Pediatric Applications of Transcranial Doppler Sonography

Harald Bode 2014-09-01

The measurement of the cerebral circulation in children, particularly in newborns and young infants, has for a long time been high on the list of needs in clinical and scientific pediatrics. The methods available to date have either been too unreliable or unsuitable for use on children. In the course of a research project at the Department of Pediatrics of the University of Freiburg, Dr. Harald Bode has made the first systematic examination of the cerebral circulation of children using transcranial Doppler sonography. Over 500 children with ages between 0 and 18 years were included in this exhaustive study, documenting Doppler measurements in about 3,000 basal cerebral arteries. Basic reference values were obtained which involved adapting the methodology and available equipment to the special requirements of the pediatrician. Moreover, the influence of biological and physiological factors on these Doppler values has also been considered in addition to those of disease and therapy. The result is an impressive record of the many applications of transcranial Doppler sonography during childhood. It is not difficult to predict that this methodology will be of lasting value and capable of further development. I hope this book receives the attention it undoubtedly deserves and that the author is able to continue in realizing his fruitful scientific ideas in clinical pediatric practice.

The Clinical Application of Transcranial Doppler Ultrasonography in Infants and Children-Day-Eel Goh 1996

This important reference provides complete and current information on the applications of transcranial Doppler ultrasound in the evaluation of cerebrovascular diseases. The book gives practical instructions for performing examinations, explains how to interpret results, provides essential data on normal values, and describes the use of the technique in specific clinical situations such as stroke, head injury, subarachnoid hemorrhage and vasospasm, arteriovenous malformations, and monitoring during carotid surgery. Coverage includes thorough discussions on recent clinical studies, new refinements in transcranial Doppler sonography, and new applications such as monitoring of critically ill patients and detection of cerebral emboli in patients with suspected transient ischemic symptoms. The book also offers comprehensive guidelines on the pediatric applications of transcranial Doppler. More than 200 illustrations, including 20 in full color, complement the text.
hypoperfusion plays a significant role in the pathophysiology of pediatric hydrocephalus. Transcranial Doppler sonography is a non-invasive method for indirectly measuring intracranial pressure and decreasing intracranial compliance by assessing changes of cerebral circulation. This book discusses the cerebral circulation and intracranial dynamics in pediatric hydrocephalus. It also focuses on evaluating the impact of various intracranial factors on Doppler parameters of cerebral circulation, especially in neonates with hydrocephalus. The ambition of this work is to improve indication and timing of drainage procedure in children with hydrocephalus by applying scientific results and clinical experience.

**Handbook of Transcranial Doppler**-John P. McCartney 1997 This is a basic introduction to the techniques and interpretation of transcranial doppler sonography, a safe, non-invasive modality that is widely used in radiologic, neurologic, and neurosurgical settings. It is an invaluable resource for radiologists, neurologists and neurosurgeons.

**Transcranial Doppler Sonography**-Rune Aaslid 1986 Every few years a dissertation comes to the area of clinical application of medical technology which carries us forward as on a magic carpet into new regions of understanding and patient care. This book is such a magic carpet. It brings together, in a clear and incisive fashion, important hemodynamic principles with a simple noninvasive method of application to a part of the cerebral vasculature which has been relatively inaccessible. To the lucky and perceptive person who reads this book, a feeling of excitement and hope for progress is engendered. The diligent application of the potentials of transcranial Doppler ultrasound brings new power to our efforts in understanding the cerebral circulation and the causes, treatment and prevention of cerebrovascular disorders. Merrill P. Spencer, M. D. Director Institute of Applied Physiology and Medicine Seattle, Wash. , July 1986 Acknowledgements I am greatly indebted to Prof. He1ge Nornes, Oslo, who introduced me to the fascinating study of cerebral hemodynamics in the early 1970's and since then continually encouraged my interest in this field. It was through his pioneering work on the cerebral circulation-using peroperative electromagnetic flowmetry and Doppler techniques-that the basis was laid for the noninvasive trans cranial approach to the circle of Willis described in this book. I also gratefully acknowledge the stimulating case discussions with Prof. Peter Huber, Berne, at the very early introduction of trans cranial Doppler, the inspiring exchange of ideas with Dr. Merrill P.

**Doppler Sonography in Infancy and Childhood**-Karl-Heinz Deeg 2014-08-15 This book covers the full range of current applications of Doppler sonography in infancy and childhood, describing the variety of potential findings with the aid of a wealth of images. After an introductory chapter on the physical and technical basis of Doppler sonography, applications of cerebral Doppler sonography in infancy and of transcranial Doppler sonography in childhood are addressed, with numerous examples of imaging appearances. The major part of the book is devoted to Doppler sonography of the brain, face and neck and of the abdomen, covering normal abdominal vessels, liver, spleen, pancreas, and mesenteric and renal circulation. Imaging of the ovaries and testes is also presented, encompassing the differential diagnosis of acute scrotum and other space-occupying lesions of the testis. The book closes by considering Doppler sonography of soft tissue and vascular malformations, and the influence of congenital heart malformations on flow parameters in peripheral arteries. Doppler Sonography in Infancy and Childhood will be an invaluable reference for pediatricians, neonatologists, pediatric sonographers, and pediatric and general radiologists.

**Transcranial Doppler Ultrasonography**-Viken L. Babikian 1999 The Second Edition of this highly regarded text provides a current reference source on the clinical and research applications of Transcranial Doppler (TCD) ultrasonography. All of the chapters have been updated to reflect the rapid evolution that has taken place in the field. New information has been included on the increased use of TCD in the operating room, the introduction of contrast media, and the development of new softwares that permit the detection of microemboli. * The most comprehensive resource for neurologists seeking information on the current applications of TCD * Contains 38 color images and over 175 black and white photographs * Written by a contingent of well-respected experts who have demonstrated
Highlights on Hemodynamics - Theodoros Aslanidis 2018-10-31 In the era of functional hemodynamic monitoring and computational modeling, the present book published by IntechOpen® highlights some interesting aspects in the field. Divided into two sections, it presents hemodynamic topics of special interest. Thus, the authors offer the readers not only a “vigorous” review of the current literature but also a research direction for further advancement.

Atlas of Radiologic Measurement - Theodore Eliot Keats 2001 This new edition of a respected classic is the most comprehensive and up-to-date compendium of radiographic measurements, covering the full scope of diagnostic radiology CT, ultrasound, plain film, nuclear medicine, and MRI as applied to all organ systems. The chapters on all other organ systems have been completely updated to include newer measurements using the latest modalities. A new organization reflects the ACR coding system. Outstanding illustrations illuminate difficult concepts and enhance learning. Incorporates practical, useful, and authoritative information as the standard reference of radiologic measurement for practitioners and researchers. Contains the latest information in the field, and new, increased coverage of key topics, more than doubling the contents from the previous edition. New sections dealing with quantitative methods for diagnosis and prediction, including ultrasound of the pylorus for hypertrophic stenosis, Doppler ultrasound of native renal arteries for stenosis, and detection of hepatic iron overload from magnetic resonance. Newly added semi-quantitative methods include a scoring system for ovarian masses, grading of avascular necrosis of the hip, and Bayesian analysis for predicting malignancy in pulmonary nodules. Incorporates the American College of Radiology coding system, making the book easy to use. More than 790 new tables, graphs, drawings, and radiographic illustrations. Spanish version also available, ISBN: 84-8174-612-6


Cerebral Hemodynamics in Pediatric Hydrocephalus: Evaluation by Means of Transcranial Doppler Sonography - Branislav Kolarovszki 2018 Active, progressive hydrocephalus in children leads to increase of intracranial pressure, dilatation of cerebral ventricles, and decrease of intracranial compliance. These changes lead to disorder of regulation of cerebral circulation and development of cerebral hypoperfusion resulting in the secondary brain damage. Ependymal disruption, periventricular edema, and compression of the periventricular capillaries can be developed. Ischemia of the white matter can be developed due to hypoperfusion. But it is reversible if treated early and adequately. Transcranial Doppler sonography enables to determine hemodynamic parameters of cerebral circulation in various physiological and pathophysiological conditions. As transcranial Doppler sonography has been regarded to be noninvasive and appropriate for bedside treatment, it can also be applied in children at any age. The goal of this chapter is to assess changes of cerebral circulation in children with hydrocephalus and application of data from scientific studies of intracranial dynamics in children with hydrocephalus in clinical practice. The work is also focused on evaluation of impact of intracranial factors on Doppler parameters of cerebral circulation, especially in neonates with hydrocephalus. The ambition of this chapter is to improve indication and timing of drainage procedure in children with hydrocephalus by application of the results and clinical experience in daily clinical practice.

Dept. of Bibliography 1993

Doppler Sonography in Infancy and Childhood - Karl-Heinz Deeg 2014-09-17 This book covers the full range of current applications of Doppler sonography in infancy and childhood, describing the variety of potential findings with the aid of a wealth of images. After an introductory chapter on the physical and technical basis of Doppler sonography, applications of cerebral Doppler sonography in infancy and of transcranial Doppler sonography in childhood are addressed, with numerous examples of imaging appearances. The major part of the book is devoted to Doppler...
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Doppler Sonography in Infancy and Childhood-Karl-Heinz Deeg 2014-08-20 This book covers the full range of current applications of Doppler sonography in infancy and childhood, describing the variety of potential findings with the aid of a wealth of images. After an introductory chapter on the physical and technical basis of Doppler sonography, applications of cerebral Doppler sonography in infancy and of transcranial Doppler sonography in childhood are addressed, with numerous examples of imaging appearances. The major part of the book is devoted to Doppler sonography of the brain, face and neck and of the abdomen, covering normal abdominal vessels, liver, spleen, pancreas, and mesenteric and renal circulation. Imaging of the ovaries and testes is also presented, encompassing the differential diagnosis of acute scrotum and other space-occupying lesions of the testis. The book closes by considering Doppler sonography of soft tissue and vascular malformations, and the influence of congenital heart malformations on flow parameters in peripheral arteries. Doppler Sonography in Infancy and Childhood will be an invaluable reference for pediatricians, neonatologists, pediatric sonographers, and pediatric and general radiologists.

Cranial Neuroimaging and Clinical Neuroanatomy-Hans-Joachim Kretschmann 1992

Transcranial Doppler Ultrasonography-Viken L. Babikian 1993 Provides an up-to-date reference source for the clinical and research applications of transcranial Doppler (TCD) ultrasonography. Chapters reviewing the physiologic basis for TCD and basic TCD techniques are included.

Transfontanellar Doppler Imaging in Neonates-A. Couture 2012-12-06 This book examines in detail the role of transfontanellar pulsed and color Doppler imaging in the fetus and neonate. After an introductory chapter its use in the normal neonate is considered. Results of the hemodynamic evaluation of 491 newborns aged from 32 weeks of gestation to 9 months by means of pulsed and color Doppler are reported. Normal values of the resistive index as determined by this technique are documented, and systolic, diastolic, and mean velocities in seven different vessels are presented. It is concluded that Doppler ultrasonography enables reliable analysis of arterial and venous velocities. Subsequent chapters examine the use of transfontanellar Doppler imaging in a variety of commonly encountered pathological conditions.

Excerpta Medica- 1990

Trauma-Richard P. Dutton 2002

Brain Injury and Pediatric Cardiac Surgery-Richard Jonas 2019-08-16 An estimated 30,000 children are born in the USA with congenital heart disease each year, two thirds of which will require corrective surgery. Medical advances have formed a trend of operating on newborns rather than waiting until the child is older. Ten years ago, the mortality for these operations was 60% to 70%. That percentage has dropped to 2%. This specialized book explores the basic mechanisms of neurologic injury associated with congenital heart surgery while covering the emerging technologies for assessment of neurologic integrity and injury. The text also highlights the current and future techniques for reducing and preventing these injuries, and reviews the pertinent medicolegal issues.

Applied Radiology- 2000 Each issue includes separate but continuously paged sections called: Nuclear medicine, and: Ultrasound.

Gupta and Gelb's Essentials of
Neuroanesthesia and Neurointensive Care
Ram Adapa 2018-06-21 This second edition presents core clinical neuroanesthesia and neurointensive care knowledge in a practical, user-friendly format.


Neonatal Bacterial Infection-Bernhard Resch 2013-04-30 Neonatal sepsis still remains a significant cause of morbidity and mortality in the newborn, particularly in preterm, low birth weight infants. Despite advances in neonatal care, overall case-fatality rates from sepsis may be as high as 50%. Clinical signs of bacterial infection are vague and non-specific, and up to now there exists no easily available, reliable marker of infection despite a large bulk of studies focussing on inflammatory indices in neonatology. Every neonatologist is faced with the uncertainty of under- or over- diagnosing bacterial infection. In this book three topics will be discussed: clinical presentation including a general approach to sepsis neonatorum and two distinct diagnoses pneumonia and osteomyelitis diagnostic approaches including C-reactive protein and the immature myeloid information, and prevention and treatment of bacterial infection with immunoglobulins.

AJNR, American Journal of Neuroradiology-1994

Critical Care Ultrasound E-Book-Philip Lumb 2014-01-16 Incorporate a holistic approach. Visualize all or any parts of the body, tissues, organs and systems in their live, anatomically and functionally interconnected state and in the context of the whole patient’s clinical circumstances. See exactly how it’s done. Numerous ultrasound images and access to dozens of videos demonstrate the use of ultrasound in critical care. Rely on the guidance of more than 80 different experts from Australia, China, Middle East, Europe, USA, and Canada regarding the current and future use of CCU. Adapt the use of emergency ultrasound in specialized out-of-hospital (i.e., war zones, animals) and in-hospital (i.e., pediatric units) settings. Additionally, issues regarding CCU logistics, training, and education are analyzed for the first time.

Cumulative Index to Nursing Literature-Cinahl Information Systems Staff 1999

International Books in Print-1997

Diagnostic Ultrasound-Carol M. Rumack 1998

Pediatric Neurosurgery-William R. Cheek 1994
-- The finest and most comprehensive coverage to be found anywhere. -- Totally reorganized into more logical sections. -- 40 new authors and 20 new chapters provide an up-to-date approach. -- A two-color design which highlights illustrations and important aspects of the text. -- Also provides references for additional information.

Monitoring the Nervous System for Anesthesiologists and Other Health Care Professionals-Antoun Koht 2011-11-17 Written and edited by outstanding world experts, this is the first portable, single-source volume on intraoperative neurophysiological monitoring (IOM). It is aimed at all members of the operative team - anesthesiologists, technologists, neurophysiologists, surgeons, and nurses. Now commonplace in procedures that place the nervous system at risk, such as orthopedics, neurosurgery, otologic surgery, vascular surgery, and others, effective IOM requires an unusually high degree of coordination among members of
the operative team. The purpose of the book is to help team members acquire a better understanding of one another’s roles and thereby to improve the quality of care and patient safety.

- Concise and thorough
- Comprehensive coverage of monitoring techniques, from deep brain stimulation to cortical mapping
- Synoptic coverage of anesthetic management basics
- 23 case-based examples of procedures, including surgery of the aortic arch, ENT and anterior neck surgery, intracranial aneurysm clipping, and interventional neuroradiology
- Monitoring in the ICU and of cerebral blood flow

**Atlas of Ultrasound Measurements** - Barry B. Goldberg

2006 This long-awaited New Edition is still the only source devoted entirely to ultrasound measurements. Inside, you’ll find the most accurate coverage for all major pathologic entities from the abdomen to the vascular system. Each measurement is based on an evidence-based approach in correlation with age, sex, and gestation stage. Coverage also includes the latest technologies, such as color Doppler. Features measurements for hundreds of common entities from the abdomen, head and neck, genitourinary, gynecologic, and vascular system, providing definitive information on normal and variant ultrasound measurements. Provides measurements based on a full spectrum of variations, including age, sex, and gestation stage. Includes separate sections on first and second and third trimester pregnancies to help you determine the normal growth and development of the fetus. Presents the highest accuracy rate possible through an evidence-based approach using multiple sources from the primary literature along with tables that collate the findings. Uses all new images throughout, providing you with better image quality and accuracy. Features color Doppler images coupled with conceptual line drawings that illustrate key observations for each measurement set. With 28 additional expert contributors.

**Nursing Care of the Pediatric Trauma Patient** - Pat Moloney-Harmon

2003 Providing the most comprehensive coverage available on nursing care of the pediatric trauma patient, this practical reference discusses pediatric trauma across the continuum of care. Its broad perspective enables the use of a systems approach - consistent with the current health care environment. Four convenient sections provide in-depth, comprehensive coverage of critical information for nurses caring for the pediatric trauma patient. Comprehensive content focuses specifically on nursing care of the pediatric trauma patient. The nurse’s role in the continuum of care is consistent with the emphasis of the current healthcare environment. The organizational framework focuses on the systems approach and is divided into four sections. The section on The Scope of Pediatric Trauma covers issues such as epidemiology, prevention, outcomes management, and ethical issues. The Clinical Concepts section addresses mechanism of injury, pre-hospital care, initial resuscitation, rehabilitation, pain management, nutrition, family-centered care, and violence. The section on System Injuries covers specific body system issues. The section on Multisystem Issues covers thermal and submersion injuries as well as the unborn infant as trauma victim and sequellae of trauma. Independent and
collaborative nursing interventions are emphasized in the System Injuries section. Timely issues such as outcomes management are discussed. Chapters written by nurses practicing in pediatric trauma ensure clinically relevant, up-to-date content.

Clinical Ultrasound - Paul L. P. Allan 2011
Covering all of the core knowledge, skills and experience as recommended by the Royal College of Radiologists, it provides the Fellow with a knowledge base sufficient to pass professional certification examinations and provides the practitioner with a quick reference on all currently available diagnostic and therapeutic ultrasound imaging procedures. Contains over 4,000 high quality images (over 1,000 of which are in colour) to provide a comprehensive visual guide to help the practitioner identify and interpret diagnostic problems. Practical considerations such as image interpretation, image optimization techniques, pitfalls in technical acquisition and interpretation stressed throughout provide the trainee and practitioner with a new and improved knowledge in order to optimize clinical decision-making. Highlights the selection of other modalities (such as CT/MRI) whenever appropriate i.e.

Inherited Hemoglobin Disorders - Anjana Munshi 2015-11-11 The book, Inherited Hemoglobin Disorders, describes the genetic defects of hemoglobins, disease complications, and therapeutic strategies. This book has two distinct sections. The first theme includes seven chapters devoted to the types of hemoglobinopathies, mutation spectrum, diagnostic methods, and disease complications, and the second theme includes three chapters focusing on various treatment strategies. The content of the chapters presented in the book is guided by the knowledge and experience of the contributing authors. This book serves as an important resource and review to the researchers in the field of hemoglobinopathies.