

Magnetic Resonance Imaging Of Congenital Heart Disease

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Fetal Cardiology - Simcha Yagel 2018-09-03

The third edition of this established reference is the product of the combined efforts of many professionals - obstetricians, pediatric cardiologists, sonographers, molecular biologists, and medical physicists - and is a comprehensive guide intended for anyone interested in scanning the fetal cardiac system.

Principles and Practice of Cardiac Magnetic Resonance in Congenital Heart Disease - Mark A. Fogel 2010-03-02

CMR is a powerful tool in the armamentarium of pediatric cardiology and health care workers caring for patients with congenital heart disease (CHD), but a successful study still presents major technical and clinical challenges. This text was created to give trainees, practitioners, allied professionals, and researchers a repository of dependable information and images to base their use of CMR on. Because CHD presents an intricate web of connections and associations that need to be deciphered, the imager performing CMR needs to understand not only anatomy, physiology, function, and surgery for CHD, but also the technical aspects of imaging. Written by experts from the world's leading institutions, many of whom pioneered the techniques and strategies described, the text is organized in a logical way to provide a complete understanding of the issues involved. It is divided into three main parts: The Basics of CMR - familiarizes the reader with the minimum tools needed to understand the basics, such as evaluating morphology, ventricular function, and utilizing contrast agents CMR of Congenital and Acquired Pediatric Heart Disease - discusses broad categories of CHD and the use of CMR in specific disease states Special Topics in Pediatric Cardiac MR - covers other important areas such as the complementary role of CT scanning, interventional CMR, the role of the technologist in performing a CMR exam, and more With the ever increasing sophistication of technology, more can be done with CMR in a high quality manner in a shorter period of time than had been imagined as recently as just a few years ago. Principles and Practice of Cardiac Magnetic Resonance in Congenital Heart Disease: Form, Function, and Flow makes a major contribution to applying these techniques to improved patient care. An ideal introduction for the novice or just the curious, this reference will be equally useful to the seasoned practitioner who wants to keep pace with developments in the field and would like a repository of information and images readily available.

Thoracic Imaging - W. Richard Webb 2016-12-16

Written by two of the world's most respected specialists in the field, Thoracic Imaging: Pulmonary and Cardiovascular Radiology, Third Edition brings you completely up to date with all you need to know for optimal imaging of the heart and lungs. This comprehensive title provides practical, authoritative guidance for the radiologic assessment and diagnosis of both congenital and acquired cardiovascular and pulmonary diseases. A must-have reference for more than ten years, Thoracic Imaging is your one-stop source for current, accurate coverage of pulmonary infections, diffuse lung diseases, mediastinal masses, coronary artery CT, myocardial disease, pericardial disease, CT of ischemic heart disease, and much more. Key Features: Today's most comprehensive text-reference in the field, written by pulmonary imaging expert W. Richard Webb, MD and cardiac imaging expert Charles B. Higgins, MD. More than 2700 high-quality images, many in full color, help you visualize key aspects of chest imaging. A new chapter on MR and CT in Atrial and Ventricular Arrhythmias brings you up to date on the latest imaging techniques. Updated images and content throughout, including expanded coverage of PET/CT. "Now with the print edition, enjoy the bundled interactive eBook edition, which can be downloaded to your tablet and smartphone or accessed online and includes features like: "Complete content with enhanced navigation Powerful search tools and smart navigation cross-links that pull results from content in the book, your notes, and even the web Cross-linked pages, references, and more for easy navigation Highlighting tool for easier reference of key

content throughout the text Ability to take and share notes with friends and colleagues Quick reference tabbing to save your favorite content for future use"

Cardiovascular Magnetic Resonance Imaging - Raymond Y. Kwong 2019-01-31

The significantly updated second edition of this important work provides an up-to-date and comprehensive overview of cardiovascular magnetic resonance imaging (CMR), a rapidly evolving tool for diagnosis and intervention of cardiovascular disease. New and updated chapters focus on recent applications of CMR such as electrophysiological ablative treatment of arrhythmias, targeted molecular MRI, and T1 mapping methods. The book presents a state-of-the-art compilation of expert contributions to the field, each examining normal and pathologic anatomy of the cardiovascular system as assessed by magnetic resonance imaging. Functional techniques such as myocardial perfusion imaging and assessment of flow velocity are emphasized, along with the exciting areas of atherosclerosis plaque imaging and targeted MRI. This cutting-edge volume represents a multi-disciplinary approach to the field, with contributions from experts in cardiology, radiology, physics, engineering, physiology and biochemistry, and offers new directions in noninvasive imaging. The Second Edition of Cardiovascular Magnetic Resonance Imaging is an essential resource for cardiologists and radiologists striving to lead the way into the future of this important field.

Clinical Atlas of Cardiac and Aortic CT and MRI - Patricia M. Carrascosa 2019-02-22

This atlas comprehensively describes the application of computed tomography (CT) and magnetic resonance (MR) imaging in real-world scenarios using 192 illustrative clinical cases. These imaging techniques are revolutionizing the diagnostic and therapeutic approach for cardiovascular patients and are progressively becoming viable sub-specialties among radiologists and cardiologists. Clinical Atlas of Cardiac and Aortic CT and MRI features clinically relevant case-based examples of how CT and MR imaging techniques can be applied to identify the pathological features of a range of acquired and congenital heart diseases. Using more than 1000 high-quality figures of distinctive CT and MR imaging features of most cardiovascular diseases, both acquired and congenital, it therefore provides a valuable resource for both specialist and non-specialist radiology/cardiology practitioners seeking to develop a deep understanding of how to recognize the features of a variety of heart diseases using CT and MR imaging techniques.

Cardiovascular Magnetic Resonance Imaging - Fernando R. Gutierrez 1992

Echocardiography in Pediatric and Congenital Heart Disease - Wyman W. Lai 2012-01-03

Echocardiography is essential in the practice of pediatric cardiology. A clinical pediatric cardiologist is expected to be adept at the non-invasive diagnosis of congenital heart disease and those who plan to specialize in echocardiography will need to have knowledge of advanced techniques. Echocardiography in Pediatric and Congenital Heart Disease addresses the needs of trainees and practitioners in this field, filling a void caused by the lack of material in this fast-growing area. This new title comprehensively covers the echocardiographic assessment of congenital heart disease, from the fetus to the adult, plus acquired heart disease in children. Topics covered include: ultrasound physics laboratory set-up a protocol for a standard pediatric echocardiogram quantitative methods of echocardiographic evaluation, including assessment of diastolic function in depth coverage of congenital cardiovascular malformations acquired pediatric heart disease topics of special interest, such as 3D echocardiography, transesophageal echocardiography, and fetal echocardiography The approach of this book is a major advancement for educational materials in the field of pediatric cardiology, and greatly

enhances the experience for the reader. An accompanying DVD with moving images of the subjects covered in the textbook will further enhance the learning experience.

Fetal MRI - Daniela Prayer 2011-02-15

This is the most comprehensive book to be written on the subject of fetal MRI. It provides a practical hands-on approach to the use of state-of-the-art MRI techniques and the optimization of sequences. Fetal pathological conditions and methods of prenatal MRI diagnosis are discussed by organ system, and the available literature is reviewed. Interpretation of findings and potential artifacts are thoroughly considered with the aid of numerous high-quality illustrations. In addition, the implications of fetal MRI are explored from the medico-legal and ethical points of view. This book will serve as a detailed resource for radiologists, obstetricians, neonatologists, geneticists, and any practitioner wanting to gain an in-depth understanding of fetal MRI technology and applications. In addition, it will provide a reference source for technologists, researchers, students, and those who are implementing a fetal MRI service in their own facility.

Basic Principles of Cardiovascular MRI - Mushabbar A. Syed 2015-10-29

This book is a comprehensive and authoritative text on the expanding scope of CMR, dedicated to covering basic principles in detail focusing on the needs of cardiovascular imagers. The target audience for this book includes CMR specialists, trainees in CMR and cardiovascular medicine, cardiovascular physicists or clinical cardiovascular imagers. This book includes figures and CMR examples in the form of high-resolution still images and is divided in two sections: basic MRI physics, i.e. the nuts and bolts of MR imaging; and imaging techniques (pulse sequences) used in cardiovascular MR imaging. Each imaging technique is discussed in a separate chapter that includes the physics and clinical applications (with cardiovascular examples) of a particular technique. Evolving techniques or research based techniques are discussed as well. This section covers both cardiac and vascular imaging. Cardiovascular magnetic resonance (CMR) imaging is now considered a clinically important imaging modality for patients with a wide variety of cardiovascular diseases. Recent developments in scanner hardware, imaging sequences, and analysis software have led to 3-dimensional, high-resolution imaging of the cardiovascular system. These developments have also influenced a wide variety of cardiovascular imaging applications and it is now routinely used in clinical practice in CMR laboratories around the world. The non-invasiveness and lack of ionizing radiation exposure make CMR uniquely important for patients whose clinical condition requires serial imaging follow-up. This is particularly true for patients with congenital heart disease (CHD) with or without surgical corrections who require lifelong clinical and imaging follow-up.

Nuclear Cardiology and Cardiac Magnetic Resonance - Ernst E. van der Wall 2013-11-20

Cardiovascular nuclear medicine emerged 15 years ago as a new noninvasive technique for the detection of human cardiac disease. It arised from the fields of nuclear medicine and cardiology and the cooperation of both specialties has been very productive. At present, nuclear cardiology techniques belong to the routine armamentarium of the clinical cardiologist. Results obtained by perfusion markers, metabolic tracers, and radionuclide angiography have shown to have important impact on patient management. Although exercise electrocardiography and echocar diography yield the large bulk of necessary data in the cardiac patient, nuclear cardiology provides important data that go far beyond the results obtained by the standard procedures. Magnetic resonance imaging is a relative newcomer in cardio logy and has still to prove its value in clinical cardiology . Yet, initial results have been encouraging both in congenital heart disease and in coronary artery disease. This book is based on 16 review publications that have been written throughout the period of 1985 till present time. Most chapters have been published in the period 1989 until 1991; the preceding review papers have been updated as much as possible. Furthermore, Chapter 15 entitled "What's new in cardiac imaging" has been espe cially written for this book. The Chapters 9, 11 and 13 have been recently written and have not been published yet.

Cardiovascular Imaging - Paul Leeson 2011-06-09

A range of cardiac imaging techniques are available, each with a unique approach. Most existing imaging books are predominantly modality focused; however today's clinical cardiologist needs to learn how to apply and integrate information from the different modalities to aid clinical decision-making. In full colour throughout, and based on European

Society of Cardiology guidelines, Cardiovascular Imaging is an essential resource for all clinical trainees, It provides practical hands-on advice for cardiology, medical, radiology and technical personnel who need easily accessible, detailed information on how to use the full range of imaging modalities to investigate cardiac disease. The handbook provides a comparative overview of the different techniques and how they can be applied in different pathologies, acting as a portal to more in-depth, modality focused texts.

Cardiovascular MRI - Peter G. Danias 2008-04-06

Cardiac Magnetic Resonance (CMR) is a rapidly evolving imaging technology and is now increasingly utilized in patient care. Its advantages are noninvasiveness, superb image resolutions, and body tissue characterization. CMR is now an essential part of both cardiology and radiology training and has become part of the examination for Board certification. This book provides a condensed but comprehensive and reader friendly educational tool for cardiology fellows and radiology residents. It contains multiple choice questions similar to board examinations with concise comment and explanation about the correct answer.

Congenital Heart Diseases in Adults - Sebastian Ley 2019-04-08

This book presents a systematic overview of the most common cardiovascular defects as they are observed in adults, with a particular focus on the long-term effects and issues that may arise following surgical or interventional repair. In-depth information is provided on the standard of repair or palliation and on the role of different imaging techniques, especially CT and MRI, in the evaluation of these patients. Each chapter includes a detailed imaging protocol and describes the management appropriate to particular conditions and circumstances. Congenital heart disease (CHD) is one of the most common inborn defects. The success in treating CHD in children, even when they have complex cardiovascular defects, is resulting in a steady increase in the number of adults with CHD who need to be followed up clinically and by imaging owing to the potential for late sequelae. In providing expert, up-to-date guidance on selection of imaging modality, image interpretation, and management, this book will be a valuable resource for all radiologists, cardiologists, and pediatricians who are responsible for the care of adult and adolescent patients with CHD.

Magnetic Resonance Imaging of Congenital Heart Disease - Mushabbar A. Syed 2012-12-18

This textbook is alone in focusing on the subject of cardiac magnetic resonance (CMR) imaging in pediatric and adult patients with congenital heart disease. The topic of congenital heart disease imaging is usually relegated to a single chapter in most general CMR texts. The expanding scope of CHD warrants a text dedicated to covering CHD and CMR imaging in detail. Our proposed book aims to be a comprehensive and authoritative text on this subject. This book is be a multi-authored, illustrated text that includes supplementary access to a number of clinical videos. Authors have been selected from imaging experts in the most medically advanced areas of the world, heavily weighted by experts in the US and Europe to produce the quintessential reference in this topic.

Congenital Heart Defects. Decision Making for Surgery - Antonio F. Corno 2009-04-05

The diagnosis and management of congenital heart defects has rapidly evolved over the last few decades. In this third volume of the series entitled "Congenital Heart Defects: Decision Making for Surgery" Antonio Corno provides an up-to-date and comprehensive presentation of the new role that cardiac CT and MRI will play in the management of congenital heart defects. He has been ably assisted by a cardiologist, Pierluigi Festa. The book provides a dazzling array of images derived by both techniques and covers the full range of congenital heart malformations. Both the pre-operative and post-operative usefulness of these techniques is presented: in the pre-operative period with regard to the details useful for choosing among all available surgical options; in the post-operative period for monitoring the follow-up and potential complications. There is no doubt that these techniques will be particularly helpful for older children and adults with congenital heart disease in assessing the late impact of a congenital heart malformation and the surgical repair or palliation which may have been undertaken years previously. The time is definitely right for a comprehensive presentation of these new diagnostic modalities and the way in which they will influence the field of congenital heart management. * First and only volume on the market presenting all the pre- and post-operative aspects and images of congenital heart defects as seen by cardiac CT and MRI * Numerous illustrations provide clear and educationally useful

images for each specific anatomic detail * Helps to decide on the best surgical option * Describes potential complications * Provides advice with regard to monitoring in the post-operative period

Echocardiography in Pediatric and Adult Congenital Heart Disease -

Benjamin W. Eidem 2012-03-28

Written by expert pediatric cardiologists at the Mayo Clinic and other leading institutions, this book provides a comprehensive review of echocardiographic evaluation and diagnosis of congenital heart disease in pediatric and adult patients. Coverage includes advanced techniques such as tissue Doppler, three-dimensional echocardiography, intracardiac and intraoperative transesophageal echocardiography, and cardiac magnetic resonance imaging. Chapters provide complete information on the full range of abnormalities and on evaluation of valve prostheses and the transplanted heart. More than 1,300 illustrations, including over 900 in full color, complement the text. Purchase includes online access to AVI clips developed at the Mayo Clinic of the congenital-specific lesions illustrated in the book.

Cardiac Imaging: The Requisites - Lawrence Bost 2015-10-14

Get the essential tools you need to make an accurate diagnosis with *Cardiac Imaging, 4th Edition!* Edited by Lawrence Bost, MD and Suhny Abbara, MD, this popular volume in *The Requisites* series concisely delivers the conceptual, factual, and interpretive information you need for effective clinical practice in cardiac imaging. Practice-proven tips and excellent problem-solving discussions are accompanied by over 1000 figures and illustrations of the highest quality. The result is an outstanding review source for certification or recertification, as well as a highly user-friendly resource for everyday clinical practice. Master core knowledge of all imaging modalities currently being used (plain film, ultrasound, CT, and MR), and discusses potential future developments. Focus on the essentials needed to pass the boards and ensure accurate diagnoses in clinical practice. Clearly visualize the findings you're likely to see in practice and on exams through updated and redrawn illustrations and color images interspersed throughout the text for easier and more intuitive access. Gain new insight into a full range of cardiac imaging approaches and findings with new sections on congenital heart disease, emphasizing MRI and CT diagnostic and functional analysis as well as and updated information on valvular, ischemic, pericardial, myocardial, congenital, and thoracic/aortic heart disease. Benefit from the expertise and fresh perspective of new lead editors, Drs. Lawrence Bost and Suhny Abbara. Access the fully searchable text and downloadable images online at expert consult.

Atlas of Cardiovascular Magnetic Resonance Imaging - Christopher M. Kramer 2010

Atlas of Cardiovascular MR, by Christopher M. Kramer, MD and W. Gregory Hundley, MD, provides the rich visual guidance you need to effectively diagnose cardiovascular problems using the latest cardiac magnetic resonance imaging approaches. Using a case-based approach, this new clinical reference explains how to select and implement the best imaging options for every type of cardiovascular disease and shows you how to interpret your findings. An Expert Consult site, included with the book, provides additional images and videos that provide further clarity on cardiovascular applications of MR imaging. Key points in each chapter summarize the most important things to remember. A case-based format demonstrates how imaging principles apply to real clinical situations. A clinically oriented, practical approach focuses on the hands-on knowledge you need to achieve the best image quality, avoid artifacts, and interpret images accurately. Numerous high-quality images, many in full color, mirror the cardiovascular MR findings you see in practice. A companion DVD provides additional images and videos that further illustrate cardiovascular applications of MR imaging. A logical, consistent format in each chapter makes information easy to find.

Handbook of Cardiovascular Magnetic Resonance Imaging - Ray Abbott 2021-11-16

The medical imaging technology that is used for the non-invasive assessment of the function and structure of the cardiovascular system is referred to as cardiovascular magnetic resonance imaging (CMR). This imaging technique is helpful in evidence-based diagnostic and therapeutic pathways in cardiovascular disease. The applications of cardiovascular MRI include the assessment of myocardial ischemia and viability, myocarditis, iron overload, congenital heart disease and vascular disease. CMR study includes a few techniques of imaging such as cine imaging for heart function, 4D flow CMR, adenosine for perfusion, etc. This book presents the complex subject of cardiovascular magnetic resonance imaging in the most comprehensible and easy to understand language. It presents researches and studies performed by

experts across the globe. The book will help the readers in keeping pace with the rapid changes in this field.

Updates in Cardiac MRI, an Issue of Magnetic Resonance Imaging Clinics of North America - Karen Ordovas 2014-12-11

Cardiac MR is explored in this important issue in *MRI Clinics of North America*. Articles will include: MR physics in practice; Ventricular mechanics: Techniques and applications; MR safety issues particular to women; Novel MR applications for evaluation of pericardial diseases; 4D flow applications for aortic diseases; T1 mapping: technique and applications; ARVD: An updated imaging approach; Imaging the metabolic syndrome; Coronary MRA: how to optimize image quality; Prognostic role of MRI in nonischemic myocardial disease; MRI for valvular imaging; MRI for adult congenital heart disease assessment; Cardiac MRI applications for cancer patients; Applications of PET-MRI for cardiovascular disease; Rings and slings, and more.

Diagnostic Imaging of Congenital Heart Defects - Matthias Gutberlet 2019-12-11

A valuable new reference in the diagnosis and image-guided treatment of congenital heart defects. Congenital heart defects represent the most common birth defect and affect millions of children worldwide. Defects of the heart and great vessels span a broad spectrum. Modern medical progress has enabled more than 90% of patients to reach adulthood. In many cases, however, patients remain ill throughout their lives, with significant limits on quality of life and physical capacity. Our ongoing goals are to improve treatment options even further. This book details all important imaging techniques for diagnosing congenital heart defects and assessing their severity. The author is a highly experienced expert in his field, making his clinical experience available to readers who can then implement that knowledge in their own daily routine. Key Features: All key imaging modalities, including 2D and 3D echocardiography, cardiac catheter exams, MRI and MR angiography, CT, and chest X-ray. Descriptions of general and technical fundamentals, a structure based on clinical pictures, and current standard values. Crucial information emphasized in callout boxes and tabular overviews. Supports the professional dialogue between all the involved caretakers. Richly illustrated with more than 1,000 stunning images from the newest generation of devices. Gutberlet's *Diagnostic Imaging of Congenital Heart Defects: Diagnosis and Image-Guided Treatment* will be welcomed by pediatric and general radiologists as a comprehensive, multimodality guide to the diagnosis and management of congenital heart defects.

Cardiovascular MRI in Practice - Zachary Garcia 2021-11-16

The medical imaging technology used for the non-invasive assessment of the function and structure of the cardiovascular system is termed as cardiovascular magnetic resonance imaging. It corresponds to other imaging techniques such as cardiac CT, echocardiography and nuclear medicine. It plays an important role in evidence-based diagnostic and therapeutic pathways in cardiovascular diseases. It helps in the assessment of cardiomyopathies, vascular diseases, myocarditis, congenital heart disease, and myocardial ischemia and other cardiac diseases. It also plays a crucial role in surgical planning in complex congenital heart disease. Cardiovascular magnetic resonance imaging utilizes the basic principles of image reconstruction and acquisition like other MRI techniques. The various advancements in cardiovascular magnetic resonance imaging are glanced at and their applications as well as ramifications are looked at in detail in this book. It elucidates new techniques and their applications in a multidisciplinary manner. This book will serve as a reference to a broad spectrum of readers.

Cardiovascular MRI in Congenital Heart Disease - Shankar Sridharan 2010-02-26

The last 10 years has seen explosive expansion of the number of centres performing cardiovascular magnetic resonance (CMR) imaging. The majority of this expansion has been in the field of adult ischaemic imaging, but congenital heart disease remains one of the main indications for CMR. Importantly, the greatly improved survival of patients with congenital heart disease gives us a burgeoning adult population living with the sequelae of the disease (grown-up congenital heart disease - GUCH). Without previous experience or formal training, the interpretation of CMR images of patients with congenital heart disease can be difficult. The main aim of this book is to create a portable resource that offers efficient access to high-quality MR (and where appropriate, CT) images of the common congenital and structural heart abnormalities. We hope that by providing key images for each condition and a clear interpretation of the MR appearances, we will improve the reader's understanding of the conditions, facilitate their interpretation of images and optimise the planning of the imaging protocols during their

own practice of congenital CMR. As with any publication from a single institution, the contents of this book represent our own practice. We have not written a definitive or exhaustive description of the conditions.

Cardiovascular Magnetic Resonance - Warren J. Manning 2018-04-26
Provides state-of-the-art coverage of CMR technologies and guidelines, including basic principles, imaging techniques, ischemic heart disease, right ventricular and congenital heart disease, vascular and pericardium conditions, and functional cardiovascular disease. Includes new chapters on non-cardiac pathology, pacemaker safety, economics of CMR, and guidelines as well as new coverage of myocarditis and its diagnosis and assessment of prognosis by cardiovascular magnetic resonance, and the use of PET/CMR imaging of the heart, especially in sarcoidosis. Features more than 1,100 high-quality images representing today's CMR imaging. Covers T1, T2 and ECV mapping, as well as T2* imaging in iron overload, which has been shown to save lives in patients with thalassaemia major. Discusses the cost-effectiveness of CMR.

Cardiovascular Magnetic Resonance Handbook - Zachary Garcia 2021-11-16

The medical imaging technology used for the non-invasive assessment of the function and structure of the cardiovascular system is known as cardiovascular magnetic resonance. It corresponds to other imaging techniques such as cardiac CT, echocardiography and nuclear medicine. It plays an important role in evidence-based diagnostic and therapeutic pathways in cardiovascular disease. It helps in the assessment of cardiomyopathies, vascular diseases, myocarditis, cardiomyopathies, congenital heart disease, and myocardial ischemia and viability. It also plays a crucial role in surgical planning in complex congenital heart disease. Cardiovascular magnetic resonance utilizes the basic principles of image reconstruction and acquisition like other MRI techniques. The various advancements in cardiovascular magnetic resonance are glanced at and their applications as well as ramifications are looked at in detail in this book. It elucidates new techniques and their applications in a multidisciplinary manner. This book will serve as a reference to a broad spectrum of readers.

Adult Congenital Heart Disease - Sara Thorne 2017

A practical approach to the investigation and treatment of adult congenital heart disease (ACHD), this fully updated Oxford Specialist Handbook is a concise and accessible overview of a complex condition. Packed with straightforward advice, management strategies and key clinical points, it equips clinicians with a sound understanding of the principles and physiology of ACHD. An ideal reference tool for cardiology trainees, general cardiologists and acute medicine physicians, this second edition of Adult Congenital Heart Disease has been fully reviewed to include new guidelines and increased illustrations to aid understanding. Brand new chapters on epidemiology, heart failure, device therapy and transition and transfer of care ensure that Adult Congenital Heart Disease remains the definitive guide to supporting clinicians throughout all aspects of the patient's care.

CT of the Heart - U. Joseph Schoepf 2019-04-01

This book is a comprehensive and richly-illustrated guide to cardiac CT, its current state, applications, and future directions. While the first edition of this text focused on what was then a novel instrument looking for application, this edition comes at a time where a wealth of guideline-driven, robust, and beneficial clinical applications have evolved that are enabled by an enormous and ever growing field of technology.

Accordingly, the focus of the text has shifted from a technology-centric to a more patient-centric appraisal. While the specifications and capabilities of the CT system itself remain front and center as the basis for diagnostic success, much of the benefit derived from cardiac CT today comes from avant-garde technologies enabling enhanced visualization, quantitative imaging, and functional assessment, along with exciting deep learning, and artificial intelligence applications. Cardiac CT is no longer a mere tool for non-invasive coronary artery stenosis detection in the chest pain diagnostic algorithms; cardiac CT has proven its value for uses as diverse as personalized cardiovascular risk stratification, prediction, and management, diagnosing lesion-specific ischemia, guiding minimally invasive structural heart disease therapy, and planning cardiovascular surgery, among many others. This second edition is an authoritative guide and reference for both novices and experts in the medical imaging sciences who have an interest in cardiac CT.

Clinical Cardiac MRI - Jan Bogaert 2012-02-27

This fully updated edition of the most comprehensive and best-illustrated volume on cardiac MRI emphasizes its use in everyday clinical practice and includes in its online edition dozens more real-life cases that significantly enhance the utility of the book.

CT and MRI in Congenital Heart Diseases - Ramiah Rajeshkannan 2020-12-18

This book covers the cross-sectional imaging of congenital heart diseases, and features a wealth of relevant CT and MRI images. Important details concerning anatomy, physiology, embryology and management options are discussed, and the key technical aspects of performing the imaging are explained step by step. Written by a team of respected authors, the book is richly illustrated and supplemented with access to a number of clinical videos. Intended to provide quick and reliable access to high-quality MRI and CT images of frequently encountered congenital and structural heart abnormalities, the book offers a go-to guide for imaging physicians, helping them overcome the steep learning curve for pediatric cardiac imaging.

The EACVI Textbook of Cardiovascular Magnetic Resonance - Victor Ferrari 2018-09-13

This highly comprehensive and informed textbook has been prepared by the Cardiovascular Magnetic Resonance section of the European Society of Cardiology association on imaging, the EACVI. The EACVI Textbook of Cardiovascular Magnetic Resonance is the authority on the subject. The textbook is aligned with ESC Core Curriculum and EACVI Core Syllabus for CMR. It is a practical resource and provides a disease orientated outlook on the subject. Structured with thirteen clear and detailed sections, ranging from Physics to Methodology, and featuring specific sections on ischemic heart disease, myocardial disease, pericardial disease, and congenital heart disease and adult congenital heart disease, The EACVI Textbook of Cardiovascular Magnetic Resonance provides extensive knowledge across the entire subject area in CMR. Beautifully illustrated and physical principles enriched with schematic animations, the textbook is advanced further with key video content based on clinical cases. Written by leading experts in the field from across the world, the textbook aims to summarise the existing research and clinical evidence for the various CMR indications and provide an invaluable resource for cardiologists and radiologists across the board. The textbook is ideal for cardiologists and radiologists new to the field of Cardiovascular Magnetic Resonance, those preparing for ESC certification in CMR, and those established in the field wishing to gain a deep understanding of CMR. Online access to the digital version is included with purchase of the print book, with accompanying videos referenced within the text available on Oxford Medicine Online.

Ventricular Mechanics in Congenital Heart Disease - Giovanni Biglino 2017-08-29

Looking at "Horse in Motion", the iconic photograph by E. Muybridge, it is almost possible to hear the horse galloping. The pounding sound of the hoofs hitting the ground -like a drum- can also echo the rhythmic beating of the human heart. That sound, that visceral rhythm, reminds us of the link between motion and performance: the perfectly executed stride of the horse, the incredible coordination of multiscale phenomena behind a heart beat. Furthermore, the decomposed sequence in Muybridge's photograph has become a well-known example of breaking motion into its components over time, and as such is reminiscent of those images that are routinely acquired in clinical practice, where the heart appears dilating and shrinking in a sequence of snapshots. The investigation of this motion and its subtleties is essential for refining our understanding of cardiac function, and the appreciation of how and when this motion is no longer perfectly executed can lead us to understand functional impairments and provide insight into the unfolding of pathology. In the presence of congenital heart disease (CHD), cardiac mechanics are altered: from single ventricle physiology to conduction abnormalities to different cardiomyopathies, it is important to both capture and interpret biomechanical changes that occur in the presence of a congenital defect. This special issue in *Frontiers in Pediatrics*, now an e-book, focuses on 'Ventricular mechanics in congenital heart disease' and looks at current knowledge of phenomena such as systolic/diastolic dysfunction and current methods (chiefly in cardiovascular magnetic resonance imaging and echocardiography) to evaluate cardiac function in the presence of CHD, and then presents a series of original studies that employ both medical imaging and computational modelling techniques to study specific CHD scenarios.

Dynamic Cardiovascular MRI - Dominique Didier 2003

Recent progress in MR imaging techniques has led to a rapid increase in the number of clinical applications that benefit from the non-invasive imaging of cardiovascular structures. These innovative imaging techniques present us with unique abilities for the investigation of anatomical structures as well as the functional performance of the heart, and thoracic vascular structures. This book and companion CD richly

illustrate - with carefully selected pictures and dynamic video of typical clinical cases - the basic principles of cardiovascular MR imaging techniques, while also providing a comprehensive review of the clinical applications of these techniques. The book is conveniently organized into seven main chapters covering congenital heart disease, aortic anomalies, cardiac masses, valvular diseases, pericardial diseases, and cardiomyopathy. The book is augmented by a Macintosh and Microsoft Windows compatible CD-ROM. This CD-ROM adds a wealth of additional multimedia resources in a convenient, easy to use interactive teaching tool that includes: Didactic and pictorial representations of complex cardiovascular abnormalities and morphological and functional findings Over 200 cine sequences of dynamic cardiac sequences and 3-dimensional rendered views Over 300 annotated images and illustrations A total of 50 fully-documented and illustrated clinical cases A concise technical and clinical discussion of each category of cardiovascular disease

Multimodality Imaging Innovations In Adult Congenital Heart Disease - Pastora Gallego 2021-06-16

This book focuses on congenital heart disease (CHD) and emerging imaging technologies. It covers all clinically relevant aspects of the fascinating new cardiac imaging technologies, including a comprehensive explanation of their basic principles, practical aspects of novel clinical applications, and detailed descriptions of specific uses in the broad spectrum of clinically important adult CHD. Innovations and emerging technologies for diagnosis and therapeutics, evaluation and treatment are continually evolving, and due to these advances in non-invasive diagnosis, there has been a significant improvement in the survival rates for CHD patient. Novel approaches to trans-catheter interventions and advances in echocardiography, MRI and CT imaging are being developed and incorporated into routine clinical practice, while emerging three-dimensional printing technologies are fundamentally affecting patient care, research, trainee education, and interactions between multidisciplinary teams, patients, and caregivers. In addition, translational technologies on the horizon promise to take this nascent field even further. Exploring the applicability of these emerging technologies in improving our understanding of complex congenital cardiac defect anatomy and physiology will provide new treatment options for this unique population. Written by experts in the field who are also involved in patient care, this book discusses the practical application of innovations in advanced multimodality imaging in the daily clinical routine and offers tips and tricks for beginners.

Cardiovascular Magnetic Resonance - Warren J. Manning, MD 2010-04-05

Cardiovascular Magnetic Resonance provides you with up-to-date clinical applications of cardiovascular MRI for the broad spectrum of cardiovascular diseases, including ischemic, myopathic, valvular, and congenital heart diseases, as well as great vessel and peripheral vascular disease. Editors Warren J. Manning and Dudley J. Pennell and their team of international contributors cover everything from basic MR physics to sequence design, flow quantification and spectroscopy to structural anatomy and pathology. Learn the appropriate role for CMR in a variety of clinical settings with reference to other modalities, practical limitations, and costs. With the latest information on contrast agents, MR angiography, MR spectroscopy, imaging protocols, and more, this book is essential for both the beginner and expert CMR practitioner. Covers both the technical and clinical aspects of CMR to serve as a comprehensive reference. Demonstrates the full spectrum of the application of cardiac MR from ischemic heart disease to valvular, myopathic, pericardial, aortic, and congenital heart disease. Includes coverage of normal anatomy, orientation, and function to provide you with baseline values. Discusses advanced techniques, such as interventional MR, to include essential information relevant to the specialist. Features appendices with acronyms and CMR terminology used by equipment vendors that serve as an introduction to the field. Uses consistent terminology and abbreviations throughout the text for clarity and easy reference. Covers both the technical and clinical aspects of CMR to serve as a comprehensive reference. Demonstrates the full spectrum of the application of cardiac MR from ischemic heart disease to valvular, myopathic, pericardial, aortic, and congenital heart disease. Includes coverage of normal anatomy, orientation, and function to provide you with baseline values. Discusses advanced techniques, such as interventional MR, to include essential information relevant to the specialist. Features appendices with acronyms and CMR terminology used by equipment vendors that serve as an introduction to the field. Uses consistent terminology and abbreviations throughout the text for

clarity and easy reference.

Cardiac CT and MR for Adult Congenital Heart Disease - Farhood Saremi 2013-11-23

This is the first major textbook to address both computed tomography (CT) and magnetic resonance (MR) cardiac imaging of adults for the diagnosis and treatment of congenital heart disease (CHD). Since the introduction of faster CT scanners, there has been tremendous advancement in the diagnosis of CHD in adults. This is mostly due to the higher spatial resolution of CT compared to MR, which enables radiologists to create more detailed visualizations of cardiac anatomic structures, leading to the discovery of anomalous pathologies often missed by conventional MR imaging. This book is unique in highlighting the advantages of both CT and MR for the diagnosis of CHD in adults, focusing on the complementary collaboration between the two modalities that is possible. Chapters include discussions of case examples, clinical data, MR and CT image findings, and correlative cadaveric pictures. The chapters focus not only on the diagnosis of the primary problem, but also give readers information on visual clues to look for that often reveal associated pathologies. This book appeals primarily to diagnostic and interventional radiologists, as well as cardiologists and interventional cardiologists.

3D Echocardiography - Takahiro Shiota 2020-12-30

Since the publication of the second edition of this volume, 3D echocardiography has penetrated the clinical arena and become an indispensable tool for patient care. The previous edition, which was highly commended at the British Medical Book Awards, has been updated with recent publications and improved images. This third edition has added important new topics such as 3D Printing, Surgical and Transcatheter Management, Artificial Valves, and Infective Endocarditis. The book begins by describing the principles of 3D echocardiography, then proceeds to discuss its application to the imaging of • Left and Right Ventricle, Stress Echocardiography • Left Atrium, Hypertrophic Cardiomyopathy • Mitral Regurgitation with Surgical and Nonsurgical Procedures • Mitral Stenosis and Percutaneous Mitral Valvuloplasty • Aortic Stenosis with TAVI / TAVR • Aortic and Tricuspid Regurgitation • Adult Congenital Heart Disease, Aorta • Speckle Tracking, Cardiac Masses, Atrial Fibrillation KEY FEATURES • One-click view of high-resolution 3D/2D images and movies in a supplemental eBook • In-depth clinical experiences of the use of 3D/2D echo by world experts • Latest findings to demonstrate clinical values of 3D over 2D echo

Cardiac Magnetic Resonance Atlas - Yasmin Rustamova 2020-08-03

This book presents the main cardiac pathologies, providing a helpful guide featuring clinical cases and electronic supplementary material. There are several systematic books on cardiac magnetic resonance, which approach the different pathologies and related pathophysiology in a general manner, and these are useful for readers at an early stage in their medical careers. However, when it comes to individual patients (during the acquisition of images and reporting activities) there is no book providing operative protocols or systematic descriptions of details to look for. In the eight chapters (Cardiomyopathies, Myocarditis, Ischemic Heart Disease, Valvular Heart Diseases, Cardiac Masses, Pericardial Diseases, Congenital Heart Disease, and Miscellanea), the individual pathology is illustrated with a clinical case. The cases are divided into four sections: An introduction with a short medical history and the purpose of the diagnostic CMR A detailed CMR acquisition protocol CMR images, indicating purpose, method, analysis and meaning of the image, as well as videos. Concluding paragraph with the final diagnosis reached on the basis of the findings obtained in each image This book, collecting one hundred one clinical cases covering a broad spectrum of cardiac diseases, is an invaluable tool for radiologists and cardiologists.

Cardiovascular MRI in Practice - John Grizzard 2008-11-03

Cardiovascular MR imaging has become a robust, clinically useful modality, and the rapid pace of innovation and important information it conveys have attracted many students whose goal is to become adept practitioners. In turn, many excellent textbooks have been written to aid this process. These books are necessary and useful in helping the student learn the underlying pulse sequences used in CMR, as well as the imaging findings in a variety of disorders. However, one of the difficulties inherent in learning CMR from a book is that the printed format is not the ideal medium to display the dynamic imaging that comprises a typical CMR case. For instance, it may be difficult to perceive focal areas of wall motion abnormality on serial static pictures, but these abnormalities are often easily seen on cine loops. One might say that trying to learn CMR solely from a standard textbook with

illustrations is like trying to learn to drive by looking at snapshots obtained through the windshield of a moving car. The learner needs to see the cardiac motion and decide if it is normal or abnormal; he or she needs to be in the driver's seat. An additional limitation of the available textbooks on CMR is that while they often have superb illustrations of abnormal findings, these images have been preselected.

Handbook of Cardiovascular Magnetic Resonance Imaging - Gerald

M. Pohost 2006-10-27

Cardiovascular Magnetic Resonance (CMR) is well established in clinical practice for the diagnosis and management of a wide array of cardiovascular diseases. This expertly written source offers a wealth of information on the application and performance of CMR for diagnosis and evaluation of treatment.

Angiography in Infants and Children - Michael T. Gyepes 1974