BOOK REVIEW


# Neurocardiology. Physiopathological aspects and clinical implications

by Ricardo J. Gelpi and Bruno Buchholz.
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*"Books are the quietest and most constant of friends; they are the most accessible and wisest of counselors, and the most patient of teachers."*
**Charles W. Eliot** (1834-1926)

*"I always imagined paradise as a kind of library"*
**Jorge L. Borges** (1899-1986)

N*eurocardiology. Pathophysiological aspects and clinical implications*, a book by Ricardo J. Gelpi and Bruno Buchholz, published in 2018, is presented in a volume of 365 pages and 20 color illustrations. Sixty-five coauthors of national and international relevance collaborated in its edition.

As pointed out by Benjamin Natelson more than 30 years ago (1), "neurocardiology is the study of the neurophysiological, neurological and neuroanatomical aspects of cardiology, especially including the neurological origins of cardiac disorders." More recently, Osteraas and Lee (2) highlighted the clinical implications of the nervous system interaction with the cardiovascular system:

"Cardiomyopathy due to stress exemplifies the brain-heart connection and occurs in several conditions with acute brain lesions that share excessive sympathetic activation. The brain influences on the heart include elevation of cardiac markers, arrhythmias, repolarization disorders in the electrocardiogram, myocardial necrosis and autonomic dysfunction. The neurogenic stunned myocardium following aneurysmal subarachnoid hemorrhage represents one end of the spectrum, and is associated with a marked increase of intracranial pressure that results in the exaggerated increase of catecholamines and possibly, necrosis, with contraction bands."

The increase in scientific works related with neurocardiology testifies the current interest and relevance of neurocardiology. Effectively, up to the time of this review we found 5,710 works cited in Pubmed that include the term "neurocardiology". More interesting is that 4,128 of these works date from the last 5 years (3). As the authors point out, *Neurocardiology. Physiopathological aspects and clinical implications*, is the first book in Spanish that provides a global view on this specialty, ranging from basic aspects to clinical manifestations, making it a comprehensive resource of great value for this emerging discipline. This book is addressed to researchers, residents and physicians trained in cardiology, neurology, internal Medicine, intensive care medicine, anesthesiology, cardiovascular surgery and neurosurgery, It will also be of interest to professionals from other related areas. "

The work is organized in 29 chapters. The first is introductory and refers to the history of neurocardiology. Chapters 2 to 8 analyze anatomical, physiological and physiopathological aspects of the brain-heart relationship under the following titles: functional neuroanatomy of the heart, intrinsic neuroanatomy of the human heart and other mammals, hypothalamic control of cardiovascular function, parasympathetic control of cardiac function: a new target of therapeutic opportunities, molecular mechanisms involved in the regulation of cardiac adrenergic and cholinergic signals, chronobiology of cardiovascular function, and heart rate variability, its mechanisms and its relationship with autonomic innervation. Chapters 9 to 28 are particularly devoted to the clinical aspects of neurocardiology: physiopathology of vasovagal syncope, syncope with autonomic nervous system participation, neural regulation in heart failure, neurohumoral interaction in heart failure control, cardiovascular control during exercise in heart failure, autonomic control in acute myocardial infarction: effects of vagal stimulation, autonomic modulation for the management of patients with chronic heart failure, participation of the autonomic nervous system in myocardial protection mechanisms, neuromodulation in chronic refractory cardiac pain, autonomic nervous system and its importance in the genesis of cardiac arrhythmias, sudden death and autonomic nervous system, cardiac autonomic innervation and

role of neuromodulatory treatments, trigeminocardiac reflex, cardiovascular autonomic neuropathy in diabetes mellitus, cardiovascular diseases in neurological diseases: Parkinson's disease, neurocardiology and cerebrovascular disease, dysautonomic arrhythmogenesis: a working hypothesis in chagasic heart disease, autonomic cardiovascular regulation in sleep apnea, Takotsubo syndrome or stress cardiomyopathy, and cardiac interoception as a regulating mechanism of behaviors and emotions. The last chapter is a corollary worthy of the work since it exposes the future of Neurocardiology through the lens of the polyvagal theory.

The Elsevier edition is extremely neat and careful, both in its modern design and layout as s in the quality of its printing and binding.

As readers attentive to the advances of cardiology from its basic aspects to its clinical applications, we recognize the enormous value of this book, and thank Drs. Ricardo J. Gelpi and Bruno Buchholz, as well as the co-authors for the idea and achievement of this book. We celebrate the possibility of having a work that will certainly enrich our understanding and interest in an area of great importance and relevance.

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