Part I  Basic Sciences

1  The Heart: Anatomy, Physiology and Exercise Physiology  ....................... 3
   Syed Shah, Gopinath Gnanasegaran, Jeanette Sundberg-Cohon, and John R Buscombe

2  Pathophysiology of Coronary Artery Disease  ..................... 23
   Shahid Mahmood

3  Pathology of Coronary Artery Disease and Ischemic Heart Disease ............. 31
   Usha Kini and Shalini Mullick

4  Pathophysiology of Diabetic Vascular Complications ..................... 45
   Francis Estrada and John R. Buscombe

Part II  Conventional Investigation of Coronary Artery Disease and Ischaemic Heart Disease

5  Clinical Assessment and Evaluation of the Cardiovascular System .......... 53
   Jeanette Sundberg-Cohon, Nivedita Gauthaman, Gopinath Gnanasegaran and Margaret Hall

6  The Plain Chest Radiograph in the Assessment of Cardiac Disease .......... 65
   Nicola Mulholland

7  Ischaemic and Inflammatory Biomarkers in Cardiovascular Disease .......... 77
   Gopinath Gnanasegaran, Gregory Shabo and John R. Buscombe

8  Electrocardiography and Exercise Stress Test ............................ 87
   Humayun Bashir, Gopinath Gnanasegaran and John R. Buscombe

9  Ambulatory Electrocardiography, Transient Event Monitors, and Continuous Loop Recorders .......................... 113
   R. Wayne Kreeger, John Brooks and Assad Movahed

10 Echocardiography and Contrast Echocardiography .................... 117
    Firas A Ghanem, Jaffar Ali Raza, Ishtiaque H. Mohiuddin and Assad Movahed

11 Dobutamine Stress Echocardiography ......................... 127
    Satish C. Govind and S. S. Ramesh

12 Transesophageal echocardiography .................. 137
    Satish C. Govind and S. S. Ramesh

13 Clinical Cardiac Electrophysiology – An Overview ...................... 145
    Senthil Thenappan, Jaffar Ali Raza, R. Wayne Kreeger and Assad Movahed

14 Cardiac Catheterization and Selective Coronary Angiography:
   Current Status and Limitations ....................... 155
   Matt Cummings, Aravinda Nanjundappa and Assad Movahed

15 Emerging Role of Multi-detector CT Imaging .................. 163
    Shahid Mahmood and John Hoe

16 Current Status of Cardiovascular MR Imaging .................. 177
    Shahid Mahmood and Robert Kwok

Part III  Nuclear Cardiology

17 Principles of Myocardial SPECT Imaging ............ 191
    Kathryn Adamson
18 Radionuclides in Nuclear Cardiology: Current Status and Limitations 213
Richard Fernandez

19 Planar and SPECT Radiopharmaceuticals in Nuclear Cardiology: Current Status and Limitations 221
Gopinath Gnanasegaran, Akhtar Ahmed, Jilly Croasdale and John R. Buscombe

20 Myocardial Perfusion Imaging for Risk Stratification in Suspected or Known Coronary Artery Disease: Current Status and Limitations 231
Firas A. Ghanem and Assad Movahed

21 Imaging Protocols in Myocardial Perfusion Scintigraphy 237
Shobhan Vinjamuri

22 Pharmacological Stress Myocardial Perfusion Imaging: Current Status and Limitations 245
Gopinath Gnanasegaran, Francis Sundram, Margaret Hall and John R Buscombe

23 Gated Single Photon Emission Computed Tomography (SPECT) Imaging: Current Status and Limitations 261
Sagir Ahmed and Assad Movahed

24 Myocardial Perfusion Scintigraphy in the Assessment of Post-Revascularization – Current Status and Limitations 275
Jaffar Ali Raza and Assad Movahed

25 Nuclear Cardiology in Women 287
A. Muhammad Umar Khan and John R. Buscombe

26 Myocardial Perfusion Scintigraphy in Acute Chest Pain: Current Status and Limitations 299
Priya Velappan and Assad Movahed

27 Myocardial Perfusion Scintigraphy in Diabetes: Current Status and Limitations 305
John O. Prior

28 Artefacts and Pitfalls in Myocardial Perfusion Imaging 325
Iulia Heinle and Qaisar H. Siraj

29 Multiple Gated Equilibrium Blood Pool Imaging (MUGA) 343
Rakesh Kumar

30 First Pass Studies – Current Status and Limitations 355
Radhakrishnan Jayan and Linda Smith

31 Cardiac PET: Physics and Methodology 363
Lefteris Livieratos

32 PET Radiopharmaceuticals in Nuclear Cardiology: Current Status and Limitations 379
James R. Ballinger

33 Cardiac PET Imaging: Current Status and Limitations 387
Ishtiaque H Mohiuddin and Assad Movahed

34 Paediatric Nuclear Cardiology 401
Pietro Zucchetta

35 Cardiac Adrenergic Imaging 409
Shinichiro Fujimoto, Shohei Yamashina and Junichi Yamazaki

Part IV Management of Coronary Artery Disease and Ischaemic Heart Disease

36 Prevention of Coronary Heart Disease 419
Firas A Ghanem and Assad Movahed

37 Cardiovascular Medications: Pharmacokinetics and Pharmacodynamics 425
Jaffar Ali Raza, Wayne Kreeger and Assad Movahed

38 Anti-Arrhythmic Drugs: Pharmacokinetics and Pharmacodynamics 453
R. Wayne Kreeger, Jaffar Ali Raza and Assad Movahed

39 Coronary Angioplasty and Newer Interventional Strategies 463
Aravinda Nanjundappa, Pabitra Saha and Assad Movahed

40 Coronary Artery Bypass Surgery: Science and Practice 471
Michael W. A. Chu, W. Randolph Chitwood Jr and T. Bruce Ferguson

41 Minimally Invasive Cardiac Surgery 487
L. Wiley Nifong and W. Randolph Chitwood Jr
42 Transmyocardial Revascularization  . . . . . . . 497
Jay Jayakumar, Wai Weng Woon
and Peter L. C. Smith

43 Prevention of Re-Stenosis
of Coronary Arteries by Radionuclides  . . . . . 511
John R. Buscombe

44 Cardiac Transplantation:
Current Status and Limitations  . . . . . . . . 517
Sheetal Kaul and Assad Movahed

Subject Index  . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . . 525
Integrating Cardiology for Nuclear Medicine Physicians
A Guide to Nuclear Medicine Physicians
Movahed, A.; Gnanasegaran, G.; Buscombe, J.; Hall, M.
(Eds.)
2009, XIV, 544 p., Hardcover
ISBN: 978-3-540-78673-3