

Imaging in Oncology

Cancer Treatment and Research

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Preface

During the past two decades, and even more so in the last five years, radiology has evolved at a tremendous pace, and imaging technology continues to make great advances into morphological, as well as functional, aspects of oncologic diseases. Developments in computed tomography (CT) have led to the introduction to ultra-fast, high-resolution single-source and dual-source multislice scanners. Positron emission tomography (PET) has stepped into the clinical limelight with the availability of vastly improved structural co-registration and overall improved diagnostic performance from recently developed PET-CT hybrid scanners. Magnetic resonance imaging (MRI) has become faster and more versatile with high magnetic strength systems, MR spectroscopy, diffusion weighted MRI, and flow mapping. Oncologic imaging guided interventional techniques such as radio frequency ablation, microwave and cryoablation procedures have also progressed immensely.

From an oncologic point of view, these developments have improved patient care. Today, the role of imaging extends beyond traditional detection, localization, characterization, staging, follow-up and treatment of patients with cancer. CT is currently being investigated as a screening tool for colon and lung cancer. MRI has emerged as a modality of choice for imaging many cancers including hepatic, adrenal and most musculoskeletal cancers. Hybrid PET-CT scanners provide combined morphologic and functional information for tumor detection, and assessment of early tumor response to treatment. The growing, dynamic collaboration between the radiologic and oncologic communities is important to foster to ensure cancer patients receive optimal care.

This book, “Imaging in Oncology,” describes the current status of imaging techniques in oncology, with the help of specialized contributions from world-renowned oncologic imaging experts.

Summary Statement

Scholarly overview of cancer imaging, incorporating the most recent research and clinical advances in oncologic radiology.

Aims:

- To serve as an up-to-date, attractive, broad overview book of oncologic imaging for radiologists and all involved in oncologic care, particularly oncologists and radiation therapists.
- To demonstrate the importance of oncologic imaging in medicine and surgery.
- To provide pertinent clinical and research information that underpins accurate interpretation and sensible use of cancer imaging.
- To review established oncologic imaging findings, algorithms and techniques in plain radiography, Ultrasound, CT, MR, Nuclear Medicine, PET and PET/CT, as well as image guided intervention.
- To highlight new developments and advances in oncologic imaging.
- To appeal to physicians in practice and in training, and to all interested in oncologic imaging.

Scope:

- Scholarly, pertinently illustrated, well-referenced text with chapter contributions from world-renowned cancer imaging experts.
- Guidelines for each chapter provided by editors to provide for a coordinated, integrated text.
- Summary sections included in each chapter illuminating its key points

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