Books review

Clinical electrocardiography. A textbook

Edited by Bayés de Luna A, Fiol-Sala M, Bayés-Genís A, and Baranchuk A. Wiley, United States; 2021. ISBN: 9781119536451

Since its beginnings, body surface recording of voltage variations produced by cardiac activity has proven to be increasingly useful in clinical practice. Today, electrocardiography (ECG) is used in almost all fields of medicine, and a number of related applications have been developed to be used with the standard 12-lead ECG. These include various modalities of continuous electrocardiographic monitoring (with the recent inclusion of electronic devices and cell phones), vectorcardiography, heart rate variability analyses, signal averaging, body surface mapping, and high-resolution electrocardiography. Advances have also been made in automated interpretation and large-scale processing of ECG information, due to progress made in computational science, artificial intelligence, and deep-learning techniques, advances that may indicate where personalized medicine is headed. Electrical cardiac activity monitoring has a past characterized by success and progress, a present defined by its usefulness in daily medical practice, and a future in which the technology will be further improved by enhancements in the recording and analysis of tracings.

The success of standard ECG is largely due to the accessibility and availability of the technique, the standardization of normality and abnormality criteria, and the close correlation between altered patterns and underlying disease with acceptable sensitivity and specificity values, which helps achieve accurate diagnoses, assess risks, make therapeutic decisions, and take adequate preventive measures. All of this must be accompanied by knowledge transfer, ie, through a process focused on learning how to perform and interpret ECGs to thus acquire skills and competency to recognize urgent situations, whether common or rare. This process can take place in various settings: the medical and nursing academic curricula include the material, and there are numerous opportunities to expand or refresh those skills after graduation, in parallel with daily activities that build on the skills acquired.

Regardless of how electrocardiography proficiency is achieved, it is essential to have appropriate educational materials to gain further knowledge of the basic principles of the technique, to recognize normal patterns, and to identify abnormal patterns and establish their relationship with the most relevant diseases, including those that are uncommon. In view of these goals, it is certainly a pleasure to welcome the new edition of the book entitled *Clinical Electrocardiography*, authored by Antoni Bayés de Luna, Miquel Fiol-Sala, Antoni Bayés-Genís, and Adrian Baranchuk and published by Wiley-Blackwell. The textbook includes a preface from the authors and prologues by Marcelo V. Elizari and by Pedro Brugada and is divided into 5 sections, each with several topic-specific chapters. Following the introduction to electrocardiography, sections 2 and 3 focus on normal and abnormal ECG patterns, section 4 discusses types of arrhythmia, and section 5 discusses the clinical usefulness of electrocardiography. The chapters of this last section also discuss the diagnostic value of ECGs, situations related to ischemic heart disease, hereditary heart disease, and other heart conditions and illnesses, as well as various electrocardiographic patterns indicating additional risk, the limitations of the technique, and finally, thoughts on the role of electrocardiography in the 21st century.

The process of gaining skill in interpreting ECGs requires analyzing tracings for a wide variety of diagnoses and placing them in their clinical context, as well as becoming familiar with mechanisms involved in their onset. *Clinical Electrocardiography* delves into these issues and is another accomplishment in the long scientific career of Prof. Antonio Bayés de Luna who, since his earliest professional years, has exhibited his interest and expertise in providing useful tools to learn cardiology overall and electrocardiography in particular. Later editions (1987, 1993, 1998, 2012, plus the current text) have included a carefully curated selection of ECGs, and this new publication by Prof. Bayés de Luna and his coauthors and collaborators includes recent contributions from cardiovascular research to help broaden readers' understanding of the pathophysiology involved in the appearance of the characteristic patterns of conditions such as ischemic heart disease, cardiac rhythm disorders, and channelopathies, among others. The authors participate in the process by undertaking the periodic revisions and updates required for any diagnostic technique, a process that includes both new concepts and related terminology. The textbook reviews the contributions of the latest basic and clinical research and discusses information provided by biomarkers, coronary angiography, and cardiac magnetic resonance imaging, making it possible to more readily characterize the processes involved in the appearance of abnormal electrocardiographic patterns, eg, the true location of damaged or ischemic myocardium in the context of ischemic heart disease or the underlying causes implicated in the development of certain types of arrhythmia.

In summary, *Clinical Electrocardiography* takes a rigorous, comprehensive approach as it discusses the fundamental issues that should be included in a treatise on electrocardiography: *a)* it adds typical tracings, allowing normal and abnormal patterns to be distinguished and making it easier to recognize pathologic recordings; *b)* it offers precise, up-to-date explanations of the mechanisms involved, and *c)* it encourages and fosters interest in achieving further progress in professionals' understanding of the technique and its clinical applications. These aspects are achieved as a result of the scientific background of its authors and their valuable contributions to cardiology. Consequently, this volume with its prologues will give the reader an opportunity to discover this engaging field of proven worth in clinical practice and to ensure better insight into cardiac pathophysiology.

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