

Nuclear Cardiac Imaging: Terminology and Technical Aspects

E.S. Crawford and S.S. Husain

Reston, VA: Society of Nuclear Medicine and Molecular Imaging, 2010, 181 pages, \$99.00

Nuclear Cardiac Imaging: Terminology and Technical Aspects, now in its second edition, gives an overview of the basic principles and technical aspects of nuclear cardiac imaging studies for nuclear medicine technologists, cardiology fellows, radiology and nuclear medicine residents, and students.

The book is divided into 5 sections, with multiple chapters in each. Section 1, "Myocardial Perfusion Imaging," has several chapters dedicated to the review of cardiac anatomy, radiopharmaceuticals used in cardiac SPECT, and protocols for exercise and pharmacologic stress testing and includes some detail on acquiring and processing images. Section 2 includes 2 brief chapters, the first discussing imaging of acute chest pain and the second discussing radiopharmaceuticals used in myocardial infarction-avid imaging. Section 2 also provides examples of myocardial infarction scans showing normal and abnormal findings. Section 3 reviews dynamic cardiac imaging, including indications, methods, red blood cell labeling, and resting gated acquisitions, and concludes with an overview of first-pass imaging. There is also a chapter on gated image acquisition and processing of gated blood-pool SPECT. This chapter could have been longer and more detailed but otherwise is well written. Section 4 discusses cardiac PET. The overall content is good, but the discussion does not include cardiac sarcoidosis, and more detail on insulin loading for patients undergoing ^{18}F -FDG viability studies would significantly enhance this section. The image displays are excellent and easy to understand. Section 5 is worth the read. The chapter on electrocardiography is well written, and the examples of electrocardiograms are excellent for someone just learning or as a review. The summary of drugs provided in the chapter on the cardiovascular system is a helpful overview for anyone studying for an examination.

New to this second edition are a well-written chapter on radiation exposure from medical diagnostic imaging and a nice chapter on cardiovascular drugs that were not included in the first edition.

Overall, this is an excellent reference book for nuclear medicine students, cardiology fellows, radiology residents, and technologists sitting for the nuclear cardiology technologist or NMTCB examination.

Maria Mackin

*Paul N. Yu Heart Center at the University of Rochester
601 Elmwood Ave., Box 679 N
Rochester, NY 14642
E-mail: maria_mackin@urmc.rochester.edu*

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A Clinician's Guide to Nuclear Medicine

A. Taylor, D.M. Schuster, and N. Alazraki

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Compared with diagnostic imaging modalities such as CT, MR imaging, radiography, and sonography, nuclear medicine modalities are often less familiar to referring physicians, medical students, and other health care practitioners. A real need therefore exists for a way to provide this audience with accurate information and education on nuclear medicine diagnostic and therapeutic services. The second edition of *A Clinician's Guide to Nuclear Medicine* is a resource to help meet this need.

This book differs from many other nuclear medicine books in that it primarily regards the clinical problem of the patient in question and the potential role that nuclear medicine may provide in the management of that patient. Rather than presenting a comprehensive study of each clinical area of nuclear medicine practice (cardiology, oncology, neurology), this book presents common clinical indications in which nuclear medicine frequently plays a role (thyroid, prostate cancer, ^{18}F -FDG imaging).

Many current texts are geared to the physician, scientist, technologist, and student alike. In these cases, the referring physician or practitioner must sift through considerable information that may have little or no relevance to the clinical problem at hand. Although this book does include common topics such as physics, instrumentation, and radiopharmaceuticals, they are presented in a way that directly benefits patient management, addressing many of the common questions that a patient may have about a nuclear medicine procedure.

The chapters are in an accessible format that enables the reader to find the desired information quickly. Each chapter opens with a list of clinical indications and questions and then is divided into 5 distinct areas of information: "Scans," "Clinical Questions," "Worth Mentioning/Cutting Edge," "Patient Information," "References," and "Cost."

The "Scans" section of each chapter is further divided into 6 subsections. The "Background" subsection presents the general clinical question. "Radiopharmaceuticals" reviews the diagnostic and therapeutic radiopharmaceuticals used for each study related to the clinical question. "How the Study Is Performed" relates valuable information that helps the physician and patient understand the pro-

cedure. “Understanding the Report” presents common nuclear medicine–specific information and terminology to help the reader better understand the clinical findings of the procedure. Finally, “Potential Problems” helps the clinician understand any areas of potential difficulty with the procedure and with its subsequent interpretation.

The “Clinical Questions” section presents information on each clinical question listed at the beginning of the chapter. The potential advantages and disadvantages of each related nuclear medicine procedure are addressed and compared with those of other diagnostic and therapeutic modalities. This section may particularly help the reader determine which nuclear medicine study will be the best approach to answering a clinical question.

The “Worth Mentioning/Cutting Edge” section is particularly relevant to the current practice of nuclear medicine and its role in patient management. Practitioners are somewhat less familiar with the field of nuclear medicine than with other diagnostic and therapeutic choices. Rapid innovation within the field and the existence of less common procedures understandably pose a challenge in decisions on whether to include a nuclear medicine procedure in the resolution of a clinical question. The “Worth Mentioning/Cutting Edge” section comprehensively reviews the current technologic state of the practice of nuclear medicine, including such newer technology as PET/CT and developments in radiopharmaceutical choices.

The “Patient Information” section enables the physician to effectively communicate with the patient. Patients will wish to know what they can expect during a procedure, and this section presents question commonly asked by patients with regard to radiation risk,

study preparation, and medication requirements. Providing this information to the patient will ensure that the procedure is completed efficiently and that any patient concerns or questions are addressed.

The “References” section lists related publications that provide more detail on a clinical question and support the information presented in the text.

The “Cost” section addresses an area important to today’s medical practice and patient management, allowing the reader to compare potential nuclear medicine options with other modalities from the standpoint of cost.

A Clinician’s Guide to Nuclear Medicine familiarizes clinicians with the practice of nuclear medicine and educates them on its potential for inclusion in the management of a clinical question. The format is accessible and helpful to health care practitioners as they consider the use of nuclear medicine as a possible tool in pursuing answers to particular clinical questions.

Anthony J. Harris, CNMT

Johnston Community College

Fayetteville Technical Community College

245 College Rd.

Smithfield, NC 27577

E-mail: ajharris@johnstoncc.edu

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