
Preface

For more than 50 years, we have used coronary angiography to diagnose and quantify the extent of obstructive disease due to atherosclerosis. This has provided an important tool for the cardiologist in the evaluation and management of the patient with coronary artery disease. In more recent years, major technological advances in arterial wall imaging enable more precise visualization of the atherosclerotic plaque. These developments have expanded beyond traditional angiographic techniques, which simply visualize the arterial narrowings that develop as a complication of vascular disease. Rather, the ability to use a range of intravascular and noninvasive imaging techniques permits direct visualization of the full thickness of the artery wall and the whole burden of disease within. As a result, we now have the opportunity to image the amount of plaque, distinguish its individual components, and potentially evaluate the functionality of the disease. The latter will be further enhanced by advances in molecular imaging, which in combination with the invasive and noninvasive approaches described in this book, have the ability to translate the vascular biological insights from the experimental setting to the daily management of patients. This has important implications for the risk prediction, management, and evaluation of novel anti-atherosclerotic therapies. In this book, we focus on each of the major approaches to imaging of the coronary arteries. In particular, our authors have highlighted how each of these modalities has enhanced our understanding of the disease process and propose challenges that need to be overcome for their increasing integration into clinical practice.

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