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### Editorial

- 527 Primed for lethal battle: A step forward to enhance the efficacy and efficiency of stem cell transplantation therapy**

*Molly E. Ogle, BS, Shan Ping Yu, MD, PhD, and Ling Wei, MD, Atlanta, Ga*


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### Congenital Heart Disease (CHD)

- 528 The Norwood procedure using a right ventricle–pulmonary artery conduit: Comparison of the right-sided versus left-sided conduit position**

*David J. Barron, FRCS, Andre Brooks, MD, John Stickley, BSc, Steven M. Woolley, FRCS, Oliver Stümper, PhD, Timothy J. Jones, FRCS, and William J. Brawn, FRCS, Birmingham, United Kingdom*

Reconstruction of the central pulmonary arteries during the stage II Norwood procedure can be difficult with a right ventricle–pulmonary artery (RV–PA) conduit. We describe an RV–PA conduit routed to the right of the neo-aorta in 125 patients that improves access to the pulmonary arteries and reduces bypass times during the stage II procedure. The technique was associated with 88% early survival and carried a survival benefit at 6 months over that seen with the classical Norwood procedure, which was not seen with the left-sided conduits. This might be related to the longer length (and resistance) of the right conduit compared with the left conduit.

- 538 Association of neonatal hypoxia with lasting changes in left ventricular gene expression: An animal model** 

*Danny Del Duca, MD, Guoruey Wong, BASc, Phan Trieu, BSc, Demetra Rodaros, BSc, Athanasios Kouremenos, BSc, Artavazd Tadevosyan, MSc, George Vaniotis, BSc, Louis R. Villeneuve, MSc, Christo I. Tchervenkov, MD, Stanley Nattel, MD, Bruce G. Allen, PhD, Terence E. Hébert, PhD, and Charles V. Rohlicek, MD, PhD, Montréal, Québec, Canada*

Gene expression profiling was performed in left ventricular tissue from 10- and 90-day-old rats after exposure to hypoxia for the first 10 days of life. Significant changes in expressions of a wide array of genes, including those associated with vascular remodeling, energy homeostasis, and apoptosis, persisted into adult life.

- 547 Coarctation repair in neonates and young infants: Is small size or low weight still a risk factor?**

*Phillip T. Burch, MD, Collin G. Cowley, MD, Richard Holubkov, PhD, Donald Null, MD, Linda M. Lambert, MSN, FNP, Peter C. Kouretas, MD, PhD, and John A. Hawkins, MD, Salt Lake City, Utah*

Actuarial freedom from recurrent obstruction after simple coarctation repair in 167 infants younger than 3 months was 89% at 5 years. This was similar for infants weighing less than 2.5 kg and those weighing 2.5 kg or greater. In the current era, low birth weight does not affect the incidence of reintervention after coarctation repair, and the timing of the operation should be based on clinical status.

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**553 Pulmonary valve replacement in repaired tetralogy of Fallot: Determinants of early postoperative adverse outcomes**

*Laura Dos, MD, Alexander Dadashev, MD, David Tanous, MBBS, Ignacio J. Ferreira-González, MD, Kim Haberer, Samuel C. Siu, MD, Glen S. Van Arsdell, MD, Erwin N. Oechslin, MD, William G. Williams, MD, and Candice K. Silversides, MD, Toronto, Ontario, Canada, and Barcelona, Spain*

Mortality after pulmonary valve replacement in patients with repaired tetralogy of Fallot is low, and most patients have an uncomplicated postoperative course. When postoperative complications occur, they are associated with prolonged hospitalization. Older patients (age >45 years), those with multiple previous sternotomies, and those undergoing urgent operations are at higher risk.

**560 Aminoterminal brain-type natriuretic peptide levels correlate with heart failure in patients with bidirectional Glenn anastomosis and with morbidity after the Fontan operation**

*Evelyn Lechner, MD, Elisabeth M. Schreier-Lechner, MD, Anna Hofer, MD, Roland Gitter, MD, Rudolf Mair, MD, Ariane Biebl, MD, and Gerald Tulzer, MD, PhD, Linz, Austria*

In 78 patients with a bidirectional Glenn (BDG) anastomosis, aminoterminal pro-brain natriuretic peptide (NT-pro-BNP) plasma levels and severity of congestive heart failure (CHF) were assessed. NT-pro-BNP levels of patients after BDG anastomosis without CHF were not increased, and plasma NT-pro-BNP concentrations correlated with the severity of CHF and morbidity after the Fontan operation.

**565 Impact of DEL22q11, trisomy 21, and other genetic syndromes on surgical outcome of conotruncal heart defects**

*Guido Michielon, MD, Bruno Marino, MD, Gianluca Oricchio, MD, Maria Cristina Digilio, MD, Fiore Iorio, MD, Sergio Filippelli, MD, Silvia Placidi, MD, and Roberto M. Di Donato, MD, Rome, Italy*

This retrospective study reviews the outcome of 787 patients who underwent repair of CTHDs between 1992 and 2007. Proven genetic syndrome was diagnosed in 211 patients (26.8%). Fifteen-year survival was  $84.3\% \pm 2.3\%$  in nonsyndromic patients and  $73.2\% \pm 4.2\%$  in syndromic patients ( $P < .001$ ). Del22q11 and trisomy 21 did not represent a risk factor for mortality.

**571 The practical clinical value of three-dimensional models of complex congenitally malformed hearts**

*Eugénie Riesenkampff, MD, Urte Rietdorf, MSc, Ivo Wolf, PhD, Bernhard Schnackenburg, PhD, Peter Ewert, MD, Michael Huebler, MD, Vladimir Alexi-Meskishvili, MD, Robert H. Anderson, MD, Nicole Engel, MD, Hans-Peter Meinzer, PhD, Roland Hetzer, MD, Felix Berger, MD, and Titus Kuehne, MD, Berlin, Heidelberg, and Hamburg, Germany; London, United Kingdom*

In complex congenital heart diseases, current standard imaging techniques do not always elucidate all required anatomic information in a comprehensive manner for planning the optimum surgical treatment strategy. We report our initial clinical experiences with the use of realistic 3-dimensional heart models to facilitate preoperative planning.

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## General Thoracic Surgery (GTS)

### 581 Effect of sympathectomy level on the incidence of compensatory hyperhidrosis after sympathectomy for palmar hyperhidrosis

*Daniel L. Miller, MD, Ayesha S. Bryant, MSPH, MD, Seth D. Force, MD, and Joseph I. Miller, Jr, MD, Atlanta, Ga*

Compensatory hyperhidrosis after sympathectomy for palmar hyperhidrosis can be reduced significantly by dividing the sympathetic chain at a single level (T2). Older patients and patients with increased body mass index should be warned about the increased risk of compensatory hyperhidrosis after sympathectomy and should possibly undergo a temporary sympathetic block to assess the potential for compensatory hyperhidrosis.

### 586 Structural and morphologic evaluation of a novel detergent–enzymatic tissue-engineered tracheal tubular matrix

*Philipp Jungebluth, Tetsuhiko Go, MD, Adelaide Asnaghi, Silvia Bellini, PhD, Jaume Martorell, MD, Chiara Calore, PhD, Luca Urbani, Helmut Ostertag, MD, PhD, Sara Mantero, PhD, Maria Teresa Conconi, PhD, and Paolo Macchiarini, MD, PhD, Barcelona, Spain; Milano and Padua, Italy; and Hannover, Germany*

We bioengineered a 6-cm-long tracheal tubular matrix in vitro. On implantation as a heterotopic allograft/xenograft in animals, this matrix maintained its viability and mechanical and morphologic characteristics over a 30-day period without immunosuppression.

### 594 Clinical characteristics, biologic behavior, and survival after esophagectomy are similar for adenocarcinoma of the gastroesophageal junction and the distal esophagus



*Jessica M. Leers, MD, Steven R. DeMeester, MD, Nadia Chan, MS, Shahin Ayazi, MD, Arzu Oezcelik, MD, Emmanuele Abate, MD, Farzaneh Banki, MD, John C. Lipham, MD, Jeffrey A. Hagen, MD, and Tom R. DeMeester, MD, Los Angeles, Calif*

It has been suggested that adenocarcinoma of the gastroesophageal junction differs from adenocarcinoma of the distal esophagus. We retrospectively reviewed our experience with esophagectomy for adenocarcinoma at these locations and show that there is a similar prevalence and pattern of lymph node metastases, type of recurrence, and survival. Efforts to differentiate between adenocarcinoma of the distal esophagus or gastroesophageal junction are unnecessary, and both are effectively treated with esophagectomy.

### 603 Silver nitrate through flexible bronchoscope in the treatment of bronchopleural fistulae

*Grigoris Stratakos, MD, Lina Zuccatosta, MD, Ilias Porfyridis, MD, Michele Sediari, MD, Charalambos Zisis, MD, FETCS, Vasso Mariatou, MD, Eleftherios Kostopoulos, MD, Argini Psevdi, MD, Spyros Zakynthinos, MD, and Stefano Gasparini, MD, Athens, Greece, and Ancona, Italy*

Small bronchopleural fistulae ( $\leq 5$  mm) of proximal airways were managed with silver nitrate application via flexible videobronchoscopy. The success rate was 82%, whereas treatment failure was noted in 2 cases treated only 15 days after surgical resection. This technique has promising results in fistulae occurring at least 1 month after surgery.

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**608 The sentinel node concept in adenocarcinomas of the distal esophagus and gastroesophageal junction**

*Brechtje A. Grotenhuis, MD, Bas P. L. Wijnhoven, MD, PhD, Ronald van Marion, Herman van Dekken, MD, PhD, Wim C. Hop, PhD, Hugo W. Tilanus, MD, PhD, J. Jan B. van Lanschot, MD, PhD, and Casper H. J. van Eijck, MD, PhD, Rotterdam, The Netherlands*

In this study we investigated whether the application of the sentinel node procedure is feasible in esophageal adenocarcinoma and whether it can tailor surgical treatment of the individual patient.

**613 A novel method for determining adjacent lung segments with infrared thoracoscopy**

*Noriyuki Misaki, MD, Sung Soo Chang, MD, Masashi Gotoh, MD, PhD, Yasumichi Yamamoto, MD, PhD, Katashi Satoh, MD, PhD, and Hiroyasu Yokomise, MD, PhD, Kagawa, Japan*

This experimental animal study attempted to visualize the transition zone between a target pulmonary segment and another segment by using infrared thoracoscopy with intravenous injection of indocyanine green based on blood flow without lung inflation. We proved that the color transition zone was the intersegmental line based on pathologic and radiologic analysis.

**619 Extrapleural pneumonectomy for malignant pleural mesothelioma: Outcomes of treatment and prognostic factors**

*Tristan D. Yan, BSc(Med), MBBS, PhD, Michael Boyer, MBBS, PhD, FRACP, Mo Mo Tin, MBBS, Daniel Wong, MBBS, Catherine Kennedy, RM, RA, Jocelyn McLean, RN, MN, Paul G. Bannon, MBBS, PhD, FRACS, and Brian C. McCaughan, MBBS, FRACS, Sydney, Australia*

Extrapleural pneumonectomy-based multimodal therapy is associated with acceptable perioperative outcomes and encouraging long-term results for selected patients with malignant pleural mesothelioma.

**Acquired Cardiovascular Disease (ACD) 625 Midterm results of endovascular treatment of complicated acute type B aortic dissection**

*Ali Khojenezhad, MD, Carlos E. Donayre, MD, Bassam O. Omari, MD, George E. Kopchok, BS, Irwin Walot, MD, and Rodney A. White, MD, Omaha, Neb, and Torrance, Calif*

Twenty-eight patients underwent endovascular repair of complicated type B aortic dissection. Overall survival rate was 82% and 78% at 1 and 5 years' follow-up, respectively. The rate of treatment failure according to Stanford criteria was 18% at 5 years. Thoracic aortic endografting can be performed with acceptable morbidity and mortality in experienced hands.

**632 Influence of prosthesis–patient mismatch on exercise-induced arrhythmias: A further aspect after aortic valve replacement**

*Vito Antonio Mannacio, MD, Vincenzo De Amicis, MD, Luigi Di Tommaso, MD, Francesco Iorio, MD, and Carlo Vosa, MD, Naples, Italy*

This study evaluated occurrence of prosthesis–patient mismatch, long-term outcome, LV mass regression, exercise tolerance, and arrhythmias in 157 patients who underwent AVR for pure AS with a size 19- or 21-mm prosthesis and good LV function.

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**639 Prosthesis–patient mismatch is less frequent and more clinically indolent in patients operated for aortic insufficiency**

Joel Price, MD, Harry Lapierre, MD, Ladislaus Ressler, MD, Buu-Khanh Lam, MD, MPH, Thierry G. Mesana, MD, PhD, and Marc Ruel, MD, MPH, Ottawa, Ontario, Canada

The incidence and significance of prosthesis–patient mismatch (PPM) differs in patients with aortic insufficiency (AI) compared with those with aortic stenosis or mixed disease. In patients with lone AI, PPM is seen less frequently and has no significant effect on survival and freedom from heart failure.

**646 Cell therapy with autologous bone marrow mononuclear stem cells is associated with superior cardiac recovery compared with use of nonmodified mesenchymal stem cells in a canine model of chronic myocardial infarction**

Myrielle Mathieu, DVM, Jozef Bartunek, MD, PhD, Bachar El Oumeiri, MD, Karim Touihri, MD, Ielham Hadad, MS, Philippe Thoma, MD, Thierry Metens, MS, PhD, Agnes Mendes da Costa, DVM, Maryam Mahmoudabady, MD, Dominique Egrise, MS, PhD, Didier Blocklet, MD, Naïma Mazouz, MS, PhD, Robert Naeije, MD, PhD, Guy Heyndrickx, MD, PhD, and Kathleen McEntee, DVM, PhD, Brussels, Braine L'Alleud and Aalst, Belgium; and TU Eindhoven, The Netherlands

We compared bone marrow mononuclear cell and mesenchymal stem cell therapy in a canine model of chronic myocardial infarction. Mononuclear cells were superior to mesenchymal stem cells in improvement of cardiac systolic function and reduction of infarct size and N-terminal B-type natriuretic propeptide level. This was associated with a favorable angiogenic environment and neovascularization.

**654 Midterm clinical and echocardiographic results and predictors of mitral regurgitation recurrence following restrictive annuloplasty for ischemic cardiomyopathy**

Francesco Onorati, MD, Antonino S. Rubino, MD, Domenico Marturano, MD, Eugenia Pasceri, MD, Giuseppe Santarpino, MD, Stefania Zinzi, MD, Giuseppina Mascaro, MD, and Attilio Renzulli, MD, PhD, FECTS, Catanzaro, Italy

Effects and predictors of recurrent ICMR following mitral restrictive annuloplasty (MRA)+CABG were evaluated. MRA failure correlated with mortality, heart failure, absence of cardiac reverse remodeling. Previous anterior+posterior infarcts, preoperative ventricular dilation, and coaptation depth at discharge  $\geq 0.5$  cm predict recurrence. Prognosis of MRA is good, as long as a low postoperative coaptation depth is achieved.

**663 Surgical left ventricular remodeling leads to better long-term survival and exercise tolerance than coronary artery bypass grafting alone in patients with moderate ischemic cardiomyopathy**

Omer Dzemali, MD, Petar Risteski, MD, Farhad Bakhtiary, MD, Eduard Singer, Andreas Zierer, MD, Peter Kleine, MD, PhD, and Anton Moritz, MD, PhD, Frankfurt am Main, Germany

Patients with coronary disease and impaired left ventricular function were treated with coronary artery bypass grafting (group 1, n = 165) or open left ventricular remodeling in addition to revascularization (group 2, n = 120). Group 2 showed longer ventilation times and higher blood loss, but lower operative mortality, improved long-term survival, and quality of life.

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**669 Transit-time flow characteristics of in situ right gastroepiploic arterial grafts in coronary artery bypass grafting**

*Yoshiyuki Takami, MD, Kazuyoshi Tajima, MD, Sachie Terazawa, MD, Noritaka Okada, MD, Kei Fujii, MD, and Yoshimasa Sakai, MD, Nagoya, Japan*

We classified intraoperative transit-time flow profiles of patent in situ gastroepiploic arterial grafts into four types, closely associated with disease severity of target coronary artery. Patent in situ gastroepiploic arterial grafts showed more regurgitant flow and lower differentiated index of early diastolic flow than in situ internal thoracic arterial grafts.

**674 A new vascular ring connector in surgery for aortic dissection**

*Jeng Wei, MD, MSD, Chung-Yi Chang, MD, Yi-Cheng Chuang, MD, Sung-How Sue, MD, Kuo-Chen Lee, MD, and David Tung, MD, Taipei, Taiwan*

We present the first clinical report of the successful use of a novel titanic vascular ring connector in the surgical reconstruction of aortic dissection.

**Perioperative Management (PM)**

**678 Statins for prevention of atrial fibrillation after cardiac surgery: A systematic literature review** 

*Oliver J. Liakopoulos, MD, Yeong-Hoon Choi, MD, Elmar W. Kuhn, MD, Thorsten Wittwer, MD, Michal Borys, MD, Navid Madershahian, MD, Gernot Wassmer, PhD, and Thorsten Wahlers, MD, Cologne, Germany*

The current meta-analysis of 13 studies (n = 17,643 patients) provides evidence that statin pretreatment may reduce the incidence of any (OR, 0.64; 95% CI, 0.48–0.87) or new-onset atrial fibrillation (OR, 0.66; 95% CI, 0.48–0.89; P < .01) after cardiac surgery. Nevertheless, significant heterogeneity among studies and publication bias underscore the need for future randomized controlled trials.

**687 Costs of excessive postoperative hemorrhage in cardiac surgery**

*Michael C. Christensen, MSc, MPA, DrPH, Stephan Krapf, MD, Angela Kempel, MSc, and Christian von Heymann, MD, PhD, DEAA, Bagsvaerd, Denmark; and Augsburg, Freiburg, and Berlin, Germany*

Excessive postoperative hemorrhage in cardiac surgery is a serious clinical complication that places substantial demands on hospital resources. In a retrospective analysis of data collected at the Heart Center, Augsburg, Germany, we find incremental hospital costs of €6251 (95% CI, 4594 to 7909). Excessive hemorrhage was also associated with a significant risk of postoperative complications and death. Clinical interventions that can effectively prevent or address excessive postoperative hemorrhage in cardiac surgery are likely to have substantial cost-effectiveness potential.

**694 Thromboelastometry-guided administration of fibrinogen concentrate for the treatment of excessive intraoperative bleeding in thoracoabdominal aortic aneurysm surgery**

*Niels Rahe-Meyer, MD, MSc, PhD, Cristina Solomon, MD, Michael Winterhalter, MD, Siegfried Piepenbrock, MD, Kenichi Tanaka, MD, MSc, PhD, Axel Haverich, MD, and Maximilian Pichlmaier, MD, Atlanta, Ga, and Hannover, Germany*

In this study of patients undergoing elective thoracoabdominal aortic aneurysm surgery, the efficacy of intraoperative fibrinogen concentrate administration after cardiopulmonary bypass was assessed. Administration of fibrinogen concentrate at doses guided by thromboelastometric data (ROTEM FIBTEM) was associated with reduced transfusion of allogeneic blood products and lower 24-hour drainage volume.

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- 703 Hetastarch increases the risk of bleeding complications in patients after off-pump coronary bypass surgery: A randomized clinical trial**  
*Marketa Hecht-Dolnik, MD, Howard Barkan, DrPH, Ananse Taharka, MD, and John Loftus, MD, Oakland and Berkeley, Calif*

Our randomized clinical trial of patients undergoing off-pump coronary artery bypass grafting found the intraoperative use of hetastarch for volume replacement to be associated with increases in bleeding, transfusion requirements, and the likelihood of receiving a transfusion on postoperative day 1.

- 712 Preventing heart injury during negative pressure wound therapy in cardiac surgery: Assessment using real-time magnetic resonance imaging**  
*Malin Malmsjö, MD, PhD, Rainer Petzina, MD, Martin Ugander, MD, PhD, Henrik Engblom, MD, PhD, Christian Torbrand, MD, Arash Mokhtari, MD, PhD, Roland Hetzer, MD, PhD, Håkan Arheden, MD, PhD, and Richard Ingemansson, MD, PhD, Lund, Sweden, and Berlin, Germany*

MRI assessment in a porcine sternotomy wound model show altered position of the heart in relation to the sternum during negative pressure wound therapy (NPWT). This may explain 2 potentially hazardous events associated with NPWT, namely, risk for heart rupture and reduced cardiac output. Inserting a rigid barrier over the heart may be a protective measure that is clinically practicable.

## Evolving Technology/ Basic Science (ET/BS)

- 718 An expansible aortic ring for a physiological approach to conservative aortic valve surgery**  
*Emmanuel Lansac, MD, PhD, Isabelle Di Centa, MD, François Raoux, MD, Neil Bulman-Fleming, Adrian Ranga, Aicha Abed, MSc, Maguette Ba, MD, Anthony Paolitto, Didier Letourneur, PhD, and Anne Meddahi-Pellé, MD, PhD, Paris, Suresnes, Boulogne–Billancourt, Le Plessis Robinson, Villeteuse, and Orléans, France; and Montréal, Québec, Canada*

An expansible aortic ring was designed to treat dystrophic aortic insufficiency. The device is implanted externally to increase coaptation height by reducing the dilated aortic root diameters while maintaining root dynamics. The properties of the device were tested in vitro and in vivo in an ovine model.

- 725 Deleted in Malignant Brain Tumors 1 is up-regulated in bacterial endocarditis and binds to components of vegetations**  
*Hanna Müller, MD, Marcus Renner, PhD, Burkhard M. Helmke, MD, Caroline End, PhD, Christel Weiss, PhD, Johannes Poeschl, MD, and Jan Mollenhauer, PhD, Heidelberg, Frankfurt/Main, Mannheim, Germany; and Odense, Denmark*

The glycoprotein DMBT1 is a scavenger receptor cysteine-rich protein with functions in epithelial differentiation and suppression of infection via bacterial aggregation. We report that DMBT1 is up-regulated in affected heart valves with bacterial endocarditis and is able to bind platelets, erythrocyte membranes, and fibrin/fibrinogen.

- 733 Percutaneous reimplantation of a pulmonary valved stent in sheep: A potential treatment for bioprosthetic valve degeneration**  
*Yuan Bai, MD, Gang-Jun Zong, MD, Hai-Bing Jiang, MD, Wei-Ping Li, MD, Hong Wu, MD, Xian-Xian Zhao, MD, and Yong-Wen Qin, MD, Shanghai and Jiangsu Province, China*

To study the replacement of degenerated bioprosthetic valves with transcatheter reimplantation of stent-mounted pulmonary valves, 6 sheep underwent percutaneous pulmonary valved stent implantation. After 2 months of follow-up, reimplantation of stent-mounted pulmonary valves was performed in these sheep. Echocardiography confirmed that the stents were in the desired position during follow-up.

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**Cardiothoracic Transplantation (TX)****738 Heart–lung transplantation in patients with pulmonary atresia and ventricular septal defect**

*Katarzyna Januszewska, MD, PhD, Edward Malec, MD, PhD, Gerd Juchem, MD, PhD, Ingo Kaczmarek, MD, PhD, Ralf Sodian, MD, PhD, Peter Uberfuhr, MD, PhD, and Bruno Reichart, MD, PhD, Munich, Germany*

Heart–lung transplantation for patients with pulmonary atresia and ventricular septal defect is challenging and requires carefully planned and meticulously performed surgical intervention. This management should be taken into consideration as a future option if the specific anatomy is uncorrectable in early periods of life, and the palliative procedures should be avoided.

**744 Renoprotective immunosuppression by pioglitazone with low-dose cyclosporine in rat heart transplantation**

*Yosuke Tanaka, MD, Tomomi Hasegawa, MD, PhD, Zhi Chen, MD, Yutaka Okita, MD, PhD, and Kenji Okada, MD, PhD, Kobe, Japan*

We evaluated the efficacy of the peroxisome proliferator–activated receptor  $\gamma$  activator pioglitazone in rat heart transplantation. Pioglitazone can reduce a dose of cyclosporine with sufficient immunosuppressive effects. Pioglitazone treatment with low-dose cyclosporine protects both cardiac allografts and recipient kidneys synergistically, leading to improvement of graft survival with a minimal cyclosporine-induced nephrotoxicity.

**752 Apyrase treatment prevents ischemia–reperfusion injury in rat lung isografts**

*Seiichiro Sugimoto, MD, PhD, Xue Lin, MD, Jiaming Lai, MD, Mikio Okazaki, MD, PhD, Nitin A. Das, MD, Wenjun Li, MD, Alexander S. Krupnick, MD, Ridong Chen, PhD, Soon Seog Jeong, PhD, G. A. Patterson, MD, Daniel Kreisel, MD, PhD, and Andrew E. Gelman, PhD, St Louis, Mo*

Administration of a soluble recombinant apyrase improves function and attenuates inflammation in rat lung grafts following prolonged cold storage.

**760 In vitro modeling of nonhypoxic cold ischemia–reperfusion simulating lung transplantation**

*Monica Casiraghi, MD, Jason R. Tatreau, BS, John B. Abano, MD, John W. Blackwell, BS, Larry Watson, MD, Keith Burridge, PhD, Scott H. Randell, PhD, and Thomas M. Egan, MD, MSc, Chapel Hill, NC, and Milan, Italy*

We describe a cell culture model of ischemia–reperfusion injury that depicts what lung tissue experiences during transplantation. Consistent with changes observed in lung tissue in vivo, endothelial cells exposed to simulated cold ischemia develop cytoskeletal alterations and monolayer gap formation during ischemia and activation of inflammatory signaling cascades with simulated warm reperfusion.

**Brief Technique Reports 768 Open versus endovascular repair of traumatic aortic rupture: A systematic review**

*Enoch Akowuah, MD, MRCS, FRCS (C-Th), Gianni Angelini, MD, MCh, FRCS, and Alan J. Bryan, DM, FRCS (C-Th), Bristol, United Kingdom*

**770 The treatment of recurrent aortic prosthetic detachment with modified Bentall procedure: Results of two cases**

*Chong Zhang, MD, Yiming Ni, MD, Liping Shi, MD, and Tao Jin, MD, Hangzhou, China*

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- 771 **Successful emergency surgery for coexistent acute aortic syndrome and acute carotid artery obstruction**  
*Masahiko Ando, MD, Kazuhito Imanaka, MD, Hideaki Yamabi, MD, and Hiroshige Sato, MD, Saitama, Japan*
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*Narain Moorjani, MD, FRCS, Jack Broadhurst, MB ChB, and Sunil Ohri, MD, FRCS, Southampton, United Kingdom*
- 775 **Biologic anastomosis: The first case of biologic coronary bypass surgery**  
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- 777 **Technical options for the treatment of anomalous origins of right or left coronary arteries associated with aortopulmonary windows**  
*Bertrand Léobon, MD, Emmanuel Le Bret, MD, PhD, Régine Roussin, MD, Chokri Kortas, MD, Mohammed Ly, MD, Anne Sigal-Cinquabre, MD, Emre Belli, MD, and Alain Serraf, MD, PhD, Le Plessis-Robinson, France*
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*Jun Yokote, MD, Akihiko Usui, MD, Hideki Oshima, MD, Noriyasu Usami, MD, Kohei Yokoi, MD, and Yuichi Ueda, MD, Nagoya, Japan*
- 781 **Single-stage repair of aortopulmonary window with interrupted aortic arch by transection of the aorta and direct reconstruction**  
*Masahiro Yoshida, MD, Masahiro Yamaguchi, MD, PhD, Yoshihiro Oshima, MD, PhD, Shigeteru Oka, MD, PhD, Tomonori Higuma, MD, and Yutaka Okita, MD, PhD, Kobe and Akashi, Japan*

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## Notices of Correction

- 794 **Correction of article by Abdel-Rahman U, Risteski P, Tizi K, Kerscher S, Behjati S, Zwicker K, Scholz M, Brandt U, Moritz A, entitled Hypoxic reoxygenation during initial reperfusion attenuates cardiac dysfunction and limits ischemia–reperfusion injury after cardioplegic arrest in a porcine model (2009;137:978-82).**
- 794 **Correction of article by Patel HJ, Williams DM, Meerkov M, Dasika NL, Upchurch GR Jr, Deeb GM, entitled Long-term results of percutaneous management of malperfusion in acute type B aortic dissection: Implications for thoracic aortic endovascular repair (2009;138:300-8).**

## Meeting Proceedings

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*Colleen Koch, MD, Cleveland, Ohio*

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## Meetings and Courses 799 Meetings and Courses




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### Announcements

- The American Association for Thoracic Surgery**
- 804 *Save the Date!*
- 804 *AATS Meetings and Sponsored Events*
- 804 *2010 AATS Academy Applications Now Available*
- 804 *Applications for Membership Now Available Online*
- 805 *2010 Summer Intern Scholarship Application Now Available*
- The Western Thoracic Surgical Association**
- 805 *Applications for Membership*
- The American Board of Thoracic Surgery**
- 805 *Notices*
- 805 *Requirements for Maintenance of Certification*
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### Reader Services 29A JTCVS Disclosure Statement

- 30A **Information for Readers**

	Earn CME credits at <a href="http://cme.ctsnetjournals.org">http://cme.ctsnetjournals.org</a>
	Supplemental material is available online
	Video clip is available online

Congenital heart disease (CHD) is the most common malformation in humans. The psychomotor development of children with CHD has been shown to be delayed in many aspects throughout adulthood. Many of these delays in brain maturation are evident as early as in the fetal period and often result in brain injury and developmental delays consistent with children born prematurely. Anatomic abnormalities in the most severe CHD disorders, transposition of the great arteries and hypoplastic left heart syndrome, require early surgical interventions to improve the cardiac function, thus subsequently improv

Congenital heart disease is one or more problems with the heart's structure that exist since birth. Congenital means that you're born with the defect. Congenital heart disease, also called congenital heart defect, can change the way blood flows through your heart. Some congenital heart defects might not cause any problems. Complex defects, however, can cause life-threatening complications. Advances in diagnosis and treatment have allowed babies with congenital heart disease to survive well into adulthood. Sometimes, signs and symptoms of congenital heart disease aren't seen until

Congenital heart defects (CHDs) are the most common type of birth defect. As medical care and treatment have advanced, babies with a CHD are living longer and healthier lives. Learn more facts about CHDs below.

What are Congenital Heart Defects (CHDs)? CHDs are present at birth and can affect the structure of a baby's heart and the way it works. The Centers for Disease Control and Prevention (CDC) cannot attest to the accuracy of a non-federal website. Linking to a non-federal website does not constitute an endorsement by CDC or any of its employees of the sponsors or the information and products presented on the website. You will be subject to the destination website's privacy policy when you follow the link.

A heart disease that is present at birth. Representative examples include atrial septal defect, ventricular septal defect, tetralogy of Fallot, and patent foramen ovale.

Congenital heart disease (13213009); CHD - Congenital heart disease (13213009). Monarch Initiative: MONDO:0005453. Definition. A heart disease that is present at birth. Representative examples include atrial septal defect, ventricular septal defect, tetralogy of Fallot, and patent foramen ovale. [from NCI]. Additional description. From GHR Critical congenital heart disease (CCHD) is a term that refers to a group of serious heart defects that are present from birth.