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BOOK REVIEW

Ignasi Carrio and Pablo Ros (Eds.): PET/MRI Methodology and Clinical Applications

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Ignasi Carrio, Professor at the Autonomous University of Barcelona, is too young to be considered one of the fathers of nuclear medicine. Nevertheless, he has extensive top-level experience in our discipline, having been President of EANM and, for many years, Editor-in-Chief of *European Journal of Nuclear Medicine and Molecular Imaging* (EJNMMI), which under his stewardship attained its highest ever impact factor. As a consequence, we can consider him, if not a father, at least a wise and experienced brother, able to give us a correct reading of the present and a solid vision for the future of molecular imaging. It is therefore no accident that he has edited one of the first books on PET/MRI, the newest, as yet little-known tool in the radiological area. This 163-page publication with 60 illustrations (48 in color) has been co-edited by Pablo Ros, of University Hospitals Case Medical Center in Cleveland. The authors were recruited from the pioneer groups in Europe and the USA.

The book is divided into two parts. While the first covers methodology and equipment, the second focuses on clinical applications, also covering risks and safety aspects, health care costs, and impact. More precisely, the content is developed in 11 chapters, followed by an index: (1) PET/MR System Design; (2) Image Distortion in Clinical PET/MR Imaging; (3) Workflow and Practical Logistics; (4) MR-PET in Breast Cancer; (5) PET/MRI in Evaluating Lymphomas; (6) PET-MRI of the Liver; (7) PET/MR in Colorectal Cancer; (8) PET/MR in Brain Imaging; (9) MR-PET in Cardiology; (10) Risks and Safety Aspects of MR-PET; 11) Health Care Costs and Impacts.

As might be expected, the publication, starting with detailed information on the methodology and apparatus of PET/MRI, covers not only the most important clinical applications, but also general issues of logistics, workflow, health care costs, and impact, very important for those who are starting to think about acquiring an expensive new machine that has to justify itself on the basis of acceptable cost effectiveness. Supported by a an updated bibliography, many of the first clinical applications are presented. Of course, it is impossible to cover all the clinical proposals for a methodology for which new applications are appearing practically every day over an increasingly wide spectrum. Therefore, to stay up to date, it remains mandatory to continue to read leading journals, first of all EJNMMI. Nevertheless, the clinical chapters certainly indicate, together with medical information already applicable in practice, the areas into which PET/MRI could expand in the near future. Waiting for pathophysiological information based on multi-functional studies strictly connecting fMRI and PET, it is already evident that PET/MRI, because of its superior soft tissue contrast, may be advantageous relative to PET/CT everywhere a pathological event does not determine a significant change in density, as may be the case in brain, breast, prostate, pelvis, and head and neck. Of course, dosimetric advantages with respect to PET/CT, owing to the absence of ionizing radiation for MRI, also individuate possible indications in pediatrics or in the evaluation of benign diseases.

A major quality of this book is that, although it is a first fruit, it is already mature in that it provides methodologically up-to-date and clinically useful information to all radiologists and nuclear physicians who wish to learn more about the latest developments and applications of this important emerging imaging modality. This book is also recommended to residents and students who want to be ready to be active users and early leaders in the use of a new technology.

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