

Atlas of Sectional Radiological Anatomy for PET/CT

Mehmet T. Kitapçı

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 Springer

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*To my parents Mkerrem and Nihat Kitapı
with deepest gratitude...*

MTK

Preface

Integrated positron emission tomography (PET) with computed tomography (CT) has been increasingly used in cancer diagnosis and management. This new imaging tool combines two scan techniques in one exam merging those two (PET and CT) into one set of images combining the usefulness and reducing the limitations of those two distinct imaging modalities.

This book grew out of discussions among the radiologists and nuclear medicine specialists about the limitations of PET and CT. It is an important fact that functional changes in tumor processes happen before morphological changes. Therefore, PET has been a valuable tool in oncology. It is well known that attenuation, which is the loss of detection of true coincidence events, remains as an important challenge when PET images are used alone. This makes harder to interpret particularly in cancer diagnostic and staging images or radiotherapy treatment planning. Meanwhile, CT, providing detailed cross-sectional views of all tissues, is one of the best and fastest tools in morphological imaging. Using those two techniques has grown particular interest in recent years. For PET/CT, CT-scan parameters need to be optimized to minimize radiation exposure to the patient. This optimization requires not giving contrast agents and having less quality images than regular conventional diagnostic CT images taken with the higher scan parameters and with longer time of radiation exposure. We believe it is essential to reeducate ourselves for better evaluation of those lower quality images which are normally used for PET/CT hybrid imaging.

We certainly hope that this atlas will be a user friendly guide to nuclear physicians, radiologists, clinicians, and medical students to consider three dimensions in the mind's eye and the interpretation of the PET/CT properly.

I express my deep gratitude to my mentor and dear friend Dr. R. Edward Coleman for encouraging this work. Certainly producing this book needed time, professional work and collaboration. I want to thank my dear friend Nadir Gülekon, MD, for all his great work with the expertise of being an anatomist as well as a clinical radiologist. I thank for those valuable images taken in Integra Imaging Center and my colleagues M. Ali Gürses, MD and Burcu E. Akkaş, MD. I also thank Andrew Moyer, editor of radiology and nuclear medicine at Springer for the valuable efforts and patience in ensuring the successful publication of this book. Finally I thank my lovely wife Aysin for her remarks and patience.

Ankara

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