

Book Reviews

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Intravenous Anaesthetic Agents. BY JOHN W. DUNDEE. Edward Arnold Publishers, 1979. Distributed by Year Book Medical Publishers, Inc., Chicago, 1979. Pages: 160. Price: \$22.00.

This is a splendid little book of 12 chapters dealing with intravenous anesthesia and intravenous anesthetics. With the exception of four chapters written jointly with other authors, the material is written entirely by Dr. Dundee, and reflects his vast experience with intravenous agents gained over the past quarter of a century. Of particular interest to those of us outside of the United Kingdom are the brief, concise, current, and I believe wholly objective discussions of agents not available to use in America, such as Althesin[®], Etomidate[®], and Propanidid[®]. With respect to the latter agents, the pertinent literature is nicely summarized with a reasonably current bibliography, allowing interested students to pursue each of the subjects in greater depth than that in which they are presented.

The book is very clinically oriented; however, not to the extent that it can be characterized as "soft." Instead, those studies which would enable one to administer each of these agents in a rational way are quoted. Diagrams are few but appropriate and well presented. The text is clear, well written, not redundant, and appropriately brief. The author implies that this book is not meant as an all-inclusive exposition of pharmacology and physiology, characteristic of each of these agents, but rather is meant more as an update and a survey of current status of each of the agents presented.

I was especially attracted to several of the chapters. First is the chapter on hypersensitivity reactions, wherein a summary of reactions related to many intravenous agents is presented, and each of these reactions analyzed as to probable cause. It is especially noteworthy that a healthy degree of skepticism related to each of these reactions is demonstrated, and what emerges is that hypersensitivity reactions occur but are probably less frequent than actually reported. Second is a chapter on the ideal intravenous anesthetic. Dr. Dundee describes the physical properties, recovery characteristics, respiratory and cardiovascular effects, etc., that would characterize an ideal intravenous anesthetic. It is apparent that the ideal anesthetic is not yet here, and in fact is unlikely to be developed. The latter chapter is the final chapter in the book, and the only criticism that I have is that it might have been more appropriately placed at the beginning to serve as a reference against which the available agents could be presented.

In summary, I found the book easy and pleasant to read, informative, and current, and I recommend it as an addition to the library of anyone interested in or using intravenous agents.

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Mechanisms of Pain and Analgesic Compounds. Eleventh Miles International Symposium. EDITED BY ROLAND F. BEERS, JR., AND EDWARD G. BASSETT. New York, Raven Press, 1979. Pages: 496. Price: \$45.00.

The surge of new information concerning endogenous opioid compounds and stimulus-provoked analgesia has created a framework upon which chronic pain mechanisms and therapies, heretofore

somewhat mysterious, may be theoretically based. *Mechanisms of Pain and Analgesic Compounds*, which has captured the state of this renaissance, provides a valuable guide for researchers and interested clinicians.

The book is a series of invited papers in six sections. Sections A and B are clinical overviews and begin with the almost obligatory, still invaluable perspective of John Bonica. He restates the premise that "normal" segmental, suprasegmental, and cortical responses to subacute noxious stimuli become deleterious and self-sustaining, and lead to "pain behavior"—a major health and socioeconomic problem. Bonica reviews the evolution of the Melzack and Wall gate-control theory into the stimulus-provoked analgesia model, and reinforces the view that surgical interruption of peripheral or central pain pathways is usually temporary and often counterproductive. Several contributors review human neuroanatomic pathways subserving pain from cutaneous afferents to complex brain integration, with particular attention to the trigeminal system and dorsal horn, a major site of antinociceptive modulation. Cannon and Liebeskind describe the specific descending pathways that mediate such antinociceptive modulation, mainly via endorphin and enkephalin inhibitory synapses. The neurosurgical swing from ablative to augmentative procedures is described by Long, who reviews analgesic techniques by transcutaneous, epidural, and brain (periaqueductal gray, internal capsule) electrical stimulation. The roles of endorphins, enkephalins, naloxone, and acupuncture in the understanding of these stimulation analgesia modes are summarized by Chapman. Coupling theoretical views to clinical practice, Melzack and Dennis conclude that serial local anesthetic blocks (trigger points, sympathetic ganglia, etc.) can reduce nociceptive reverberative activity, which might otherwise lead to self-sustaining pain behavior. Surgical deafferentation (rhizotomy, neurectomy) may have contrary effects, according to work by Melzack and Loeser, in that spinal and brain nociceptive neurons surgically deprived of input may have chronic, spontaneous high-frequency electrical bursts. The behavioral approach to chronic pain therapy is presented by Fordyce, who observes that factors unrelated to nociception modify patients' pain behavior. He describes techniques of operant conditioning and biofeedback, which have become widely accepted therapies. That such pragmatic, behavioral techniques may be integrated within this book's context is a major feature of the chronic pain field's evolution.

Section C deals directly with biochemistry, pharmacology, and endocrinology of the endogenous opioids. Kosterlitz presents opioid-binding studies and discusses possible differential physiologic effects of various enkephalins and endorphins. Opioid synthesis, release, and metabolism, as well as the roles some other substances have on their activities, are reviewed by Hughes. The anatomic distribution of opioid neurons is surveyed by Watson and Barchas, and Akil presents evidence for distinct differing roles for endorphins and enkephalins in focal human brain-stimulation analgesia. Goldstein reviews physiologic opioid mechanisms and the question of naloxone hyperalgesia. Section D covers peripheral mechanisms of pain and analgesia, including inflammatory mediators, dental pain, and headache. Ferreira concludes that opioids (and drugs such as aspirin) have central as well as peripheral sites of action. Section E looks at molecular, cellular, and synaptic mechanisms of opioid/opiate tolerance and dependency. Collier cites data from neural tissue culture in which chronic opioid inhibition causes increased cyclic AMP levels and sensitivity to naloxone and excitatory neuro-

transmitters. Others implicate phosphodiesterase and prostaglandins in opioid habituation and withdrawal, and still others favor "opioid specific neuronal kindling." From work on myenteric neurons, North likens opiate/opioid withdrawal to denervation supersensitivity, observing that prolonged synaptic antagonism may induce trophic sensitization of postsynaptic agonist receptors. Section F concludes with preclinical data on new analgesic compounds developed with hope they may have less abuse potential.

Previous Miles Symposia have dealt with timely issues, including cell membrane receptors and recombinant molecules. This volume summarizes a decade of advances in basic and clinical understanding of chronic pain, mood, and habituation. The magnitude of the work and workers presented in *Mechanisms of Pain and Analgesic Compounds* should resist obsolescence and remain a milestone.

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Anesthesia and Neurosurgery. BY JAMES E. COTTRELL AND HERMAN TURNOFF. St. Louis, C. V. Mosby, 1980. Pages: 433. Price: \$47.50.

The book attempts to integrate current basic science knowledge of the neurosciences with an organized approach to clinical problems, with special emphasis on anesthetic and critical care problems. The text, which presumes that the reader has a basic knowledge of neurologic pathophysiology, is generally well written and illustrated. After reading it, the reader will have sufficient information to appreciate the important mechanisms relating to neuropathophysiology.

The book is written by many authors, some of whom are well known neuroscientists and clinicians from various medical subspecialties. As with any multi-author book, styles and manners of presentation vary considerably. This also leads to some repetition. An advantage of this format is that the text is up-to-date and well referenced.

The initial chapters are devoted to the physiology and pathophysiology of cerebral and spinal cord blood flow, metabolic requirements, cerebrospinal fluid mechanisms, and intracranial pressure. The next few chapters talk directly about anesthesia for patients with neurologic compromise. The chapter on neuroradiology presents to the anesthesiologist the needs of the radiologist, which, though often forgotten, can be as important as those of the neurosurgeon in management of the acutely ill patient. The subsequent chapters describe problems associated with the patient with severe head injury, including peripheral sequelae. The evaluation of coma and brain death are discussed. The chapter on barbiturate protection of the brain is an excellent review of a subject that is currently under extensive investigation. Sections on neurologic intensive care, induced hypotension, and mechanisms of injury of spinal cord trauma follow. The final chapter, describing the use of evoked potentials, a measurement that should find wider application in the future, is very good. Many chapters include some historical background that gives added insight into the subject matter. The book may be considered lacking in that it includes little about anesthetic procedures peculiar to pediatric neurosurgery or transphenoidal hypophysectomy, and nothing about the peri-anesthetic management of the patient with an acute or chronic spinal cord injury.

In conclusion, *Anesthesia and Neurosurgery* delivers a very good presentation of the basic neurosciences and its applications to clinical medicine, with particular emphasis on the problems encountered

by the anesthesiologist and intensivist who deals with neurologic disease processes. Despite some shortcomings that may be expected in any volume dealing with a rapidly expanding anesthetic subspecialty, the book can provide a good start for understanding neuropathophysiology and neuroanesthesia. Most clinicians and residents will benefit from reading it.

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Year Book of Anesthesia, 1979. EDITED BY JAMES E. ECKENHOFF, ALEX J. BART, EDWARD A. BRUNNER, H. STEELE HOLLEY, AND HARRY W. LINDE. Chicago, Year Book Medical Publishers, 1979. Pages: 351. Price: \$23.75.

Dr. Eckenhoff and his colleagues have again given us another fine edition in the *Year Book of Anesthesia* series. As in the past, the volume contains abstracts of articles published during the past year relevant to our specialty, plus brief editorial comments. In this reviewer's opinion, the editorial comments are the most appealing part of the book. They place each abstracted article in proper perspective, they are often witty, and they guide the reader to other articles on the subject. One may not always agree with the editor's views, yet their ability to stimulate interest is unsurpassed.

An important feature of the book is that it is not merely a review of articles that have appeared in major anesthesia journals; rather, it emphasizes material from non-anesthesia journals that we do not ordinarily read. By reading this book we can both supplement knowledge gained by reading our own journals and appear well-informed to our colleagues. There is nothing more embarrassing than to be approached by a surgeon or internist who cites an anesthesia-related article that was published in his specialty journal and with which you are totally unfamiliar. Reading the *Year Book* should diminish the likelihood of that's happening.

The book is divided into 22 sections covering individual areas of anesthesia, including, for example, physiology, techniques, complications, ICU, and obstetrics, although as might be expected, there is some overlap between sections. The first section, "The Informed Anesthesiologist," contains some highly interesting material, but is probably a misnomer, since the entire book should produce an "informed anesthesiologist."

The last section has 62 questions covering material in the book, with pages referenced as to where the answers can be found. This quiz can be an enjoyable way to test your reading comprehension and perhaps, assuming approval is obtained from the appropriate accrediting body, could make the book suitable for Category I CME credit.

If one wishes to find an anesthesia book that is informative, current, enjoyable, and inexpensive, the 1979 *Year Book* is an excellent choice.

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