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Atlas of SPECT/CT

Fanti S et al. (eds.). 229 pages. Berlin: Springer; 2011
242 figures, 5 tables. ISBN 978-3-642-15725-7

SPECT is an imaging technique that uses a gamma camera to generate a functional 3D distribution of a photon emitter radionuclide within the body, whereas CT utilizes an external source of x-rays to produce anatomical 3D images. Therefore, SPECT/CT provides both functional and anatomical images, and it can also accurately make an attenuation correction of SPECT images. It precisely localizes and also characterizes any functional abnormality on CT. High resolution CT may demonstrate a small (less than 1 cm in size) lesion which is generally beyond the resolution of current gamma camera. Recent development of ultra-fast and high resolution SPECT/CT with cadmium zinc telluride detector opens a new revolution of nuclear medicine and molecular imaging because of possible multiple time-point imagings which are vitally important in understanding of biological processes.

This book was published in 2011 but may be the first atlas book of SPECT/CT. It completes a trilogy offering updated information and guidance on the full spectrum of hybrid SPECT/CT. The full range of potential SPECT/CT applications in clinical routine is considered and assessed by acknowledged 50 experts.

The book is organized into 13 chapters, and chapters I and II deal with clinical importance and technology, respectively. The following 9 chapters discuss imagings of tumor, bone, brain, heart, parathyroid, sentinel node, infection, red blood cell, and lung with good practical cases using high quality images and teaching points. The last two chapters present radiation therapy plan and dosimetry using SPECT/CT. The book is easy to read with user-friendly guide to the optimal utilization as well as interpretation of SPECT/CT. The suggested readings or references in each chapter are up-to-date, and the index is useful.

The book is designed to serve as a reference text for both nuclear physicians and radiologists. It also provides a fundamental support for radiographers, technologists as well as nuclear medicine and radiology trainees. I highly

recommend this book to them and also hope that this book will be revised with images from the new SPECT/CT system using CZT crystal in near future.

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