

PART I Introduction

- 1 **The History of Obstetric Anesthesia, 2**
Donald Caton, MD

PART II Maternal and Fetal Physiology

- 2 **Physiologic Changes of Pregnancy, 13**
Rachel M. Kacmar, MD, Robert Gaiser, MD
- 3 **Uteroplacental Blood Flow, 38**
Warwick D. Ngan Kee, BHB, MBChB, MD, FANZCA, FHKCA, FHKAM
(Anaesthesiology)
- 4 **The Placenta: Anatomy, Physiology, and Transfer of Drugs, 56**
Mark I. Zakowski, MD, Andrew Geller, MD
- 5 **Fetal Physiology, 77**
Mieke Soens, MD, Lawrence C. Tsen, MD

PART III Fetal and Neonatal Assessment and Therapy

- 6 **Antepartum Fetal Assessment and Therapy, 97**
George M. Graham III, MD, Joong Shin Park, MD, PhD,
Errol R. Norwitz, MD, PhD
- 7 **Anesthesia for Fetal Surgery and Other Intrauterine Procedures, 132**
Mark D. Rollins, MD, PhD
- 8 **Intrapartum Fetal Assessment and Therapy, 155**
Elizabeth G. Livingston, MD
- 9 **Neonatal Assessment and Resuscitation, 171**
Susan W. Aucott, MD, Jamie D. Murphy, MD
- 10 **Fetal and Neonatal Neurologic Injury, 199**
Tania F. Esakoff, MD, Sarah J. Kilpatrick, MD, PhD,
Arvind Palanisamy, MBBS, MD, FRCA

PART IV Foundations in Obstetric Anesthesia

- 11 **Patient Safety and Team Training, 224**
David J. Birnbach, MD, MPH, Eduardo Salas, PhD
- 12 **Spinal, Epidural, and Caudal Anesthesia: Anatomy, Physiology, and Technique, 238**
Naveen Nathan, MD, Cynthia A. Wong, MD
- 13 **Local Anesthetics and Opioids, 271**
Brenda A. Bucklin, MD, Alan C. Santos, MD, MPH

PART V Anesthesia before and during Pregnancy

- 14 **Pharmacology during Pregnancy and Lactation, 313**
Tony Gin, MBChB, MD, FANZCA, FHKAM
- 15 **In Vitro Fertilization and Other Assisted Reproductive Technology, 336**
Lawrence C. Tsen, MD
- 16 **Problems of Early Pregnancy, 350**
Katherine W. Arendt, MD, Margaret E. Long, MD
- 17 **Nonobstetric Surgery during Pregnancy, 368**
Jeanette R. Bauchat, MD, MS, Marc Van de Velde, MD, PhD, EDRA

PART VI Labor and Vaginal Delivery

- 18 **Obstetric Management of Labor and Vaginal Delivery, 393**
Akila Subramaniam, MD, MPH, Alan T. N. Tita, MD, PhD,
Dwight J. Rouse, MD, MSPH
- 19 **Trial of Labor and Vaginal Birth after Cesarean Delivery, 409**
David H. Chestnut, MD
- 20 **The Pain of Childbirth and Its Effect on the Mother and the Fetus, 422**
Peter H. Pan, MD, Jessica L. Booth, MD
- 21 **Childbirth Preparation and Nonpharmacologic Analgesia, 441**
Rebecca D. Minehart, MD, MSHPEd,
Marie E. Minnich, MD, MMM, MBA, CPE
- 22 **Systemic Analgesia: Parenteral and Inhalational Agents, 453**
Thunga Setty, MBChB, FRCA, Roshan Fernando, MD, FRCA
- 23 **Epidural and Spinal Analgesia: Anesthesia for Labor and Vaginal Delivery, 474**
Cynthia A. Wong, MD
- 24 **Alternative Regional Analgesic Techniques for Labor and Vaginal Delivery, 540**
David H. Chestnut, MD
- 25 **Postpartum Tubal Sterilization, 553**
Joy L. Hawkins, MD

PART VII Cesarean Delivery

- 26 **Anesthesia for Cesarean Delivery, 568**
Lawrence C. Tsen, MD, Brian T. Bateman, MD, MSc

27 Postoperative Analgesia, 627*Ronald B. George, MD, FRCPC,**Brendan Carvalho, MBBCh, FRCA, MDCH,**Alexander Butwick, MBBS, FRCA, MS, Pamela Flood, MD***PART VIII Anesthetic Complications****28 Aspiration: Risk, Prophylaxis, and Treatment, 671***Michaela K. Farber, MD, MS***29 The Difficult Airway: Risk, Assessment, Prophylaxis, and Management, 692***Robin Russell, MBBS, MD, FRCA***30 Postpartum Headache, 724***Feyce Peralta, MD, Alison Macarthur, BMSc, MD, FRCPC, MSc***31 Neurologic Complications of Pregnancy and Neuraxial Anesthesia, 752***Hans Sviggum, MD,**Felicity Reynolds, MD, MBBS, FRCA, FRCOG ad eundem***32 Shared Decision-Making and Communication, 777***Vilma E. Ortiz, MD, Joshua Abrams, JD,**May C. M. Pian-Smith, MD, MS***PART IX Obstetric Complications****33 Preterm Labor and Delivery, 798***Janelle R. Bolden, MD, William A. Grobman, MD, MBA***34 Abnormal Presentation and Multiple Gestation, 822***Joy L. Hawkins, MD***35 Hypertensive Disorders, 840***Robert A. Dyer, FCA (SA), PhD,**Justiaan L. Swanevelder, FCA (SA), FRCA, MMed (Anes),**Brian T. Bateman, MD, MSc***36 Infection, 879***Melissa E. Bauer, DO, Catherine M. Albright, MD,**Scott Segal, MD, MHCM, David J. Wlody, MD***37 Antepartum and Postpartum Hemorrhage, 901***Jennifer M. Banayan, MD, Jennifer E. Hofer, MD,**Barbara M. Scavone, MD***38 Embolic Disorders, 937***Paloma Toledo, MD, MPH***39 Maternal Mortality, 956***Jill M. Mhyre, MD***PART X The Parturient with Systemic Disease****40 Autoimmune Disorders, 972***Phil Popham, BSc, MBBS, FRCA, MD, PG Cert US***41 Cardiovascular Disease, 987***Mladen I. Vidovich, MD, FACC, FSCAI***42 Chronic Pain during and after Pregnancy, 1033***Jessica Ansari, MD, Pamela Flood, MD***43 Endocrine Disorders, 1056***Richard N. Wissler, MD, PhD***44 Hematologic and Coagulation Disorders, 1088***Jill M. Mhyre, MD***45 Liver Disease, 1112***David B. Wax, MD, Yaakov Beilin, MD***46 Malignant Hyperthermia, 1126***M Joanne Douglas, MD, FRCPC***47 Musculoskeletal Disorders, 1139***Roanne Preston, MD, FRCPC***48 Neurologic and Neuromuscular Disease, 1160***Grace Lim, MD, MS, Angela M. Bader, MD, MPH***49 Obesity, 1190***Ashraf S. Habib, MBBCh, MSc, MHSc, FRCA, Robert D'Angelo, MD***50 Psychiatric Disorders, 1207***Warwick D. Ngan Kee, BHB, MBChB, MD, FANZCA, FHKCA, FHKAM**(Anaesthesiology), Vijay J. Roach, MBBS, MRCOG, FRANZCOG,**MHKCOG***51 Renal Disease, 1215***Daniel Katz, MD, Yaakov Beilin, MD***52 Respiratory Disease, 1231***Karen S. Lindeman, MD***53 Substance Use Disorders, 1248***Lisa R. Leffert, MD***54 Trauma and Critical Care, 1274***Luis D. Pacheco, MD, Edward R. Sherwood, MD, PhD***Appendix A. American Society of Anesthesiologists****Guidelines for Neuraxial Anesthesia in Obstetrics, 1300****Appendix B. Practice Guidelines for Obstetric Anesthesia:****an Updated Report by the American Society of Anesthesiologists Task Force on Obstetric Anesthesia and the Society for Obstetric Anesthesia and Perinatology, 1302****Appendix C: Optimal Goals for Anesthesia Care in Obstetrics, 1326****Appendix D: Information Technology Resources for Obstetric Anesthesia Providers, 1328***Richard C. Month, MD, FASA, William Camann, MD,**Larry F. Chu, MD, MS (BCHM), MS (Epidemiology)***Index, 1333**