

Harold L. Brooks

A white ECG waveform is visible on the left side of the cover, extending horizontally across the top half of the page.

Electrocardiography:

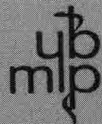
100

DIAGNOSTIC CRITERIA



Electrocardiography: 100 Diagnostic Criteria

Harold L. Brooks, M.D.



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Electrocardiography: 100 Diagnostic Criteria

To the Chief Residents, House Officers, and Medical Students of the Medical College of Wisconsin whose searching inquiries and recurring critique inspired this work, and who have repeatedly honored us with the “Best Teaching Service Award”

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PREFACE

Knowledge is power. The physician or other health professional with well developed skills in interpreting basic clinical data such as the ECG and chest x-ray has a distinct advantage over the one who must depend upon the “super specialist” to make that interpretation for him.

Electrocardiography is similar to other clinical tools in that a diagnosis is based upon a set of criteria. Several ECG criteria have been developed during the past many decades since Einthoven began using the string galvanometer to record the cardiogram. Some ECG diagnoses are straightforward, concise, and have a high predictive accuracy whereas others (e.g., left ventricular hypertrophy) have less accuracy, more qualifiers, and more criteria—even two or three sets of criteria. Nonetheless, it is important to take the initial step in the learning pro-

cess to master the established basic criteria of each ECG diagnosis.

The computer can now make a “diagnosis” in many cases with approximately 50 to 60% accuracy by applying some of these specific criteria in a logical sequence. On the other hand, when 50 ECG tracings are reviewed by a dozen internationally recognized ECG experts, there is rarely 100% agreement. The objective of the house officer or other trainee is to move upward within this spectrum.

We have put together a set of diagnostic criteria for the 100 most important ECG interpretations in general clinical use. The list is derived and modified from the recommendation of the American College of Cardiology’s Committee on Electrocardiography as representing a basic core of knowledge for the physician. The diagnostic criteria

laid down herein constitute the consensus of several authorities. We have omitted complex and controversial ECG interpretations and diagnostic criteria where possible. This book is designed as a guide to *begin* the mastery of the ECG. *It is not intended to be an “official” set of criteria.* Expert international committees have discussed setting forth an official set of criteria for all major ECG diagnoses, but have always stopped short of doing so—no doubt due in part to difficulties in reaching consensus.

The book is organized into three parts. Part I contains the basic elements necessary to understand clinical electrocardiology. Part II presents the 100 ECG interpretations and gives a brief summary of description, mechanism, causes, and the basic diagnostic criteria in concise format. Part III presents some

clinical correlations designed to help make the important step between an ECG interpretation and the patient's clinical diagnosis and gives pointers in helping make the transition between laboratory data and assessment of the patient.

I have been assisted in each chapter by members of our Cardiology Division who have been selected

because of their special interest in the ECG as well as their proven talents in the art of teaching residents and students. (Several have received "Best Teaching Awards" by the residents and medical students in recent years, and the Cardiology Division has been voted the "Best Teaching Service" in 6 of the past 9 years.)

A primary goal of this work is a concise presentation while at the same time maintaining accuracy. In the final analysis, as all good students come to realize, the patient's ultimate diagnosis will rest upon a *profile* of data rather than a single test.

HAROLD L. BROOKS, M.D.

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HAROLD L. BROOKS, M.D.

A NOTE OF EXPLANATION ABOUT THE ECG FORMATS

Each diagnosis appears in a two-page format, with both pages visible when the book is lying open-face. One page contains a concise summary of the Description, Mechanism, usual Causes of the Condition, and a list of the important Diagnostic Criteria. The facing page shows a representative ECG illustrating the findings. The diagnostic criteria are keyed to the ECG illustration using arrows which point out the exact abnormality on the tracing.

STANDARD FORMATS

These formats present either the 12 standard ECG leads (example: ECG 1) or a two or three lead rhythm strip (example: ECG 7). Most of the ECGs in this book use these formats.

CGR FORMATS

This Computer Graphic Record (CGR) presents a single, signal-averaged ECG complex from each of the 12 leads. There are two formats: 12 lead with rhythm strip (example: ECG 49); 12 lead sequential comparison (example: ECG 39).

INTERVALS APPEAR ON ECGS WHERE APPROPRIATE:

- Ventricular Rate in Beats/Min
- P-R Interval in Milliseconds (ms)
- QRS Duration in Milliseconds
- Corrected QT Interval (QTc), ms
- Mean Axes of P, QRS, and T, in degrees

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