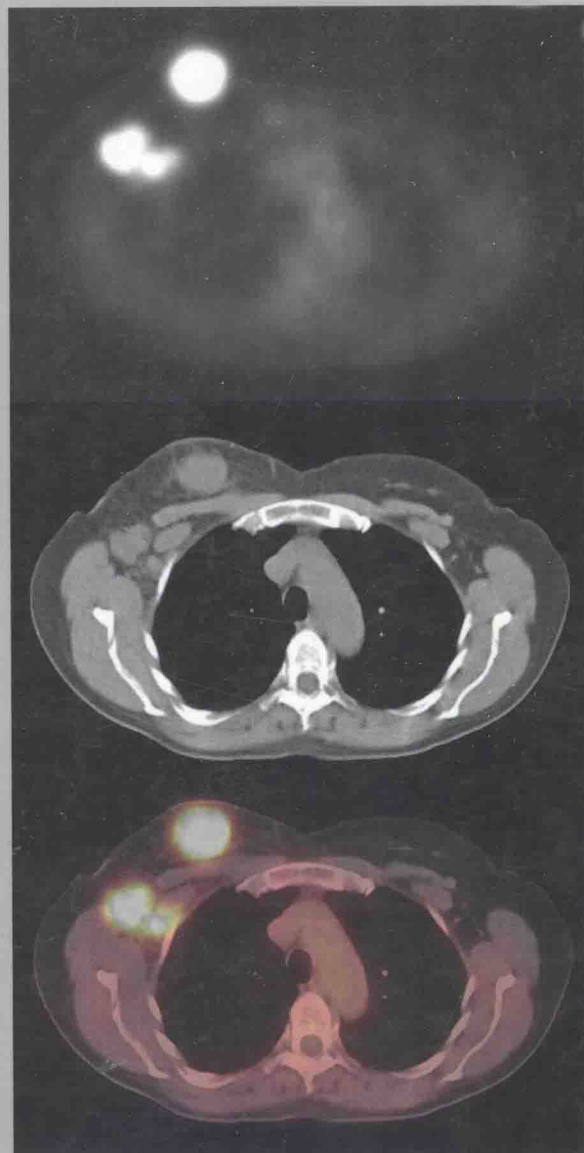
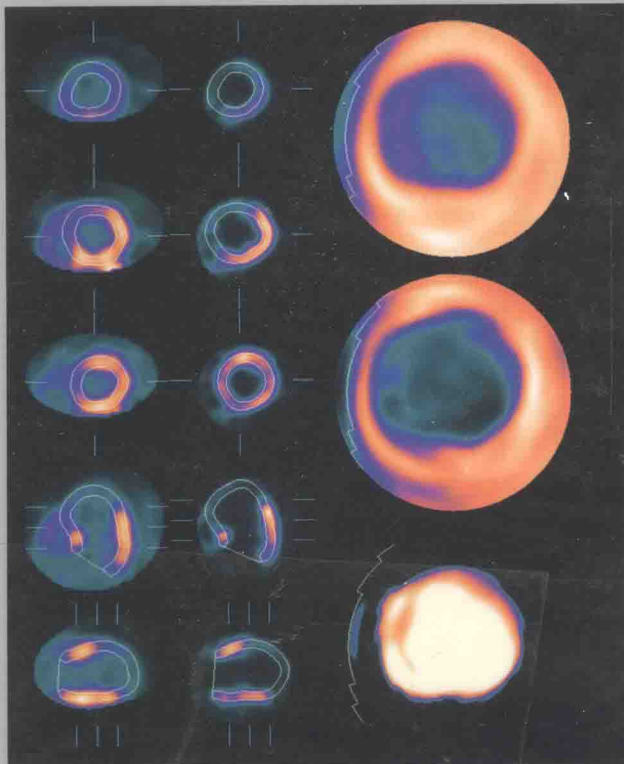


Case-Based Nuclear Medicine

Kevin J. Donohoe
Annick D. Van den Abbeele

Second Edition



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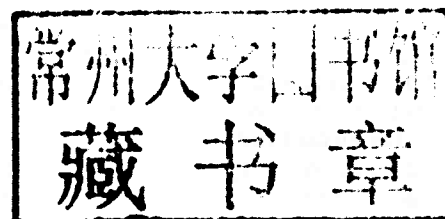
Second Edition

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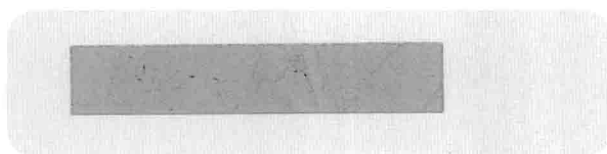
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Case-Based Nuclear Medicine

Second Edition



To my mentors, Dennis Patton and Jim Woolfenden, who have shown me how to teach and explore.
And to Mary and Lori, who pull me away from the computer now and then.

Kevin J. Donohoe, MD

To my parents, Nelly and Karel Gerard Van den Abbeele; my sister, Karyn; my brothers, Eric and Michel,
and their families—for giving me the roots and the wings, for inspiring the best, and for their endless
encouragement, love, and support.

Annick D. Van den Abbeele, MD

FOREWORD

This new collection of 166 cases continues to make a contribution to education in nuclear medicine. Like its predecessor, it challenges the reader to test him- or herself while acquiring new knowledge. Novice and master clinician alike should approach each case as follows:

- Read the *Clinical Presentation* and *Technique* sections.
- Examine the images and interpret them.
- State the clinical question as the referring physician should have stated it.
- Compare your image interpretation and differential diagnosis with those of the authors.
- Study the *Discussion* and *Pearls and Pitfalls* sections.
- Call up the articles in the *Suggested Reading* section to determine your interest.

This exercise will provide the reader with a systematic review of current nuclear medicine interpretation.

A casebook, unlike a textbook, is meant to be worked with, not referred to. Working with this one should be looked on as both a challenge and a joy.

Go to it!

S. James Adelstein, MD, PhD
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PREFACE

This book has been written with residents in radiology and nuclear medicine in mind, but it may also be helpful to anyone interested in reviewing a spectrum of physiologic imaging studies to understand the role of nuclear medicine in the diagnosis of disease and the management of patients. Each case includes tips describing some of the more important aspects to consider in the interpretation of nuclear medicine images, as well as basic information describing how the individual procedures are done. Rather than attempting to include all possible image presentations for all possible diseases, this book focuses on the common presentations of diseases and describes the findings in a manner that will allow the reader to understand how images are affected by normal physiology and disease. The reader should then be able to apply that knowledge when encountering the innumerable variations in scan findings seen in the daily practice of medical imaging.

Individual cases are presented as they would be in clinical practice or during a board examination. A brief, clinical presentation is provided, followed by the images. Readers should try to approach the studies as they normally would during their daily practice. When they interpret the studies, all the reasons why the scans appear as they do should be considered—from the technical aspects of the imaging procedure to the disease processes involved.

The pertinent technical aspects of each study are presented after the images to further elucidate the type of study obtained, if not initially obvious. This information is followed by a differential diagnosis and then the final diagnosis. A brief discussion section outlines why the images appear as they do and discusses the specific image findings that should have helped make the final diagnosis.

In some cases, the diagnosis may be difficult. If the reader does not arrive at the same diagnosis as the author, he or she should not be discouraged, but rather should understand what the important normal and abnormal findings are and the physiology behind those findings. An understanding of the physiology is essential to the successful practice of nuclear medicine.

A list of the pearls and pitfalls encountered with each imaging procedure is also provided. The reader should consider their relevance to the specific case, including how the pearls may assist image interpretation and how the pitfalls may make an accurate diagnosis more difficult.

We have attempted to make this book challenging and fun. We hope the skills acquired in studying the cases will provide you not only with the tools necessary to pass a board examination or to recognize a specific disease process, but with an understanding of physiologic imaging that can be applied even as imaging technology evolves.

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Section I

Skeletal Scintigraphy

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