

Atlas of Clinical Positron Emission Tomography

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Related Fields of Medicine. Radiology, nuclear medicine, oncology, neurology, and cardiology.

Format. Hardcover book.

Audience. Physicians, fellows, and residents who interpret or request clinical PET studies and technologists and paramedical staffs who are involved in clinical PET imaging.

Purpose. "To illustrate how clinical PET imaging is being used to improve patient care by influencing management and outcome" (from Preface).

Content. This book consists of three parts: I. Introduction; II. Applications of PET in Oncology; and III. Other Applications of PET. Part I describes the basic theory of PET imaging, radiotracers, typical PET-imaging protocols, and image analysis, interpretation, and archive/display systems. Although relatively compact, this portion comprehensively covers technical issues related to clinical PET imaging and provides an excellent review for readers who are not familiar with principles and methods of PET imaging. Part II discusses oncologic applications of clinical PET and comprises 8 of the total of 14 chapters, reflecting the current use and approval of clinical PET imaging. Each chapter begins with an overview of specific cancers and the stages of the disease; particularly overviews of the latter provide a handy reference when interpreting clinical PET images. These are followed by a discussion of key management issues, case presentations, and conclusions. Case presentations include not only true-positive cases and radiographic correlation but also false-positive cases and negatives, which together give a good perspective for actual image interpretation. Discussion of each case is directed to the point of the images presented. Two chapters in Part III briefly cover clinical applications in neurology, psychiatry, and cardiology. The last chapter of Part III summarizes problems and artifacts relating to clinical PET imaging. This chapter is informative and immediately useful for clinical image interpretation.

Highlights. Clinical PET imaging is a growing field in radiological practice. Imaging devices and techniques are evolving continuously, and approvals for clinical use of PET imaging are expanding steadily. Medical data to justify the efficacy of clinical PET imaging are also accumulating rapidly; however, there are many applications in which the experience of clinical PET imaging is still limited. Thus, a

careful discussion of individual PET imaging studies provides important learning and discussion material for both improving current practice and directing further development of clinical PET imaging. The book fulfills these important roles by presenting abundant cases and discussion of clinical PET studies. The authors' comments based on their experience are also inserted in many places, which enhances greatly readers' insight into image interpretation and use of clinical PET imaging. The oncologic section, including primary brain tumor, provides excellent case presentations and discussions covering a wide variety of issues relating to PET imaging. After reading through this book and examining each case presented, physician readers should become more confident in reading clinical PET images. Readers also will gain an international perspective regarding clinical PET imaging in the United Kingdom and the United States. The book should be of interest for anyone who is involved in clinical PET imaging.

Limitations. An organizational discussion of independent PET centers that rely solely on commercial FDG supply and mobile PET systems could have been extended in the introduction, considering the recent growing interests in these sectors. Each case could have been presented in a case study format starting with patient history, indication, PET findings, and comments. This would have allowed readers to formulate their own interpretations for each case and compare those opinions with the authors' findings and comments. However, the numerous studies presented in this book probably did not allow space for this format. Key management issues from the viewpoint of the referring physicians could have been extended. Discussions of neuropsychiatric and cardiac applications are somewhat superficial in contrast to continuing discussions of the clinical use of PET imaging in their specialty societies. These chapters, however, provide excellent educational cases of common brain and cardiac disorders and PET findings.

Related Reading. *PET: Correlation With Morphological Cross-Sectional Imaging*, G.K. von Schulthess, ed. (Lippincott, Williams & Wilkins; 1999), also provides good reviews of clinical PET applications. *Clinical PET*, R. Bares and G. Lucignani, eds. (Kluwer Academic; 1996), gives a good overall review of clinical PET in neurology, cardiol-

ogy, and oncology. Clinical PET applications in neurology and cardiology can be supplemented by specialty books such as *Cardiac PET*, M. Schwaiger (Kluwer Academic; 1995); *Neuroimaging*, W. Orrison and colleagues, eds. (WB Saunders; 2000); and *Clinical Brain Imaging: Principles and Applications*, J. Mazziotta and S. Gilman, eds. (FA

Davis; 1992), although some of the content is out of date and not specific to clinical applications.

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