

Contents

List of Contributors ix
Reviews of the First Edition xiii
Preface to the Third Edition xv
Preface to the First Edition xvii
Foreword to the First Edition xviii
Abbreviations xix

Section 1 Routine Cardiac Surgery

1 **Basic Principles of Cardiac Surgery** 1
 Paolo Bosco and Samer A. M. Nashef

2 **Symptoms and Signs of Cardiac Disease** 6
 Joseph E. Arrowsmith

3 **Diagnostic Techniques** 11
 Amir Awwad and S. K. Bobby Agarwal

4 **Conduct of Anaesthesia** 24
 Andrew I. Gardner and Paul H. M. Sadleir

5 **Principles of Cardiopulmonary Bypass** 30
 Timothy Coulson and Florian Falter

6 **Weaning from Cardiopulmonary Bypass** 45
 Simon Anderson

7 **Routine Early Postoperative Care** 50
 Barbora Parizkova and Aravinda Page

8 **Common Postoperative Complications** 55
 Jonathan H. Mackay and Joseph E. Arrowsmith

Section 2 Anaesthesia for Specific Procedures

9 **Aortic Valve Surgery** 69
 Pedro Catarino and Joseph E. Arrowsmith

10 **Mitral Valve Surgery** 75
 Jonathan H. Mackay and Francis C. Wells

11 **Tricuspid and Pulmonary Valve Surgery** 82
 Joanne Irons and Yasir Abu-Omar

12 **Minimally Invasive and Off-Pump Cardiac Surgery** 91
 Ben Gibbison

13 **Thoracic Aortic Surgery** 99
 Seema Agarwal and Andrew C. Knowles

14 **Surgery for Cardiomyopathy and Pericardial Disease** 107
 Jonathan Brand and Florian Falter

15 **Surgery for Pulmonary Vascular Disease** 113
 Choo Y. Ng and Andrew Roscoe

16 **Ventricular Assist Device Implantation** 118
 Nicholas J. Lees

17 **Heart Transplantation** 125
 Lenore F. van der Merwe and Alan D. Ashworth

Section 3 Cardiac Catheter Laboratory Procedures

18 **Electrophysiological Procedures** 131
 Joseph E. Arrowsmith

19 **Procedures for Structural Heart Disease** 137
 Cameron G. Densem and Andrew A. Klein

Section 4 Paediatric Cardiac Surgery

20 **General Principles and Conduct of Paediatric Cardiac Anaesthesia** 145
 Isabeau A. Walker and Jon H. Smith

21 **Common Congenital Heart Lesions and Procedures** 154
 David J. Barron and Kevin P. Morris

Contents

22. **Postoperative Paediatric Care** 181
 Jane V. Cassidy and Kevin P. Morris
23. **Adult Congenital Heart Disease** 186
 Craig R. Bailey and Davina D. L. Wong

Section 5 Cardiopulmonary Bypass

24. **Temperature Management and Deep Hypothermic Arrest** 191
 Charles W. Hogue and Joseph E. Arrowsmith
25. **The Effects of Cardiopulmonary Bypass on Drug Pharmacology** 199
 Jens Fassl and Berend Mets
26. **Controversies in Cardiopulmonary Bypass** 203
 Will Tosh and Christiana Burt
27. **Cardiopulmonary Bypass Emergencies** 210
 David J. Daly
28. **Non-Cardiac Applications of Cardiopulmonary Bypass** 215
 Joseph E. Arrowsmith and Jonathan H. Mackay
29. **Extracorporeal Membrane Oxygenation** 218
 Simon Colah

Section 6 Advanced Monitoring

30. **Cardiovascular Monitoring** 223
 Arturo Suarez and Jonathan B. Mark
31. **Neurological Monitoring** 230
 Brian D. Gregson and Hilary P. Grocott

Section 7 Transoesophageal Echocardiography

32. **Comprehensive TOE Examination** 239
 Justiaan Swanevelder and Andrew Roscoe
33. **Assessment of Ventricular Function** 242
 Catherine M. Ashes and Andrew Roscoe
34. **Assessment of Valvular Heart Disease** 248
 Massimiliano Meineri and Andrew Roscoe
35. **TOE for Miscellaneous Conditions** 254
 Lachlan F. Miles and Andrew Roscoe

Section 8 Miscellaneous Topics

36. **Haematology** 261
 Martin W. Besser and Kiran M. P. Salaunkey
37. **Cardiac Surgery during Pregnancy** 269
 Savio J. M. Law and Sarah E. Round
38. **Regional Anaesthesia** 274
 Trevor W. R. Lee
39. **Pain Management after Cardiac Surgery** 280
 Siân I. Jaggar and Helen C. Laycock
40. **Infection** 285
 Hannah McCormick and Judith A. Troughton

Index 290