

Contents

1 Coronary Anatomy

- GONDA J. DE JONGE, PETER M. A. VAN OOIJEN, JEAN-LOUIS SABLAYROLLES,
GUIDO LIGABUE, and FELIX ZIJLSTRA 1

2 Invasive Coronary Imaging

2.1 Conventional Catheterisation

- MICHAEL R. REES and FELIX ZIJLSTRA 25

2.2 Quantitative Coronary Arteriography

- JOHAN H. C. REIBER, JOAN C. TUINENBURG, GERHARD KONING,
JOHANNES P. JANSSEN, ANDREI RAREŞ, ALEXANDRA J. LANSKY, and
BOB GOEDHART 41

2.3 Clinical Intracoronary Ultrasound

- JURGEN LIGTHART and PIM J. DE FEYTER 67

2.4 Quantitative Coronary Ultrasound (QCU)

- NICO BRUINING, RONALD HAMERS, SEBASTIAAN DE WINTER, and
JOS R. T. C. ROELANDT 91

3 Non-Invasive Coronary Imaging

3.1 Multi-Detector Row Computed Tomography – Technical Principles, New System Concepts, and Clinical Applications

- THOMAS FLOHR and BERND OHNESORGE 99

3.2 Developments in MR Coronary Angiography

- ROBERT R. EDELMAN and DEBIAO LI 135

3.3 Clinical Implementation of Coronary Imaging

- HATEM ALKADHI, RIKSTA DIKKERS, CHRISTOPH R. BECKER,
STEPHAN ACHENBACH, and VALENTIN E. SINITSYN 149

3.4 MDCT in Acute Coronary Syndrome

- HATEM ALKADHI, RIKSTA DIKKERS, CHRISTOPH R. BECKER,
CHARLES WHITE, and UDO HOFFMAN 165

3.5 Coronary CT Angiography Guidance for Percutaneous Transluminal Angioplasty

- JEAN-LOUIS SABLAYROLLES and PHILIPPE GUYON 175
-

3.6	Use of Multidetector Computed Tomography for the Assessment of Acute Chest Pain: Guidelines of the North American Society of Cardiac Imaging and the European Society of Cardiac Radiology	
	ARTHUR E. STILLMAN, MATTHIJS OUDKERK, MARGARET ACKERMAN, CHRISTOPH R. BECKER, PAWEL E. BUSZMAN, PIM J. DE FEYTER, UDO HOFFMANN, MATTHEW T. KEADEY, RICCARDO MARANO, MARTIN J. LIPTON, GILBERT L. RAFF, GAUTHAM P. REDDY, MICHAEL R. REES, GEOFFREY D. RUBIN, U. JOSEPH SCHOEPF, GIUSEPPE TARULLI, EDWIN J. R. VAN BEEK, LEWIS WEXLER, and CHARLES S. WHITE	191
4	Non-Invasive Measurement of Coronary Atherosclerosis	
4.1	Pathophysiology of Coronary Atherosclerosis and Calcification	
	WILFRED F. A. DEN DUNNEN and ALBERT J. H. SUURMEIJER	205
4.2	Detection and Quantification of Coronary Calcification	
	ROZEMARIJN Vliegenthart Proença and CHRISTOPHER HERZOG	211
4.3	Measuring Coronary Calcium	
	JAAP M. GROEN, MARCEL J. W. GREUTER, and MATTHIJS OUDKERK	223
4.4	Coronary Calcium as an Indicator of Coronary Artery Disease	
	AXEL SCHMERMUND, STEFAN MÖHLENKAMP, and RAIMUND ERBEL	235
4.5	Epidemiology of Coronary Calcification	
	ROZEMARIJN Vliegenthart Proença and JACQUELINE C. M. WITTEMAN.	247
4.6	Coronary Artery Calcium Screening: Current Status and Recommendations from the European Society of Cardiac Radiology and North American Society for Cardiovascular Imaging	
	MATTHIJS OUDKERK, ARTHUR E. STILLMAN, SANDRA S. HALLIBURTON, WILLI A. KALENDER, STEFAN MÖHLENKAMP, CYNTHIA H. MCCOLLOUGH, ROZEMARIJN Vliegenthart Proença, LESLEE J. SHAW, WILLIAM STANFORD, ALLEN J. TAYLOR, PETER M. A. VAN OOIJEN, LEWIS WEXLER, and PAOLO RAGGI.	267
5	Multi-Dimensional Computed Cardiac Visualization	
	PETER M. A. VAN OOIJEN, WISNU KRISTANTO, GONDA J. DE JONGE, CAROLINE KUEHNEL, ANJA HENNEMUTH, TOBIAS BOSKAMP, JAAP M. GROEN, and ANDRÉ BROEKEMA	297
	Subject Index.	339
	List of Contributors.	349