

the clinical management of patients in intensive care units would undoubtedly require much additional and supplemental information.

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Principles of Clinical Electrocardiography. Ninth edition. BY M. J. GOLDMAN. LOS ALTOS, Lange Medical Publications, 1976. Pages: 412. Price: \$9.50.

Understanding of the electrical activity of the heart, as reflected in the electrocardiogram, is more and more a requirement for the competent anesthesiologist. It is demanded by changes in patient populations with increasing degenerative diseases, by increased knowledge and skills in surgery and anesthesia extending complicated surgical care to patients with heart disease, as well as by extension of anesthesiology care beyond just administration of anesthesia.

For those of us who have avoided electrocardiography for decades but can no longer do so, this new edition of Doctor Goldman's book is most welcome. Like earlier editions, it is offered as a basic, simplified introduction to the measurement and understanding of the electrical activity in the heart.

Beginning with the factors that generate the ECG, one is gently introduced to the vocabulary of electrocardiography and quickly led to normal variations in the ECG. With this foundation established, abnormalities of the heart and how cardiac abnormalities alter the display of electrical activity are considered. The author stresses that unipolar leads offer more logical understanding of the ECG. This wisdom is supported by an easy progression to vector analysis.

The practicing anesthesiologist will be most interested in disturbances of cardiac rhythm. Here, a clearer presentation of the role of electrolyte shifts in the generation and conduction of electrical impulses would be welcome.

The second half of this book will be of greatest assistance to the anesthesiologist. Chapter Nine deals with the recognition of conduction disturbances. Chapter Ten is devoted to myocardial ischemia. Both chapters discuss these cardiac abnormalities as established entities. The anesthesiologist must realize that such abnormalities may occur *de novo* during anesthesia, and that recognition of such changes may be difficult with usual cardioscopic monitoring. The best information will be obtained from an aV lead, if only one lead is to be monitored.

Chapters Twelve through Seventeen deal specifically with disturbances of cardiac rhythm, some mechanisms of such disturbances, and their recognition. This section is an improvement on earlier

editions. Consideration of a re-entry mechanism to explain some atrial tachyarrhythmias and discussions of the sick-sinus syndrome, bradycardia-tachycardia syndrome, and accelerated idioventricular rhythm are new. A valuable change is the expanded and updated discussion of electrical pacing and defibrillation.

The section on "Interpretation," a self-study section, is retained. The bibliography is adequate, though one would expect reference to more recent publications. The book is well-designed and clearly printed on paper of good quality with minimal typographic distractions. Illustrations are profuse and reproduced clearly.

This book is quite fundamental, even elementary. While it may not hold the interest of readers well versed in electrocardiography, it will be well received by those beginning a study of electrocardiography or those requiring a basic review of the subject.

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Understanding EEG: An Introduction to Electroencephalography. BY DONALD SCOTT. Philadelphia, Lippincott, 1975. Pages: 248. Price: \$16.00.

It would seem logical, from an anesthesiologist's point of view, that the EEG ought to: a) be able to tell us something about the nature of anesthesia as a neurophysiologic process, b) tell us how "deeply" our patients are anesthetized, c) give information regarding anesthetic toxicity, and d) aid in detection of intraoperative cerebral ischemia. Electroencephalography, which has been studied in relation to anesthesia since 1933 in many different ways, has not in fact proved very helpful to the clinical anesthesiologist. Exceptions to this occur when a particular toxic manifestation of an anesthetic agent happens to be seizure activity, and with electroencephalographic monitoring for the detection of cerebral ischemia, especially during such procedures as carotid endarterectomy. Doctor Scott devotes only seven pages (of 213) to the subject of the relationship between the EEG and anesthesia. Further, and most distressing, this chapter (Chapter 12) is superficial at best, misleading at worst. Also, considerable space is devoted to the description of a device optimistically (and euphemistically named the "cerebral function monitor," which heavily filters a single EEG channel and displays it at a very slow paper speed. The device is discussed as if it had become a generally accepted intraoperative monitor (it is not in wide use, at least in this country).

There are, to be sure, other chapters of interest to anesthesiologists. The chapter describing their

normal electroencephalogram is cohesive and well written and delves successfully into the problems regarding artifacts, which are encountered with great frequency in electroencephalography. It also explains the way in which electrode locations are chosen and the ability of the electroencephalographer by the use of such techniques as phase reversal to localize cerebral tumors and other abnormalities. There is also an excellent chapter on the nature of the electroencephalogram during sleep. There is a reasonable discussion of the role of the electroencephalographer in the determination of brain death, and the proper emphasis is given to the fact that deep barbiturate overdose can produce an isoelectric EEG. Some time is also devoted to more futuristic EEG techniques, such as spectral analysis, telemetry, and biofeedback. The illustrations are adequate, and the bibliography is extensive.

The author states in his preface that he has written a book for the senior medical student encountering EEG for the first time. I agree. He also states that he has intended it for a "variety of postgraduates" studying for all sorts of further qualifications, including anesthesiologists. If indeed the author, a psychiatrist by training, intended to interest an anesthesiologist or two in EEG and its potential usefulness in the operating room, he has probably not succeeded, although the book would certainly be a basic text for those already directly concerned with electroencephalography.

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The Lung in the Critically Ill Patient. Pathophysiology and Therapy of Acute Respiratory Failure. EDITED BY W. C. SHOEMAKER. Baltimore, Williams and Wilkins, 1976. Pages: 129. Price: \$9.50.

The socioeconomic effects of acute respiratory failure (ARF) in critically ill patients have led to a multidisciplinary interest in the etiology, pathophysiology and therapy of this disease. The Society of Critical Care Medicine has emphasized the importance of pulmonary dysfunction in critically ill patients at each of its annual meetings and in nearly every issue of its journal. Dr. Shoemaker's goal was to provide the reader with a convenient reference source for articles concerning pulmonary function that were published in the journal *Critical Care Medicine* in 1973 and 1974.

The monograph consists of 17 articles written by recognized authorities representing the specialties of surgery, medicine, pediatrics, neonatology, anesthesiology and pathology. There was understandable difficulty in organizing the monograph in a cohesive form. Yet the entire spectrum of acute respiratory failure (including etiology, pathophysiology, diagnostic considerations, clinical manage-

ment and evaluation of therapy for adult and infantile respiratory failure) is covered at least partially and is well indexed. The text is directed towards those interested in critical care medicine and individuals without background in respiratory care or without prior knowledge of etiologic and pathophysiologic processes in the patient with ARF may find the monograph difficult to comprehend.

Several articles either are poorly referenced or consist mainly of authoritative opinion or describe the author's general routine of patient management. Also, this book lacks detailed description of the management of patients with severe ARF. None of the authors describes monitoring devices and their use, specific criteria for applying and discontinuing positive end-expiratory pressure (PEEP), management of routine complications, or other details of interest to the physician caring for the critically ill patient. Also lacking is a discussion of some of the recent innovations in respiratory therapy. Only briefly mentioned, if at all, are intermittent mandatory ventilation (IMV), high-level PEEP (more than 20 cm H₂O), PEEP and CPAP for spontaneous breathing adult patients, and newer monitoring techniques such as the use of the flow-directed pulmonary-artery catheter. Many of these techniques undoubtedly were unavailable at the time of original writing.

Several articles are outstanding and deserve special mention. Dr. John West's description of Dr. Peter Wagner's complex technique for quantifying ventilation-perfusion ratios throughout the entire lung using intravenously injected gases of various solubilities is lucid and exciting. No other diagnostic technique promises to give the therapist as exact or as significant information as this one does. Hopefully, the technique will become available to other investigators. Dr. Lindholm's description of the use of fiberoptic bronchoscopy in critically ill patients requiring continuous mechanical ventilatory support is also very well done. He defines his patient population, the technique used, results, and complications in a clear and unbiased fashion. The article leaves little doubt that there are indications for using fiberoptic bronchoscopy in some mechanically ventilated patients. The discussion by Drs. Wilson and Pontoppidan on the pathophysiology, diagnosis, and management of patients with ARF is as complete and well referenced (11 references) an article as any currently available and is a fitting summary to the monograph.

The text is impressive in the extent of its coverage. However, it also emphasizes the major gaps that exist in our knowledge of all phases of ARF. For those with an interest in the management of critically ill patients but without ready access to *Critical Care Medicine*, this monograph will be an invaluable addition to their libraries.

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