Contents

Contributors vii-xi

Forewords xiii-xv

Preface xvii

Acknowledgments xix

List of Abbreviations xxi-xxiii

SECTION A **INTRODUCTION AND BASICS OF CARDIAC ELECTROPHYSIOLOGY**

1. **Electrophysiology Study: Indications, Hardware and Set-up, Catheter Placement** 3-30
   Ajit Thachil
2. **Electrophysiology Study: Technical Details, Electrograms, Noise and Filtering** 31-41
   Katherine Duello, KL Venkatachalam
3. **Measurements of Basic Intervals, Refractory Periods and Programmed Electrical Stimulation** 43-53
   B Hygriv Rao
4. **Sinus Node Function Evaluation and Abnormalities** 55-63
   Watchara Lohawijarn, Negar Salehi, Vini Singh, Aravdeep S Jhand, Ranjan K Thakur
5. **Atrioventricular Conduction and Block** 65-96
   Kartikeya Bhargava

SECTION B **FUNDAMENTALS OF CARDIAC ANATOMY, IMAGING, MAPPING AND ABLATION**

6. **Cardiac Anatomy for Electrophysiologists** 99-118
   José Angel Cabrera, Sergio Castrejón, Damián Sánchez-Quintana
7. **Imaging in Cardiac Electrophysiology** 119-133
   Gerard Loughlin, Karen Ordovas, Edward P Gerstenfeld
8. **Conventional Mapping Techniques: Fundamentals** 135-147
   Daniel Pelchovitz, Rishi Arora
9. **Three-dimensional Mapping of Cardiac Arrhythmias: Techniques, Principles and Application** 149-167
   Freddy Del-Carpio Munoz, Samuel J Asirvatham
10. **Radiofrequency Ablation: Principles and Biophysics** 169-188
    Abhishek Deshmukh, Paul Friedman
11. **Non-Radiofrequency Sources of Ablation** 189-201
    Sampath Gunda, Moustapha Atoui, Dhanunjaya Lakkireddy

SECTION C — SUPRAVENTRICULAR TACHYARRHYTHMIAS: AV NODE-DEPENDENT TACHYCARDIAS

12. **Supraventricular Arrhythmias: Classification** 205-211
Vikas Kalra, Mithilesh K Das

13. **Supraventricular Tachycardias: Approach during Electrophysiology Study** 213-222
Peter Cheung, Taresh Taneja, Shoei K Stephen Huang

14. **Supraventricular Tachycardias: Baseline Features during Sinus Rhythm and Tachycardia** 223-246
John William Schleifer, Komandoor Srivathsan

15. **Supraventricular Tachycardias: Ventricular Pacing Maneuvers** 247-264
Jeffrey Munro, Dan Sorajja, Win-Kuang Shen

16. **Supraventricular Tachycardias: Atrial Pacing Maneuvers** 265-271
Nishant Verma, Bradley P Knight

17. **Atrioventricular Nodal Reentrant Tachycardia: Classification, Electrophysiological Features, and Ablation** 273-279
Demosthenes G Katritsis, Mark E Josephson

18. **Wolff-Parkinson-White Syndrome and Atrioventricular Accessory Pathway-related Arrhythmias: Localization, Mapping and Ablation** 281-302
Rahul Jain, John M Miller

19. **Mahaim Fiber Accessory Pathways and Other Variants of Preexcitation** 303-329
Shomu Bohora

20. **Junctional Tachycardia** 331-340
Leonard A Steinberg, Benzy J Padanilam

SECTION D — SUPRAVENTRICULAR TACHYARRHYTHMIAS: ATRIAL TACHYCARDIA, FLUTTER AND FIBRILLATION

21. **Focal Atrial Tachycardia and its Differentiation from Macroreentrant Atrial Tachycardia** 343-349
Chrishan J Nalliah, Jonathan M Kalman

22. **Atrial Flutter: Classification, Mechanisms and Management** 351-360
Yanfei Yang, Melvin Scheinman

23. **Atrial Fibrillation: Classification and Mechanisms of Initiation and Maintenance** 361-374
Ashok Shah, Nicolas Derval, Thomas Pambrun, Sana Amraoui, Seigo Yamashita, Benjamin Berte, Noora Al-Jefairi, Antonio Frontera, Darren Hooks, Arnaud Denis, Frédéric Sacher, Mélèze Hocini, Pierre Jais, Michel Haissaguerre

24. **Atrial Fibrillation Ablation: Pulmonary Vein Isolation Techniques, Strategies and Principles** 375-387
Rajiv Mahajan, Darragh Twomey, Dennis H Lau, Prashanthan Sanders

25. **Atrial Fibrillation Ablation: Substrate Modification and Other Strategies** 389-399
Tilman Maurer, Erik Wissner, Karl-Heinz Kuck

26. **Atrioventricular Junction Ablation for Rate Control in Atrial Fibrillation** 401-407
Amar Upadhyay, Raja J Selvaraj

27. **Atrial Fibrillation Ablation: Clinical Studies, Efficacy and Complications** 409-413
Antonio Sorgente, Riccardo Cappato

28. **Surgical Ablation for Atrial Fibrillation** 415-428
Matthew C Henn, Matthew R Schill, Chawannuch Ruaengsri, Richard B Schuessler, Ralph J Damiano Jr

29. **Atrial Arrhythmias in Congenital Heart Disease and Postcardiac Surgery** 429-440
Edward P Walsh

SECTION E **VENTRICULAR TACHYARRHYTHMIAS**

30. **Introduction to Ventricular Arrhythmias** 443-447
George Shaw, David Callans

31. **Monomorphic Ventricular Tachycardia: Mechanisms and Etiology** 449-464
Jianqing Li, Mark E Josephson

32. **Ventricular Tachycardia in Ischemic and Nonischemic Cardiomyopathy: Reentrant Circuits, Mapping Techniques and Ablation Strategies** 465-487
Adam Lee, Haris M Haqqani

33. **Ventricular Tachycardia in Arrhythmogenic Right Ventricular Dysplasia/Cardiomyopathy** 489-500
Hugh Calkins

34. **Ventricular Tachycardia in Specific Cardiomyopathies: Sarcoidosis and Tuberculosis** 501-510
Daljeet Kaur Saggu, Calambur Narasimhan

35. **Idiopathic Left Ventricular Tachycardia** 511-530
Akihiko Nogami

36. **Idiopathic Outflow Tract Ventricular Tachycardia** 531-545
Jackson J Liang, Sanjay Dixit

37. **Idiopathic Ventricular Tachycardia from the Mitral Annulus, Papillary Muscles and Other Sites** 547-570
Takumi Yamada

38. **Bundle Branch Reentry: Mechanisms, Diagnosis and Management** 571-582
Zalmen Blanck, Anwer Dhala, Masood Akhtar

39. **J Wave Syndromes** 583-603
Charles Antzelevitch, Bence Patocskai

40. **Early Repolarization Syndrome and Risk of Sudden Cardiac Death** 605-611
Peter A Noseworthy

41. **Idiopathic Ventricular Fibrillation: Mechanisms and Management Strategies** 613-626
Arnon Adler, Raphael Rosso, Sami Viskin

42. **Ventricular Arrhythmia Storm: Etiology, Mechanisms and Management** 627-634
SP Abhilash, Narayanan Namboodiri

SECTION F MISCELLANEOUS

43. Entrainment: Principles and Clinical Applications **637-657**
Ivan Cakulev, Albert L Waldo

44. Wide QRS Complex Tachycardia: An Electrophysiologic Approach **659-703**
Masood Akhtar

45. Provocative Drug Testing in the Electrophysiology Lab **705-709**
Venkata A Narla, Nitish Badhwar

46. Catheter Ablation in Children **711-716**
Philip Wackel, Bryan Cannon

47. Epicardial Ablation: Techniques and Applications **717-725**
Tahmeed Contractor, Roderick Tung, Noel G Boyle, Kalyanam Shivkumar

Index **727**