Molecular basis of cardiovascular disease: a companion to Braunwald's heart disease
Kenneth Chien; Philadelphia; 1999; W.B. Saunders; 630 pages; $135.00.

Molecular biologic techniques have facilitated many of the recent advances in our basic understanding of the pathophysiology of cardiovascular disease. These same techniques have allowed a variety of new treatments, including gene therapy, to be designed and evaluated in patients with cardiac and peripheral vascular disease. As such, Molecular basis of cardiovascular disease is a timely text that provides a comprehensive and up-to-date review of molecular biologic principles and their application to cardiovascular disease.

Vascular surgeons need to realize early on that the target audience for this text is the cardiologist. This is not a criticism because the book was designed as a companion to Heart disease: a textbook of cardiovascular medicine, authored by Eugene Braunwald. However, many of the chapters deal with disease processes that are of little interest to practicing vascular surgeons or even a surgeon who is interested in vascular biology. This is particularly true of the sections on cardiac morphogenesis, myopathies, and arrhythmias. Even the sections of the text that might be of interest to vascular surgeons (ie, “Vascular biology and atherogenesis”) are written with a focus on coronary artery disease and restenosis after coronary angioplasty. There is hardly any mention of the contributions made by vascular surgeons/scientists on vein graft adaptation. Issues that are specific to peripheral vascular disease are, for the most part, ignored. For example, there is little in this text about abdominal aortic aneurysms, with the exception of a few pages in the section on “Morphogenesis of cardiovascular disease” where the pattern of inheritance for aneurysms is discussed. This is unfortunate because there is a great deal of information now available about the pathogenesis and treatment of this disease process, much of which has been derived with molecular biologic techniques.

With this as my only reservation, I found the book to be practical and informative. The text is organized into seven sections. Section I, entitled “Principles of molecular cardiology,” is designed as a general introduction to molecular techniques as they relate to the study of cardiovascular disease. The first chapter, “General principles of molecular biology,” is a well-written, concise overview of basic molecular biology and molecular techniques. The chapters on gene transfer and genetically modified animal models are excellent, relevant, and written in a manner that allows the reader to understand the application of these techniques to cardiovascular medicine. Sections 2, 3 and 4, on “Morphogenesis and cardiovascular disease,” “Cardiac muscle and myopathies,” and “Cardiac conduction and arrhythmias” are, as previously mentioned, not particularly relevant to vascular surgeons. Section 5, entitled “Vascular biology and atherogenesis,” includes four chapters in which the topics of endothelium, atherogenesis, restenosis, and angiogenesis are addressed. The chapter on atherogenesis has inflammation and the contribution of white blood cells to the atherosclerotic process as its specific focus. As such, it does not provide the reader with a general overview of atherosclerosis. The chapter on restenosis is excellent, thorough, and well referenced, although it lacks information regarding the pathophysiology of vein graft stenosis. Sections 6 and 7 include well-written chapters in which risk factors for coronary artery disease and the molecular basis of hemostasis disorders are addressed.

The cast of contributors is extraordinary and includes scientific leaders, such as Jan Breslow, Robert Rosenberg, Judah Folkman, Michael Gimbrone, Jr, Peter Libby, and many more. Each chapter is either authored or coauthored by a well-established, national figure who has made a substantial contribution to cardiovascular biology. At the end of the text, there is a useful 21-page glossary in which commonly used terms that relate to molecular biology are defined in a practical manner.

Despite its emphasis on cardiac rather than peripheral vascular disease, I would recommend this book to surgeons who have an interest in vascular biology. The relevant sections are up to date and well written by renowned authorities. I have already used this book as a reference on many occasions, and I plan to assign several of its chapters as required reading for new fellows entering the laboratory.

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Modern visualisation of the endothelium
J.M. Polak; Amsterdam; 1998; Harwood Academic; 243 pages; $85.00.

Modern visualisation of the endothelium is the fourth volume in a series entitled “The endothelial cell research series,” which aims to provide readers with reviews of basic and clinical research related to the endothelium. As the title suggests, the purpose of this text is to present the latest technical and conceptual advances in visualization of the endothelium and how they relate to the production of regulatory molecules in physiologic and disease states. The target audience as outlined by the authors includes cell biologists, anatomists, pathologists, biochemists and physiologists.
Cardiovascular diseases (CVDs) are the number 1 cause of death globally, taking an estimated 17.9 million lives each year. CVDs are a group of disorders of the heart and blood vessels and include coronary heart disease, cerebrovascular disease, rheumatic heart disease and other conditions. Four out of 5 CVD deaths are due to heart attacks and strokes, and one third of these deaths occur prematurely in people under 70 years of age. Individuals at risk of CVD may demonstrate raised blood pressure, glucose, and lipids as well as overweight and obesity. These can all be easily measured in primary care.