

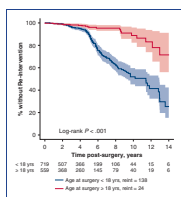


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### Congenital Articles in AATS Journals

e95 Congenital

#### Congenital: Pulmonary Valve



345



#### Reintervention rates after bioprosthetic pulmonary valve replacement in patients younger than 30 years of age: A multicenter analysis

Christopher W. Baird, MD, Mariana Chávez, MD, Lynn A. Sleeper, ScD, Michele J. Borisuk, MSN, CPNP, Emile A. Bacha, MD, Luke Burchill, MD, Kristine Guleserian, MD, Michel Ilbawi, MD, Khanh Nguyen, MD, Anees Razzouk, MD, Takeshi Shinkawa, MD, Minmin Lu, MS, and Stephanie M. Fuller, MD, MS, Boston, Mass; New York and Valhalla, NY; Melbourne, Australia; Miami, Fla; Chicago, Ill; Loma Linda, Calif; Little Rock, Ark; and Philadelphia, Pa

Bioprosthetic PVR has acceptable outcomes. Younger age and smaller valve are independent predictors of a shorter time to reintervention. Different valve types have different rates of reintervention.

**This article has an associated discussion and webcast.**

363

**Commentary:** Pulmonary valve replacement: A good option with room for improvement  
*James Quintessenza, MD, St Petersburg, Fla*

With low early morbidity and mortality, pulmonary valve replacement provides a good solution for our patients, but durability remains a significant issue.

364

**Commentary:** Pulmonary valve bioprosthesis: Longevity and reintervention  
*Harold M. Burkhart, MD, and Sabrina D. Phillips, MD, Oklahoma City, Okla, and Jacksonville, Fla*

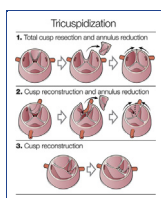
Patients requiring a bioprosthetic pulmonary valve will need multiple valve interventions in their lifetime. Valve longevity, in addition to time to reintervention, must play a role when deciding valve strategies.

365

**Commentary:** In pursuit of the perfect pulmonary valve....  
*John D. Cleveland, MD, and S. Ram Kumar, MD, PhD, FACS, Los Angeles, Calif*

The pursuit for the perfect pulmonary valve, which is both durable and easy to implant and maintain, has yet to bear fruit.

#### Congenital: Truncal Valve



368

#### The quadricuspid truncal valve: Surgical management and outcomes

Phillip S. Naimo, MD, Tyson A. Fricke, MBBS, Melissa G. Y. Lee, MBBS, PhD, Yves d'Udekem, MD, PhD, Johann Brink, MD, Christian P. Brizard, MD, and Igor E. Konstantinov, MD, PhD, Melbourne, Australia

More than one-third of children with a quadricuspid truncal valve will require truncal valve surgery. Tricuspidization is a durable repair option in young children.

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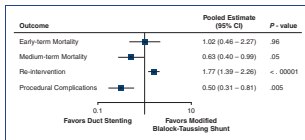
- 376** **Commentary:** Truncal root remodeling: A useful technique that can be translated to other lesions?  
*Aditya K. Kaza, MD, MBA, Boston, Mass*

Can truncal root remodeling be translated to other lesions?

- 377** **Commentary:** This looks like a great hammer...which nails should we pound?  
*Paul M. Kirshbom, MD, Charlotte, NC*

Tricuspidization appears to be a durable technique for repair of quadricuspid truncal valves in truncus arteriosus.

## Congenital: Tetralogy of Fallot



- 379** **Duct stenting versus modified Blalock–Taussig shunt in neonates and infants with duct-dependent pulmonary blood flow: A systematic review and meta-analysis**  
*Ali Alsagheir, MBBS, MSc, Alex Koziarz, MSc, Ahmad Makhdoum, MBBS, MSc, Juan Contreras, MD, Hatim Alraddadi, MBBS, Tasnim Abdalla, BHSc, Lee Benson, MD, Rajiv R. Chaturvedi, MD, PhD, and Osami Honjo, MD, PhD, Hamilton and Toronto, Ontario, Canada*



We performed a systematic review and meta-analysis of DS versus modified BTS in neonates and infants with duct-dependent PBF.

- 391** **Commentary:** Duct stenting in neonates: Is it time to kiss goodbye our old friend, the Blalock-Taussig shunt?  
*Majd Makhoul, MD, FAAP, FACC, Lexington, Ky*

Duct stenting is an effective, safe alternative to Blalock-Taussig shunt in infants with ductal-dependent pulmonary blood flow. RCTs are needed to define the long-term superiority of either approach.

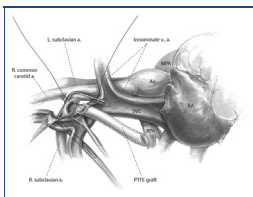
- 392** **Commentary:** Ductal stenting for ductal-dependent pulmonary blood flow: Time for an exclusive club to expand its membership?  
*James M. Meza, MD, MSc, Neel Prabhu, BS, Reid C. Chamberlain, MD, Joseph W. Turek, MD, PhD, and Nicholas D. Andersen, MD, Durham, NC*

In infants with ddPBF, DS may be preferable in suitable candidates. Its use is especially attractive in SV disease and merits further study.

- 394** **Commentary:** Shunts versus stents? Collaboration better than competition  
*David G. Lehenbauer, MD, and David L. S. Morales, MD, Cincinnati, Ohio*

The ideal approach to managing patients with duct-dependent pulmonary blood flow is a unified therapeutic strategy that is patient centric, evidence-based, and provided by a multidisciplinary Heart Team.

## Congenital: Tetralogy of Fallot: Invited Expert Opinion



- 396** **The many factors leading to resurgence of the Blalock shunt for tetralogy**  
*David Zurkowski, PhD, and Richard A. Jonas, MD, Washington, DC*

Multiple factors are coalescing to reverse the move to early primary repair of tetralogy despite widespread acceptance of neonatal repair of transposition and other symptomatic anomalies.

*The Journal of Thoracic and Cardiovascular Surgery* (ISSN 0022-5223) is published monthly by Elsevier Inc., 230 Park Avenue, Suite 800, New York, NY 10169-0901, USA. Business Office: 1600 John F. Kennedy Blvd, Suite 1800, Philadelphia, PA 19103-2899, USA. Editorial Office: 230 Park Avenue, Suite 800, New York, NY 10169-0901, USA. Customer Service Office: 6277 Sea Harbor Drive, Orlando, FL 32887-4800, USA. Periodicals postage paid at New York, NY, and additional mailing offices. POSTMASTER: Send address changes to Elsevier, Journal Returns, 1799 Highway 50 East, Linn, MO 65051, USA.

- 400** **Commentary:** You like potato and I like potahto  
*Christopher E. Mascio, MD, Philadelphia, Pa*

From databases and resident education to emerging technologies and research, it is still not clear what initial therapy is best for symptomatic, neonatal/early infancy tetralogy of Fallot.

- 401** **Commentary:** Is there still a role for the systemic-to-pulmonary artery shunt in tetralogy?  
*Harold M. Burkhardt, MD, Jess L. Thompson, MD, and Arshid Mir, MD, Oklahoma City, Okla*

Although most tetralogy infants are amenable to primary repair, there exists at-risk neonates who benefit from staged palliation followed by complete repair.

## Congenital: Hypoplastic Left Heart Syndrome: Case Report

- e97** **COVID-19 as a confounding factor in a child submitted to staged surgical palliation of hypoplastic left heart syndrome: One of the first reports of SARS-CoV-2 infection in patients with congenital heart disease**

(GA)

*Rodrigo Freire Bezerra, MD, Sônia Meiken Franchi, MD, Heloísa Khader, MD, Rodrigo Moreira Castro, MD, Gabriel Romero Liguori, MD, PhD, Luciana da Fonseca da Silva, MD, PhD, and José Pedro da Silva, MD, PhD, São Paulo, Brazil, and Pittsburgh, Pa*

COVID-19 could be a confounding factor for the diagnosis and management of patients with CHD. SARS-CoV-2 infection can progress with significant hypoxemia and mimics surgical complications.

- e103** **Commentary:** Adapting the practice of congenital heart surgery to the coronavirus disease 2019 (COVID-19) pandemic  
*Emile Bacha, MD, New York, NY*

As the COVID-19 pandemic ravages some countries, the variable impact on perioperative outcomes for congenital heart patients is slowly becoming more apparent.

- e104** **Commentary:** “Murder on the Orient Express of pandemic: COVID was found guilty, but was it the murderer?”  
*Giulia Poretti, MD, and Mauro Lo Rito, MD, San Donato Milanese, Italy*

During the COVID-19 pandemic, patients with congenital heart disease may contract the virus. It is easy to accuse the virus, but common hospital complications must not be forgotten: a compelling case.

- e105** **Commentary:** The importance of operative timing in the era of coronavirus disease 2019 (COVID-19)  
*John P. Costello, MD, and Victor T. Tsang, FRCS, London, United Kingdom*

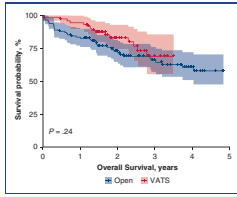
Providers must carefully consider testing and the true urgency of operative interventions in congenital heart disease patients with recent SARS-CoV-2 exposure, symptoms, or lack thereof.

## Thoracic Articles in AATS Journals

- e107** Thoracic

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## Thoracic: Lung Cancer



403



### Comparison of Video-assisted thoracoscopic surgery with thoracotomy in bronchial sleeve lobectomy for centrally located non-small cell lung cancer

Dong Xie, MD, PhD, Jiajun Deng, MD, Diego Gonzalez-Rivas, MD, Yuming Zhu, MD, Lei Jiang, MD, Gening Jiang, MD, PhD, and Chang Chen, MD, PhD, Shanghai, China, and Coruña, Spain

Compared with thoracotomy, VATS is a safe and reliable surgical procedure for sleeve lobectomy in selected patients with centrally located NSCLC without compromising perioperative and oncologic outcomes.

**This article has an associated discussion and webcast.**

414

### Commentary: Open or VATS? Roll up your sleeve

Taryne Imai, MD, and Benny Weksler, MD, Los Angeles, Calif, and Pittsburgh, Pa

A large, propensity-matched analysis of sleeve lobectomies strengthens consideration of minimally invasive approaches for sleeve resection instead of thoracotomy and validates the uniportal option.

415

### Commentary: Minimally invasive sleeve lobectomy: Time to roll up our “sleeves” and learn something new?

Neel P. Chudgar, MD, and Matthew J. Bott, MD, New York, NY

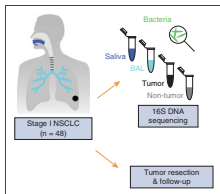
Thoracoscopic sleeve lobectomy can be performed with comparable morbidity, mortality, and survival to thoracotomy in appropriately selected patients when performed by experienced surgeons.

417

### Commentary: Overreliance of propensity-score matched studies in thoracic surgery

Travis C. Geraci, MD, and Thomas Ng, MD, New York, NY, and Providence, RI

Propensity-score studies have shown the superiority of VATS. Now, as robotic surgery rises, thoracic surgeons should perform randomized trials to provide greater level of evidence for these approaches.



419



### Lower airway bacterial microbiome may influence recurrence after resection of early-stage non-small cell lung cancer

Santosh K. Patnaik, MD, PhD, Eduardo G. Cortes, MS, Eric D. Kannisto, MS, Achamaporn Punnaitinont, BA, Samjot S. Dhillon, MD, Song Liu, PhD, and Sai Yendamuri, MD, Buffalo, NY

Bacterial community in the lower airway may have an influence on the biology of lung cancer or the immune response to it. This influence can have an effect on disease recurrence after tumor resection.

**This article has an associated webcast.**

430

### Commentary: Lung cancer and dysbiosis: Debugging the studies for the future

Harvey I. Pass, MD, New York, NY

The lung microbiome has enormous ramifications for lung cancer if we can avoid specimen contamination, harmonize computational techniques, and uncover dysbiotic mechanisms for cancer promotion.

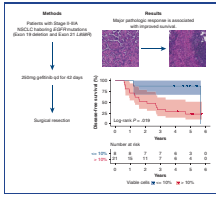
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### Commentary: Lower airway microbiome and non-small cell lung cancer: The beginning of a bug story

Dao M. Nguyen, MD, MSc, FRCSC, FACS, and Nestor Villamizar, MD, Miami, Fla

Certain lower airway bacterial composition may be associated with increased risk of recurrence after resection of early-stage NSCLC.

Thoracic: Lung Cancer: Clinical Trial



**434 Gefitinib as neoadjuvant therapy for resectable stage II-III non-small cell lung cancer: A phase II study**



Yang Zhang, MD, Fangqiu Fu, MD, Haichuan Hu, MD, Shengping Wang, MD, PhD, Yuan Li, MD, PhD, Hong Hu, MD, and Haiquan Chen, MD, PhD, Shanghai, China

Gefitinib as neoadjuvant therapy for stage II-III NSCLC with *EGFR* mutations is acceptable in terms of drug toxicity and surgical complication. Major pathologic response indicates improved survival.

**443 Commentary: Drawing the target after shooting the arrow: The importance of trial design**  
R. Taylor Ripley, MD, Houston, Tex

Major pathological response after neoadjuvant therapy for lung cancer is associated with improved long-term survival. Pathological response should be the primary end point in neoadjuvant trial design.

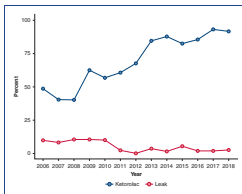
**444 Commentary: Preoperative gefitinib for stage II-III non-small cell lung cancer with *EGFR* mutation: A stitch in time, or delay from stitches?**  
Christopher G. Azzoli, MD, and Thomas Ng, MD, Providence, RI, and Memphis, Tenn

In this phase 2 study, 42 days of gefitinib produced a major pathologic response in 10 of 4 patients with stage II-III *EGFR* mutant lung cancer, which was associated with longer disease-free survival.

**446 Commentary: Durable activity of a tyrosine kinase inhibitor in lung cancer**  
Chadrick E. Denlinger, MD, Charleston, SC

Surgery for locally advanced lung cancers following neoadjuvant gefitinib appears safe with surprisingly optimistic long-term outcomes.

Thoracic: Esophageal Cancer



**448 Ketorolac use and anastomotic leak in patients with esophageal cancer**



Erin M. Corsini, MD, and Wayne L. Hofstetter, MD, the MD Anderson Esophageal Cancer Working Group, Houston, Tex

In the setting of increasing use of ERAS pathways, ketorolac in the postoperative period does not seem to be associated with anastomotic leak after esophagectomy.

**455 Commentary: Don't fear the nonsteroidal anti-inflammatory drugs**  
Jennie H. Kwon, MD, and Chadrick E. Denlinger, MD, Charleston, SC

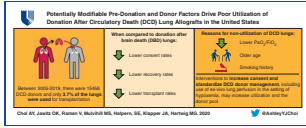
Ketorolac appears to be a safe adjunct for pain control following an esophagectomy.

**456 Commentary: Enhanced recovery after surgery: Does ketorolac get in the way of anastomotic healing following esophagectomy?**  
Shawn S. Groth, MD, MS, FACS, Houston, Tex

As part of a multimodal, opioid-limiting, Enhanced Recovery After Surgery protocol, ketorolac does not increase the risk of anastomotic leak following esophagectomy.

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## Thoracic: Lung Transplant



458



### Predictors of nonuse of donation after circulatory death lung allografts

Ashley Y. Choi, MHS, Oliver K. Jawitz, MD, Vignesh Raman, MD, Michael S. Mulvihill, MD, Samantha E. Halpern, BA, Yaron D. Barac, MD, PhD, Jacob A. Klapper, MD, and Matthew G. Hartwig, MD, Durham, NC, and Petach-Tikva, Israel



Use of DCD lungs can be improved with appropriate interventions. International guidelines should be developed to facilitate improved organ recovery.



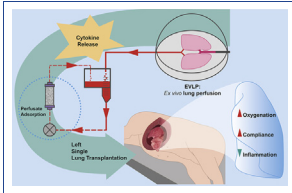
467

### Commentary: Lung donation after circulatory death in the United States. Current and future challenges

Usman Ahmad, MD, Cleveland, Ohio

Lung donation from DCD remains low. Variability in practice exists across regions and programs. Increasing awareness and standardization is necessary to preserve and expand this donor pool.

## Thoracic: Lung Transplant: Basic Science



e109



### Perfusate adsorption during ex vivo lung perfusion improves early post-transplant lung function

Ilker Iskender, MD, MSc, Stephan Arni, PhD, Tatsuo Maeyashiki, MD, Necati Citak, MD, Mareike Sauer, DVM, Josep Monné Rodriguez, DVM, Thomas Frauenfelder, MD, Isabelle Opitz, MD, Walter Weder, MD, and Ilhan Inci, MD, Zurich, Switzerland



Adsorption of inflammatory mediators during EVLP improves immediate post-transplant graft function by decreasing inflammatory response to reperfusion in pigs.



**This article has an associated discussion and webcast.**

e123

### Commentary: Ex vivo lung perfusion plus solute adsorption: An exorcism of evil humors?

Ian C. Glenn, MD, and Siva Raja, MD, PhD, Cleveland, Ohio

Ex vivo perfusion with an adsorption membrane improves short-term graft function in a porcine model. Although this finding is provocative, its true value needs to be vetted in the real world.

e124

### Commentary: Ischemia reperfusion—Looking ahead

Eugene Golts, MD, and Mark Onaitis, MD, La Jolla, Calif

Optimizing lung transplant organ outcomes via absorption of inflammatory mediators causing ischemia-reperfusion injury is an exciting possibility.

e125

### Commentary: Double, double, toil, and trouble: Removing evil humours during ex vivo lung perfusion

Daniel Rodriguez, BS, and Jonathan D'Cunha, MD, PhD, Phoenix, Ariz

We comment on the promising work addressing the removal of inflammatory mediators from the perfusate during EVLP in a porcine model as a means of preventing primary graft dysfunction.

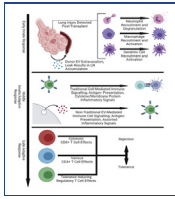
e127

### Commentary: 'Tis the season to filter your perfusate

Yizhan Guo, MD, and Alexander Sasha Krupnick, MD, Charlottesville, Va

Cytokine adsorption during ex vivo lung perfusion may play a role in improving graft function after implantation.

Thoracic: Lung Transplant: Basic Science: Expert Review



**e129** Potential role of exosome-based allorecognition pathways involved in lung transplant rejection



*Billanna Hwang, DHSc, James Bryers, PhD, and Michael S. Mulligan, MD, Seattle, Wash*



Exosomes are extracellular vesicles involved in a multitude of immune responses and are capable of eliciting and potentiating innate and adaptive immunity in lung transplant rejection.

**e135** **Commentary:** Curiouser and curiouser—The role of exosomes in transplant rejection  
*Brian Bateson, DO, and Victor van Berkel, MD, PhD, Louisville, Ky*

Exosomes play a role in the development of rejection in lung transplantation.

**e136** **Commentary:** It's time for exosomes to get the limelight in lung transplant  
*Michael K. Y. Hsin, FRCS, CTh, and Mingyao Liu, MD, Hong Kong, and Toronto, Ontario, Canada*

Exosome-based allorecognition pathways seem to be a missing link between innate and adaptive immunity and the development of CLAD. Exosomes might be potential biomarkers and targets of therapy for CLAD.

Adult Articles in AATS Journals

**e139** Adult

Adult: Aorta



**469** Valve-sparing root replacement in patients with bicuspid aortopathy: An analysis of cusp repair strategy and valve durability



*Christopher Lau, MD, Matthew Wingo, MD, Mohamed Rahouma, MD, Natalia Ivascu, MD, Erin Iannacone, MD, Mohamed Kamel, MD, Mario F. L. Gaudino, MD, and Leonard N. Girardi, MD, New York, NY*



VSRR can be reliably performed in patients with BAVs, often without the need for cusp reconstruction.

**This article has an associated discussion and webcast.**

**479** **Commentary:** Beauty, and durability, is in the eye of the needle holder  
*Andrew L. Mesher, MD, Muhammad Aftab, MD, and T. Brett Reece, MD, Aurora, Colo*

Bicuspid valve repair remains a complex procedure. Although less manipulation of normal valves may be preferable in many cases, the ability to identify which valves to save may be the most important factor in long-term durability for these cases.

**480** **Commentary:** To repair or not repair—that is the question  
*Kanika Kalra, MD, and Edward P. Chen, MD, Atlanta, Ga*

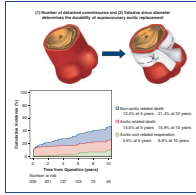
Cusp repair is successfully done in insufficient bicuspid aortic valves during valve-sparing root replacement. Whether a conservative approach of noncusp repair is superior warrants further study.

**481** **Commentary:** Valve-sparing root replacement in bicuspid valves—more than technique  
*Dawn S. Hui, MD, and Kim I. de la Cruz, MD, San Antonio, Tex*

The optimal approach to cusp repair in valve-sparing aortic root operations for bicuspid aortic valve patients remains an area of investigation.



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**483** **The fate of aortic root and aortic regurgitation after supracoronary ascending aortic replacement for acute type A aortic dissection**



*Yuki Ikeno, MD, PhD, Koki Yokawa, MD, Katsuhiro Yamanaka, MD, PhD, Takeshi Inoue, MD, Hiroshi Tanaka, MD, PhD, Kenji Okada, MD, PhD, and Yutaka Okita, MD, PhD, Kobe, Japan*

Sinus of Valsalva diameter and commissure detachment were independent risk factors for unfavorable aortic root outcomes.

**494** **Commentary:** The best is not (always) the enemy of the good  
*Amedeo Anselmi, MD, PhD, and Jean-Philippe Verhoye, MD, PhD, Rennes, France*

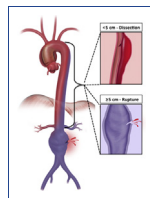
Root replacement in type A acute aortic dissection is a powerful means to guarantee both immediate and late patient safety when justified by markers of anatomical aggressiveness of the disease.

**495** **Commentary:** Acute type A dissection—Should we systematically replace the aortic root?  
*Jean Bachet, MD, FEBCTS, Suresnes, France*

The main aim of surgery for acute type A dissection is to save the patient's life, yet a second aim is to prevent late severe aortic adverse events. Could replacing the aortic root then be mandatory?

**496** **Commentary:** Balancing the extent, balancing the risk  
*Sung Jun Park, MD, and Joon Bum Kim, MD, PhD, Seoul, Republic of Korea*

While root-preserving aortic replacement remains mainstay of treatment in acute aortic dissection, risk can be well balanced by fine patient selection for aggressive root approach.



**498** **Natural history of descending thoracic and thoracoabdominal aortic aneurysms**



*Mohammad A. Zafar, MD, Julia Fayanne Chen, MD, Jinlin Wu, MD, Yupeng Li, PhD, Dimitra Papanikolaou, MD, Mohamed Abdelbaky, MD, Thais Faggion Vinholo, BS, MSc, John A. Rizzo, PhD, Bulat A. Ziganshin, MD, PhD, Sandip K. Mukherjee, MD, and John A. Eleftheriades, MD, PhD (hon), the Yale Aortic Institute Natural History Investigators, New Haven, Conn; Beijing, China; Glassboro, NJ; Stony Brook, NY; and Kazan, Russia*

The risk of fatal complications increases dramatically at 6.0 cm in patients with DTTAAs. Preemptive intervention before this size can save lives.

**This article has an associated discussion and webcast.**

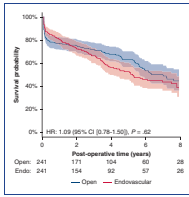
**512** **Commentary:** The hinge point doubles down—What's next for descending thoracic and thoracoabdominal aortic repair  
*Joseph S. Coselli, MD, Houston, Tex*

The descending thoracic and thoracoabdominal aorta appear to dilate more quickly than previously thought; likewise, the risk of an acute aortic event may occur at a smaller diameter. Should the diameter-based threshold of repair be shifted lower?

**514** **Commentary:** Earlier intervention for descending aortic aneurysms may prevent rupture, but what about all the dissections?  
*Robert B. Hawkins, MD, MSc, and J. Hunter Mehoff, MD, MSc, Charlottesville, Va*

The risk of aortic rupture in descending aortic aneurysms occurs at smaller diameters than previously estimated; however, earlier intervention would have only limited impact on preventing dissection.





**516** **Outcomes after endovascular versus open thoracoabdominal aortic aneurysm repair: A population-based study**



*Rodolfo V. Rocha, MD, Thomas F. Lindsay, MDCM, Peter C. Austin, PhD, Mohammed Al-Omran, MD, MSc, Thomas L. Forbes, MD, Douglas S. Lee, MD, PhD, and Maral Ouzounian, MD, PhD, Toronto, Ontario, Canada*

Endovascular repair is associated with improved early outcomes but higher rates of secondary procedures. Long-term survival is poor and independent of repair technique.

**This article has an associated discussion and webcast.**

**528** **Commentary:** Aortic repair in the Great White North—endovascular or open, eh?  
*Alice Le Huu, MD, and Joseph S. Coselli, MD, Houston, Tex*

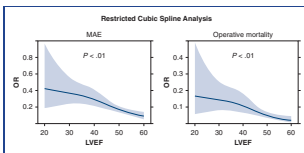
A Canadian study finds that open repair of TAAA has significantly greater short-term mortality and morbidity compared with an endovascular approach, but long-term survival is comparable. However, patient management must be individually tailored to achieve optimal outcomes.

**530** **Commentary:** Don't forget what we are competing for  
*Anthony Estrera, MD, FACS, Houston, Tex*

As cardiovascular surgeons, we should not compete between open and endovascular when repairing thoracoabdominal aortic aneurysms but rather should always compete for what is best for the patient.

**532** **Commentary:** To sew or to stent? That's the question  
*Marek Ehrlich, MD, Vienna, Austria*

This study compares open versus endovascular repair of TAAA and helps us better understand the comparative efficacies of these well-established methods.



**534** **Impact of left ventricular ejection fraction on the outcomes of open repair of descending thoracic and thoracoabdominal aneurysms**



*Ivancarmine Gambardella, MD, FRCS, Mario F. L. Gaudino, MD, FEBCTS, Mohamad Rahouma, MD, Woodrow J. Farrington, MD, Faiza M. Khan, MD, Irbaz Hameed, MD, Christopher Lau, MD, Erin Iannacone, MD, and Leonard N. Girardi, MD, New York, NY*

Left ventricular ejection fraction is not an independent predictor of adverse events in surgery of the descending thoracoabdominal aorta.

**542** **Commentary:** Thinking, fast and slow—and even slower—about thoracoabdominal aortic aneurysm repair  
*Faisal H. Cheema, MD, Charles C. Miller III, PhD, and Keshava Rajagopal, MD, PhD, Houston, Tex, and Nashville, Tenn*

Deep analysis of surgical data occasionally may confirm intuition and clinical experience, while contradicting typical or standard “intermediate” levels of data analysis.

**543** **Commentary:** Patients with descending and thoracoabdominal aortic aneurysms need expert centers and expert surgeons  
*Ourania Preventza, MD, Houston, Tex*

Taking care of patients with descending and thoracoabdominal aneurysms requires expertise and judgment regarding open or endovascular procedures or both. Expert centers are needed.

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## Adult: Aorta: Brief Research Report



**e143** **Direct measurement of ascending aortic diameter by intraoperative caliper assessment**

*Thais Faggion Vinholo, MD, MSc, Mohammad A. Zafar, MD, Dimitra Papanikolaou, MD, Juyeon Chung, PA-C, Hesham Ellauzi, MD, Bulat A. Ziganshin, MD, PhD, and John A. Elefteriades, MD, PhD(hon), New Haven and Hartford, Conn, and Kazan, Russia*

We confirm the accuracy of and concurrence between preoperative CT and TTE with direct intraoperative caliper measurements of ascending thoracic aortic aneurysms.

**e147** **Commentary:** Measurement of the ascending aorta: A picture is worth a thousand calipers  
*Erin M. Iannacone, MD, and Leonard N. Girardi, MD, New York, NY*

The decision to recommend surgical management for aneurysmal aortic disease continues to require thoughtful evaluation of the patient and his or her imaging studies by the operating surgeon.

**e148** **Commentary:** Measure twice, cut once  
*Jonathan C. Hong, MD, MHS, and Joseph S. Coselli, MD, Houston, Tex*

Intraoperative direct caliper measurements of the ascending aorta correlate well with preoperative CT and TTE measurements at a high-volume aortic institution.

## Adult: Aorta: Letters to the Editor

**e151** **Moderate aortic dilatation should not be ignored at primarily nonaortic cardiac surgery**

*Metesh Acharya, MRCS, and Marjan Jahangiri, FRCS (CTh), London, United Kingdom*

**e152** **Reply:** Concomitant aortic replacement: how proactive should we be?

*Nathan Haywood, MD, and Irving L. Kron, MD, Charlottesville, Va, and Tucson, Ariz*

**e153** **Reply:** Should small aortas be replaced?

*Craig R. Smith, MD, New York, NY*

**e154** **Aortic root repair using pericardial autograft for acute type A aortic dissection**

*Hong-Wei Guo, MD, Yi Chang, MD, and Xiang-Yang Qian, MD, Beijing, China*

**e155** **Reply:** Aortic root repair—all or nothing

*Arash Motekallefi, MD, Angelo M. Dell'Aquila, MD, and Andreas Rukosujew, MD, Münster, Germany*

**e155** **Reply from the author:** Respect mother nature—aortic root repair in acute type a aortic dissection

*Bo Yang, MD, PhD, Ann Arbor, Mich*

**e157** **Facing the small aortic root in aortic valve replacement: Enlarge or not enlarge?**

*Andrea De Martino, MD, Aldo D. Milano, MD, PhD, and Uberto Bortolotti, MD, Pisa and Bari, Italy*

**e158** **Reply:** Aortic root enlargement, again and again

*Manuel J. Antunes, MD, PhD, DSc, Coimbra, Portugal*

**e159** **Reply:** Fact or fiction: The benefit of aortic root enlargement during aortic valve replacement

*Irbaz Hameed, MD, and Mario Gaudino, MD, MSCE, New Haven, Conn, and New York, NY*

**e160** **Reply:** Small aortic annulus: Can we dispel all the Hamletic doubts?

*Aziz Omar, MD, Valentina Mancini, MD, and Michele Di Mauro, MD, PhD, MSc, Chieti-Pescara and Pescara, Italy, and Maastricht, The Netherlands*

- e160** **Reply:** Aortic root enlargement—more important than ever?  
*Derrick Y. Tam, MD, PhD, Junichi Shimamura, MD, PhD, and Stephen E. Femes, MD, MSc, Toronto, Ontario, Canada*

## Adult: Expert Consensus Document From the EACTS-STAS-AATS Valve Labelling Task Force

- 545** **Essential information on surgical heart valve characteristics for optimal valve prosthesis selection: Expert consensus document from the European Association for Cardio-Thoracic Surgery (EACTS)–The Society of Thoracic Surgeons (STS)–American Association for Thoracic Surgery (AATS) Valve Labelling Task Force**

*Andras P. Durko, MD, Philippe Pibarot, DVM, PhD, Pavan Atluri, MD, Vinayak Bapat, MD, Duke E. Cameron, MD, Filip P. A. Casselman, MD, PhD, Edward P. Chen, MD, Gry Dahle, MD, John A. Elefteriades, MD, PhD, Patrizio Lancellotti, MD, PhD, Richard L. Prager, MD, Raphael Rosenhek, MD, Alan Speir, MD, Marco Stijnen, PhD, Giordano Tasca, MD, PhD, Ajit Yoganathan, PhD, Thomas Walther, MD, PhD, and Ruggero De Paulis, MD (Task Force Chairman), EACTS-STAS-AATS Valve Labelling Task Force, Rotterdam and Eindhoven, The Netherlands; Quebec, Quebec, Canada; Philadelphia, Pa; New York, NY; Boston, Mass; Aalst and Liège, Belgium; Atlanta, Ga; Oslo, Norway; New Haven, Conn; Ann Arbor, Mich; Vienna, Austria; Falls Church, Va; Riyadh, Kingdom of Saudi Arabia; Frankfurt, Germany; and Rome, Italy*

- 559** **Commentary:** A giant step forward in valve care



*Pavan Atluri, MD, and John A. Elefteriades, MD, PhD (hon), Philadelphia, Pa, and New Haven, Conn*

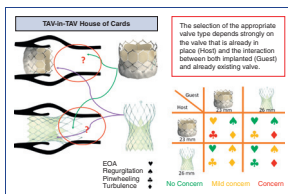
The European Association for Cardio-Thoracic Surgery/Society of Thoracic Surgeons/American Association for Thoracic Surgery Task Force produced a document on labeling for prosthetic cardiac valves. Manufacturer “buy in” will be necessary to populate the standardized charts developed by the Task Force.

- 562** **Commentary:** Valve Labeling Task Force: Efforts now needed by manufacturers and surgeons

*John A. Elefteriades, MD, PhD (hon), and Pavan Atluri, MD, New Haven, Conn, and Philadelphia, Pa*

Implementation of the Task Force on Valve Labeling recommendations will require buy-in by manufacturers and familiarization with the data tables by surgeons.

## Adult: Aortic Valve



- 565** **The hemodynamics of transcatheter aortic valves in transcatheter aortic valves**



*Hoda Hatoum, PhD, Scott Lilly, MD, PhD, Pablo Maureira, MD, PhD, Juan Crestanello, MD, and Lakshmi Prasad Dasi, PhD, Columbus, Ohio; Nancy, France; and Rochester, Minn*

Appropriate valve selection depends strongly on the host valve already in place and the interaction between the host and guest valves.

- 577** **Commentary:** Transcatheter aortic valve-in-transcatheter aortic valve replacement—Are we learning more and knowing less?

*Gaetano Paone, MD, MHSA, and Adam B. Greenbaum, MD, Atlanta, Ga*

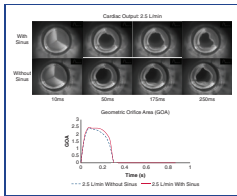
Understanding the hemodynamic properties across various potential TAV-in-TAV configurations will be essential to optimizing the performance and the durability of future TAV-in-TAV replacements.

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- 579** **Commentary:** TAVR-in-TAVR—Be a good host for your guest  
*Siamak Mohammadi, MD, FRCSC, and Dimitri Kalavrouziotis, MD, FRCSC, Quebec City, Quebec, Canada*

The hemodynamic changes after TAVR-in-TAVR are poorly understood. They may depend on the type of valve previously implanted and the incoming TAVR valve and may influence late durability and outcome.

## Adult: Aortic Valve: Evolving Technology



- 581** **In vitro evaluation of a new aortic valved conduit**  
*Vahid Sadri, PhD, Immanuel David Madukauwa-David, PhD, and Ajit P. Yoganathan, PhD, Atlanta, Ga*



The presence of a sinus of Valsalva equivalent in the KONECT RESILIA aortic valved conduit (Edwards Lifesciences, Irvine, Calif), in addition to more closely mimicking patient anatomy, offers reduced pressure gradients, improved effective orifice area, and lower peak velocities.

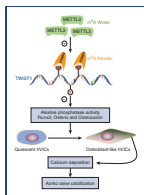
- 591** **Commentary:** In vitro analysis of a biological composite valve graft: More evidence in support of the sinuses of Valsalva  
*Leonard N. Girardi, MD, New York, NY*

Analysis of a new valve conduit reaffirms the advantages of neo-sinuses for aortic root replacement. Long-term clinical data are needed to support superiority of neo-sinuses over a straight tube.

- 593** **Commentary:** Nature knows best  
*Aaron Bettenhausen, MD, and Dawn S. Hui, MD, San Antonio, Tex*

In vitro testing of a new prosthetic reinforces existing data on the importance of the Sinus of Valsalva in aortic root hemodynamics but is subject to model limitations.

## Adult: Aortic Valve: Basic Science



- e163** **Factors influencing osteogenic differentiation of human aortic valve interstitial cells**  
*Tingwen Zhou, MD, Dong Han, MD, Junwei Liu, MD, Jiawei Shi, MD, Peng Zhu, MD, Yongjun Wang, MD, and Nianguo Dong, MD, Wuhan, Xi'an, and Beijing, China*



METTL3 overexpression is linked with AVC. METTL3 promotes osteogenic differentiation of hVICs via suppressing TWIST1 expression through an m<sup>6</sup>A-YTHDF2-dependent pathway.

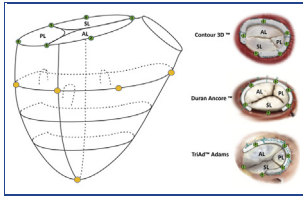
- e187** **Commentary:** Two clinical solutions and many molecular options for aortic valve stenosis  
*Ari A. Mennander, MD, PhD, Tampere, Finland*

Experimental research on epigenetics, such as METTL3-mediated m6A modification, may open a vast field of still-uncovered possibilities to unravel clinically unsolved dilemmas.

- e188** **Commentary:** Aortic valve calcification: A new story with a twist?  
*Igor E. Konstantinov, MD, PhD, FRACS, and Yaroslav Y. Ivanov, MD, PhD, Melbourne, Australia*

A novel therapeutic target using the TWIST pathway and valvular interstitial cells may prevent aortic valve calcification.

## Adult: Tricuspid Valve: Basic Science



### e191 **The influence of tricuspid annuloplasty prostheses on ovine annular geometry and kinematics**



*Marcin Malinowski, MD, Tomasz Jazwiec, MD, Nathan Quay, BS, Matthew Goehler, BS, Manuel K. Rausch, PhD, and Tomasz A. Timek, MD, PhD, Grand Rapids, Mich; Katowice and Zabrze, Poland; and Austin, Tex*

Tricuspid annuloplasty rings differentially influence the tricuspid annulus with rigid prostheses perturbing annular dynamics and flexible altering annular geometry. All rings affected annular strains.

**This article has an associated discussion and webcast.**

### e209 **Commentary: Tricuspid valve ring characteristics: Physiologically important, clinically relevant, or too little too late?**

*Gabriel S. Aldea, MD, Seattle, Wash*

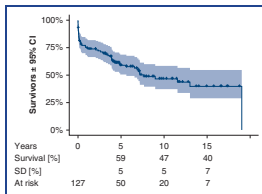
Functional tricuspid regurgitation is currently diagnosed and treated late, frequently beyond the point of meaningful physiological remodeling. Future research aims to evolve diagnosis and treatment.

### e211 **Commentary: There is never “best,” only “better”**

*Song Wan, MD, FRCS, Hong Kong, China*

Despite searches for the holy grail of the tricuspid annuloplasty ring, it is unlikely that a single ring will fit all pathologies and all patients. For an individual patient with a specific disease, however, a “better” option among the available rings should always be considered and evaluated.

## Adult: Valve Disease



### 595 **Cardiac valve operations after solid organ transplantation: A single-center experience**



*Fabio Ius, MD, Daniel Moscalenco, MD, Dietmar Boethig, MD, Igor Tudorache, MD, Axel Haverich, MD, Gregor Warnecke, MD, and Serghei Cebotari, MD, Hannover, Germany*

Transplant patients requiring cardiac valve operations showed a complicated postoperative course, but survival conditioned to hospital discharge was satisfactory. Young age was associated with SVD.

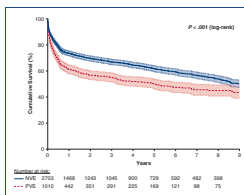
**This article has an associated webcast.**

### 607 **Commentary: It is not only about the valve, but also the patients and their condition**

*Michel Carrier, MD, MBA, Montréal, Québec, Canada*

Valve repair or replacement in previous transplant recipients of various organs remains a difficult task because of numerous comorbid conditions. Ideally, it should be performed in stable patients.

## Adult: Endocarditis



### 609 **Surgical results for prosthetic versus native valve endocarditis: A multicenter analysis**



*Carolyn Weber, MD, Georgi Petrov, MD, MSc, Maximilian Luehr, MD, Hug Aubin, MD, Sems-Malte Tugtekin, MD, Michael A. Borger, MD, PhD, Payam Akhyari, MD, Thorsten Wahlers, MD, Christian Hagl, MD, Klaus Matschke, MD, and Martin Misfeld, MD, PhD, for the study group Clinical, Multicenter Project of Analysis of Infective Endocarditis in Germany, Cologne, Duesseldorf, Munich, Dresden, and Leipzig, Germany*

Early and late mortality remain high in patients undergoing surgery for PVE. After adjusting for preoperative comorbidities, long-term survival for PVE and NVE is comparable.

**This article has an associated discussion and webcast.**

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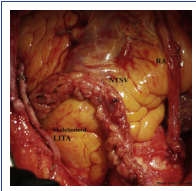
- 620** **Commentary:** Surgical results for prosthetic valve endocarditis: Early pain but long-term gain  
*Carlo Olevano, MD, and Clifford W. Barlow, DPhil, FRCS (CTh), Southampton, United Kingdom*

Prosthetic valve endocarditis has an early postoperative mortality approximately twice that of native valve endocarditis, but long-term survival after 1 year is comparable for both groups.

- 622** **Commentary:** Without short-term recovery, there is no long-term outcome after surgery for endocarditis  
*Ari A. Mennander, MD, PhD, Tampere, Finland*

The perilous combination of prosthetic valve endocarditis and comorbidities impact outcome after surgery.

## Adult: Coronary



- 624** **The no-touch saphenous vein is an excellent alternative conduit to the radial artery 8 years after coronary artery bypass grafting: A randomized trial**



*Mats Dreifaldt, MD, PhD, John D. Mannion, MD, Håkan Geijer, MD, PhD, Mats Lidén, MD, PhD, Lennart Bodin, PhD, and Domingos Souza, MD, PhD, Örebro and Stockholm, Sweden, and Dover, Del*

The “no touch” saphenous vein graft is an excellent complementary conduit to the arterial grafts.

- 631** **Commentary:** The race for the second best—The no-touch saphenous vein versus the radial artery

*Saswata Deb, MD, PhD, and Stephen E. Fremes, MD, MSc, Toronto, Ontario, Canada*

In their single-center, randomized, controlled trial, Dreifaldt and colleagues investigated the long-term (8 years) patency of the no-touch saphenous vein graft compared with the radial artery. The findings of this study are very encouraging for the use of saphenous vein grafts, which remains one of the commonly utilized grafting conduits.

- 634** **Commentary:** Looking before leaping

*Dawn S. Hui, MD, and Richard Lee, MD, MBA, San Antonio, Tex, and Augusta, Ga*

Advances in vein harvest techniques may promote improved patency, but whether this proves to be an acceptable alternative or preferable to arterial grafts remains in question.



- 636** **Incidence and impact of silent brain lesions after coronary artery bypass grafting**



*Hitoshi Tachibana, MD, Arudo Hiraoka, MD, PhD, Kazuya Saito, PT, Yoshitaka Naito, OT, Genta Chikazawa, MD, PhD, Kentaro Tamura, MD, Toshinori Totsugawa, MD, PhD, Hidenori Yoshitaka, MD, PhD, and Taichi Sakaguchi, MD, PhD, Okayama, Japan*

Silent brain lesions were frequently observed even in off-pump and anaortic coronary artery bypass grafting. Multiple and large lesions were associated with cognitive dysfunction.

- 645** **Commentary:** Silent brain lesions add noise to the on- versus off-pump coronary artery bypass grafting debate

*William C. Frankel, BS, and Tom C. Nguyen, MD, Houston, Tex*

New brain lesions detected on MRI occur in approximately 20% of patients after CABG and may be associated with postoperative cognitive dysfunction.

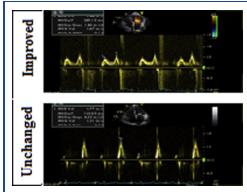
- 647** **Commentary:** Coming to terms with stroke and “brain lesions” in cardiac surgery  
*Keshava Rajagopal, MD, PhD, Houston, Tex*

Cardiac surgery continues to carry important risks of cerebrovascular complications. However, the relationships between brain lesions and clinical strokes remain ill-defined.

- 649** **Commentary:** Silent brain lesions after coronary artery bypass grafting—Reexamining the sound of silence  
*Andrew M. Vekstein, MD, and Shu S. Lin, MD, PhD, Durham, NC*

By obtaining magnetic resonance images before and after coronary artery bypass grafting, Tachibana and colleagues more accurately characterized new “silent” brain lesions and found that multiple and large lesions are associated with cognitive dysfunction.

## Adult: Coronary: Ischemic Cardiomyopathy



- 651** **Restrictive filling pattern in ischemic cardiomyopathy: Insights after surgical ventricular restoration**



*Fabio Fantini, MD, Anna Toso, MD, Lorenzo Menicanti, MD, Francesco Moroni, MD, and Serenella Castelvécchio, MD, Florence, Prato, San Donato Milanese, and Milan, Italy*

A restrictive filling pattern (RFP) was reversed in approximately one-half of our patients with ischemic cardiomyopathy after surgical ventricular restoration (SVR). The response remained stable over time, and New York Heart Association class was improved. Relative wall thickness was the sole pre-SVR parameter associated with this evolution.

- 661** **Commentary:** The promise of precision cardiovascular surgery  
*Imtiaz Ali, MD, and Paul W. M. Fedak, MD, PhD, FRCS(C), Calgary, Alberta, Canada*

Surgery to restore ventricular shape, size, and function may require more precision to determine which specific patients may benefit and when surgery should be optimally performed.

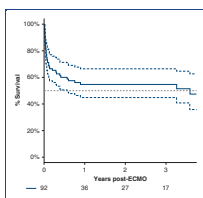
- 662** **Commentary:** The wisdom of a Nobel laureate and surgical ventricular reconstruction  
*Torsten Doenst, MD, Jena, Germany*

Surgical ventricular reconstruction, although ineffective according to the Surgical Treatment for Ischemic Heart Failure trial, may be helpful in selected patients; possibly those with classic aneurysms and/or high relative posterior wall thickness.

- 664** **Commentary:** Identifying patients who do not improve following surgical ventricular reduction: Is diastolic dysfunction the culprit?  
*Richard J. Moro, MBA, ACS, RDCS, RVT, and Kevin D. Accola, MD, FACC, Orlando, Fla*

Systolic function is life. Diastolic function is quality of life. Identifying positive cardiac function responders before SVR can predict improvements in NYHA class.

## Adult: Mechanical Circulatory Support



- 666** **Predictors of in-hospital mortality and midterm outcomes of patients successfully weaned from venoarterial extracorporeal membrane oxygenation**



*Federico Sertic, MD, Lexy Chavez, BS, Dieynaba Diagne, MPH, Thomas Richards, PhD, Joyce Wald, MD, Michael Acker, MD, Edo Birati, MD, Eduardo Rame, MD, and Christian Bermudez, MD, Philadelphia, Pa*

Durable and sustained ECMO weaning, with acceptable midterm echocardiographic and functional status, is obtainable after support for CS in appropriately selected patients.

**This article has an associated discussion and webcast.**



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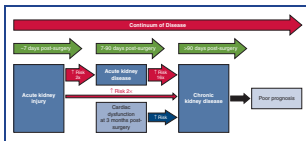
- 679** **Commentary:** Survival following extracorporeal membrane oxygenation support, a sobering view  
*Michel Carrier, MD, MBA, Montréal, Québec, Canada*

The present study shows that successful weaning from ECMO support is by no means a guarantee of survival at 1 year. Much more work needs to be done to ensure an acceptable rate of survival.

## Adult: Mechanical Circulatory Support: Letters to the Editor

- e213** **Mechanical ventilation: A necessary evil?**  
*David L. Joyce, MD, MBA, Wauwatosa, Wis*
- e214** **Reply:** Splitting over lumping in mechanical support for acute respiratory distress syndrome  
*Michael C. Grant, MD, Baltimore, Md*
- e215** **Reply:** Protecting the right ventricle in COVID-19 acute respiratory distress syndrome—More data required  
*Gurmeet Singh, MD, MSc, FRCSC, and Daniel Brodie, MD, Edmonton, Alberta, Canada, and New York, NY*

## Adult: Perioperative Management



- 681** **Chronic progression of cardiac surgery associated acute kidney injury: Intermediary role of acute kidney disease**

*Jin Sun Cho, MD, PhD, Jae-Kwang Shim, MD, PhD, Sak Lee, MD, PhD, Jong-Wook Song, MD, PhD, Nakcheol Choi, MD, Sugeun Lee, MD, and Young-Lan Kwak, MD, PhD, Seoul, Republic of Korea*

Postvalvular heart surgery AKI was associated with increased risk of CKD development even after early recovery. AKD and cardiac dysfunction at 3-month follow-up were independent risk factors of CKD.

- 689** **Commentary:** The dangers of postoperative acute kidney injury—Vulnerability despite early resolution

*Glenn J. R. Whitman, MD, and Chirag R. Parikh, MD, PhD, Baltimore, Md*

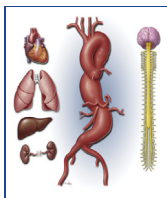
Despite resolution, acute kidney injury after cardiac surgery leaves patients vulnerable to significant renal and cardiovascular morbidity. It is our responsibility to prevent or minimize this harm.

- 691** **Commentary:** Old sins have long shadows

*Antonio Miceli, MD, PhD, and Mattia Glauber, MD, Milan, Italy*

Patients with normal renal function who recover from AKI are still at risk for renal failure.

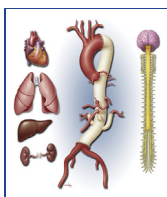
## Adult: Perioperative Management: Expert Review



- 693** **Perioperative care after thoracoabdominal aortic aneurysm repair: The Baylor College of Medicine experience. Part 1: Preoperative considerations**

*Subhasis Chatterjee, MD, Jose G. Casar, MD, Scott A. LeMaire, MD, Ourania Preventza, MD, and Joseph S. Coselli, MD, Houston, Tex*

Thoracoabdominal aortic aneurysm repair is a technically demanding cardiothoracic surgical procedure. Optimizing preoperative care is required for successful surgical outcomes.



- 699** **Perioperative care after thoracoabdominal aortic aneurysm repair: The Baylor College of Medicine experience. Part 2: Postoperative management**

*Subhasis Chatterjee, MD, Jose G. Casar, MD, Scott A. LeMaire, MD, Ourania Preventza, MD, and Joseph S. Coselli, MD, Houston, Tex*

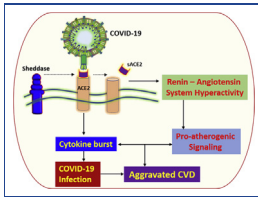
Thoracoabdominal aortic aneurysm repair is a technically demanding cardiothoracic surgical procedure. Diligent postoperative care is required for successful surgical outcomes.

- 706** **Commentary:** Expertise in thoracoabdominal aortic aneurysm repair—More than just the knife

*Ali Hage, MD, John Bozinovski, MD, MSc, Maral Ouzounian, MD, PhD, and Michael W. A. Chu, MD, MEd, on behalf of the Canadian Thoracic Aortic Collaborative (CTAC), Toronto, Ontario, Canada, and Columbus, Ohio*

Performing an excellent thoracoabdominal aortic aneurysm repair is only half the story; equally important are key preoperative and postoperative care measures that ultimately define optimal patient outcomes.

## Adult: Perioperative Management: Basic Science



- e217** **Molecular chronicles of cytokine burst in patients with coronavirus disease 2019 (COVID-19) with cardiovascular diseases**

*Finosh G. Thankam, PhD, and Devendra K. Agrawal, PhD (Biochem), PhD (Med Sci), MBA, Pomona, Calif*

The strong association between COVID-19 and CVD comorbidity points toward the COVID-19-mediated dysregulation of ACE2 and subsequent activation of multiple proinflammatory signaling pathways.

- e227** **Commentary:** The molecular pandemonium of coronavirus disease 2019

*Leora B. Balsam, MD, and William D. Hoffman, MD, Worcester, Mass*

COVID-19 and cardiovascular disease are linked. Knowledge of the basic science will help us understand why this link exists and how to best treat infected patients with cardiovascular comorbidities.

- e228** **Commentary:** Evolving understanding of coronavirus disease 2019: Molecular biology, immunology, and surgery

*Edward Buratto, MBBS, PhD, and Igor E. Konstantinov, MD, PhD, FRACS, Melbourne, Australia*

Understanding molecular mechanisms of COVID-19 disease is crucial for cardiothoracic surgeons.

## Adult: Perioperative Management: Letters to the Editor

- e231** **Wicked problems and proportionality: Is the lesser of two evils the best we can do?**

*Ahmad Makhdoum, MD, MSc, Derrick Y. Tam, MD, PhD, and Stephen E. Fremes, MD, MSc, Toronto, Ontario, Canada*

- e232** **Reply:** Elective with an asterisk

*Scott Silvestry, MD, Orlando, Fla*

- e233** **Reply:** A problem of “ethic” proportions

*Michael Salna, MD, Michael Argenziano, MD, and Isaac George, MD, New York, NY*

- e234** **Reply from the author:** Hamlet, the cardiac surgeon

*Keshava Rajagopal, MD, PhD, Houston, Tex*

- e235** **Low rate of health care-associated transmission of coronavirus disease 2019 (COVID-19) in the epicenter**

*Lauren Sutherland, MD, Jonathan Hastie, MD, Hiroo Takayama, MD, PhD, Yoko Furuya, MD, Beth Hochman, MD, Nancy Kelley, MS, PA-C, Paul Kurlansky, MD, Denise McLaughlin, RN, S. Tasnim Raza, MD, and Brian Scully, MD, New York, NY*

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**e237 Reply:** Keeping surgical patients safe during the coronavirus disease 2019 (COVID-19) pandemic: Los Angeles versus New York City  
*Michael E. Bowdish, MD, MS, and Stephen F. Sener, MD, Los Angeles, Calif*

**e238 Reply:** Safe harbor during pandemic storm  
*Daniel J. Goldstein, MD, New York, NY*

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## Announcements

### The American Association for Thoracic Surgery



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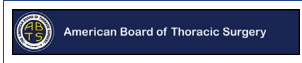


**709** [Save the Date](#)

**709** [Applications for WTSA Membership](#)

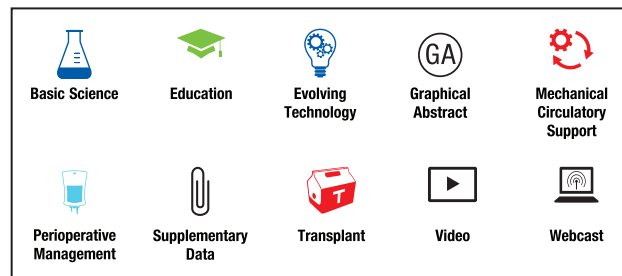
**709** [2021 Donald B. Doty Education Award](#)

## The American Board of Thoracic Surgery



**710** *ABTS Announcement*

**710** *ABTS Requirements for the 10-Year Milestone for Maintenance of Certification*



*The Journal of Thoracic and Cardiovascular Surgery* online is sponsored by St. Jude Medical.

### Cover Photographs

**Left:** (Congenital) From Duct Stenting Versus Modified Blalock-Taussig Shunt in Neonates and Infants With Duct-Dependent Pulmonary Blood Flow: A Systematic Review and Meta-Analysis. Graphical abstract depicting heart with ventricular septal defect, pulmonary atresia, and patent ductus arteriosus undergoing DS or modified BTS.

**Center:** (Thoracic) From Perfusate Adsorption During Ex Vivo Lung Perfusion Improves Early Post-Transplant Lung Function. EVLP is characterized by the release of inflammatory mediators into the perfusate. In the present study, we have tested the beneficial effects

of perfusate adsorption during EVLP on short-term post-transplant lung function in a pig EVLP lung transplant model. This strategy resulted in preservation of post-transplant graft function, by means of enhanced gas exchange and lung mechanics, via inhibition of inflammatory response to IR injury in pigs. *EVLP*, Ex vivo lung perfusion.

**Right:** (Adult) From Valve-Sparing Root Replacement in Patients With Bicuspid Aortopathy: An Analysis of Cusp Repair Strategy and Valve Durability. VSRR in patients with BAVs is durable in patients with or without a need for cusp repair.