Bookmark File PDF ACTA NEUROCHIRURGICA

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86 short papers originating from the 13th International Symposium on Intracranial Pressure and Brain Monitoring held in July 2007 in San Francisco present experimental as well as clinical research data on invasive and non-invasive intracranial pressure and brain biochemistry monitoring. The papers have undergone a peer-reviewing and are organized in eight sections: brain injury: ICP management and cerebral physiology; hydrocephalus and cerebrospinal fluid dynamics; advanced neuromonitoring; biomedical informatics; imaging; ICP: brain compliance, biophysics, and biomechanics; stroke, subarachnoid hemorrhage, and intracerebral hematoma; and experimental studies and models. The papers address the increasing use of decompressive craniectomy for the treatment of brain edema as well after brain injury and the rapidly expanding field of advanced neuromonitoring and neuroimaging.
Gamma knife radiosurgery has grown continually in importance in recent years. However, there was a lack of established clinical and physical quality standards and a good knowledge of the possibilities of radiosurgical treatment for brain lesions. This book fills the gap by giving an overview of the current status of European gamma knife radiosurgery. Leading european experts report on their specialities in this field which is a state-of-the-art summary of the possibilities and results of their current work. The book encompasses all important as well as the more rare indications. All relevant technical and clinical quality standards are addressed. Tailored planning strategies are described for different indications. All professionals who care for patients with neurosurgical disease, such as neurosurgeons, radiosurgeons, radiologists, radiation oncologists and neurologists will find the book highly useful for the management of patients with benign and malignant brain lesions in a multidisciplinary setting.
During the last decade a multitude of studies concerning the dynamic changes in cerebral blood flow (CBF), cerebral metabolic rate of oxygen (CMRO2), and intracranial pressure (ICP) in the acute phase after head injury have been published. These studies have been supplemented with studies of cerebral autoregulation, CO2 reactivity and barbiturate reactivity. Other investigations include studies of cerebrospinal fluid pH, bicarbonate, lactate and pyruvate. In this book experimental and clinical studies of the dynamic changes in CBF, CMRO2, CO2 reactivity and barbiturate reactivity are reviewed. The author's own clinical studies of the dynamic changes in CBF and cerebral metabolism are summarized and discussed, and the therapeutical implication as regards the use of artificial hyperventilation, sedation with barbiturate and mannitol treatment are discussed.

It has become increasingly difficult for the single clinician to cover the whole area of traumatology and particularly neurotraumatology. This is now a science with various specialized fields of research. The results are published in different and special journals, proceedings and books often not easily available to those responsible for the daily practical management of the patients with head injuries. Epidemiological investigations are necessary to evaluate the severity and frequency of accidents and injuries. Such studies will stress the importance of analysis of the causes and also the importance of prevention. They are useful for evaluation of the effects of injuries despite management. Moreover, the researchers of the different aspects may need some knowledge of other links in the chain of events at and after an impact. This is particularly evident with respect to the problems of accident and injury, their prevention, reduction, management and the presentation of the most important clinical features in each case for international comparisons. Therefore it is appropriate to let the different specialists briefly discuss and present their aspects of the subject. Moreover, it may facilitate and stimulate the clinicians in studying special fields of interest. This was the intention behind the "Scandinavian Symposium on Neurotraumatology" held in May 1985 in Gothenburg: - To accumulate wider knowledge for the neurosurgeon and better understanding between the researchers in various fields to the benefit of the coming and present patients. Sten Lindgren Contents Lindgren, S.: Introduction.
The articles in this volume cover the various radiosurgical techniques used to treat benign and malignant intracranial tumors, cavernous malformations, and functional disorders, as well as a wide array of specific details on medical physics, neuroimaging, and anesthetic support. Particular emphasis is put on the optimal combination of microneurosurgery and radiosurgery for attaining the best functional results in patients with vestibular schwannomas, craniopharyngiomas, and pituitary adenomas, and on the most effective methods of treatment planning and radiation dosimetry in cases of metastatic brain tumors. The highlighted clinical aspects include indications for radiosurgery and the prediction of patients’ prognosis, along with analysis of outcomes in comparison with results achieved by other modalities in the context of multifaceted therapeutic strategies. In addition, possible options for applying advanced treatment using such modern devices as Leksell Gamma Knife PerfexionTM and IconTM are presented in depth. This information will interest both radiosurgical practitioners and neurosurgeons, and help them to provide optimal care and to achieve the greatest benefit of their patients. This book will serve as an excellent companion for the previous publication “Gamma Knife Neurosurgery in the Management of Intracranial Disorders” (Acta Neurochirurgica Supplement, Volume 116, Springer, 2013).
This is a proceeding book of 8th European-Japanese Cerebrovascular Congress (held in Zurich in 2016). Since many experts from Europe and Japan had very important and fruitful discussion on the management of cerebrovascular diseases, the proceeding book will be very attractive for the physicians and scientists of the area.

This volume provides an overview of new concepts in neurovascular interventions based on clinical and scientific knowledge of cerebrovascular disorders. It especially focuses on subarachnoid hemorrhage and cerebrovascular malformations, e.g. aneurysms, arterio-venous malformations, and cavernomas. A separate part addresses cerebral revascularization for both complex aneurysms and ischemia. All contributions were written by recognized experts and cover original papers presented at the 7th European Japanese Stroke Surgery Conference, held in Verona, Italy in June 2014. The authors present new trends and strategies for managing emerging problems, as well as in-depth discussions on controversial issues in the field.
In 1992 the Editors published the first volume of Minimally Invasive Neurosurgery (MIN I) which described the current state of the art in this rapidly developing field of neurosurgery and reported first clinical experiences with these new technologies. The subject of MIN II is limited to endoscopic anatomy, technical devices and surgical management of disorders suitable for endoscopic procedures. The indications and approaches in different diseases are still highly preliminary and longterm results are not yet available. The clinical value and the benefit to the patients treated with these new techniques must still be proven against the well established standards of microsurgery. This volume presents a critical update of neuroendoscopy.
"Research” and "Publishing” are phrases familiar to all neurosurgeons and neuroscientists. Many young neurosurgeons struggle with them on a trial-and-error basis at first, and there are not structured education programs providing information on standard methods. The European Association of Neurosurgical Societies Research Committee has developed a course on research and publication methods for residents in neurosurgery who have not yet completed training. This supplement includes selected contributions from this course and will serve as an essential handbook providing basic tools to guide research and publication work, presenting time-saving advice, and resulting in the most beneficial contributions in experimental and clinical research.

This monograph aims to provide a survey of recent research on the pathogenesis of hypertensive encephalopathy. Or, in other words, to relate experimental results directly to a clinical problem. I am convinced that a very important task of experimental medical research is to find applications to the relevant clinical problem as soon as possible, and to avoid distraction by an increasingly over whelming accumulation of new information from all fields of scientific work. This is undoubtedly easier for a clinician than for a scientist who is only concerned with fundamental research; success ful research for clinical medicine thus requires that clinicians and scientific specialists in the theoretical medical branches cooperate with each other. To fulfill this aim the clinician must be able to think in pathophysiological terms to a considerable extent, which will scarcely be possible if he is involved in routine clinical medicine alone. Experimental work thus presents a real challenge to the physician who wishes to solve a medical problem and also possesses scientific curiosity. Besides an answer to his question, he has the opportunity to obtain a real feeling for what he has learned to call "physiologi cal". I hope with my own experimental work to provide a convincing example of how such work may serve as an impressive reminder to the clinician of the possibly grave consequences of underestimating a development in the course of a serious illness, for instance a hyper tensive episode following head injury.
Up to date, the treatment of arteriovenous racemose angiomas of the brain remains unsatisfactory. Intraoperative hemorrhages, post-embolizational or postoperative deficits depending on the site and size of the A VM as well as inoperability of rare angioma types have promoted the technical improvement of diagnostic and therapeutic approaches. Nevertheless, some pathophysiological problems of A VM hemodynamics have not been solved. Many angiographical studies, observations during embolization and operation, dopplersonographical and other perfusion measurements provided some insight. Sufficient animal models have yet to be developed in order to elucidate the pathophysiological mechanisms. This monograph describes A V fistula models in cats and rats, both conventional and newly developed, which allow a better comparison with human cerebral angiomas than previous ones. The most important result is that the model of the breakthrough of arterial pressure waves into the capillaries following a failure of cerebrovascular regulation cannot be confirmed. Rather, according to the findings in precapillary vessels presented here, the regulation functions normally so that a breakdown of regulation cannot be responsible for global brain edema often seen after removal of angiomas. The regulation was demonstrated using different methods, most important of which being the CO response of 2 brain vessels to varying CO contents of the inhaled air. Angiographical, dopplersonographical and 2 perioperative dopplersonographical as well as intraoperative measurements of flow and pressure have been applied.
On the occasion of the 25th anniversary of the founding of the Vienna School of Neurosurgery at the University of Vienna an international symposium on the anatomy, the approaches to, and the treatment of pathologic processes of the cranial midline, and on the results obtained, was held in Vienna in May 1990. This book contains selected papers on the diagnostics and therapy of processes of the cranial midline. The topics range from processes of the anterior cranial fossa via pterional approaches and processes of the cavernous sinus to lesions in the area of the pituitary, the third ventricle, the midbrain, and the posterior cranial fossa. Issues like approaches to the clivus, to the supratentorial and infra tentorial petro us bone and to the brain stem are addressed and techniques like stereotactic endoscopic interventions or the endovascular treatment of cerebral vascular malformations are discussed. The present book is intended to provide a survey of the complexity of cranio-cerebral processes of the cranial midline and their diagnostics and treatment and informs on the state of the art.

This issue of Acta Neurochirururgica presents the latest surgical and experimental approaches to the craniovertebral junction (CVJ). It discusses anterior midline (transoral transnasal), posterior (CVJ craniectomy laminectomy, laminotomy, instrumentation and fusion), posterolateral (far lateral) and anterolateral (extreme lateral) approaches using state-of-the-art supporting tools. It especially highlights open surgery, microsurgical techniques, neuronavigation, the O-arm system, intraoperative MR, neuromonitoring and endoscopy. Endoscopy represents a useful complement to the standard microsurgical approach to the anterior CVJ: it can be used transnasally, transorally and transcervically; and it provides information for better decompression without the need for soft palate splitting, hard palate resection, or extended maxillotomy. While neuronavigation allows improved orientation in the surgical field, intraoperative fluoroscopy helps to recognize residual compression. Under normal anatomic conditions, there are virtually no surgical limitations to endoscopically assisted CVJ and this issue provides valuable information for the new generation of surgeons involved in this complex and challenging field of neurosurgery.
This volume showcases recent high-quality work relating to the pathophysiology, biophysics, monitoring, and treatment of traumatic brain injury and hydrocephalus that was presented at the 15th International Symposium on Intracranial Pressure and Brain Monitoring (ICP), held in Singapore in November 2013. The included papers derive from experts in neurointensive care, physiology, physics, engineering, and neurosurgery who have made important contributions in this translational area of research. All were selected from among oral and oral-poster presentations following a rigorous peer-review process involving the ICP Board members, and their focus ranges from the latest research findings and developments to clinical trials and experimental studies. This collection of papers from ICP 2013 continues the proud tradition of publishing key work from the ICP symposia and will be of interest for all who wish to stay abreast of recent advances in the field.

This volume is the second in a new series of pro The task carried out through the collaboration of ceedings covering the official scientific meetings of the neurosurgeons and specialists in neurorehabilitation Neurorehabilitation Committee of the World Federa cannot be viewed simply as a restoration of function or tion of Neurosurgical Societies (WFNS). The first reconstruction of structure. Recent advances in neu scientific meeting of the WFNS Neurorehabilitation roimaging techniques have begun to demonstrate that Committee was held successfully in Munster, Ger it involves extensive functional and structural reorga many, in 2000 under the auspices of Professor Klaus nization of neural networks within the brain and R. H. von Wild. The proceedings of that meeting probably the spinal cord. On this basis, we felt that it (Functional Rehabilitation in Neurosurgery and Neu might be more appropriate to refer to such activities as rotraumatology) were published as a supplement to re-engineering of the damaged brain and spinal cord. Acta Neurochirurgica (volume 79, 2001). This first In order to encapsulate such a concept, the second scientific meeting highlighted the important role scientific meeting was entitled the Second Interna played by neurosurgeons in neurorehabilitation be tional Symposium on Neurosurgical Re-engineering of at an early period after brain or spinal cord the Damaged Brain and Spinal Cord (NRDBS'02). ginning damage.

This book covers topical issues in neurovascular surgery, and in particular the management of intracranial aneurysms, arteriovenous malformations, and cavernomas, current trends in cerebral revascularization, and new concepts in cerebrovascular imaging. The contents reflect the continuing developments in interventions in cerebrovascular disorders as a result of progress in neuroimaging, evolution of pathophysiological concepts, new clinical trials, and technological innovations. The chapters are all written by acknowledged experts from across the world, and comprise original papers presented at the 6th European Japanese Stroke Surgery Conference, held in June 2012 in Utrecht, The Netherlands. The book will be of value to all who are interested in the latest developments in the field and offers fascinating insights into varied perspectives and techniques.

Nearly 80 short papers originating from the 14th International Symposium on Intracranial Pressure and Brain Monitoring held in Tuebingen, Germany, in September 2010 present experimental as well as clinical research data related to the naming topics of the conference. The papers have undergone a peer-reviewing and are organized in the following sections: methods of brain monitoring and data analysis, methods of invasive and non-invasive ICP assessment, the role of autoregulation, the role of tissue oxygenation and near-infrared spectroscopy, hydrocephalus/IIH imaging and diagnosis, management and therapy of hydrocephalus, management and therapy of traumatic brain injury, management and therapy of subarachnoid and intracranial hemorrhage, experimental approaches to acute brain disease. The book gives a good overview on the latest research developments in the field of ICP and related brain monitoring and on management and therapy of relevant acute brain diseases.

This monograph on the "Ultrastructure of Human Sella Tumors" is in fact a study of the correlations of clinical findings and morphology. It is a timely and eagerly awaited publication because of the increasing interest of the endocrinologist in pituitary disorders and of the neuro surgeon in the newest aspects of surgery on pituitary tumors, and also because of the unsatisfactory but still widely accepted classification into eosinophil, basophil and chromophobe pituitary adenomas. This old classification has been mainly based on granule color as seen after hematoxylin-eosin staining, but it does not, after extensive clinical observations, reflect in many instances the type of clinical picture observed. The author has brilliantly succeeded in demonstrating in a convinc ing way, by an extensive study of the relevant literature and by his own histological work, that further insight into the biology of the hypophysis and of the pituitary tumor can be obtained only by newer methods of light microscopic staining, immuno-histochemistry and electron microscopy combined with radio-immunological blood hormone determination.

This supplement of Acta Neurochirurgica contains the proceedings of the Ninth Convention of the Academia Eurasiana Neurochirurgica held in Chateau St. Gerlach, Houthem, The Netherlands, 29 July - 1 August 1998. During this convention a three-day symposium on Neurosurgery and Medical Ethics was held. In this time of tremendous technical advancement in medicine in general and neurosurgery in particular, we are liable to lose sight of the sick patient as a human being, and the odds are that he will be the object rather than the subject of our action in the near future. It is a purpose and a task of the Academia Eurasiana Neurochirurgica to recognize this thread and to pay attention to tradition, morality and ethics in neurological surgery. The theme of this convention and the subject of the symposium met this purpose as no other. In the scientific sessions during the first day, the moral backgrounds of medical ethics in the most important cultures and religions in east and west were elucidated by invited experts in this field. A mutual respectful understanding of each other's conception of and belief in ethical principles is a growing necessity in our multicultural societies in both continents. On the second day, the ethical aspects of different fields of neurological surgery were discussed by members of the Academia. In this context, also the internationally much-discussed and much-criticized regulations on euthanasia in The Netherlands were explained.

Human greatness has many connotations. Since the requirements for membership in this category are vague and poorly defined, admittance to the Mount Olympus is frequently erratic and subjective, especially in view of a wide "penumbra zone"* of border cases. Nevertheless, rising above a twilight zone of debatable cases, there are individuals whose right for mem bership is unquestionable. In science, one of the unequivocal criteria for "greatness" relates to how far one's scientific achievement affects the opening of new horizons, and points to directions for future development and progress. Unveiling new visions can derive only from creative people who conceive original ideas and con cepts, and who are daring enough to promote them against the indifference or opposition of the establishment. Maintaining the integrity and the faith to one's own ideals may require extraordinary strength of character, - up to courting persecution or even death, - as happened in the middle ages, and more recently, in the first half of this century with regard to Cecile and Os kar Vogt, whose lives and accomplishments are described in this book. Thus the greatness of the Vogts is based both on their penetrating vision of the future for brain research and on the sterling quality of their character, which sustained a "test of fire" during the Nazi years in Germany.

Organized by the European Association of Neurosurgical Societies, Paris, July 15-20, 1979

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.

The articles in this volume cover the various options of the optimal management of brain tumors, vascular lesions, and functional disorders. They provide a good balance between microneurosurgery and radiosurgery, presenting also alternative surgical and radiosurgical treatment options with discussions on their advantages and disadvantages. The presentation of multiple treatment methods will help to provide better service to patients. Some papers, specifically highlighting alternative treatment options, are accompanied by editorials prepared by recognized experts in the field. Additional emphasis is put on importance of the advanced neuroimaging techniques for radiosurgical treatment planning and subsequent follow-up.

This book illustrates and discusses key points related to intra- and postoperative complications of brain, spine and peripheral nerve surgery, and covers the majority of neurosurgical subspecialties, including skull base surgery, brain tumor surgery, vascular and endovascular neurosurgery, neuroendoscopy, functional neurosurgery, spine surgery, peripheral nerve surgery, radiosurgery and radiotherapy. In addition, it considers related medicolegal, ethical and philosophical aspects. Including material that represents the combined proceedings of the First International Conference on Complications in Neurosurgery (March 3-5, 2017; Mumbai, India) and the dedicated symposium “Complications in Neurosurgery” during the XVI Congress of the World Federation of Neurosurgical Societies (August 20-25, 2017; Istanbul, Turkey), the articles in this volume were written by recognized experts in the field and based both on their personal experience and the latest scientific evidence. It offers a valuable reference guide, providing detailed recommendations on the prevention and management of complications in neurosurgery.

Endoscopic neurosurgical interventions gain in importance. This book gives adetailed description of the recent indi- cations of endoscopic procedures inmodern neurosurgery. They include endoscopic stereotaxy, endoscopic evacuations of intracerebral hematomas, cysts and abscesses as well as endoscopic interventions on brain tumors. An extended over- view about the usable endoscopes and the operative equipment is pointed out.

The First Convention of the Academia Eurasiana Neurochirurgica was devoted to one of the main problems not only of medicine in general and especially of neurosurgery but also of theology and anthropology. Many of these aspects have been discussed. Experts in the fields of biological and neurosciences, representatives of different religions and philosophers have contributed to a better un dersta nding of the somatic aspects of pain and its medical treatment and of its religious, cultural, and philosophical interpretations and interactions. It really was a unique event to bring together scientists and physicians, priests, theologians and philosophers, make them give reviews of their fields and have them discussing the many facets of pain and suffering. To achieve such a difficult goal was mainly the achievement of the late Hans Werner Pia, the first President of the Academia Eurasiana Neurochirurgica and organizer of this Convention. Because the Convention is inseparably related to the Inauguration of the Academia Eurasiana Neurochirurgica the speeches and lectures given on this occasion and dealing with the aim of the Academia, the founding of Academies in history and with the anthropological challenge of pain are also published in this Supplement Volume of Acta Neurochirurgica. The Convention and the Inauguration of the Academia Eurasiana Neurochirurgica are a fitting memorial to the personality of Hans Werner Pia. Its proceedings are dedicated to him.

Severe, protracted pain defying control is being seen with in creasing frequency as a symptom of chronic disease. It accompanies many, mostly serious, disorders in various organs and parts of the human body, making the sufferer's life increasingly intolerable. It no longer fulfillR its mission of warning signal of disease present, protecting health, but on the contrary arises as an important factor in systematically reducing and preparing the final collapse of the defensive forces of the body, both in the somatic and psychic spheres. It can surprise nobody that patients tormented and plagued by severe pain do not wish to live under conditions primarily caused by incurable disease, and are looking forward longingly to their release by deat. h, if no help is forthcoming. Attempts to control such pain are, therefore entirely justified, necessary and logical. The treatment of intractable pain is without exception sympto matic in character. Efforts to control it by drugs are, even at present and despite the striking progress in pharmacology, unsatisfactory and inadequate. So far we know of no drug capable of effectively and systematically alleviating such pain without concurrently inter fering with the other sensitive-sensory components. In addition to the direct changes and dist. urbances of consciousness and personal ity, protracted conservative therapy results in addiction to narcot ics.

International experts present in this volume advances in reconstructive neurosurgery focusing on the fields of neurotrauma and neurodegenerative disorders. The highlights include building an international strategy for risk reduction, documentating an multidisciplinary approach towards restoration of function in paraplegic spinal cord-injured patients, describing a new approach for statistical analysis in traumatic brain injury trials, describing blood flow changes in diffuse brain injury, discussing rehabilitation programs in Germany following acute brain injury, describing research data form Taiwan on neurotrauma, showing the neuropsychiatric effects from deep brain stimuation fro ovement disorders, difining the role played by imanging for deep brain stimulation targeting in mental illness, using radiosurgery in decompresssion in the treatment of trigeminal neuralgia, describing the development of radiosurgery from brain to the spine, listing new transgenic animal models of Parkinson's disease, discussing gene therapy for neuropathic pain and Parkinson's disease, and finally, discussing constrained-induced movement therapy fro stroke patients, and endovascular therapy for cerebrovenous disorders.

This volume is the first to describe all clinically and experimental relevant aspects of primary and secondary brain stem lesions important to clinicians. It contains a detailed description of the computer-tomographical and morphological changes of the cerebral cisterns in acutely and chronically increased intracranial pressure. The prognostic value of clinical parameters of primary and secondary brain stem lesions is demonstrated. The possibilities of assessing the clinical course by computer-aided evaluation are presented. In addition to that, comprehensive view of morphological, radiological and clinical findings, extensive investigation concerning blink reflex (BR) and auditory evoked brain stem potentials (BAEP) supply highly relevant functional aspects of those lesions. The effects of raised intracranial pressure upon BR, BAEP as well as upon cerebral blood flow and focal flow in different brain areas were studied in animal experiments and reveal new and fascinating conclusions. Based on these investigations, a mathematical model following modern concepts of system analysis was developed. The model includes the intracranial system, autoregulation of cerebral flow (cardiovascular components) and the short-time behaviour of arterial blood pressure regulation.