

Contents

List of Contributors ix
Foreword xii
Preface xiii
Acknowledgments xiv

Section 1 The Trauma Operating Room

- 1 **Trauma Operating Room** 1
 Brian Mecklenburg, Lisa L. Schlitzkus, and Kenji Inaba

Section 2 Resuscitative Procedures in the Emergency Room

- 2 **Cricothyroidotomy** 7
 Morgan Schellenberg, Paul Wisniewski, and Travis M. Polk
- 3 **Thoracostomy Tube Insertion** 16
 Demetrios Demetriades and Caroline Park
- 4 **Emergency Room Resuscitative Thoracotomy** 23
 Demetrios Demetriades, James Bardes, and Scott Zakaluzny

Section 3 Head

- 5 **Intracranial Pressure Monitors** 33
 Meghan Lewis and John Peter Gruen
- 6 **Evacuation of Acute Epidural and Subdural Hematomas** 38
 Gabriel Zada and Kazuhide Matsushima

Section 4 Neck

- 7 **Neck Operations for Trauma: General Principles** 47
 James Bardes, Emilie Joos, and Kenji Inaba
- 8 **Carotid Artery and Internal Jugular Vein Injuries** 51
 Edward Kwon, Daniel Grabo, and George C. Velmahos
- 9 **Subclavian Vessels** 59
 Demetrios Demetriades and Jennifer A. Smith

- 10 **Axillary Vessels** 70
 Demetrios Demetriades and Emilie Joos
- 11 **Vertebral Artery Injuries** 74
 Demetrios Demetriades, Morgan Schellenberg, and Nick A. Nash
- 12 **Trachea and Larynx** 82
 Elizabeth R. Benjamin and Kenji Inaba
- 13 **Cervical Esophagus** 89
 Elizabeth R. Benjamin and Kenji Inaba

Section 5 Chest

- 14 **General Principles of Chest Trauma Operations** 95
 Demetrios Demetriades, Matthew J. Forestiere, and Rondi Gelbard
- 15 **Cardiac Injuries** 104
 Demetrios Demetriades, Zachary D. Warriner, and Scott Zakaluzny
- 16 **Thoracic Vessels** 118
 Demetrios Demetriades, Vincent Chong, and Stephen Varga
- 17 **Lungs** 130
 Demetrios Demetriades and Jennifer A. Smith
- 18 **Thoracic Esophagus** 142
 Anthony W. Kim and Caroline Park
- 19 **Diaphragm** 150
 Lydia Lam and Caroline Park
- 20 **Surgical Fixation of Rib Fractures** 156
 Travis M. Polk and Paul Wisniewski
- 21 **Video-Assisted Thoracoscopic Evacuation of Retained Hemothorax** 164
 Aaron Strumwasser and Matthew J. Forestiere

Contents

Section 6 Abdomen

- 22 **General Principles of Abdominal Operations for Trauma** 171
 Damon Clark, Zachary D. Warriner, and Lisa L. Schlitzkus
- 23 **Damage Control Surgery** 184
 Mark J. Kaplan and Demetrios Demetriades
- 24 **Resuscitative Endovascular Balloon Occlusion of the Aorta (REBOA)** 193
 Elizabeth R. Benjamin and Kazuhide Matsushima
- 25 **Gastrointestinal Tract** 202
 Morgan Schellenberg, Lisa L. Schlitzkus, and Kenji Inaba
- 26 **Duodenum** 211
 Elizabeth R. Benjamin, Edward Kwon, and Demetrios Demetriades
- 27 **Liver and Biliary Tract Injuries** 220
 Kenji Inaba, Zachary D. Warriner, and Kelly Vogt
- 28 **Splenic Injuries** 234
 Demetrios Demetriades and Matthew D. Tadlock
- 29 **Pancreas** 244
 Demetrios Demetriades, Emilie Joos, and George C. Velmahos
- 30 **Urological Trauma** 253
 Leo R. Doumanian, Charles D. Best, Jessica A. Keeley, and Stephen Varga
- 31 **Abdominal Aorta and Splachnic Vessels** 268
 Pedro G. Teixeira, Gregory A. Magee, and Vincent L. Rowe
- 32 **Iliac Vessel Injuries** 286
 Demetrios Demetriades and Kelly Vogt
- 33 **Inferior Vena Cava** 291
 Lydia Lam, Matthew D. Tadlock, and Demetrios Demetriades
- 34 **Cesarean Section** 311
 Marcia Ciccone, Sigita Cahoon, and Laila I. Muderspach
- 35 **Emergency Hysterectomy** 321
 Marcia Ciccone, Laila I. Muderspach, and Sigita Cahoon

Section 7 Pelvic Fractures and Bleeding

- 36 **Damage Control for Pelvic Fracture Bleeding** 335
 Kazuhide Matsushima, Bryan Love, and Mathew D. Tadlock

Section 8 Upper Extremities

- 37 **Brachial Artery Injury** 343
 Peep Talving and Elizabeth R. Benjamin
- 38 **Upper Extremity Fasciotomies** 354
 Demetrios Demetriades
- 39 **Upper Extremity Amputations** 364
 Peep Talving and Jackson Lee

Section 9 Lower Extremities

- 40 **Femoral Artery Injuries** 373
 George C. Velmahos, Matthew J. Forestiere, and Rondi Gelbard
- 41 **Popliteal Vessels** 378
 Demetrios Demetriades and Gregory A. Magee
- 42 **Harvesting of Saphenous Vein** 385
 Aaron Strumwasser and Gregory A. Magee
- 43 **Lower Extremity Amputations** 390
 Jackson Lee, Jessica A. Keeley, and Stephen Varga
- 44 **Lower Extremity Fasciotomies** 400
 Elizabeth R. Benjamin and James Bardes

Section 10 Orthopedic Damage Control

- 45 **Orthopedic Damage Control** 413
 Eric Pagenkopf, Daniel Grabo, and Peter M. Hammer

Section 11 Soft Tissues

- 46 **Skin Graft Technique** 427
 Justin Gillenwater and Warren Garner
- 47 **Negative Pressure Therapy for Soft Tissue Wounds** 434
 Elizabeth R. Benjamin and Demetrios Demetriades
- 48 **Escharotomy in Burns** 439
 Justin Gillenwater and Warren Garner
- 49 **Temporary Vascular Shunts** 446
 Morgan Schellenberg, Travis M. Polk, and Paul Wisniewski

Index 450