

Computer Processing of Dynamic Images from an Anger Scintillation Camera. Kenneth B. Larson and Jerome R. Cox, Jr. (eds). Cloth, \$15, 203 pp. New York, The Society of Nuclear Medicine, Inc., 1974.

This compact, well-written book should prove to be a valuable reference for those engaged in computer processing of dynamic radionuclide distribution data, and individual sections of the book will have a special appeal to different disciplines. The first three chapters that constitute Part 1 present a lucid, concise description of the Anger scintillation camera, including its principles of operation and basic electronic design. This section will be particularly helpful to the electronic engineer and physicist who is not familiar with nuclear medicine instrumentation as well as to the electronics-minded physician who desires to further his understanding of the scintillation camera. The advanced technologist also will find Part 1 interesting and informative reading, particularly the brief discussion of quality control procedures for the scintillation camera.

Part 2 is devoted to a discussion of the design of computer-camera interfaces and of the development of computer programs. Chapter 4 is a comprehensive review of the scintillation camera as a source of dynamic distribution data with particular emphasis on the problems associated with high data transfer rates. This process is discussed in terms of the number of bits necessary to describe an event, as well as the maximum usable event rate. The information presented is general and not machine specific. The chapter devoted to interface design considerations is worthwhile reading for electronics engineers and other scientists interested in this aspect of nuclear medicine. Although the specific interface described for the PDP 12 cannot be used on the currently available 16-bit word computers with disc-operating systems, the information does serve as a basis for understanding current developments. Software for processing dynamic distribution data has also undergone expansion and refinement since the development of the programs described.

Part 3 on compartmental analysis presents useful information for biomedical engineers, applied mathematicians, statisticians, and physical scientists who have an adequate background and the intestinal fortitude to wade through the mathematics. Knowledge of advanced calculus, including vector analysis as well as partial differential equations, is necessary. Those concerned with the development of algorithms for processing dynamic distribution data will find this section particularly interesting. Part 4 presents a discussion of the clinical utility of the scintillation camera—digital computer configuration and application of models for dynamic tracer studies. The format of this section is rather unique in that different aspects of these topics are presented as a debate between eminently qualified panelists. The clinical usefulness of computers in nuclear medicine is demonstrated in a way that clinicians should find interesting.

The appendices in Part 5 contain a brief introduction to digital logic circuits, a list of operator commands for the

software developed at Washington University, and a glossary of electronics and computer terms for physicians, technologists, and others who may not be familiar with computer jargon.

This is an informative book that provides valuable information for medical scientists who are engaged in computer processing of dynamic distribution data and would be a desirable addition to their libraries.

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New Techniques in Tumor Localization and Radioimmunoassay. M. N. Croll, L. W. Brady, P. Hondas, and R. J. Wallner (eds). Cloth, \$19.50, 218 pp. New York, John Wiley & Sons, 1974.

This book incorporates the proceedings of a symposium, and as stated in the preface, the "purpose of the symposium was to dramatize the new information available relative to tumor localization techniques and radioimmunoassay procedures. . . ." The contents can be readily divided into two sections. The first nine chapters are devoted to a discussion of radioimmunoassay, including fundamentals, commercial development problems, insulin, cardiac glycosides, renin, hepatitis B antigen, carcinoembryonic antigen assay, gastrin, and computer applications. These chapters are quite worthwhile, especially those on the radioimmunoassay procedures that present the details of the technique, the pitfalls, clinical implications, and clinical applications. The discussions of different aspects of radioimmunoassay are quite lucid and useful for both the physician in nuclear medicine and the practicing clinician. There is an excellent description of the problems associated with the commercial development of a radioimmunoassay kit that gives the reader some insight into the difficulties involved in the development of radiopharmaceuticals.

In the second section of the book on tumor localization techniques the authors quite accurately point out that the specificity of radiopharmaceuticals is generally a far-removed goal and that this area of nuclear medicine is in its infancy. The chapter on instrumentation deals with the problems involved in the definition of neoplasms by means of radiopharmaceuticals. Although many of the points discussed are generally well known the review serves to emphasize these points. The author also presents some additional features that are just now becoming understood and should be appreciated by the practicing clinician. This chapter would be of particular value to all those in the practice of clinical nuclear medicine. There are several chapters devoted to specific and nonspecific radiopharmaceuticals used for the detection of neoplasms. The authors realistically describe the advantages and disadvantages of these radiopharmaceuticals.

The last section in the book is devoted to the characterization of central nervous system tumors in the child and

as pointed out by the author the characterization is just as applicable to the adult. In every case all the evidence available from the radionuclide studies should be evaluated in an effort to arrive at a differential diagnosis and a possible histologic diagnosis. This is not merely a mental exercise but is the deductive procedure by which more specific inter-

pretations may be made. This book presents the state of the art in the various topics and could serve as a source for review.

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Physician's Desk Reference for Radiology and Nuclear Medicine. M. D. Blafox and L. M. Freeman (eds). Cloth, \$8.50, 82 pp. Oradell, N.J., Medical Economics Co., 1974.

This short text is divided into five sections: instrumentation, organ imaging procedures, nonimaging procedures, therapeutic radionuclides, and an appendix. The information in Part 1 on instrumentation is extremely abbreviated and is of very limited value except for the accompanying bibliography. The section on organ imaging is condensed but instructive. It presents basic information on all aspects of organ imaging and should be helpful to those persons who are just becoming acquainted with this field. On those procedures that do not require imaging (in vitro and in vivo) information content is basic and adequate for those persons in the practice of nuclear medicine who limit this

area to currently available techniques. The appendix is very helpful in that it contains information frequently needed such as physical constants of radionuclides, radiation dosages, and the AEC list of well-established medical uses of radiopharmaceuticals. In addition, there are sections that provide information on commercial pharmaceutical products, instrumentation and equipment, and educational material. This small work will serve two functions: (A) to provide information to those persons interested in understanding elementary principles of nuclear medicine, and (B) to provide a convenient reference source on scientific, educational, and commercial data.

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