

BOOK REVIEWS

NUCLEAR MEDICINE IN CLINICAL PRACTICE: Selective Correlation with Ultrasound and Computerized Tomography. L.D. Greenfield, J.M. Uszler. Deerfield Beach, FL, Verlag Chemie International Inc., 410 pp, \$47.50

Although this small book gives special attention to correlation with ultrasound and computerized tomography, it comes very close to being a standard overview textbook for physicians interested in clinical nuclear medicine. There has been a need for such a book since the pioneer works of Beierwaltes, Wagner, and Blahd have become somewhat out-of-date. There are 24 contributors and 23 sections included, and it is refreshing for an oldtimer to see a text on nuclear medicine that includes more than images. Our specialty has a history filled with exciting change. Many of the dramatic contributions developed with radionuclides have been adapted by other disciplines, viz., immunology, neuroradiology, cardiology, oncology, laboratory medicine, to name a few. In this volume, there are descriptions of the clinical application of hormone assays and of tumor markers, criteria for the diagnosis of megaloblastic anemia, indications for the applications of the $^{14}\text{CO}_2$ breath test as well as a discussion of correlative imaging.

The publisher has produced a book of high quality. The figures are quite clear and well produced so that their small size proves no major handicap. The editors have introduced some pleasant surprises—including an excellent glossary although some omissions should be corrected in future editions. I would have included more SI units, such as the gray, as well as geiger counter, fission product, and Cutie-Pie. One other helpful addition would be a summary section on dose-limiting recommendations, "who regulates what," and licensing. A unique feature is the provision for readers to request reprints from the author of any particular chapter. I checked this out and it really works!

There are some other surprises in store for you. In the chapter on endocrine procedures there is the statement: "CT appears to be the preferred initial procedure for primary aldosteronism, Cushing's syndrome and pheochromocytoma." It follows that in these endocrine syndromes, one uses the radioimmunoassay first and then follows up the abnormal values with CT as the initial noninvasive imaging procedure. In the chapter on the lung, there is an interesting discussion on pulmonary infarction and gallium scans. In the chapter on the central nervous system, there is little mention of brain death or the guidelines for this determination as proposed by the President's Commission (JAMA, 1981).

This particular book is slanted toward nuclear imaging procedures and cannot be expected to give equal attention to the multiple other imaging techniques as is done in some recent texts. Some readers will be disappointed at the brevity with which the other imaging modalities are discussed. There is also less attention to technology of nuclear medicine procedures than in some other standard works.

Certain areas, though brief, are particularly illuminating and should be singled out for credits: the discussions on osteomyelitis in the chapter on bone and joint imaging, of ventilation/perfusion (\dot{V}/\dot{Q}) scanning for pulmonary embolism, and of the treatment of hyperthyroidism. These should help orient the resident physician in training and will prove useful in any medical training program. It is a good review for candidates preparing for examinations that include the proper use of radionuclides. In fact, it is the most

compact, complete, and practical book on Nuclear Medicine currently available.

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STUDIES OF CELLULAR FUNCTION USING RADIOTRACERS. M.W. Billingham, L.G. Colombetti, Eds. Boca Raton, FL, CRC Press, 1982, 250 pp. U.S. \$74.50, Foreign, \$85.00

The use of radioisotopes to study biological systems has produced a wealth of information that could not have been obtained by other methods. The utilization of radiotracer techniques to study, and thus understand, the function of cells by tracing the localization and metabolism of labeled substrates is a refinement of this powerful general methodology. The recent trend in nuclear medicine to place greater emphasis on the application of basic biochemical and physiological principles is reflected by the publication of the CRC series on RADIOTRACERS IN BIOLOGY AND MEDICINE of which *Studies of Cellular Function Using Radiotracers* is a part. In appearance, this volume maintains the high standards that one has come to expect from the CRC press. Of course, manuscript preparation well in advance of publication is required and, as a consequence, especially in a rapidly changing field such as nuclear medicine, the resulting monograph may be somewhat out-of-date by the time it is published. To some degree it is true in this case.

Each of the nine chapters focuses on a particular anatomical area such as the brain, heart, bone, thyroid, etc., and is authored by an expert (or experts) in the subject covered. These chapters consist basically of a description of the major metabolic pathways involved in each area and how these pathways result in the observed metabolism and localization of the radiotracers used. While the general level of these discussions is high, the inevitable uneven treatment resulting from multiple authorship is occasionally apparent.

The first chapter is an excellent overview of the use of radiolabeled glucose and glucose analogs for the determination of cerebral glucose metabolism and is the most successful at fulfilling the promise of elucidating cellular function. After a brief but adequate description of the kinetics of glucose transport across the blood-brain barrier and of the Sokoloff [^{14}C]2-deoxyglucose method for the determination of regional glucose metabolic rates, the use of [^{18}F]2-fluoro-deoxyglucose (FDG) and positron computed tomography for the noninvasive determination of these rates in man is presented.

The most obvious result of the time interval between manuscript preparation and publication is the omission of the remarkable results obtained using FDG in human studies, as in the area of assessment of certain disease states and as an aid in understanding the stimulus-response capacity of the human brain. In addition, the tomographic images shown are among the first obtained using positron computed tomography and are quite primitive compared with those in the current literature. The references also reflect the time-lag problem—out of 36 citations only six are after 1977 and none are after 1979.

Chapter Two ostensibly deals with the mechanisms of local-