

## **PART 1 Introduction**

- 1 History of atherosclerosis and vulnerable plaque research, 3  
*Mohammad Madjid, Ibrahim Aboshady, Samuel Ward Casscells, Renu Virmani & James T Willerson*

## **PART 2 Pathology**

- 2 The pathology of vulnerable plaque, 21  
*Renu Virmani, Allen P Burke, James T Willerson, Andrew Farb, Jagat Narula & Frank D Kolodgie*
- 3 Plaque rupture, 37  
*Renu Virmani, Allen P Burke, Andrew Farb, Herman K Gold, Alope V Finn & Frank D Kolodgie*
- 4 Plaque erosion, 60  
*Frank D Kolodgie, Allen P Burke, Andrew Farb, David R Fowler, Robert Kutys, Thomas N Wight & Renu Virmani*
- 5 Pathogenesis and significance of calcification in coronary atherosclerosis, 77  
*Allen P Burke, Frank D Kolodgie, Andrew Farb & Renu Virmani*
- 6 Adventitial and periadventitial fat inflammation and plaque vulnerability, 95  
*Silvio Litovsky, Deborah Vela, Mohammad Madjid, Samuel Ward Casscells & James T Willerson*
- 7 Murine models of advanced atherosclerosis, 105  
*Michael E Rosenfeld & Stephen M Schwartz*

## **PART 3 Triggers for plaque rupture**

- 8 Physical and mechanical stress, 131  
*Luis E Rohde & Richard T Lee*
- 9 Inflammation and matrix metalloproteinases, 140  
*Zorina S Galis & Susan M Lessner*
- 10 Apoptosis in atherosclerosis, 162  
*Mark M Kockx, Wim Martinet & Michiel Knaapen*

## **PART 4 Diagnosis**

- 11 Emerging biomarkers of instability, 187  
*Sotirios Tsimikas*
- 12 Ultrasonic detection of coronary disease, 211  
*Mani A Vannan, Chowdhury Ahsan, Johan Verjans, Artiom Petrov & Jagat Narula*
- 13 Intravascular ultrasound for plaque characterization, 222  
*D Geoffrey Vince & Anuja Nair*
- 14 Magnetic resonance imaging and intravascular magnetic resonance imaging, 230  
*Hee Kwon Song, Ronald L Wolf, Jacob Schneiderman & Robert L Wilensky*
- 15 Radionuclide imaging, 247  
*Johan Verjans & Jagat Narula*
- 16 Near-infrared spectroscopy, 257  
*Pedro R Moreno, Barbara Marshik & James E Muller*
- 17 Intravascular thermography, 263  
*Mohammad Madjid, Morteza Naghavi, Silvio Litovsky, Samuel Ward Casscells & James T Willerson*
- 18 Optical coherence tomography, 273  
*Paul Magnin & Evelyn Regar*

- 19 Intravascular palpography, 289  
*Johannes A Schaar, Chris L de Korte,  
Frits Mastik, Pim de Feyter, Cornelis J  
Slager, Anton FW van der Steen &  
Patrick W Serruys*
- 20 Coronary computed tomography for  
the detection of atherosclerotic plaque  
burden , 297  
*Allen J Taylor & Irwin M Feuerstein*

## **PART 5 Management**

- 21 New developments in treatment of vulnerable  
plaques, 305  
*Mohammad Madjid, Silvio Litovsky,  
James T Willerson & Samuel Ward Casscells*

- 
- 22 Photodynamic therapy, 321  
*Ron Waksman & Pauline E McEwan*
- 23 Thermal stabilization of vulnerable  
plaques, 331  
*Samuel Ward Casscells, Birendra N Lal,  
Mohammad Madjid, Tarun Tewatia, Ibrahim  
Aboshady, Yong-Jian Geng & James T Willerson*
- 24 An interventionalist's perspective, 343  
*Aloke V Finn, Ronald Waksman &  
Herman Gold*
- 25 Genetic modulation of vulnerable plaques, 350  
*Chunming Dong & Pascal J  
Goldschmidt-Clermont*

Index, 369