

## Table of Contents

### THORACIC AORTIC SURGERY IN THE 21ST CENTURY

#### Editorial



#### 627 Thoracic Aortic Surgery in the 21st Century

*Mohamad Bashir, Duke Cameron, and Edward Chen*

#### Basic and Clinical Sciences



#### 628 Nonsyndromic Thoracic Aortic Aneurysms and Dissections—Is Screening Possible?

*Thais Faggion Vinholo, Mohammad A. Zafar, Bulat A. Ziganshin, and John A. Elefteriades*



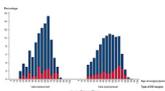
#### 635 Artificial Intelligence in Aortic Surgery: The Rise of the Machine

*Mohamad Bashir, and Amer Harky*



#### 638 Decision-Making in Thoracic Aortic Aneurysm Surgery—Clinician and Patient View

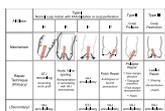
*Arjen L. Gökalp, and Johanna J.M. Takkenberg*



#### 643 Aortic Valve Surgery in Nonelderly Patients: Insights Gained From AVIATOR

*Emmanuel Lansac, Pouya Youssefi, Frederiek de Heer, Joseph Bavaria, Laurent De Kerchove, Ismail El-Hamamsy, Gebrine Elkhoury, Maurice Enriquez-Sarano, Laurent de Guillaume Jondeau, Jolanda Kluin, Philippe Pibarot, Hans-Joachim Schäfers, Jean-Louis Vanoverschelde, Johanna J.M. Takkenberg, and on behalf of the Aortic Valve Repair Research Network Investigators from the Heart Valve Society, Collaborators*

#### Valve: Disease Management and Surgical Innovation



#### 650 Aortic Valve Repair: From Concept to Future Targets

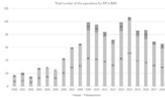
*Ming Hao Guo, and Munir Boodhwani*



(continued on page e3)

## THORACIC AORTIC SURGERY IN THE 21ST CENTURY (continued)

### Valve: Disease Management and Surgical Innovation



#### 656 (Almost) All Nonstenotic Bicuspid Aortic Valves Should Be Preserved or Repaired

*Shunsuke Miyahara, Ulrich Schneider, Lucie Morgenthaler, and Hans-Joachim Schäfers*



#### 661 Almost All Incompetent BAV Should Be Repaired

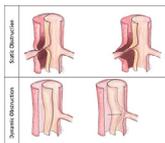
*Tirone E. David*

### Aorta: Disease Management & Surgical Innovation



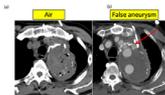
#### 664 Type A Aortic Dissection in the United Kingdom: The Untold Facts

*Mohamad Bashir, Amer Harky, Callum Howard, and Thomas Bartram*



#### 668 Mesenteric Malperfusion in Acute Aortic Dissection: Challenges and Frontiers

*Bashi V. Velayudhan, A. Mohammed Idhrees, K. Mukesh, and Ramachandran Nair Kannan*



#### 674 Opinion: Aortic Graft Infection—Any Guidelines or Just Surgeon's Experience Lines!

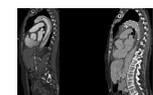


*Yutaka Okita, Katsuhiko Yamanaka, and Kenji Okada*



#### 679 Which Frozen Elephant Trunk Offers the Optimal Solution? Reflections From Essen Group

*Konstantinos Tsagakis, and Heinz Jakob*



#### 686 Reflection From UK Aortic Group: Frozen Elephant Trunk Technique as Optimal Solution in Type A Acute Aortic Dissection

*Giovanni Mariscalco, Haris Bilal, Pedro Catarino, Leonidas Hadjinikolaou, Manoj Kuduvalli, Mark Field, Jorge Mascaro, Aung Y. Oo, Cesare Quarto, James Kuo, Geoff Tsang, and on behalf of the UK Aortic Group*



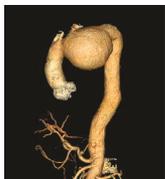
#### 691 The Decision-Making Process in Acute Type A Aortic Dissection: When to Replace the Aortic Arch

*Alessandro Leone, Luca Di Marco, Giacomo Murana, Giuditta Coppola, Mariafrancesca Fiorentino, Ciro Amodio, Roberto Di Bartolomeo, and Davide Pacini*

*(continued on page e4)*

## THORACIC AORTIC SURGERY IN THE 21ST CENTURY *(continued)*

### Aorta: Disease Management & Surgical Innovation



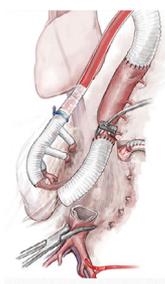
**697 Contemporary Management of Aortic Arch Aneurysm**

*Kenton L. Rommens, and Anthony L. Estrera*



**703 Thoracoabdominal Aortic Aneurysm Repair: From an Era of Revolution to an Era of Evolution**

*Alice Le Huu, Susan Y. Green, and Joseph S. Coselli*



**708 Thoracoabdominal Aortic Aneurysm – The Branch First Technique**

*George Matalanis, and Stephanie L. Ch'ng*

---

## ADULT

### State of the Art



**713 Spinal Cord Protection for Thoracic Aortic Surgery: Bench to Bedside**

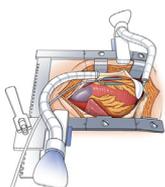
*Christian V. Ghincea, Yuki Ikeno, Muhammad Aftab, and T. Brett Reece*



**721 Donation After Cardiac Death: A Necessary Expansion for Heart Transplantation**

*Rachel A. Beaupré, and Jeffrey A. Morgan*

### Current Readings



**726 Current Readings on Outcomes After Off-Pump Coronary Artery Bypass Grafting**

*Viral Patel, Shinya Unai, Mario Gaudino, and Faisal Bakaeen*



**734 The Eternal Debate: CABG Vs PCI. Current Status of the Literature**

*John Lisko, Norihiko Kamioka, and Kendra J. Grubb*

*(continued on page e5)*

## ADULT (continued)

### Original Submissions



**740** **True Lumen Stabilization to Overcome Malperfusion in Acute Type I Aortic Dissection**

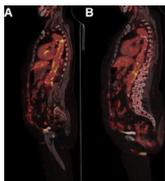


*Konstantinos Tsagakis, Rolf A. Jánosi, Ulrich H. Frey, Thomas Schlosser, Roberto Chiesa, Tienush Rassaf, and Heinz Jakob*



**749** **Editorial Commentary: Hybrid Approach as the Rescuer of Malperfusion Syndrome in Acute Type I Aortic Dissection: A New Hope?**

*Joon Bum Kim*



**751** **Incidence of Aortitis in Surgical Specimens of the Ascending Aorta Clinical Implications at Follow-Up**

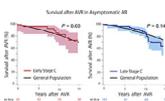


*Andrea De Martino, Paolo Ballestracci, Lorenzo Faggioni, Stefano Pratali, Riccardo Morganti, Angela Pucci, and Uberto Bortolotti*



**761** **Editorial Commentary: Commentary: Aortitis Prognosis: Pathologic Diagnosis Independently Adversely Affects Long-Term Survival**

*Neil Venardos, T. Brett Reece, and Muhammad Aftab*



**763** **Outcomes After Aortic Valve Replacement for Asymptomatic Severe Aortic Regurgitation and Normal Ejection Fraction**



*Shusaku Maeda, Kazuhiro Taniguchi, Koichi Toda, Toshihiro Funatsu, Haruhiko Kondoh, Takenori Yokota, Satoshi Kainuma, Takashi Daimon, Yasushi Yoshikawa, and Yoshiki Sawa, and Osaka Cardiovascular Surgery Research (OSCAR) Group*



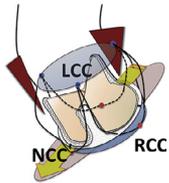
**771** **Editorial Commentary: Filling the Gap Between Guidelines and Current Surgical Practice: Is Early Surgery Justified in Patients With Asymptomatic Severe Aortic Regurgitation With Normal Left Ventricular Function?**

*Ko Bando*

(continued on page e6)

## ADULT (continued)

### Original Submissions



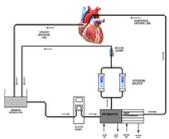
**773**  **Transprosthetic Cuff Leakage of a Bovine Pericardial Aortic Bioprosthesis**

*Arudo Hiraoka, Akihiro Hayashida, Toshinori Totsugawa, Kentaro Tamura, Genta Chikazawa, Hidenori Yoshitaka, and Taichi Sakaguchi*



**780** **Editorial Commentary: What Every Surgeon Should Know About Intraoperative Evaluation of Paravalvular Leaks**

*Joanna Chikwe, and Eric Zabirowicz*



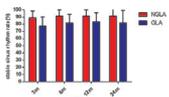
**783**  **Hemoadsorption to Reduce Plasma-Free Hemoglobin During Cardiac Surgery: Results of REFRESH I Pilot Study**

*Thomas G. Gleason, Michael Argenziano, Joseph E. Bavaria, Lauren C. Kane, Joseph S. Coselli, Richard M. Engelman, Kenichi A. Tanaka, Ahmed Awad, Michael E. Sekela, and Joseph B. Zwischenberger*



**794** **Editorial Commentary: Hemoadsorption Is Safe During Cardiac Surgery – But Does It Improve Outcomes?**

*Matthew C. Henn, and Marc R. Moon*



**796**  **Efficacy of Cut-and-Sew Surgical Ablation for Atrial Fibrillation in Patients With Giant Left Atria Undergoing Mitral Valve Surgery: A Propensity-Matched Analysis**

*Huishan Wang, Jinsong Han, Zengwei Wang, Zongtao Yin, Zhigang Liu, Yan Jin, and Hongguang Han*



**803** **Editorial Commentary: The Maze Procedure and Left Atrial Enlargement: Just Do It**

*Marc Gillinov, and Edward G. Soltesz*

### Letter to the Editor

**805** **Response to the Article by Tiako Et Al, “Recidivism Is the Leading Cause of Death Among Intravenous Drug Users Who Underwent Cardiac Surgery for Infective Endocarditis”**

*Amber B. Moore, and Margaret Hayden*

### Reply to the Letter to the Editor

**806** **Acknowledging the Importance of Proper Word Choice to Avoid Stigmatizing Patients Who Inject Drugs**

*Max Jordan Nguemeni Tiako, Makoto Mori, Syed Usman Bin Mahmood, and Arnar Geirsson*

(continued on page e7)

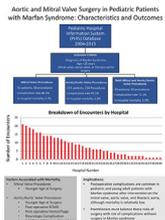
## CONGENITAL State of the Art



### 807 State of the Art: Tissue Engineering in Congenital Heart Surgery

*Rebekah Boyd, Frank Parisi, and David Kalfa*

## Original Submissions



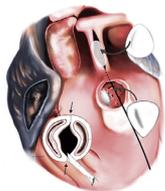
### 818 Thoracic Aortic, Aortic Valve, and Mitral Valve Surgery in Pediatric and Young Adult Patients With Marfan Syndrome: Characteristics and Outcomes

*Joseph J. Knadler, Scott LeMaire, E. Dean McKenzie, Brady Moffett, and Shaine A. Morris*



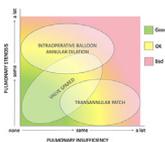
### 826 Editorial Commentary: Cardiovascular Operations in Children With Marfan Syndrome

*Tirone David*



### 828 Valve-Sparing Tetralogy of Fallot Repair With Intraoperative Dilatation of the Pulmonary Valve. Mid-Term Results

*María Lozano-Balseiro, Maria Garcia-Vieites, Isaac Martínez-Bendayán, Irene García-Hernández, Jose J. Cuenca-Castillo, Fernando Rueda-Núñez, and Victor Bautista-Hernandez*



### 835 Editorial Commentary: Intraoperative Balloon Pulmonary Annulus Dilatation: A New Alchemy or Polishing a Meatball?

*David P. Bichell*



### 837 Mid-Term Outcome of Right Ventricle to Pulmonary Artery Shunt for Older Children and Young Adults With Ventricular Septal Defect, Pulmonary Atresia, and Hypoplastic Pulmonary Arteries

*Kartik Patel, Suresh Kumar Rajan, Pankaj Garg, Trushar Gajjar, Amit Mishra, Rahul Kumar, Yashpal Rana, Chadrashekharan Ananthnarayan, Pranav Sharma, and Sanjay Patel*



### 845 Editorial Commentary: A Lesson About Pulmonary Artery Development From a Developing World Study

*Bahaaldin Alsoufi*

*(continued on page e8)*

## CONGENITAL (continued)

### Brief Research Reports



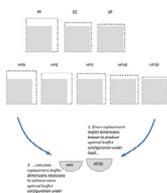
#### 847 **Surgical Repair of Tetralogy of Fallot With Absent Pulmonary Valve: Favorable Long-Term Results**

*Dan M. Dorobantu, Carla Stoicescu, Robert M. Tulloh, and Serban C. Stoica*



#### 850 **Editorial Commentary: Survival Improvement in Tetralogy of Fallot With Absent Pulmonary Valve: A Nouvelle Cuisine Message**

*Veronica D'Oria, and Mauro Lo Rito*



#### 852 **Mechanical Properties of Autologous Pericardium Change With Fixation Time: Implications for Valve Reconstruction**

*Sophie C. Hofferberth, Christopher W. Baird, David M. Hoganson, Luis G. Quiñonez, Sitaram M. Emami, Pedro J. del Nido, and Peter E. Hammer*



#### 855 **Editorial Commentary: Commentary: The Quest for the Ideal Patch**

*Michel Ilbawi*

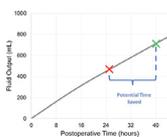
## THORACIC News and Views



#### 856 **Patient-Reported Outcomes: Time to Integrate Into Outcomes Reporting?**

*Rachel L. Medbery, Felix G. Fernandez, and Onkar V. Khullar*

### Original Submission



#### 861 **Early Identification of Patients Who Will Meet 24-Hour Fluid Output Threshold for Chest Tube Removal After Lung Resection**

*Jayson L. Azzi, Bram Gottlieb, Donna E. Maziak, Andrew J.E. Seely, Farid M. Shamji, Sudhir Sundaresan, Patrick J. Villeneuve, and Sebastien Gilbert*



#### 868 **Editorial Commentary: Everyone Hates Chest Tubes**

*Christopher W. Seder*

(continued on page e9)

## THORACIC *(continued)*

### Case Report



- 870** **Thoracoscopic Resection of a Nonseminomatous Primary Mediastinal Germ Cell Tumor**  
▶ *Raul Caso, and M. Blair Marshall*