiotherapy Radiosurgery Stereotactic Radiosurgery (SRS): Procedure, Results and Risks (2 Volume Set) **Surface Guided Radiation Therapy Stereotactic and Functional Neurosurgery** *Unequal Sphere Packing Problem in the Context of Stereotactic Radiosurgery Prevention and Management of Acute and Late Toxicities in Radiation Oncology*

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Image-Guided Hypofractionated Stereotactic Radiosurgery Oct 31 2022 Following recent developments in hypofractionated stereotactic radiation therapy (SRT) for brain and spine tumors, this new edition offers a fully updated and comprehensive "how-to" guidance on hypofractionated SRT for brain and spine metastases, glioma, benign tumors, and other tumor types. Presenting the state of the art of the technology and practice, this book: • Discusses the pros and cons of hypofractionated SRT compared to single-fraction radiosurgery, providing a deeper understanding of radiosurgery and radiobiology • Explains the toxicity and adverse effects of hypofractionated SRT including the dosage of 24 Gy in two spine SBRT fractionation schemes, aiding practitioners in communicating the risks and benefits of treatment and in obtaining consent from their patients • Outlines the current standards for safe practice, including checklists for implementation • Explores new technologies for brain and spine tumors including LITT, MR-guided focused ultrasound, and Zap technology, with chapters authored by well-recognized experts in the radiation, oncology, and neurosurgery communities; this book delivers a level of technological and clinical detail not available in journal papers This book is suitable for radiation oncologists, neurosurgeons, and medical physicists who specialize in brain and/or spine radiosurgery or want to start a program and need a comprehensive reference with key checklists for practice.
Intracranial Stereotactic Radiosurgery Apr 24 2022 Written by recognized experts in the fields of neurologic surgery, neurology, physics, and radiation oncology, Intracranial Stereotactic Radiosurgery is a comprehensive reference for current techniques for radiosurgery of the brain. Following introductory chapters on the relevant history, radiobiology, and neuropathology of radiosurgery, the book provides detailed discussion of radiosurgical procedures for various disease entities, including arteriovenous malformations and fistulas, meningiomas, vestibular and nonvestibular schwannomas, movement disorders, epilepsy, ocular disorders, and brain metastases. These chapters address the benefits and limitations of radiosurgical techniques for each indication and describe the outcomes, possible complications and their management, and alternative treatments.Highlights: Review of all currently available treatment systems Discussion of frame-based versus frameless techniques Coverage of single and multisession radiosurgery with descriptions of indications and benefits of each approach More than 100 high-quality illustrations, many in full color Perspectives from international experts in the field This authoritative textbook will be invaluable to neurosurgeons, radiation oncologists, neuroradiologists, and medical physicists at all levels. It is also a helpful resource for neurologists and other physicians who refer patients for intracranial radiosurgery.
Stereotactic Body Radiotherapy Sep 17 2021 This is a single, comprehensive handbook for clinical oncology trainees and consultants, covering the basic aspects of stereotactic radiotherapy systems and treatment.
Stereotactic Radiosurgery (SRS): Procedure, Results and Risks (2 Volume Set) Oct 26 2019 The book is a practical guide for neurosurgeons and radiation oncologists willing to better understand the contemporary multimodal management of neurosurgical diseases including, but not limited to, stereotactic radiosurgery (SRS). Since its invention 1950s, SRS has dramatically impacted the treatment and prognosis of several neurosurgical diseases such as brain and spine metastases, intracranial and spinal arteriovenous malformations, benign head and spine tumors, functional neurological diseases, etc. The book is formed by 35 chapters encompassing all aspects of SRS, from basic principles to the traditional and novel clinical applications. Each chapter points out the current evidence-based indications, contraindications, and adverse effects of SRS and other techniques that should be considered as an alternative or as a complement to SRS.
Intracranial Stereotactic Radiosurgery Dec 21 2021 In this third edition of Intracranial Stereotactic Radiosurgery, Drs. Sheehan and Lunsford provide an updated assessment of the practice of stereotactic radiosurgery. Topics include benign and malignant tumors, cerebrovascular abnormalities, and functional disorders. Several new topics are now included and focus on immunotherapy, hypofractionation, and repeat radiosurgery. Each chapter contains key figures and tables to illustrate the critical concepts of the work. Contributors to the book represent many of the most prestigious stereotactic radiosurgery centers across the world. This book is comprised of 36 chapters and represents a comprehensive update to prior editions. It is intended to be a readable, credible, and accessible reference on stereotactic radiosurgery. Editors Jason Sheehan, MD, PhD, FACS, FAANS, is the Vice Chair and Harrison Distinguished Professor of Neurological Surgery at the University of Virginia (UVA). He also serves as the Neurosciences Service Line Director at UVA. Dr. Sheehan is the current chair of the American Association of Neurological Surgeons (AANS) and Congress of Neurological Surgeons (CNS) Section on Tumors. He serves as the Editor-In-Chief of the Journal of Neuro-Oncology. L. Dade Lunsford, MD, serves as the Lars Leksell Professor and Distinguished Professor at the Department of Neurological Surgery at the University of Pittsburgh. He is also director of the Center for Image-Guided Neurosurgery at the University of Pittsburgh Medical Center and an internationally recognized authority on stereotactic surgery, radiosurgery, and minimally invasive surgery. He has authored or coauthored more than 1,000 scientific reports and 16 books.
Stereotactic Radiosurgery and Radiotherapy May 14 2021 This book provides a complete reference on the physics and techniques of stereotactic radiosurgery (SRS) and stereotactic radiotherapy (SRT). It also details procedures used in neurosurgery and radiation oncology. The book covers the technological advancements in stereotactic radiosurgery and radiation therapy, dosimetry requirements, treatment planning techniques, and quality assurance methods. Unlike other books, this book starts from the basics and explains each step in SRS, SRT, and SBRT. Each chapter contains a short summary emphasizing the chapter s salient features. "
Modern Stereotactic Neurosurgery Jul 04 2020 As in any multiauthored textbook penned by When I was first approached by the publisher of this volume, Martinus Nijhoff, Boston, I writers of diverse backgrounds and interests, explored the possibility of writing a personal Modern Stereotactic Neurosurgery to some monograph on contemporary stereotactic extent suffers from incompleteness. Future surgery. After a review of available literature, volumes no doubt will include many additions several aspects became apparent. First, no cur from other authors who also are important rent, readily accessible, multiauthored text de specialists in the field. Because not all authors signed to survey the field was available. Those write in the same style (or even language), we books that were available tended to heavily have attempted to achieve a more cohesive text emphasize theory, physiology, and anatomy. in the editorial process. Each chapter has been Second, stereotactic surgeons were considered subdivided into pertinent headings for easier abstruse and for too long were relegated to a reference. Because of my own background, status outside of the mainstream of neuro some readers will note an Americanization (as surgery. This attitude probably reflected the opposed to anglicization) of the chapters. insufficient explanation of the practical uses While many chapters comprise primarily sum and advantages of stereotactic technique. maries of the authors' work within the field, Third, in recent years, the field has expanded each author was encouraged to review the liter so rapidly that it has become a major compo ature in that discipline if appropriate.

Prevention and Management of Acute and Late Toxicities in Radiation Oncology Jun 22 2019 This book is an evidence-based guide to the prevention and current management of acute and late toxicities of radiation therapy for a wide range of malignancies. Each chapter focuses on a particular anatomic site and provides information on normal sectional anatomy, contouring of target volumes and organs at risk, dose constraints, the pathophysiology of radiation toxicity, and treatment approaches for each potential toxicity. The information provided will assist in the planning and delivery of intensity-modulated radiation therapy, including volumetric modulated arc therapy, stereotactic radiosurgery, and stereotactic body radiotherapy. It will also enable the selection of appropriate, evidence-based management options in individual patients who experience radiation toxicities, taking into account the organ-specific pathophysiology of radiation injury. Written by acknowledged experts and featuring numerous high-quality illustrations, the book will be an ideal reference aid for practicing clinical and radiation oncologists, radiotherapists, fellows, residents, and nurses.
Stereotactic Radiosurgery and Stereotactic Body Radiation Therapy Aug 29 2022 This book is a comprehensive review of stereotactic radiosurgery (SRS) and stereotactic body radiation therapy (SBRT): its physics, clinical evidence, indications, and future directions. The utilization of stereotactic radiosurgery (SRS) and stereotactic body radiation therapy (SBRT) is increasing internationally because of several factors. First, it offers patients a local treatment option that has demonstrated effectiveness similar to traditional surgery without the morbidity of general anesthesia and open surgical resection. Second, recent advancements in the quality of scientific evidence supporting a SRS or SBRT-containing approach in patients continues to evolve and demonstrate favorable disease-specific outcomes with little, if any, toxicity in various anatomic disease sites and for various conditions including cancer, benign tumors, and other psychiatric and neurologic conditions. Third, and most provocatively, is the notion that definitive local therapy (i.e. SRS or SBRT) in patients with cancer can boost the immune system to fight cancer in other sites throughout the body. While traditional medical knowledge would suggest that all patients with metastatic cancer are incurable, there is a mounting body of evidence that there is a subset of these patients that can be cured with definitive SRS or SBRT. This volume thus delves into each of these benefits and aspects of treatment, guiding physicians to the best treatment plan for their patients. Expert, international authors provide guidelines for SRS and SBRT use by clinicians. Chapters are divided into six main sections: Radiobiology of Radiosurgery and Stereotactic Body Radiation Therapy, Intracranial Radiosurgery Technique, Intracranial Radiosurgery by Indication, Stereotactic Body Radiation Therapy Technique, Stereotactic Body Radiation Therapy by Indication, The Future of Radiosurgery and SBRT. Overall physics are explained, as well as specific considerations for particular surgical tools (including the Leksell Gamma Knife and Accuray CyberKnife), techniques (including fractionated and charged particle radiosurgery), and anatomic sites (including brain metastases, pituitary tumors, and the prostate). Detailed images and charts enhance the chapters. This book provides physicians with a single, practical resource incorporating both of these broad categories of treatment, SRS and SBRT, and better defines the current role and the direction of radiosurgery.
Physical Aspects of Stereotactic Radiosurgery Jul 16 2021 The current volume presents a comprehensive, unbiased description of the physical aspects of focussed gamma radiation, focussed x-radiation, and the charged particle method of stereotactic radiosurgery, and the role each plays in treatment. Physicists will find the work a useful guide to the choice and setup of a radiosurgical unit, while physicians will gain insight into those factors affecting the patient.
Stereotactic Body Radiotherapy Dec 29 2019 This is a single, comprehensive handbook for clinical oncology trainees and consultants, covering the basic aspects of stereotactic radiotherapy systems and treatment.
Extracranial Stereotactic Radiotherapy and Radiosurgery Jun 02 2020 For radiation oncologists and physicists who want an authoritative overview of emerging developments in the field, as well as clear direction on the utilization of this new technology in clinical practice, this reference provides in-depth descriptions of new and promising stereotactic methods for the application of stereotactic radiotherapy for the treatment of extracranial tumors.
Stereotactic and Functional Neurosurgery Aug 24 2019 This text presents a comprehensive and state-of the-art approach to stereotactic and functional neurosurgery. Overarching sections include achieving stereotactic precision, defining trajectories and targets, the biophysics of stereotactic therapies, diseases and targets, and the future of functional neurosurgery. Each section is designed to be inclusive of all relevant topics, serving as an unbiased resource to new clinicians in this field or established clinicians that are aiming to better understand complementary methods. Importantly, each section and the associated chapters can be used by basic and translational scientists as well as engineers and industry to better understand and deliver innovation to the field. Chapters within each section methodically analyze traditional and recently emerging concepts and techniques; address underlying principles with examples drawn from specific diseases and applications; and cover patient selection, target selection, available stereotactic methods, nuanced surgical methods, and clinical evidence across treatment options. Written by experts in each area, Stereotactic and Functional Neurosurgery is a definitive guide to the latest developments in stereotactic targeting, electrode implantation, surgical treatment of neurological and psychiatric disorders, the renaissance of stereotactic lesions, and the frontier of restorative neurosurgery for a variety of disorders that have no other therapeutic options.
Controversies in Stereotactic Radiosurgery Jun 14 2021 Controversies in Stereotactic Radiosurgery: Best Evidence Recommendations is a comprehensive reference that compiles, synthesizes, and summarizes the most relevant scientific literature on the topic. Each succinct, problem-oriented chapter addresses a different controversy surrounding stereotactic radiosurgery. This book saves physicians significant amounts of time by distilling years of scientific research into sound guidelines that will help them make fully-informed treatment decisions. Key Features: Covers both intracranial and spine radiosurgery, providing complete coverage of this rapidly evolving technology Includes more than 35 chapters on treatment controversies for brain and spine tumors as well as vascular malformations Contains summary tables throughout the text that present the main conclusions of published studies All neurosurgeons, radiation oncologists, and neuro-oncologists, involved in the treatment of patients who may be candidates for stereotactic radiosurgery of the brain and spine will find this book to be an essential decision making guide.
Extracranial Stereotactic Radiotherapy and Radiosurgery Oct 07 2020 For radiation oncologists and physicists who want an authoritative overview of emerging developments in the field, as well as clear direction on the utilization of this new technology in clinical practice, this reference provides in-depth descriptions of new and promising stereotactic methods for the application of stereotactic radiotherapy for the treatment of extracranial tumors.
Radiosurgery Mar 31 2020 This new volume covers a wide range of topics in neurosurgery such as the evaluation of radiosurgery versus conventional microsurgery. Reports from the 2001 meeting of the International Stereotactic Radiosurgery Society include the most current information on advanced radiosurgical approaches to patients with benign and malignant brain tumors, vascular malformations, and functional disorders. New radiosurgical technologies are reviewed, including the use of new imaging techniques. Device quality assurance and physics applications are discussed. The expanding field of extracranial radiosurgery is addressed. The publication is of special interest to neurosurgeons, radiation oncologists, medical physicists, and neurologists who require the most up-to-date information on the use of stereotactic radiosurgery for neurologic diseases.
Stereotactic Body Radiation Therapy Jun 26 2022 Stereotactic body radiation therapy (SBRT) has emerged as an important innovative treatment for various primary and metastatic cancers. This book provides a comprehensive and up-to-date account of the physical/technological, biological, and clinical aspects of SBRT. It will serve as a detailed resource for this rapidly developing treatment modality. The organ sites covered include lung, liver, spine, pancreas, prostate, adrenal, head and neck, and female reproductive tract. Retrospective studies and prospective clinical trials on SBRT for various organ sites from around the world are examined, and toxicities and normal tissue constraints are discussed. This book features unique insights from world-renowned experts in SBRT from North America, Asia, and Europe. It will be necessary reading for radiation oncologists, radiation oncology residents and fellows, medical physicists, medical physics residents, medical oncologists, surgical oncologists, and cancer scientists.
Principles and Practice of Stereotactic Radiosurgery Sep 29 2022 Principles and Practice of Stereotactic Radiosurgery, Second Edition serves as the definitive reference textbook for SRS practitioners. It provides a theoretical basis for the use of therapeutic radiation including imaging techniques and radiobiology. The bulk of the textbook contains chapters that are comprehensive in scope on all diseases that are treated by SRS. Lastly, it addresses administrative and technical aspects of running an SRS unit. Each chapter provides an expansive treatment of the subject, with emphasis placed on the technical aspects of SRS so that practitioners in this field can use it as a daily reference. Written by noted experts in the field, Principles and Practice of Stereotactic Radiosurgery, Second Edition is the only reference needed for neurosurgeons, radiation oncologists and medical physicists at all levels of training and practice who are interested in SRS.
Radiosurgery Apr 12 2021 Stereotactic radiosurgery, a field of increasing importance worldwide, is proving its value in primary and adjuvant treatment. Particle beam, gamma knife, and linear accelerator technology have already been successfully used in many operations, and their potential is being further explored. This series, featuring the latest achievements in radiosurgery, reflects the actual state of knowledge in the field. It is the official publication of the International Stereotactic Radiosurgery Society and volumes in this book series will be published every two years, following the main society congress. For neurological surgeons, radiation oncologists, radiologists, and medical physicists, neurologists and allied health practitioners each new volume will set the standard for work in radiosurgery during this period.
Principles and Practice of Stereotactic Radiosurgery Aug 17 2021 Principles and Practice of Stereotactic Radiosurgery, Second Edition serves as the definitive reference textbook for SRS practitioners. It provides a theoretical basis for the use of therapeutic radiation including imaging techniques and radiobiology. The bulk of the textbook contains chapters that are comprehensive in scope on all diseases that are treated by SRS. Lastly, it addresses administrative and technical aspects of running an SRS unit. Each chapter provides an expansive treatment of the subject, with emphasis placed on the technical aspects of SRS so that practitioners in this field can use it as a daily reference. Written by noted experts in the field, Principles and Practice of Stereotactic Radiosurgery, Second Edition is the only reference needed for neurosurgeons, radiation oncologists and medical physicists at all levels of training and practice who are interested in SRS.
Handbook of Evidence-Based Stereotactic Radiosurgery and Stereotactic Body Radiotherapy Jul 28 2022 This handbook concisely summarizes state-of-the-art information about stereotactic radiosurgery (SRS) and stereotactic body radiotherapy (SBRT), including the history and development of these modalities, the biologic rationale for these technologies, typical practices, and reported results. Developed as a companion to Handbook of Evidence-Based Radiotherapy, Second Edition, edited by Eric Hansen and Mack Roach, III, it is organized by disease site and presents treatment techniques and recommended imaging; safety and quality assurance; toxicities

and management; recommended follow-up; and supporting evidence. Inclusion of evidence-based guidelines is intended to help inform decisions regarding the appropriateness of SRS and SBRT and guide treatment and evaluation. Handbook of Evidence-Based Stereotactic Radiosurgery and Stereotactic Body Radiotherapy can be easily referenced in the clinic and is a valuable guide for oncology practitioners.?

Surface Guided Radiation Therapy Sep 25 2019 Surface Guided Radiation Therapy provides a comprehensive overview of optical surface image guidance systems for radiation therapy. It serves as an introductory teaching resource for students and trainees, and a valuable reference for medical physicists, physicians, radiation therapists, and administrators who wish to incorporate surface guided radiation therapy (SGRT) into their clinical practice. This is the first book dedicated to the principles and practice of SGRT, featuring: Chapters authored by an internationally represented list of physicists, radiation oncologists and therapists, edited by pioneers and experts in SGRT Covering the evolution of localization systems and their role in quality and safety, current SGRT systems, practical guides to commissioning and quality assurance, clinical applications by anatomic site, and emerging topics including skin mark-less setups. Several dedicated chapters on SGRT for intracranial radiosurgery and breast, covering technical aspects, risk assessment and outcomes. Jeremy Hoisak, PhD, DABR is an Assistant Professor in the Department of Radiation Medicine and Applied Sciences at the University of California, San Diego. Dr. Hoisak's clinical expertise includes radiosurgery and respiratory motion management. Adam Paxton, PhD, DABR is an Assistant Professor in the Department of Radiation Oncology at the University of Utah. Dr. Paxton's clinical expertise includes patient safety, motion management, radiosurgery, and proton therapy. Benjamin Waghorn, PhD, DABR is the Director of Clinical Physics at Vision RT. Dr. Waghorn's research interests include intensity modulated radiation therapy, motion management, and surface image guidance systems. Todd Pawlicki, PhD, DABR, FAAPM, FASTRO, is Professor and Vice-Chair for Medical Physics in the Department of Radiation Medicine and Applied Sciences at the University of California, San Diego. Dr. Pawlicki has published extensively on quality and safety in radiation therapy. He has served on the Board of Directors for the American Society for Radiology Oncology (ASTRO) and the American Association of Physicists in Medicine (AAPM).

Image-Guided Stereotactic Radiosurgery Jan 10 2021 This book provides the reader with a detailed update on the use of stereotactic radiosurgery (SRS) in patients with lesions of the brain and other parts of the body. The aim is not simply to explain the application of SRS and document its value with reference to the author's own clinical experiences and other published evidence, but also to contextualize the technology within a new strategic concept of cancer care. When embedded within an appropriate conceptual framework, technology becomes pivotal in changing therapeutic strategies. A new paradigm that is increasingly impacting on clinical practice is the oligometastatic state, on the basis that long-term survival might be achieved in patients with a low volume and number of metastatic lesions. This book accordingly addresses the value of SRS in patients with oligometastases of solid tumors to the brain, lung, spine, and liver. In addition, it examines the use of SRS in patients with diverse brain lesions, early-stage stage lung cancer, liver cancer, and early-stage prostate cancer. Readers will be persuaded that SRS, using cutting-edge imaging technologies to deliver precisely targeted radiation therapy, represents an exciting non-invasive procedure that holds great promise for the present and the future of cancer care.

Radiosurgery Jan 28 2020 The aim of the International Stereotactic Radiosurgery Society (ISRS) is to promote technical developments in stereotactic radiosurgery on the highest level of clinical experience based on clinical investigations. In this volume, high-quality peer-reviewed papers from the 8th International Stereotactic Radiosurgery Society meeting held in San Francisco 2007 are presented. The reports include new studies on physics, imaging and radiobiology in radiosurgery as well as the latest research in the field of cranial radiosurgery on benign tumors, malignant tumors and vascular malformations. Further articles cover new investigations in the practice on spinal and body radiosurgery. This publication is of special interest to neurosurgeons, radiation oncologists and medical physicists who require precise information to keep up to date with the important developments on the use of stereotactic radiosurgery.

Handbook of Evidence-Based Stereotactic Radiosurgery and Stereotactic Body Radiotherapy Oct 19 2021 This handbook concisely summarizes state-of-the-art information about stereotactic radiosurgery (SRS) and stereotactic body radiotherapy (SBRT), including the history and development of these modalities, the biologic rationale for these technologies, typical practices, and reported results. Developed as a companion to Handbook of Evidence-Based Radiotherapy, Second Edition, edited by Eric Hansen and Mack Roach, III, it is organized by disease site and presents treatment techniques and recommended imaging; safety and quality assurance; toxicities and management; recommended follow-up; and supporting evidence. Inclusion of evidence-based guidelines is intended to help inform decisions regarding the appropriateness of SRS and SBRT and guide treatment and evaluation. Handbook of Evidence-Based Stereotactic Radiosurgery and Stereotactic Body Radiotherapy can be easily referenced in the clinic and is a valuable guide for oncology practitioners.?

Stereotactic Radiosurgery and Stereotactic Body Radiation Therapy (Sbrt) Mar 24 2022 Stereotactic Radiosurgery and Stereotactic Body Radiation Therapy (SBRT) is a comprehensive guide for the practicing physician and medical physicist in the management of complex intracranial and extracranial disease. It is a state-of-the-science book presenting the scientific principles, clinical background and procedures, treatment planning, and treatment delivery of SRS and SBRT for the treatment of tumors throughout the body. This unique textbook is enhanced with supplemental video tutorials inclusive to the resource. Beginning with an overview of SRS and SBRT, Part I contains insightful coverage on topics such as the evolving radiobiological principles that govern treatment, imaging, the treatment planning process, technologies and equipment used, as well as focused chapters on quality assurance, quality management, and patient safety. Part II contains the clinical application of SRS and SBRT for tumors throughout the body including those in the brain, head and neck, lung, pancreas, adrenal glands, liver, prostate, cervix, spine, and in oligometastatic disease. Each clinical chapter includes an introduction to the disease site, followed by a thorough review of all indications and exclusion criteria, in addition to the important considerations for patient selection, treatment planning and delivery, and outcome evaluation. These chapters conclude with a detailed and site-specific dose constraints table for critical structures and their suggested dose limits. International experts on the science and clinical applications of these treatments have joined together to assemble this must-have book for clinicians, physicists, and other radiation therapy practitioners. It provides a team-based approach to SRS and SBRT coupled with case-based video tutorials in disease management, making this a unique companion for the busy radiosurgical team. Key Features: Highlights the principles of radiobiology and radiation physics underlying SRS and SBRT Presents and discusses the expected patient outcomes for each indicated disease site and condition including a detailed analysis of Quality of Life (QOL) and Survival Includes information about technologies used for the treatment of SRS and SBRT Richly illustrated with over 110 color images of the equipment, process flow diagrams and procedures, treatment planning techniques and dose distributions 7 high-quality videos reviewing anatomy, staging, treatment simulation and planning, contouring, and management pearls Dose constraint tables at the end of each clinical chapter listing critical structures and their appropriate dose limits Includes access to the fully-searchable downloadable eBook

Robotic Radiosurgery. Treating Tumors that Move with Respiration Sep 05 2020 With contributions by numerous experts

Stereotactic Radiosurgery for Prostate Cancer Nov 19 2021 This book offers a comprehensive evaluation of the use of stereotactic body radiosurgery (SBRT) for the treatment of prostate cancer. The rationale, selection criteria, and treatment planning for prostate SBRT are explained. Important imaging and anatomic considerations are discussed, and detailed consideration devoted to organ motion and tumor tracking during SBRT. Outcomes of therapy are then examined, with thorough appraisal of side effect profiles and quality of life impacts. Clear guidance is provided on how to deliver the therapy in a way that minimizes the risk of long-term urinary and rectal toxicities. Stereotactic radiosurgery for prostate cancer is an increasingly used form of treatment. Retrospective investigations have demonstrated the safe application of high-dose treatments, with 5-year results comparable to those achieved with protracted external beam radiotherapy. Prospective studies are underway comparing SBRT with more traditional forms of image-guided and intensity-modulated radiotherapy. In offering in-depth guidance on safe delivery of prostate SBRT, this book will be of value for students of radiation oncology, more experienced practitioners, and medical physicists.

Handbook of Radiosurgery in CNS Disease Feb 29 2020 Handbook of Radiosurgery in CNS Disease is a concise and practical manual offering radiation oncology, neurology, and neurosurgery residents, trainees, fellows, and clinicians up-to-date information on the role of radiosurgery within the overall context of CNS disease management. The emphasis is on decision making and the evaluation of radiosurgery as a viable option among the suite of potentially applicable treatments, including frame-based systems, non-invasive body immobilization, and image-guided targeting. The book examines radiosurgery as a treatment modality for various CNS pathologies, discussing relevant radiobiology, current technology, and the technical aspects of specific procedures. Chapters organized by pathology provide practical coverage of clinical evaluations, patient selection and management decision-making, and relevant points in radiosurgical applications for the entity under discussion. Pertinent cases are presented to demonstrate the process for each treatment paradigm. A unique collaboration of editors with an international reputation for excellence in radiation oncology, vascular neurosurgery, and neurosurgical oncology will offer insights into the role of radiosurgery in the entire central nervous system (i.e. both brain and spine). Handbook of Radiosurgery in CNS Disease features: Practical focus on key clinical issues in radiosurgery of CNS disease: patient selection, radiosurgery in context with other modalities, pitfalls Coverage of cranial and extracranial disease Relevant cases illustrate discussion of each treatment paradigm Outstanding editorial team Concise format makes for an easy review or quick reference, in contrast to large texts "

Stereotactic Radiosurgery (SRS) Dec 09 2020 "The book is a practical guide for neurosurgeons and radiation oncologists willing to better understand the contemporary multimodal management of neurosurgical diseases including, but not limited to, stereotactic radiosurgery (SRS). Since its invention 1950s, SRS has dramatically impacted the treatment and prognosis of several neurosurgical diseases such as brain and spine metastases, intracranial and spinal arteriovenous malformations, benign head and spine tumors, functional neurological diseases, etc. The book is formed by 35 chapters encompassing all aspects of SRS, from basic principles to the traditional and novel clinical applications. Each chapter points out the current evidence-based indications, contraindications, and adverse effects of SRS and other techniques that should be considered as an alternative or as a complement to SRS"--

Leksell Radiosurgery Mar 12 2021 Since its introduction 52 years ago, Leksell radiosurgery has become a widely applied technique for the management of a diverse group

of vascular, neoplastic, and functional disorders. This publication presents an update on state-of-the-art radiosurgery technology, including outcomes, by the pioneers in the field. Experts have contributed chapters on various topics. They provide a history of the development of Leksell Gamma Knife and its evolution from frame-based to the inclusion of mask-based radiosurgery in the latest Gamma Knife model. For beginners, there is valuable information related to imaging, quality assurance, patient care, anesthesia, and regulatory requirements. Advance users will appreciate the summary of the long-term outcome of important indications. Additional chapters on cavernous malformation, orbital, uveal, and ocular disorders clarify the role of radiosurgery. This book is a concise overview for physicians interested in radiosurgery. It will be of great value to neurosurgeons, radiation oncologists, and medical physicists concerned with learning about the indications of radiosurgery.

Unequal Sphere Packing Problem in the Context of Stereotactic Radiosurgery Jul 24 2019

Stereotactic Radiosurgery for the Treatment of Central Nervous System Meningiomas Jan 22 2022 Meningiomas are the most frequently reported neuro-oncologic condition, accounting for 12% to 30% of all primary intracranial tumors. The first case of intracranial meningioma treated with stereotactic radiosurgery was reported by Backlund E-O in 1971. Since then, more than 200,000 meningiomas have been treated with stereotactic radiosurgery worldwide to date. The large number of patients treated using this method is due to the fact that meningiomas are frequently located in critical areas and microsurgery is often associated with severe and permanent neurological complications. This book discusses the advantages, risks and limits of stereotactic radiosurgery relating to all regions of interest for a neuroradiosurgical approach for the treatment of central nervous system meningiomas. Firstly, it presents an introduction focusing on the “state of the art”. It then discusses the physics, imaging, neurological and neuro-oncological issues in multidisciplinary management. Lastly, it features a summary of results, including the most recent published papers regarding all the locations involved in the stereotactic radiosurgery treatment as well as new approaches to meningiomas, with particular reference to the hypofrationated treatments. Intended for anyone involved in the neuroradiosurgical treatment of brain diseases, the book provides an up-to-date overview of the latest stereotactic radiosurgery treatment of central nervous system meningiomas.

Uveal Malignant Melanoma and Stereotactic Radiosurgery Feb 08 2021 Ophthalmooncology with innumerable terms appears often like a mysterious subject for physicians of other specialties and the other scientists. This monograph introduces to the part of ophthalmology, especially the problems of intraocular tumors and intraocular uveal melanoma. Uveal melanoma is the most common primary intraocular malignant tumor. Radiation therapy has now replaced enucleation as the treatment of choice, with radioactive eye plaques and proton therapy being the two most studied radiotherapeutic modalities. More recently, stereotactic radiosurgery and fractionated stereotactic radiotherapy have emerged as promising, non-invasive treatments for uveal melanoma. Stereotactic radiosurgery is a method, which may be considered like a not true surgery" because no incisions are involved. Instead, it is an advanced method of radiation therapy that delivers high doses of radiation to very small areas and volumes.

Radiation Oncology May 02 2020 This book is an evidence-based guide to current use of radiation therapy for the treatment of malignancies at major disease sites. It is designed to meet the needs of residents, fellows, and practicing radiation oncologists and will assist in selection and delineation of tumor volumes/fields and dose prescription for intensity-modulated radiation therapy, including volumetric modulated arc therapy for stereotactic radiosurgery or stereotactic body radiotherapy. Each tumor site-related chapter presents, from the perspective of an academic expert, informative cases at different stages in order to clarify specific clinical concepts. The coverage includes case presentation, a case-related literature review, patient preparation, simulation, contouring, treatment planning, image-guided treatment delivery, follow-up, and toxicity management. The text is accompanied by illustrations ranging from slice-by-slice delineations on planning CT images to finalized plan evaluations based on detailed acceptance criteria. The expert knowledge and evidence contained in this comprehensive book will give readers the confidence to manage common cancers without outside referral and to meet the clinical challenges faced in everyday practice.

Intracranial Stereotactic Radiosurgery, An Issue of Neurosurgery Clinics May 26 2022 This issue of the Neurosurgery Clinics of North America devoted to Intracranial Stereotactic Radiosurgery is Guest Edited by Dr. Bruce Pollock of the Mayo Clinic in Rochester, Minnesota. Articles in this issue include: Concepts and Techniques of Intracranial Stereotactic Radiosurgery; Stereotactic Radiosurgery of Intracranial Meningiomas; Stereotactic Radiosurgery of Pituitary Adenomas; Stereotactic Radiosurgery of Vestibular Schwannomas; Stereotactic Radiosurgery of Non-Vestibular Schwannomas; Multi-session Radiosurgery of Benign Intracranial Tumors; Stereotactic Radiosurgery of Intracranial Gliomas; Stereotactic Radiosurgery of Brain Metastases; Stereotactic Radiosurgery of Chordomas, Chondrosarcomas, and Glomus Tumors; Stereotactic Radiosurgery of Intracranial Arteriovenous Malformations; Stereotactic Radiosurgery of Intracranial Dural Arteriovenous Fistulas; Stereotactic Radiosurgery of Intracranial Cavernous Malformations; Stereotactic Radiosurgery for Trigeminal Neuralgia; and Stereotactic Radiosurgery for Epilepsy and Functional Disorders.

Hypofractionated and Stereotactic Radiation Therapy Nov 07 2020 This handbook summarizes the data and techniques for hypofractionation and stereotactic radiation in a clinically-accessible way. Hypofractionated radiation therapy, which consists of larger-dose radiation treatments that are given over a shorter time period compared to conventional radiation fraction sizes, is used to treat a variety of cancers, including prostate, breast, lung, and colorectal. Conventional radiation therapy and hypofractionated radiation therapy have different effectiveness rates for cancer treatment and have different impacts on normal tissues in terms of causing toxicity. There is a significant and growing body of literature on the use of different dosing regimens to treat a variety of cancers and radiation oncologists need to keep up with the various dosing schedules, the effect of each regimen on cancer control in different cancers, and how the different schedules affect each organ in terms of toxicity. The book thus provides concise information ranging from commonly-used dose-fractionation schemes for hypofractionated and stereotactic body radiotherapy to simulation and treatment specifications to published safety and efficacy data. Chapters additionally examine the biological rationales for the efficacy of hypofractionated radiation; present clinical studies that demonstrate the efficacy and safety of hypofractionated radiation treatment in a variety of cancers; and describe the advances in technology that have allowed hypofractionated radiation to be safely given. This is an ideal guide for radiation oncology clinicians and trainees.

Radiosurgery Nov 27 2019 The aim of the International Stereotactic Radiosurgery Society (ISRS) is to promote technical developments in stereotactic radiosurgery on the highest level of clinical experience based on clinical investigations. In this volume, high-quality peer-reviewed papers from the 8th International Stereotactic Radiosurgery Society meeting held in San Francisco 2007 are presented. The reports include new studies on physics, imaging and radiobiology in radiosurgery as well as the latest research in the field of cranial radiosurgery on benign tumors, malignant tumors and vascular malformations. Further articles cover new investigations in the practice on spinal and body radiosurgery.This publication is of special interest to neurosurgeons, radiation oncologists and medical physicists who require precise information to keep up to date with the important developments on the use of stereotactic radiosurgery.

Stereotactic Radiosurgery and Stereotactic Body Radiation Therapy Feb 20 2022 Written by internationally known experts in the field, Stereotactic Radiosurgery and Stereotactic Body Radiation Therapy examines one of the fastest-developing subspecialties within radiation oncology. These procedures deliver large doses of radiation in one to five sessions to a precisely determined target. Often these techniques have proven to be as or more effective than traditional radiation therapy techniques, while at the same time being cost-efficient and convenient for the patient. These techniques, however, require careful planning, specialized equipment, and well-trained staff. This volume provides a cutting-edge look at the biological and technical underpinnings of SRS and SBRT techniques. It includes a history of the development of SRS and SBRT; clinical applications of the techniques; dedicated devices for delivering precisely shaped, high doses of radiation; use of in-room imaging for treatment planning and treatment guidance; immobilization techniques for accurate targeting; and future developments that will continue to evolve and refine existing techniques. A valuable introduction to those just learning about these specialized techniques, and an ideal reference for those who are already implementing them, this book covers a wide variety of topics, with clear discussions of each aspect of the technology employed.

Contemporary Stereotactic Radiosurgery Aug 05 2020 The exponential growth and acceptance rate of stereotactic radiosurgery (as measured by recognized indications and number of treating centers) has been coupled with concern about its possible over-utilization and long-term risks. To provide the most balanced account possible of this controversy, each chapter in this book is followed by a critical commentary from an expert on each indication; often one who does not perform radiosurgery. As a result, the reader benefits from an intelligent discussion of the clinical indications by both advocates and critics of radiosurgery. The book's contributors, true leaders in the field from the United States, Europe, and Japan, represent a wide variety of experience and opinion. Whereas earlier texts devoted large sections to the actual equipment used to perform radiosurgery, as the field matures it is now clear that the technique can be performed equally well with a variety of technologies. Thus, this book has just one chapter on technology, and otherwise concentrates on appropriate indications, use, and patient outcomes. It is the author's hope that neurosurgeons, radiation oncologists and neurologists will use the information in this text to decide for themselves the role that radiosurgery should play in treating patients with neurologic disorders.