Book Reviews

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Manual of Pulmonary Function Testing. By Gregg Ruppel. St. Louis, C. V. Mosby, 1979. Pages; 162. Price: $9.95.

The author's stated intention is to present a concise explanation of the commonly used pulmonary function tests, the testing techniques, and the significance of each test in regard to generalized disease processes. He has successfully achieved most of these goals.

This manual is intended to be a handy reference for technicians and physicians who want to learn pulmonary function testing.

The book is divided into eight chapters that cover most of the commonly used pulmonary function tests. The presentation of the material presumes that the reader has a basic knowledge of the pulmonary anatomy and physiology. The text of each chapter is easy to read, adequately illustrated, and well referenced.

Each test is described under three subheadings: description, technique, and significance. The description gives a brief definition of the test. The technique section is sufficient to familiarize a beginner with the tests but is inadequate for him to carry out tests without further instructions. The significance section deals with the application of the test in regard to the disease process, although an adequate physiologic explanation of the abnormal test is lacking.

The last chapter deals with the equipment used in the pulmonary function laboratory and describes different types of spirometers, pneumotachs, gas analyzers, plethysmographs, and various other recording devices. This information is not always available from the standard respiratory physiology textbooks and may be useful to the physician planning to set up a pulmonary function laboratory. The appendix includes some useful information, such as prediction regressions for most of the pulmonary function tests, and also references and some of the commonly used equations.

This book will be most useful to technicians, respiratory therapists, and physicians who wish a basic introduction to pulmonary function testing. The book may also be useful to those individuals who wish to set up a pulmonary function laboratory. One must realize that this book is not a substitute for a standard pulmonary physiology textbook; however, a copy of this book should be a useful reference in most pulmonary function laboratories.

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Principles of Clinical Electrocardiography. Tenth edition. By M. J. Goldman. Los Altos, Lange Medical Publications, 1979. Pages 415. Price: $12.00.

The popularity of this book is evident from the number of editions that have appeared since the first one in 1956. The author's purpose, to present the basic concepts of electrocardiography and their clinical applications, is achieved in a straightforward and comprehensive, but not exhaustive, treatment of the subject. As with former editions, emphasis is placed on the unipolar (augmented extremity, precordial, and esophageal) leads. This approach is particularly useful in understanding resultant normal and abnormal electrocardiographic patterns and provides the logical introduction to vector analysis. Revisions have been made in the sections related to exercise tests and the preexcitation syndromes.

The first four chapters deal with basic cardiac electrophysiology in a sufficiently detailed, but not overly complex, manner. Unfortunately, no mention is made in chapter 2 ("Electrophysiology of the Heart") of calcium-dependent, slow-channel depolarization, also referred to as the slow response. The slow response is responsible for the plateau phase of the action potential seen in atrial and ventricular muscle and Purkinje fibers and for the more rounded action potential contour of pacemaker cells found within the SA and AV nodes. The slow response is thought to be important for the genesis of arrhythmias due to reentry of excitation and has been implicated as partially responsible for triggered arrhythmias resulting from oscillatory afterpotentials. Indeed, specific slow-channel blocking drugs (verapamil, D-600) have been shown to be effective antiarrhythmic agents.

Chapters 5 through 11 deal with normal and abnormal electrocardiographic patterns. They are practical, well written, and well illustrated, and are "must" reading for practitioners with limited experience in reading ECGs, especially those who do not have the readily available services of a cardiologist to interpret ECGs in urgent or emergent situations. As the author repeatedly points out, "The ECG must always be interpreted in conjunction with the clinical findings." Presumably, the anesthesiologist is well acquainted with those. The author goes on to say, "In general, the person best qualified to interpret the ECG is the physician caring for the patient." Thus, chapters 5 through 11 are an important prerequisite to understanding ischemia and infarction patterns and arrhythmias discussed in later chapters.

Chapters 10 and 11, which deal with ECG patterns in myocardial ischemia and infarction, will be particularly helpful for anesthesiologists, since we are increasingly faced with providing care for patients with underlying coronary artery disease. These chapters are well organized and well illustrated.

Chapters 12 through 15, which deal with arrhythmias, A-V conduction block and preexcitation syndromes, will be of the most interest to anesthesiologists. Some deficiencies are apparent. Tables 12-1 and 12-3, which summarize antiarrhythmic drug action, should have included bretylium tosylate and disopyramide, antiarrhythmic drugs recently approved by the FDA for clinical use. In addition, a table summarizing principal indications for the different antiarrhythmic drugs should have been provided. The author's discussion of the sick-sinus syndrome (p 219) should be expanded. Additional illustrations, as well as a more detailed discussion of the current medical management, are warranted. I point this out for two reasons; 1) the sick-sinus syndrome is today probably the most common indication for instituting pacemaker therapy, and 2) drugs used in anesthetic practice have incompletely understood and potentially dangerous effects in patients with this syndrome, particularly those with bradycardia alternating with periods of tachycardia (bradycardia–tachycardia syndrome).

Chapters 13 ("Disturbances of Atrioventricular Conduction") and 14 ("The Ventricular Arrhythmias") are good. In the discussion related to atrioventricular dissociation (pp 214–215) in chapter 15 ("The Pararrhythmias"), the distinction between A-V block and A-V dissociation could have been made more clear. A-V dissociation is not an uncommon arrhythmia, although the author suggests that it is. A-V dissociation is frequently seen in the operating room, even in healthy patients, when potent inhalational agents are used as primary anesthetics. The loss of the normal atrial contribution to ventricular filling may lead to significant reductions in cardiac output. Whereas the electrocardiographic patterns of preexcitation syndromes (chapter 16) are of no clinical significance in themselves, the recognition of them is, since individuals with these patterns are prone to paroxysmal attacks of supraventricular tachycardia. Such attacks may occur during anesthesia, although cause-and-effect relationships are unknown at present.