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BOOK REVIEW

Eugene C. Lin and Abass Alavi (Eds): PET and PET/CT. A Clinical Guide. Third Edition

Thieme Medical Publishers, New York, 2019. ISBN: 9781626231344

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This is the third edition of a book first published in 2005 and reissued in 2009. Therefore it is a full revision of the previous editions appearing 10 years after the last revision. Nevertheless, this book substantially retains the structure and certainly the soul and the scientific and didactic character of the two previous editions. The editors are Eugene C. Lin, diagnostic and nuclear radiologist at the Virginia Mason Medical Center in Seattle, and Abass Alavi, at present Professor and Director of Research Education at the University of Pennsylvania in Philadelphia. He is known worldwide as a pioneer of positron emission tomography and is recognized as one of the most respected scientists in the field of nuclear medicine.

Although the book continues to have the acronym PET in the title, it is almost completely dedicated to hybrid PET/CT, and there is also a chapter on PET/MRI. The book comprises 410 pages divided into four parts and is enriched with 335 illustrations, many of which are in colour, and also includes complimentary access to a digital copy at https://medone.thieme.com.

Part I, Basic Science, includes three chapters: (1) the physics of PET/CT scanners, (2) the basics of fluorodeoxyglucose (FDG) radiochemistry and biology, and (3) the role of glucose and FDG metabolism in the interpretation of PET studies.

Part II, Clinical Basics, includes seven chapters. Chapters 4 to 7 discuss patient preparation, standardized uptake value, quantitative whole-body PET/CT imaging, normal variants and benign findings, and interpretation of FDG PET studies. Chapters 9 and 10 concern, respectively, PET/CT and PET/MRI, and are the main chapters on PET/CT and PET/MRI providing basic information on the clinical indications for their use.

Part III, the most extensive part (chapters 11 to 28), is dedicated to oncological applications. After a preliminary subsection on oncological PET by anatomical region and therapy response, all the most important tumours are then discussed in chapters 13 to 26. Applications of ^{18}F-NaF PET/CT in bone are discussed in chapter 27, and ^{68}Ga-based imaging techniques are discussed in the following chapter. Almost all these chapters follow a similar structure: they define accuracy in comparison with other modalities, they describe pearls and pitfalls, they discuss the role of PET/CT in all the phases of clinical interest from diagnosis to the evaluation of tumour response and detection of relapse, and finally consider prognostic information.

The last part (part IV, chapters 29 to 34), entitled "non-oncologic applications", includes chapters discussing the role of FDG PET/CT in the evaluation of infection and inflammation, neurological applications of FDG and non-FDG tracers, cardiac PET and PET/CT, paediatric PET/CT, and PET/CT in radiation therapy planning.

The aim of the book is to give full but concise and easily accessible information on the whole PET/CT scenario, mainly in relation to FDG. But the information is wider also including data in non-oncological applications and those achievable with radiotracers beyond FDG, together with the biological, technological and methodological background information needed to provide a better understanding of clinical information. Indeed, the clinical information is the main core of the book, as reflected in the title "PET and PET/CT: a clinical guide".

The book is presented in an easy to read format, with an up-to-date bibliography and references to the most recent guidelines. The major value of this book derives from its concise, although understandable, form that allows the inclusion in a single volume practically all the

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most important information needed to appreciate the clinical value of PET/CT. Clearly, further insights are needed to enter more deeply into the individual topics. I suggest this volume as the "first book" for all those (including students, technologists, practitioners and clinicians) who want to enter the field and those (nuclear physicians, radiologists, oncologists and others) already practising or utilizing nuclear medicine, who want to refresh and/or improve their knowledge. The book also works well as a manual that can be consulted quickly in case of need.