

Preface

Diagnostic imaging of the heart has a long tradition in Germany, starting over a century ago with the discovery of Wilhelm Conrad Röntgen, which forms the basis for all radiographic techniques of cardiac imaging. Another milestone was the development of cardiac ultrasonography, which began in Germany during the 1940s and was perfected by Edler and Hertz, who recorded the first tracings of the heart based on ultrasound reflection. Professor Sven Effert introduced the method in Germany and was instrumental in gaining national and international recognition. Other key milestones were the development of computed tomography and magnetic resonance imaging.

The creation of this book was motivated by a desire to combine expert knowledge from the two medical specialties of cardiology and radiology, which have been responsible for tremendous advances in the diagnosis of heart diseases.

A third essential field in developing cardiac imaging is medical physics, which has fostered fascinating developments based on work that gained several Nobel Prize awards to physicists. Equally essential is the sectional imaging triad of echocardiography, computed tomography, and magnetic resonance imaging, whose basic physical principles have contributed to the current worldwide high level of development through systematic advances in medical technology.

Against this background of innovations and advances, it has been a genuine pleasure for the editors and authors to compile a synopsis of modern cardiac imaging and summarize the advances in this field, which are most clearly reflected in sectional imaging modalities. The new role of nuclear medicine imaging (PET-CT) is also considered in this context. Despite the profound insights that modern techniques have provided into the pathological anatomy of the heart and especially its function, conventional radiographs are far from obsolete and are available for almost every patient. Radiographs should not be ordered indiscriminately, however; this relatively low-cost and well-tolerated study should be applied critically and selectively. Recognizing that decades of experience in the analysis of chest radiographs should be fully exploited, we open this book by reviewing the basic aspects of conventional radiography.

It takes more than a detailed knowledge of sectional imaging studies to maintain high medical standards and obtain certification. It is also necessary to have well-planned organizational and communication structures within and among the different specialties as well as a command of current and traditional knowledge in order to achieve a true “state of the art status.”

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Acknowledgments

Even in the age of internet-based media, the printed page still has an undisputed role in medical education. Information technology is less a competitor of books than a tool to enhance the visual impact of a book and make its contents more accessible to the reader.

Cardiac Imaging takes full advantage of these modern capabilities, particularly in its illustrations, which were processed with the aid of digital image processing techniques.

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