

CT Teaching Manual: A Systematic Approach to CT Reading

M. Hofer

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This edition is the second in English of *CT Teaching Manual: A Systematic Approach to CT Reading*, a German introductory manual on CT. Written by Dr. Matthias Hofer of Heinrich Heine University, this textbook is designed for medical students, technicians, radiology residents, and general practitioners who wish to become quickly oriented in CT. Much of the textbook consists of an atlas of normal CT anatomy. Each cross-sectional slice is accompanied by a detailed diagram with numbers referencing anatomic structures as listed on the front and back foldout covers. Besides containing chapters on anatomy, *CT Teaching Manual* also covers a variety of other topics, including the general principles of CT scanners, basic rules for reading CT scans, contrast agents, patient preparation, and radiation protection. The discussion of pathologic findings is limited, serving to provide interesting examples rather than to sharpen a radiologist's acumen.

The first chapter, on the physical and technical aspects of CT, is well written and thoroughly illustrated. Aspects of CT such as pitch, collimation, tube current, reconstruction methods, and detector design are well explained for the novice. Patient preparation, contrast agents, and adverse effects are also well discussed. From both a medical and a legal perspective, the reader must keep in mind that this book is written for a European audience and that the guidelines of the American College of Radiology may differ somewhat from those in this book. Nevertheless, Hofer's guidelines are useful.

The book is divided into main sections on the basis of anatomic regions—head, neck, thorax, abdomen, pelvis, and musculoskeletal system. Each chapter on normal anatomy is followed by a corresponding chapter illustrating pathologic conditions. With some exceptions, most of the images on normal anatomy are good. However, some of the thoracic CT images are of lower resolution. Fortunately, the good detail in the corresponding labeled drawings makes up for that loss.

A major drawback in the chapters on normal anatomy is the failure to include a cross-sectional lymph node atlas. A

lymph node on a CT image is referred to only as a "lymph node." In general, I have found that nuclear medicine physicians, when reading a PET/CT scan, find it difficult remembering whether a hypermetabolic lymph node is a left level II or left level III cervical lymph node or whether it represents a left gastric or splenic lymph node. What are nice about the sections of the book on normal anatomy are the checklists for reading particular portions of a CT scan. With these checklists and the accompanying text describing the CT images, the author successfully creates a "systematic approach" to CT reading. This approach is helpful for nuclear medicine physicians who have no formal training in CT reading. The chapters on pathologic findings are also well illustrated and show a variety of examples, but the descriptions are not specific enough to differentiate these examples from other pathologic findings.

The final part of this manual includes protocols for spiral CT, a chapter on radiation protection, and a chapter on CT angiography. The protocols are limited to a specific manufacturer's CT scanner and do not apply to other cameras. This section on protocols would have been more helpful if kept more general. The chapter on radiation protection has a nice section on automatic bolus tracking and on automatic tube current modulation. The chapter on CT angiography is a useful addition to the second edition and contains good illustrations.

Although this book has limitations, overall it is worthy of attention. It provides a good general introduction to CT scan interpretation. With combined PET/CT cameras now virtually replacing standalone PET cameras, and with SPECT/CT on its way to doing the same, learning about CT and the interpretation of CT scans is becoming an essential component of nuclear medicine education.

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