Mauricio B. Rosenbaum... the Last of the All-Round Electrocardiographers

On 4 May 2003, close to his 82nd birthday, Mauricio Rosenbaum passed away in Buenos Aires (Figure 1). Admired, respected, and beloved both in and outside Argentina, the world-wide cardiology community is in mourning after the loss of the last of a breed of electrocardiologists. Loving quality more than quantity, Rosenbaum leaves behind a legacy full of originality, intellectual elaboration, and self-criticism. “Like good wines, some research improves after resting for a while,” wrote Rosenbaum in the preface to his book on hemiblocks.1 In the latter book, published in 1968, Rosenbaum introduced a new paradigm in the field of intraventricular conduction defects without having previously published a single article on the subject.

Also like the very fine wine cellars, Rosenbaum produced during his life only a limited number of bottles, each of them memorable. Narrow ventricular extrasystoles, bidirectional ventricular tachycardia, phase 3 and phase 4 blocks, predivisional and fascicular left bundle branchblocks, concealed parasystole, and cardiac memory, along with hemiblocks, are mere samples of the exceptional vintages of the «Rosenbaum cellar.»

Born in Carlos Casares, in the province of Buenos
unfailingly identify any fragment of symphonic music
congress, «Don Mauricio» related how his uncle could
mission to a concert we attended during a scientific
inherited a love for symphonic music. During the inter-
Cordoba in Argentina’s Nueva Andalucia region. He
Aires, he studied medicine at the University of
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Rev Esp Cardiol 2002;56(10):1029-32
Fig. 1.

Aires, he studied medicine at the University of
had a fundamental interest in classical elec-
trocardiography, the electrocardiography introduced by
Einthoven, which Thomas Lewis successfully brought to
the bedside over a twenty year period until his divorce
from the galvanometer in 1926. Thirty years later, using a
two-channel electrocardiographic machine that many peo-
tle thought «had one channel too many,» Rosenbaum res-
cued the electrocardiogram from the lethargy into which it
had sunk after Lewis’ desertion of electrocardiology.
The way in which hemiblocks were discovered reflects
what I call the «Rosenbaum method.» It all began in
1950, at the bedside of a patient whose electrocardiogram
the young Mauricio Rosenbaum, aged 29 at that time,
was unable to explain. The patient, a man who had suffe-
red an anterior myocardial infarction with a right bundle
branch block, had some electrocardiographic recordings
during sinus rhythm showing a left axis deviation at \( -75^\circ \)
while in others the axis was deviated to the right at
\( +110^\circ \). Rosenbaum’s reasoning was simple: since the pa-
ient had a right bundle branch block, it was obvious that
the supraventricular impulses could follow two pathways
in the left ventricle, one producing a left axis deviation,
and the other a right axis deviation. The problem was
how to elucidate the two left ventricular conduction path-
ways. Rosenbaum started to speculate and his initial ex-
planation was that the observed phenomenon could be
due to the presence of paraspecific fibers as those descri-
bred by Ivan Mahaim in the 1940’s. He gave no further
thought to the matter, but in 1954, 1955, and 1963 he le-
aned of three more cases, all similar to his original pa-
ient. This led Rosenbaum to delve more deeply into the
anatomy of the intraventricular conduction system: «soon
after reviewing the literature and performing observa-
tions of our own, we found that the left bundle branch in-
variably had two major divisions.» Thus it was how
Mauricio and his young, enthusiastic, coworkers discover-
ed hemiblocks. The discovery, initially based on mere
speculation, led to an active search for new cases, to a
systematic study of the anatomy of the conduction sys-
tem in various animals and in humans, and to the experi-
mental production of hemiblocks. In addition, it opened
the way for the clinical characterization of trifascicular,
bifascicular and monofascicular (hemiblocks) blocks, the
study of predivisional and peripheral left bundle branch
block, aberrant conduction, the site of origin of ventricu-
lar extrasystoles, the mechanism of bidirectional ventri-
cular tachycardia, and that of blocks complicating myo-
cardial infarction. All this is described in a 742-page
monograph published by Rosenbaum and his young pu-
pils, Elizari and Lazzari, initially in Spanish in 1968, and
then in English two years later.¹

Rosenbaum has passed away, but the concepts he intro-
duced in the field of electrocardiology are bound to stay.
It will be harder to keep alive the flame of his spirit and
pretations to encourage exploration of related areas of
investigation»…«not only to educate the reader but also
to encourage and challenge him.»³

Rosenbaum was a brilliant speaker and a delightful
conversationist either in Spanish or in English, with his
typical Argentine accent in both languages. As a well-
bred Argentinian, his dislike of fish, his passion for soc-
cer, and his fascination for intellectual speculation were
typical. This latter issue deserves closer consideration.
«There is a definite tendency in scientific research to
overestimate the value of facts as compared to ideas,»
rode Rosenbaum at the end of his chapter on phase 3
and phase 4 blocks in the book entitled The conduction
system of the heart, edited by Wellens, Lie, and Janse
and published in 1976.² At that time, Rosenbaum com-
plained of the policy of many journals accepting articles
full of data but short of ideas, while rejecting some works
with excellent ideas when data were scanty. Being a keen
observer, he was able to identify what he could not inter-
pret, a process that led him to search for ideas that might
explain the unexplainable. In these endeavors Rosenbaum
found the deep intellectual satisfaction that kept him active even beyond retirement. Through in-
tellectual speculation he fixed his gaze on new horizons
which he explored with an unparalleled rigor.
Accordingly, in the preface to his book Frontiers of car-
diac electrophysiology, he urged the authors contributing
to the different chapters «to be speculative in their inter-


In Memoriam
In Memoriam

his approach to discovery and research. Observation, curiosity and rebellion against the inexplicable, the quest for information, a resolute personality, speculation on the possible and the probable, a catching enthusiasm, a natural and tireless perseverance…all this and much more constitutes the Rosenbaum spirit, that his friends will praise for ever, and that his pupils are called upon to maintain.

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REFERENCES