

Contents

Editorial	Acute Aortic Syndromes: The Evolution of Treatment and Management
Alexander Kulk and Michael M. Gamiel	1
Management of Acute Aortic Syndromes: A Multidisciplinary Approach	15
John T. Fallon, Michael J. de Bont, and Leonard N. Girardi	15
Management of Complicated Acute Type A Aortic Dissection	23
John T. Fallon and Michael P. Fischetti	23
Management of Type B Aortic Dissection	31
John T. Fallon, Michael J. de Bont, and Leonard N. Girardi	31
Part I History, Presentation and Genetics of Acute Aortic Syndromes	3

Overview and History of Aortic Dissection and Other Acute Aortic Syndromes	3
Afshin Ehsan and Frank W. Sellke	
Aortic Anatomy and the Pathophysiology of Acute Aortic Syndromes	17
Lauren V. Huckaby and Thomas G. Gleason	
Histopathology of Acute Aortic Syndromes	39
David Ranney and Ryan P. Plichta	
Genetically-Triggered Aortic Dissections	45
Melissa L. Russo and Jia Jennifer Ding	
Presentation of Acute Aortic Syndromes	63
Santi Trimarchi, Hector W. L. de Beaufort, and Theodorus M. J. van Bakel	
Classification Systems of Acute Aortic Syndromes	69
Armininder S. Jassar, Rizwan Q. Attia, and Eric M. Isselbacher	
Medical Conditions Predisposing to Aortic Dissection and Preventive Strategies	85
Eduardo Bossone, Valentina Russo, Andrea Salzano, and Kim Eagle	
What Do the Guidelines Say for the Treatment of Acute Aortic Syndromes?	105
Jordan P. Bloom, Navyatha Mohan, and Thoralf M. Sundt	
Part II Imaging and Initial Management of Acute Aortic Syndromes	
Initial Medical Management of Acute Aortic Syndromes	119
Abigail R. Benkert and Jeffrey G. Gaca	

Imaging of Aortic Dissection: CT, MRI, and Angiography.....	131
Albree Tower-Rader, Lars G. Svensson, and Venu Menon	
Imaging of Intramural Hematoma and Penetrating Atherosclerotic Ulcer by CT and MRI.....	149
Zachary Hartley-Blossom, Saurabh Agarwal, and Michael K. Atalay	
Echocardiography for the Diagnosis and Management of Acute Aortic Syndromes.....	175
Sumbal Janjua, Andrew D. Maslow, and Athena Poppas	
Long-Term Imaging of the Aorta: Considerations and Comparison of Modalities.....	189
Nicholas S. Burris, Bradley D. Allen, and David M. Williams	
Part III Treatment of Acute Thoracic Aortic Syndromes	
Blunt Traumatic Aortic Injury: Etiology, Diagnosis, and Management.....	209
Bruce L. Tjaden and Anthony L. Estrera	
Catheter-Induced Aortic Dissection	225
Hannah Chaudry, Marwan Saad, and J. Dawn Abbott	
Aortic Intramural Hematoma	237
Neel R. Sodha and Frank W. Sellke	
Penetrating Atherosclerotic Ulcer: Presentation and Management.....	249
Ignas B. Houben, Pieter Van Bakel, and Himanshu J. Patel	
Endovascular Treatment of Type A Aortic Dissections	261
Maximilian Kreibich and Friedhelm Beyersdorf	
Valve Sparing Aortic Root Replacement for Aortic Valve Insufficiency in Type A Aortic Dissection	269
Eltayeb Mohamed Ahmed and Edward P. Chen	
Basic Approaches for the Surgical Management of Acute Type A Aortic Dissection: Safe Management Strategies for the General Cardiac Surgeon	283
Tirone E. David	
Valve Repair for Aortic Valve Insufficiency in the Setting of Acute Aortic Dissection.....	293
Talal Al-Atassi and Munir Boodhwani	
Management of the Aortic Arch in Acute Aortic Dissection Type A	305
Takashi Kunihara and Hans-Joachim Schäfers	
Frozen Elephant Trunk for Aortic Dissection	323
Emidio Germano, Kyle Miletic, and Eric E. Roselli	

One-Stage Repair of Extensive Chronic Thoracic Aortic Dissection	333
Alexander Kulik and Nicholas T. Kouchoukos	
Management of Complicated Type A Aortic Dissection: The Cornell-New York Presbyterian Approach	349
Erin Ianncone, Christopher Lau, Mario Gaudino, and Leonard N. Girardi	
Management of Complicated Acute Type A Aortic Dissection: The Stanford Approach	365
Albert J. Pedroza and Michael P. Fischbein	
Management of Type B Aortic Dissection	381
Ali Khoynezhad, Tiffany Worthington, Raffat Jaber, Jeffrey Altshuler, and Rodney White	
Subacute and Chronic Type A Aortic Dissection	401
Lars G. Svensson	
Management of Chronic Descending Thoracic and Thoracoabdominal Dissection and Aneurysm - Stent Grafting, Debranching	409
Roland Assi and Wilson Y. Szeto	
Management of Chronic Dissection of the Descending Thoracic and Thoracoabdominal Aorta: Open Approach	423
Cuneyt Köksoy, Alice Le Huu, and Joseph S. Coselli	
Diagnosis and Management of Ruptured Thoracic Aortic Aneurysms	447
Christopher Lau, Mario Gaudino, Erin Ianncone, and Leonard N. Girardi	
Monitoring and Medical Treatment of Chronic Thoracic, Abdominal, and Thoracoabdominal Aortic Aneurysms	461
Melinda S. Schaller, Winona W. Wu, and Marc L. Schermerhorn	
External Aortic Support and Other Alternative Strategies in the Management of Aortic Pathology of Patients with Connective Tissue Disorders	469
John Pepper	
Management of Operative Complications After Type A Aortic Dissection Repair	483
Michael P. Robich and Jennifer S. Lawton	
Neuroprotection During Dissection Repair	497
Christian V. Ghincea, Yuki Ikeno, Andrew L. Mesher, Muhammad Aftab, and T. Brett Reece	
Acute Type A Aortic Dissection: When Not to Operate	519
Ashraf A. Sabe, Ryan P. Plichta, and G. Chad Hughes	

Delayed Surgery for Acute Aortic Dissection	535
Polina Pinkhasova, Mohammad A. Zafar, Bulat A. Ziganshin, and John A. Elefteriades	
Anesthetic Management of Acute Aortic Dissection	553
Michael Tien and Albert T. Cheung	
Coagulopathy and Bleeding Management for Aortic Dissection Surgery	577
Jerrold H. Levy and Roman M. Sniecinski	
Part IV Postoperative Monitoring and Medical Management	
Monitoring After Surgery for Acute Aortic Syndromes	597
Andrew M. Vekstein and Adam R. Williams	
Medical Management of Uncomplicated Type B Acute Aortic Syndromes	609
Arvind K. Pandey, Umberto Campia, and Patrick T. O'Gara	
Symptomatic Thoracic Aortic Aneurysms	623
Rizwan Q. Attia, Arminder S. Jassar, and Duke E. Cameron	
Future Considerations for Acute Aortic Syndromes	643
Konstantin von Aspern, Christian D. Etz, and Michael A. Borger	