
19. ELECTROCARDIOGRAPHIC BODY SURFACE POTENTIAL MAPS OF THE QRS AND T OF NORMAL CHILDREN—QUALITATIVE DESCRIPTION AND SELECTED QUANTITATIONS

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A normal data base of electrocardiographic body surface potential maps (BSPM) has yet to be obtained, in either adults or children. Taccardi's [1, 2] studies, mainly in adults, include a small but unknown number of children. Spach [3, 4] has published data on a total of 23 normal children, ages 4 to 14 years, while Tazawa and Yoshimoto [5] have reported upon a small number of normal infants.

We have recently published detailed qualitative data from the QRS of 40 normal children using a newly developed 180-electrode system, with the 180 dry electrodes enclosed in an easily applied vest and with the display in color [6]. Attempts were made to correlate the qualitative observations with the underlying cardiac electrical events, based upon various published

results. These included the activation data of perfused human hearts obtained by Durrer [7], simultaneous records of body surface and epicardial potentials in the chimpanzee obtained by Spach and his group [8], and the Miller-Geselowitz forward simulation [9]. The chimpanzee's chest geometry resembles the human, and the Miller-Geselowitz forward simulation utilized realistic heart and torso geometries. The latter data also utilized source configurations based on measured excitation sequences and cellular action potentials. Distinctive patterns of the BSPM during the QRS of the 40 children were identifiable, but considerable variations in the normal QRS were evident, not predictable from the standard 12 lead ECG or the Frank system orthogonal ECG.

We have more recently presented selected quantifications of the body surface potentials of the QRS and T of 39 of the above 40 children [10]. It is the firm belief of the authors that proper interpretation of normal and abnormal electrocardiographic data is not possible without quantification [11, 12].

This chapter presents both qualitative and

All of the figures in chapter 19 are color figures, and they appear in the color section in the middle of this book. Supported by National Heart, Lung and Blood Institute, National Institutes of Health Grant #HL 17931. Liebman, J., Plonsey, R., and Rudy, Y. (eds.), *Pediatric and Fundamental Electrocardiography*. Copyright © 1987. Martinus Nijhoff Publishing. All rights reserved.

Electrocardiographic Studies In Normal Infants And Children

JG Myers



Electrocardiographic Studies In Normal Infants And Children:

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In a world defined by information and interconnectivity, the enchanting power of words has acquired unparalleled significance. Their capability to kindle emotions, provoke contemplation, and ignite transformative change is truly awe-inspiring. Enter the realm of "**Electrocardiographic Studies In Normal Infants And Children**," a mesmerizing literary masterpiece penned by way of a distinguished author, guiding readers on a profound journey to unravel the secrets and potential hidden within every word. In this critique, we shall delve to the book is central themes, examine its distinctive writing style, and assess its profound affect the souls of its readers.

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