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JAMES B. HERRICK AND HIS UNFORGETTABLE LEGACY

JAMES B. HERRICK Y SU INOLVIDABLE LEGADO

Arnaldo Rodríguez León[1], MD, MSc; Francisco L. Moreno-Martínez[2], MD; and Yurima Hernández de la Rosa[3], MSc.

1. First and Second Degree Specialist in Cardiology. Master in Physical Activity in the Community. Diploma Course in Cardiac Pacing and Electrophysiology. Assistant Professor. Dr. Celestino Hernández Robau University Hospital. Villa Clara, Cuba.
2. First and Second Degree Specialist in Cardiology. Master in Medical Emergencies. Assistant Professor. Hemodynamics and Interventional Cardiology Unit. Cardiocentro Ernesto Che Guevara. Villa Clara, Cuba.
3. Master in Hispanic Linguistic and Editorial Studies. Managing Editor. CorSalud. Assistant Professor. Villa Clara, Cuba.

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Ischemic heart disease is the leading cause of death in both developed and developing countries[1]. Its most serious manifestation, acute myocardial infarction with ST-segment elevation, is produced by the combination of two well-established pathological processes: atherosclerosis and thrombosis.

In this issue of CorSalud there are several articles that have a common point: atherothrombosis. Acute myocardial infarction[2], left main coronary angioplasty[3], sudden cardiac death[4], intracoronary thrombosis[5] and pulmonary thromboembolism[6], are consequences of this phenomenon.

Atherothrombosis, a chronic systemic inflammatory disease with subclinical or local clinical manifestations, is the association of atherosclerosis (especially lipid-rich plaques) with the development of thrombotic complications[7].

Plaques with high lipid content and little fibrous cap are known as "vulnerable" or "unstable" plaques due to the possibility of fissure, erosion or rupture, which favors the formation of a thrombus that triggers vessel occlusion with consequent acute clinical accident. For these reasons, the term atherothrombosis is used to define the spectrum of disease[7].

This term was first used in the 70s and is now preferred by many authors as it reflects better the final stage of the chain of events that follows in atherosclerosis[8].

Exactly 100 years ago, James B. Herrick (1861-1954), surprised the scientific world with his thrombotic theory as the cause of ischemic heart disease. However, a series of historical events of marked significance for humanity prevented its postulates from receiving the support and recognition initially deserved[9]. That same year, on the night of 14 to 15 April occurs the fateful Titanic sinking where 1512 people died, and only two years later, World War I broke out, while his colleagues did not give due credit to their postulates

✉ *A Rodríguez León*
Hospital Universitario "Dr. Celestino Hernández Robau"
Cuba s/n, entre Barcelona y Hospital
Santa Clara, CP 50200, Villa Clara, Cuba.
E-mail address: ardguez@capiro.vcl.sld.cu, ardguez67@yahoo.es

during the meeting of the Association of American Physicians, held in 1912. That day only one comment, that of Dr. Emmanuel Libman, was made, which was a cause of great disappointment to Herrick[10,11].

This poor acceptance in scientific circles was explained by Paul Dudley White with three arguments: first, a low incidence of ischemic heart disease at that time, second, the occasionally slow acceptance of new ideas by clinicians and third, the fact that there were few science writers in those days. According to Dr. White himself, it took a decade to understand the veracity of his theory, which was proven by himself when he dealt with his first acute myocardial infarction (AMI) in 1921, while he was just a resident with six months in the specialty of Cardiology. By then Dr. Herrick had already refined this clinical syndrome[10].

It is hard to understand why his brilliant article "*Clinical features of sudden obstruction of the coronary arteries*," did not receive proper attention. However, if you take into account the development of science at that time it can be understood how this illustrious man was ahead of his contemporaries[9]. In medicine neither antibiotics nor hypotensive medications had been discovered, in physics, Albert Einstein had not yet stated its second and most famous law of relativity, in art, sound film was a dream for the Lumiere brothers, in music even George Gershwin had not immortalized jazz with his Rhapsody in blue and in sports, the world was shocked with the Black Sox Scandal. However, in the same city, Chicago, as the result of Dr. Herrick's work, a new hope for man was reborn.

What factors led this doctor arrive at such an erudite conclusion?

His legacy is enabled by the combination of factors that favored the formation of an awesome medical personality, capable of materializing an idea based on an eminently clinical reasoning that is fully in force today.

His experience was formed in a long and successful career, first as a clinician and then cardiologist, combining his medical practice and teaching, a duality that became a model for later generations. He was faithful to the principles of the clinical method, and cultivated medicine with special care at the patient's bedside, as he took special care of his first AMI patients during hospitalization or even at home, because by then it was sometimes preferred not to move the sick. An admirable attitude that was consistent with what he called his philosophy on the true physician, who had a dual personality of the scientific toward disease and the human and humane toward the patient[12].

He also had the certainty of being a pioneer in promoting the use of the electrocardiogram as a diagnostic tool for this disease, while Sir Thomas Lewis focused on heart rhythm disorders, particularly atrial auricular fibrillation[13]. His outstanding medical skills associated with his excellent command of Greek and Latin, as well as his renowned literary curiosity made him a gifted researcher. After reviewing more than 100 years of research in cardiology, he could form the chronology of this specialty's major events, and enrich as anyone in his time, his knowledge in cardiovascular physiology and pathology.

At the same time, his insatiable thirst for knowledge and his great humility allowed him to meet exceptional physicians and scientists of his time, traveling several times to Europe to work, first in Prague with renowned pathologist Dr. Hans Chiari, who was able to perform five or six autopsies daily. Later he traveled to Vienna, where he exchanged with the brilliant internist Dr. Edmund Neusser, and finally to Germany, where he studied with the famous organic chemist Emil Fisher[14].

Not satisfied with what he has learned and still convinced of the importance of chemistry and biology to unravel the mysteries of science, he registered at the University of Chicago, at age 43, without abandoning his duties as an internist, and took a year course in these matters.

Although few people understood his principles, he was so convinced about them that he continued his "missionary work", as he used to call it, and nothing disturbed his daily routine as a doctor and researcher, or his literary devotion. His frequent lectures before the Chicago Literary Club were outstanding, and so was his admiration for the life and work of writer and poet Geoffrey Chaucer, of whom it is said that he read everything. Nine documents of this kind were recorded after his death[12-14].

With the passing of time Herrick was fortunate to enjoy the success of his theory, without having been fully demonstrated, and got the unsought honor to refute the Hippocratic aphorism *"cor aegrotari non potest"*, i.e., the heart cannot get hurt. When someone tried to enhance his figure as a researcher and scientist in each of the countless times he was honored, he would modestly take refuge in one of the quotes from his favorite writer: "Truth is the best thing a man can keep"[15].

When speaking of the birth of Cardiology as a specialty, it is impossible to overlook the extraordinary contribution made by this eminent physician; however, it would be fair to admit how much he suffered in his transition from clinician to cardiologist, which he had to accept with nostalgia and professionalism, as stated by Eugene Braunwald[7]. It is time to remember that in 1910,

just two years before setting out his theory, he described the first molecular disease in medicine history: sickle-cell anemia, while he assisted a young black student from the Caribbean[16].

If it is frequent to honor a scientist by a discovery, what could be said about this doctor and his two discoveries that revolutionized almost simultaneously both cardiology and hematology? In his honor, the American Heart Association instituted in 1968 the James B. Herrick Award, which is given annually and is the highest award from the Council on Clinical Cardiology (see Appendix). This award is given to that doctor whose scientific achievements have greatly contributed to the development and practice of clinical cardiology. At the same time, the American Society of Hematology elected him a Member in 1960[9,10,12-16].

His medical curriculum consists of 163 articles and several books, among which "A Brief History of Cardiology", published in 1942 is one of the most important. In this work, he reveals his seriousness and commitment toward the history of medicine, and he goes deeply, as never before, into his thrombotic theory of ischemic heart disease. It is good to note a criticism on him made by another giant of Cardiology, Paul Dudley White, "*The only outstanding omission in the book as I see it is the lack of recognition of the importance of his own contribution. It undoubtedly is from sincere modesty*"[11].

It is a curious fact that Dr. White, who used to continually revised notes and articles of the cardiologist from Chicago, shortly before his death, stated with certainty that the term "coronary vasospasm", so popular in the language of clinicians and cardiologists, should belong to Herrick and not to William Osler, as he believed at the beginning of his career[10]. Could it be that one day one can mention the eponymous Herrick's coronary vasospasm?

Without a doubt, the life of Dr. Herrick is just, as he wished a brief history of Cardiology, which teaches and moves us 100 years after stating, as the result of an intensive search and brilliant deduction, the theory that originates the disease that claims more lives.

His legacy is impossible to ignore!

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Appendix. Past Recipients of the James B. Herrick Award

1968 Hermann Blumgart, M.D. 1969 Franklin D. Johnston, M.D. 1970 Eugene A. Stead, Jr., M.D. 1971 Tinsley R. Harrison, M.D. 1972 Howard Burchell, M.D. 1973 Paul Dudley White, M.D. 1974 Helen B. Taussig, M.D. 1975 Lewis Dexter, M.D. 1976 James V. Warren, M.D. 1977 George E. Burch, M.D. 1978 W. Proctor Harvey, M.D. 1979 Paul N. Yu, M.D. 1980 J. Willis Hurst, M.D. 1981 Eugene Braunwald, M.D. 1982 Richard S. Ross, M.D.	1983 Charles Fisch, M.D. 1984 T. Joseph Reeves, M.D. 1985 H.J.C. Swan, M.D., Ph.D. 1986 Robert A. O'Rourke, M.D. 1987 Harold T. Dodge, M.D. 1988 Elliot Rapaport, M.D. 1989 Shahbudin H. Rahimtoola, M.D. 1990 John Ross, M.D. 1991 Thomas W. Smith, M.D. 1992 Burton E. Sobel, M.D. 1993 James T. Willerson, M.D. 1994 Robert C. Schlant, M.D. 1995 Richard Gorlin, M.D. 1996 Thomas J. Ryan, M.D. 1997 Douglas P. Zipes, M.D.	1998 Henrick J. J. Wellens, M.D. 1999 Thomas N. James, M.D. 2000 George A. Beller, M.D. 2001 Valentin Fuster, M.D. 2002 Robert L. Frye, M.D. 2003 Jay N. Cohn, M.D. 2004 Myron L. Weisfeldt, M.D. 2005 Bertram Pitt, M.D. 2006 Patrick Serruys, M.D. 2007 David Holmes, Jr., M.D. 2008 Prediman Krishan Shah, M.D. 2009 Robert Bonow, M.D. 2010 Elliott M. Antman, M.D. 2011 Nanette Wenger, M.D.