BOOK REVIEWS


The monograph reports the author's experience with the carbon monoxide single breath method for measuring pulmonary diffusing capacity, "permeability k," diffusing capacity of the alveolar capillary membrane, and pulmonary capillary blood volume. The results are discussed and compared with the ventilatory and hemodynamic parameters.

The first chapter studies the theoretical bases of the method, describes the equipment, the experimental procedure, and the calculations; a study of the validity of the method is included.

Measurements have been made in 100 normal subjects: pulmonary diffusing capacity (DL), diffusing capacity of the capillary membrane (DM), and volume of blood in pulmonary capillaries (Qc) are shown to vary as a direct function of the morphological characteristics whereas permeability k varies as an inverse function of them. The reasons for this difference are discussed. The first three parameters show a significant decrease with age in adults whereas permeability k decreases with age for all subjects, including children. Regression equations giving normal values in function of body surface and age are established.

The adaptation of the functional characteristics of the pulmonary capillary network to the increase in pulmonary flow are studied in three particular conditions: in physical exercise in normal subjects, in congenital heart disease with left-to-right shunt, and after pneumonectomy. The diffusing capacity and its components increase in those conditions, and this increase seems to be dependent on the magnitude of pulmonary flow.

One chapter is devoted to the study of the consequences of the diffusion characteristics and of the capillary volume of an increase in precapillary resistances, as in pulmonary hypertension, and of an increase in postcapillary resistances, as in mitral stenosis. In the first group, results are not significantly different from those obtained from normal subjects, but results are lower in subjects with left-to-right shunts with pulmonary hypertension than in subjects with such shunts and no pulmonary hypertension. In the second group, the diffusing characteristics are lowered, but capillary blood volume is increased, and these variations seem to be dependent on the capillary pressure.

Finally, results of measurements in chronic lung diseases of various types of etiology are reported.

A last chapter studies the consequences of diffusion disturbances and of variations of the pulmonary capillary blood volume on oxygen saturation of arterial blood. It appears that, during exercise, arterial desaturation can be easily explained in pathologic conditions where values of DM and Qc are low. At rest, however, occurrence of arterial anoxemia as a consequence of isolated disturbances of the alveolar capillary diffusion can be questioned.

GABRIEL G. NAHAS, M.D.


This interesting new book represents the accumulated experience of Lino Rossi's studies of the conduction system of the heart. In addition to excellent examinations of the sinus node, atrioventricular node, His bundle and its branches, there are numerous examples of cardiac neuropathology, long a special concern of Rossi's, and a subject to which he has made notable contributions. The book is organized in two major parts, the first dealing with developmental and aging changes in general, and the second with clinicopathologic correlations in 83 human examples of abnormal formation or conduction of the cardiac impulse. The second part includes many electrocardiograms. The illustrations in such a book are one of its most important features, and the ones here are with few exceptions of excellent quality. There are a few pictures in color, including two superb ones which are reproduced on the dust cover of the bound volume (they also appear in the text). The 21 pages of references
include many important papers from the European literature, some of which have not received the attention they deserve in the United States.

Dr. Rossi is an original and independent thinker who has developed his concepts about the electrical activity of the heart on the basis of many years of careful studies. He believes that pathologic changes in the neural structures of the heart, particularly those elements near the conduction system, play a larger role in the pathogenesis of cardiac electrical disturbances than is generally thought, and he presents histologic evidence to support this concept. There is no question that cardiac neuropathology is a much neglected field of great importance, and Rossi's pioneering efforts in the subject have been a major contribution. Concerning A-V block, he reports that only 45% of cases were found to be due to lesions in the two bundle branches, which may surprise some; but Rossi presents clear evidence of appropriately located lesions above the level of the bundle branches to support this point.

There are numerous grammatical inaccuracies, but none of these is sufficient to obscure the intended meaning; in fact, they lend an element of charming originality. It would have been helpful to know more clinical details in a longitudinal sense concerning many of the examples of arrhythmias; for example, histopathology of the sinus node may have different significance depending on whether the observed atrial arrhythmia was a brief single bout or a sustained or permanent clinical problem. Other minor criticisms may be made, but none can detract from the obvious value of this welcome book. From the presented illustrations and discussion, as well as from Rossi's other published works, one can instantly appreciate that this man knows his field. In view of the great current interest on the clinical importance of cardiac arrhythmias, this timely book stands as a major contribution to our understanding of their pathogenesis.

THOMAS N. JAMES, M.D.


It is refreshing to find a light-weight and easily read text on pediatric cardiology among the profusion of large and heavy reference works on this subject. The authors' purposes in writing a handbook on pediatric cardiology were to present the basic fundamentals of this field and to describe the features of the common cardiac anomalies. In this brief introductory text, little comment was to be made on rare conditions; yet the authors desired to emphasize their own particular interests. Although these are diffuse and in some instances, contradictory goals, the authors have done their best to cover their subject in a limited number of pages.

The initial portion of the book deals with general considerations: anatomy, embryology, genetics, hemodynamics, physical examination, electrocardiography, vectorcardiography, roentgenology, congestive cardiac failure, and cardiac catheterization. In the second section, 15 chapters are concerned with the major congenital cardiac malformations, and five chapters with acquired problems such as rheumatic fever, bacterial endocarditis, brain abscess, and neurologic and metabolic disorders with cardiac features.

The chapters regarding specific cardiac anomalies clearly present the important features of the malformations and give information which permits not only recognition of the anomaly but also identification of its severity. The essentials of the conditions are presented in a fashion that allows an understanding of the management of the anomalies. Vectorcardiology is superbly described. A lucid presentation of this complicated subject is found which should aid the neophyte in understanding both electrocardiography and vectorcardiography. The roentgenologic examination of the heart is excellently presented with strong emphasis on correlation with topographic anatomy. Throughout, the book is readable, has excellent illustrations and tables, and in places shows the authors' sense of humor.

In writing any handbook authors face an inevitable tug-of-war between clarity and brevity. In addition, it is difficult in such a book to distill the essence of the subject, but yet to present the important factual material. The authors have tread these narrow paths carefully. One problem found in books on pediatric cardiology is the failure to provide effectively a comprehensive means and an approach to the evaluation of the child with a cardiac problem. This remains a formidable task.

The Handbook of Pediatric Cardiology was written for medical students, house officers, and practitioners.

JAMES H. MOLLER, M.D.
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Circulation. 1969;40:597-598
doi: 10.1161/01.CIR.40.4.597

Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 75231
Copyright © 1969 American Heart Association, Inc. All rights reserved.
Print ISSN: 0009-7322. Online ISSN: 1524-4539

The online version of this article, along with updated information and services, is located on the World Wide Web at:
http://circ.ahajournals.org/content/40/4/597.citation

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