

Massimo Fioranelli
Gaetano Frajese
Editors

Sports Cardiology

From Diagnosis
to Clinical Management

Forewords by
Jacob Shani
Moussa Mansour



Springer

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Massimo Fioranelli
Head of Heart Center
Casa di Cura Mater Dei
Rome, Italy

Scientific Director of the
Centro Studi in Scienze della Vita
“Guglielmo Marconi” University
Rome, Italy

Gaetano Frajese

Professor of Endocrinology
Director, Postgraduate School in Sports Medicine
“Tor Vergata” University
Rome, Italy

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Sports Cardiology

*I dedicate this book to all my colleagues, who are excellent cardiologists;
their professional and personal commitment has enabled the
development of the Mater Dei Heart Center:*

*Maria Bianchi, Caterina Bisceglia, Valentina Boccadamo,
Fiorella Caranci, Giovanna Giubilato, Carlo Gonnella, Roberto Leo,
Antonio Lucifero, Enrica Mariano, Augusto Mazzetti, Francesco Perna,
Emiliano Pica, Maddalena Piro and Vittoria Rizzello*

Massimo Fioranelli

Foreword

The field of sports cardiology gained notoriety over the last few years when several well-known athletes have succumbed to sudden cardiac death. The media attention to these events has inflamed the controversy of whether better screening would have prevented any of the deaths or whether the time has come for nations and health organization to agree on an universal approach.

Unfortunately there is no universal approach to screen athletes or the general population. There is no accepted method of screening people of different ages that want to participate in athletic activity. The challenges to the physicians who have to decide whether to approve or deny the participation and the right to compete are great.

The International Olympic Committee (IOC) has recommended, but not mandated, that all countries screen their athletes to minimize the risk of sudden death. According to the IOC, if the twelve lead ECG raises the suspicion of an underlining serious problem in an athlete, further testing should be performed. In many screening programs, the work up also includes an echocardiogram. By contrast, the American Heart Association, (AHA) and the American College of Cardiology (ACC) do not recommend the use of ECG for cardiovascular screening of athletes at any level. The Canadian Heart and Stroke Foundation also has no screening recommendations for athletes nor does the Canadian Academy of Sports and Exercise Medicine.

At the far end of the spectrum is the Italian model, in which individuals are not allowed to participate in minor sports unless they have had a family history taken, physical examination and twelve lead ECG. In the United States and Canada the sports medicine community had not embraced mandatory ECG screening because of concerns about cost, access, and risk of false positives, that leave some healthy kids on the side lines. Instead North American doctors typically rely on information from family history and physical exam to guide decisions.

In this volume the Editors managed to put together a textbook and a reference for physicians and people who have interest in sports medicine. To my knowledge there is no other textbooks such as this. All the issues that involve cardiac activity and sports from arrhythmia and sudden death to mechanical and hemodynamic issues are addressed.

This book is unique, because it is concise, accurate and extremely helpful in making decisions. Both the general practitioner as well as the cardiologist will find this textbook a useful resource and reference when they deal with

patients with or without cardiac issues, who want to participate in athletic activity. Through the collective efforts of all the Authors and the Editors, they were able to catalog the knowledge of this very important branch of medicine that impacts enormously the quality of life of the general populations, and athletes in particular.

Jacob Shani, MD, FACP, FACC, FSCAI
Chairman Cardiac Institute
Director, Division of Cardiology
Program Director, Cardiovascular Disease
and Interventional Cardiology
Professor of Medicine, Maimonides Medical Center
New York, USA

Foreword

Earlier this year and within the span of few weeks, two European football players, Fabrice Muamba and Piermario Morosini sustained sudden cardiac arrests, sending shock waves across the athletic and medical communities. These and other similar events over recent years have fueled an increased interest in sports cardiology. This field has been overlooked for years, which resulted in a poor understanding of the prevention and management of cardiac conditions among athletes.

This book, edited by Massimo Fioranelli and Gaetano Frajese, is a comprehensive practical guideline to sports cardiology. The areas covered include all aspects of this field, from history and physical examination to advanced imaging. The chapters are concise and clear, making this book an important tool for practicing cardiologists who will find themselves increasingly faced with situations requiring proficiency in the prevention, diagnosis and treatment of cardiac diseases in athletes.

Moussa Mansour, MD, FHRS, FACC
Director, Cardiac Electrophysiology Laboratory
Director, Atrial Fibrillation Program
Massachusetts General Hospital
Cardiac Arrhythmia Service
Boston, USA

Preface

Physical activity and health are now inseparable terms; regular exercise, like a pharmacological intervention, is a powerful tool of prevention and treatment for many cardiovascular diseases. In addition, the psychophysical well-being that comes from sport drives many individuals, including the elderly, to initiate and continue the practice of many sports.

The athlete's cardiovascular adaptation is sometimes a thin line between physiology and pathology, and often makes it difficult to assess the individual risk.

Whenever an athlete dies on the playing fields, cardiologists are called upon to answer the usual questions: what was the cause of death, and why was not possible to prevent it?

This whole issue revolves around the professional competence of the modern cardiologist and the limitations of current screening procedures.

If this is an objective difficulty, amplified by the media's widespread reporting of just a few fatal accidents, there are also clinical settings with less media attention but which are not free from reflection or from medical and legal implications.

The constant evolution of knowledge in the field of cardiovascular pathophysiology and the stressful pace of the work force the clinical cardiologist and the sports physician to rapidly and continuously update their knowledge.

As with other specializations, and maybe more so, the modern cardiologist has a variety of skills that make it even more important to integrate news with everyday clinical practice; we therefore require tools that can assist doctors in making clinical decisions.

This book is developed for these requirements and is characterized on the one hand by a systematic review of indications for modern non-invasive and invasive diagnosis, and on the other hand on the clinical approach to most cardiovascular problems that affect athletes.

Particular care has been taken to cover modern interventional therapies ranging from coronary artery interventions to issues related to closure of the patent foramen ovale, precautions to observe in patients with antiarrhythmic devices, and safety precautions for sporting activity in patients with congenital heart disease.

I hope that this book can help the modern sports physicians in the daily task of solving clinical problems.

Massimo Fioranelli

Contributors

Gennaro Alfano Electrophysiology Department, Policlinico Casilino, Rome, Italy

Paolo Angelini Medical Director, Center for Coronary Artery Anomalies, Texas Heart Institute at St. Luke's Episcopal Hospital, Houston, USA

Pier Paolo Bassareo Department of Cardiovascular and Neurological Sciences, University of Cagliari, Cagliari, Italy

Maria Bianchi Heart Center, Casa di Cura Mater Dei, Rome, Italy

Caterina Bisceglia Electrophysiology Department, "San Raffaele" University Hospital, Milan, Italy

Valentina Boccadamo Heart Center, Casa di Cura Mater Dei, Rome, Italy

Leonardo Calò Electrophysiology Department, Policlinico Casilino, Rome, Italy

Fiorella Caranci Heart Center, Casa di Cura Mater Dei, Rome, Italy

Maria Antonietta Carbone Cardiology Department, "San Carlo di Nancy" Hospital, Rome, Italy

Ilaria D'Angeli Heart Center, Casa di Cura Mater Dei, Rome, Italy

Ilaria Dato Cardiovascular and Neurological Department, San Donato Hospital, Arezzo, Italy

Lucia de Luca Electrophysiology Department, Policlinico Casilino, Rome, Italy

Fabrizio D'Errico Cardiology Department, "San Carlo di Nancy" Hospital, Rome, Italy

Ermenegildo de Ruvo Electrophysiology Department, Policlinico Casilino, Rome, Italy

Alessandro Fagagnini Electrophysiology Department, Policlinico Casilino, Rome, Italy

Elisa Fedele Medicine and Surgery, Università Cattolica del Sacro Cuore, Rome, Italy

Massimo Fioranelli Head of Heart Center, Casa di Cura Mater Dei, Rome, Italy, Scientific Director of the Centro Studi in Scienze della Vita, “Guglielmo Marconi” University, Rome, Italy

Gaetano Frajese Professor of Endocrinology, Director, Postgraduate School in Sports Medicine, “Tor Vergata” University, Rome, Italy

Leda Galiuto Medicine and Surgery, Università Cattolica del Sacro Cuore, Rome, Italy

Giovanna Giubilato Heart Center, Casa di Cura Mater Dei, Rome, Italy

Carlo Gonnella Cardiology Department, “San Carlo di Nancy” Hospital, Rome, Italy

Paolo Gozzo General Surgery, University of Rome “La Sapienza”, Rome, Italy

Fabrizio Guarracini Electrophysiology Department, Policlinico Casilino, Rome, Italy

Emanuele Guerra Internal Medicine Unit, Department of Health Sciences, Università degli Studi di Roma “Foro Italico”, Rome, Italy

Eduardo A. Hernandez Baylor College of Medicine, Houston, USA

Luigi Irace Vascular Surgery, University of Rome “La Sapienza”, Rome, Italy

Filippo Lamberti Electrophysiology Department, “San Eugenio” Hospital, Rome, Italy

Milena Leo Cardiology Department, Policlinico Gemelli, Rome, Italy

Roberto Leo Internal Medicine, “Tor Vergata” University, Rome, Italy

Chiara Leuzzi Interventional Cardiology, Policlinico Universitario, Modena, Italy

Gabriella Locorotondo Medicine and Surgery, Università Cattolica del Sacro Cuore, Rome, Italy

J. Alberto Lopez Baylor College of Medicine, Houston, USA

Antonio Lucifero Heart Center, Casa di Cura Mater Dei, Rome, Italy

Enrica Mariano Interventional Cardiology Unit, “Tor Vergata” University, Rome, Italy

Ombretta Martinelli Department of General Surgery, University of Rome “La Sapienza”, Rome, Italy

Annamaria Martino Electrophysiology Department, Policlinico Casilino, Rome, Italy

Augusto Mazzetti Heart Center, Casa di Cura Mater Dei, Rome, Italy

Warren H. Moore Baylor College of Medicine, Houston, USA

Serafino Orazi Head of Cardiology Department, Ospedale Civile di Rieti, Rieti, Italy

Armando Passeri Heart Center, Casa di Cura Mater Dei, Rome, Italy

Paolo Pavone Radiology Department, Casa di Cura Mater Dei, Rome, Italy

Francesco Perna Heart Center, Casa di Cura Mater Dei, Rome, Italy

Emiliano Pica Heart Center, Casa di Cura Mater Dei, Rome, Italy

Giuseppe Picciolo Cardiac Intensive Care, AOU Policlinico S. Martino, Messina, Italy

Mara Piccoli Cardiology Unit, Policlinico “Luigi di Liegro”, Rome, Italy

Fabio Pigozzi Internal Medicine Unit, Department of Health Sciences, Università degli Studi di Roma “Foro Italico”, Rome, Italy

Maddalena Piro Heart Center, Casa di Cura Mater Dei, Rome, Italy

Bruno Pironi Interventional cardiology, “M.G.Vannini” Hospital, Rome, Italy

Italo Porto Cardiovascular and Neurological Department, San Donato Hospital, Arezzo, Italy

Marco Rebecchi Electrophysiology Department, Policlinico Casilino, Rome, Italy

Vittoria Rizzello “S.Giovanni-Addolorata” Hospital, Rome, Italy

Fabiana Rollini Interventional Cardiology, Policlinico Universitario, Modena, Italy

Massimo Sangiorgi Interventional Cardiology, Policlinico Universitario, Modena, Italy

Luigi Sciarra Electrophysiology Department, Policlinico Casilino, Rome, Italy

Antonella Sette Electrophysiology Department, Policlinico Casilino, Rome, Italy

Nishant R. Shah Texas Heart Institute, Baylor College of Medicine, Houston, USA

Fabio Sperandii Internal Medicine Unit, Department of Health Sciences, Università degli Studi di Roma “Foro Italico”, Rome, Italy

Antonella Tommasino Cardiology Department, Ospedale Civile di Rieti, Rieti, Italy

Stefano Tonioni Cardiology Department, “San Carlo di Nancy” Hospital, Rome, Italy

Claudia Tota Electrophysiology Department, Policlinico Casilino, Rome, Italy

Rocco Vergallo Cardiovascular and Neurological Department, San Donato Hospital, Arezzo, Italy

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Part I
Cadiovascular Diagnostics

