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Lung cancer resections in the general thoracic surgery portion of the STS database were analyzed. Although patients had multiple comorbidities, the length of stay was shorter and mortality was lower than in reports from other large databases.

255  MicroRNA expression profiles of esophageal cancer
     Andrew Feber, PhD, Liqiang Xi, MD, James D. Luketich, MD, Arjun Pennathur, MD, Rodney J. Landreneau, MD, Maoxin Wu, MD, Scott J. Swanson, MD, Tony E. Godfrey, PhD, and Virginia R. Little, MD, New York, NY, and Pittsburgh, Pa

MicroRNA expression profiles of the esophagus are tissue and tumor-type specific. MicroRNA arrays suggest that a subset of Barrett esophagus may express a malignant genotype not previously identified.

261  Is palpation of the nonresected pulmonary lobe(s) required for patients with non–small cell lung cancer? A prospective study
     Robert James Cerfolio, MD, FACS, FCCP, and Ayesha S. Bryant, MSPH, MD, Birmingham, Ala

A prospective study of 166 patients with “VATable” non–small cell lung cancerous lesions found that 8.4% of patients may have malignant nodules in other lobes that are only discovered by palpitation and not imaged preoperatively despite fine-cut chest CT scan with contrast and integrated FDG-PET/CT scans.
Results of a prospective algorithm to remove chest tubes after pulmonary resection with high output

Robert James Cerfolio, MD, FACS, FCCP, and Ayesha S. Bryant, MSPH, MD, Birmingham, Ala

Chest tubes can be removed with up to 450 mL/day of drainage after pulmonary resection. An even higher volume might be accepted. Readmission resulting from a recurrent effusion is extremely uncommon, and the practice of leaving in a chest tube longer for drainage less than 450 mL/day is unsupported in the literature.

Durability of mitral valve repair in Barlow disease versus fibroelastic deficiency

Willem Flameng, MD, PhD, Bart Meuris, MD, PhD, Paul Herijgers, MD, PhD, and Marie-Christine Herregods, MD, PhD, Leuven, Belgium

After valvuloplasty in 348 consecutive patients, the linearized recurrence rate of MR(> .2/4) was 6.0% per year in Barlow disease and 2.9% in fibroelastic degeneration (P = .01). This rate could partially be explained by the use of chordal shortening, the nonuse of an annuloplasty ring, and the nonuse of a sliding plasty. When these techniques were avoided, the residual recurrence rate remained 2.9% in Barlow disease and 2.2% in fibroelastic deficiency (P > .05), which seems related to progression of valve degeneration.

Transmyocardial revascularization to enhance myocardial vasculogenesis and hemodynamic function


In a large animal model of myocardial dysfunction, molecular pathways underlying transmyocardial laser revascularization were evaluated, demonstrating significant increases in vasculogenesis, perfusion, and viability after transmyocardial laser revascularization. Regional contractility was significantly improved with transmyocardial laser revascularization.

Improvement in hemodynamic performance, exercise capacity, inflammatory profile, and left ventricular reverse remodeling after intracoronary delivery of mesenchymal stem cells in an experimental model of pressure overload hypertrophy

Ezequiel J. Molina, MD, Jon Palma, MS, Dipin Gupta, MD, Denise Torres, MD, John P. Gaughan, PhD, Steven Houser, PhD, and Mahender Macha, MD, Philadelphia, Pa, and Ann Arbor, Mich

In a rat model of pressure overload hypertrophy, intracoronary delivery of bone marrow–derived MSCs improved systolic and diastolic function and increased exercise capacity. Systemic inflammation, volume overload, and LV reverse remodeling were similarly improved. These effects were most remarkable at 21 and 28 days after MSC treatment.

Midterm angiographic follow-up after off-pump coronary artery bypass: Serial comparison using early, 1-year, and 5-year postoperative angiograms

Ki-Bong Kim, MD, PhD, Kwang Ree Cho, MD, PhD, and Dong Seop Jeong, MD, PhD, Seoul and Jeju-Do, Korea

We followed up graft patencies after OPCAB with serial (early, 1-year, and 5-year) coronary angiograms in 240 patients. Midterm angiographic follow-up demonstrated acceptable patency rates of grafts after OPCAB. Whereas half of the FitzGibbon grade B arterial grafts at the early angiogram became grade A at 5 years, the proportion of grade B saphenous vein grafts gradually increased during the 5 postoperative years.
The benefits of early valve replacement in asymptomatic patients with severe aortic stenosis
Morgan L. Brown, MD, Patricia A. Pellikka, MD, Hartzell V. Schaff, MD, Christopher G. Scott, MS, Charles J. Mullaney, MD, Thoralf M. Sundt, MD, Joseph A. Dearani, MD, Richard C. Daly, MD, and Thomas A. Orszulak, MD, Rochester, Minn

Among patients with severe AS who underwent AVR, early and late outcomes were similarly good in patients who had symptoms before the operation compared with those who were asymptomatic. Among patients with asymptomatic severe AS, the omission of surgical treatment was the most important risk factor for late mortality.

Adverse events during reoperative cardiac surgery: Frequency, characterization, and rescue
Eric E. Roselli, MD, Gösta B. Pettersson, MD, PhD, Eugene H. Blackstone, MD, Mariano E. Brizio, MD, Penny L. Houghtaling, MS, Regina Hauck, MBA, Jacob M. Burke, and Bruce W. Lytle, MD, Cleveland, Ohio

Adverse events still occur regularly during cardiac reoperation, are related to complexity of the procedure, and occur particularly during dissection and often when preventive strategies have not been used. Compensatory rescue measures are not always successful. Adverse events lead to poor patient outcome and higher intraoperative and postoperative cost.

Paraplegia after extensive thoracic and thoracoabdominal aortic aneurysm repair: Does critical spinal cord ischemia occur postoperatively?
Christian D. Etz, MD, Maximilian Luehr, MS, Fabian A. Kari, MS, Carol A. Bodian, DrPH, Douglas Smego, MD, Konstadinos A. Plestis, MD, and Randall B. Griepp, MD, New York, NY, and Münster, Germany

Among 858 repairs of extensive thoracoabdominal aneurysms, paraplegia developed in 10 patients within 48 hours postoperatively, despite intact intraoperative somatosensory evoked potentials. When compared with matched control subjects, paraplegic patients had higher venous pressures \((P = .03)\) and lower mean aortic pressures (as a percentage of antecedent preoperative pressures, \(P = .03\)). Perhaps optimal hemodynamics in the early postoperative period can avert delayed paraplegia in some cases.

Strategy for biventricular outflow tract reconstruction: Rastelli, REV, or Nikaidoh procedure?
Sheng-Shou Hu, MD, PhD, Zhi-Gang Liu, MD, PhD, Shou-Jun Li, MD, Xiang-dong Shen, MD, Xu Wang, MD, Jin-ping Liu, MD, Fu-Xia Yan, MD, Li-qing Wang, MD, and Yong-qing Li, MD, Beijing, China

Thirty consecutive patients with ventriculoarterial discordance, ventricular septal defect, and pulmonary stenosis underwent double root translocation, modified Nikaidoh \((n = 11)\), modified REV \((n = 7)\), and Rastelli \((n = 12)\) procedures. The hemodynamic performance of the reconstructed biventricular outflow tract, the early-term clinical outcomes, and the follow-up results were compared.
339 Surgical outcome for patients with the mitral stenosis—aortic atresia variant of hypoplastic left heart syndrome

Vladimiro L. Vida, MD, Emile A. Bacha, MD, Alejandro Larranzabal, MD, Kimberly Gawreou, ScD, Adam L. Dorfman, MD, Gerald Marx, MD, Tal Geva, MD, Audrey C. Marshall, MD, Frank A. Pigula, MD, John E. Mayer, MD, Pedro J. Del Nido, MD, and Francis Fynn-Thompson, MD, Boston, Mass

We report our recent surgical outcomes for patients with the MS-AA anatomic variant of HLHS. The presence of LV-CA fistulae in these patients is a risk factor for increased hospital mortality after surgical palliation. A change in clinical management strategy for this particular subgroup might be warranted.

347 Randomized trial of hematocrit 25% versus 35% during hypothermic cardiopulmonary bypass in infant heart surgery

Jane W. Newburger, MD, MPH, Richard A. Jonas, MD, Janet Soul, MD, Barry D. Kussman, MB, BCH, David C. Bellinger, PhD, MSc, Peter C. Laussen, MD, Richard Robertson, MD, John E. Mayer Jr, MD, Pedro J. del Nido, MD, Emile A. Bacha, MD, Joseph M. Forbess, MD, Frank Pigula, MD, Stephen J. Roth, MD, MPH, Karen J. Visconti, PhD, Adre J. du Plessis MB, ChB, MPH, David M. Farrell, MD, CCP, Ellen McGrath, RN, Leonard A. Rappaport, MD, and David Wypij, PhD, Boston, Mass

We compared perioperative and neurodevelopmental outcomes in a single-center, randomized trial of hemodilution to a hematocrit value of 25% versus 35% during hypothermic CPB for reparative infant heart surgery. Hemodilution to hematocrit levels of 35% compared with 25% had no significant clinical benefits or risks.

355 The effect of hematocrit during hypothermic cardiopulmonary bypass in infant heart surgery: Results from the combined Boston hematocrit trials

David Wypij, PhD, Richard A. Jonas, MD, David C. Bellinger, PhD, MSc, Pedro J. Del Nido, MD, John E. Mayer Jr, MD, Emile A. Bacha, MD, Joseph M. Forbess, MD, Frank Pigula, MD, Peter C. Laussen, MD, and Jane W. Newburger, MD, MPH, Boston, Mass

We studied the relationship of continuous hematocrit levels at the onset of low-flow CPB in infant heart surgery to perioperative and 1-year developmental outcomes. Higher hematocrit levels are associated with better PDI scores and, marginally, to lower serum lactate levels. It may be appropriate to target hematocrit levels above 24%.

361 Predictors affecting durability of epicardial pacemaker leads in pediatric patients

Hiroomi Murayama, MD, Masanobu Maeda, MD, Hajime Sakurai, MD, Akihiko Usui, MD, and Yuichi Ueda, MD, Nagoya, Japan

Epicardial lead durability and risk factors for lead failure were retrospectively analyzed in pediatric epicardial pacing therapy. The overall 1-, 5-, 10-, and 15-year lead survival was 100%, 89.0%, 72.5%, and 55.5%, respectively. Multivariate Cox analysis revealed concurrent structural heart disease to be the only significant predictor of lead failure.
Simultaneous hybrid coronary revascularization reduces postoperative morbidity compared with results from conventional off-pump coronary artery bypass

Zachary N. Kon, BA, Emile N. Brown, BS, Richard Tran, BS, Ashish Joshi, MD, MPH, Barry Reicher, MD, Michael C. Grant, BS, Seeta Kallam, MD, Nicholas Burris, BS, Ingrid Connerney, PhD, David Zimrin, MD, and Robert S. Poston, MD, Baltimore, Md

The treatment of multivessel coronary artery disease with the simultaneous hybrid procedure, a minimally invasive technique for revascularization, provides for clinical outcomes and patient satisfaction that are very competitive with those of traditional off-pump coronary artery bypass. In addition, local activation of inflammation and coagulation is minimized, perhaps because of less myocardial manipulation and regional bouts of warm ischemia.

Percutaneous mitral annuloplasty through the coronary sinus: An anatomic point of view

Emmanuel Lansac, MD, Isabelle Di Centa, MD, Nawwar Al Attar, MD, David Messika-Zeitoun, MD, Richard Raffoul, MD, Alec Vahanian, MD, and Patrick Nataf, MD, Paris and Boulogne-Billancourt, France

The anatomic basis of percutaneous mitral annuloplasty through the coronary sinus was studied in cadaver hearts. The coronary sinus is distant from the mitral annulus up to 20 mm. Percutaneous annuloplasty achieves at best a commissure-to-commissure annuloplasty. The potential risk for impingement of the circumflex artery exists in 45.5% of cases.

Venoarterial extracorporeal membrane oxygenation for treatment of cardiogenic shock: Clinical experiences in 45 adult patients

Farhad Bakhtiary, MD, Harald Keller, Selami Dogan, MD, Omer Dzemali, MD, Feyzan Oezaslan, MD, Dirk Meininger, MD, PhD, Hanno Ackermann, MD, PhD, Bernhard Zwissler, MD, PhD, Peter Kleine, MD, PhD, and Anton Moritz, MD, PhD, Frankfurt/Main, Germany

This report reviews our experience with extracorporeal membrane oxygenation over the years with respect to early and midterm outcome, as well as predictors of survival. Early indication, alternative peripheral cannulation techniques, and reduced anticoagulation to avoid perioperative bleeding could improve our results with increasing experience.

Recent advances in understanding Marfan syndrome: Should we now treat surgical patients with losartan?

Peter Matt, MD, Jennifer Habashi, MD, Thierry Carrel, MD, Duke E. Cameron, MD, Jennifer E. Van Eyk, PhD, and Harry C. Dietz, MD, Baltimore, Md, and Basel, Switzerland

Recent studies revealed that Marfan syndrome is not simply a congenital structural tissue defect but rather a developmental abnormality with altered cell—matrix interactions and dysregulated TGF-beta signaling. Most important, TGF-beta antagonism with losartan prevents and potentially reverses aortic root dilatation and other typical clinical features in a mouse model of Marfan syndrome.
Functional and biomechanical evaluation of a completely recellularized stentless pulmonary bioprosthesis in sheep
Geoffrey De Visscher, PhD, Helga Blockx, MSc, Bart Meuris, MD, PhD, Hans Van Oosterwyck, PhD, Erik Verbeke, MD, PhD, Marie-Christine Herregods, MD, PhD, and Willem Flameng, MD, PhD, Leuven, Belgium

Intraperitoneal seeding of a bioprosthetic heart valve as a tissue-engineering paradigm resulted in recellularization of a functional heart valve. Long-term follow-up showed an increased amount of regurgitation because the obtained contractile cells thickened and shortened the valve. Decreased, yet still appropriate, biomechanical properties were also observed.

Preoperative statins for the prevention of atrial fibrillation after cardiothoracic surgery
Kirkeith Lertsburapa, MD, C. Michael White, PharmD, Jeffrey Klinger, MD, Osman Faheem, MD, Jonathon Hammond, MD, and Craig I. Coleman, PharmD, Hartford, Storrs, Conn

Anatomical bases of percutaneous mitral annuloplasty through the coronary sinus were studied on cadaver hearts. Coronary sinus is distant from mitral annulus up to 20 mm. Percutaneous annuloplasty achieves at best a commissure-to-commissure annuloplasty. Potential risk for impingement of the circumflex artery exists in 45.5% of cases.

Lung transplantation in older patients?
Raja Mahidhara, MD, Sam Bastani, DO, David J. Ross, MD, Rajan Saggar, MD, Joseph Lynch III, MD, Gabriel T. Schnickel, MD, David Gjertson, PhD, Ramin Beygui, MD, and Abbas Ardehali, MD, Los Angeles, Calif

Age 65 years and older is generally considered a contraindication to lung transplantation. This study sought to compare the outcome of lung transplantation in older patients versus that in a younger matched cohort. This report demonstrates that lung transplantation can be performed in select patients older than 65 years with acceptable clinical outcomes.

The use of mechanical circulatory support as a bridge to transplantation in pediatric patients: An analysis of the United Network for Organ Sharing database
Ryan R. Davies, MD, Mark J. Russo, MD, MS, Kimberly N. Hong, MHSA, Michael L. O’Byrne, BS, David P. Cork, BS, Alan J. Moskowitz, MD, Annette C. Gelijns, PhD, Seema Mital, MD, Ralph S. Mosca, MD, and Jonathan M. Chen, MD, New York, NY

An analysis of the 2532 transplant recipients less than 19 years old from the United Network for Organ Sharing database was undertaken to assess the effect of mechanical circulatory support on survival. Patients supported with ventricular assist devices had survival similar to that of unsupported patients and better than that of those needing extracorporeal membrane oxygenation.

Delayed surgery for traumatic rupture of aortic arch with dissection of the left anterior descending artery
John EV, MCh, DNB, Gopalakrishnan Mundayat, MCh, Kodhandapani Chunduru, MCh, Jacob Abraham, MD, Aruna Paliyil, MD, and Das Perimpa, DPT, Kerala, India

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Right axillary artery conduit for antegrade deployment of a thoracic aortic endoprosthesis
James H. Wudel, MD, and James B. Williams, MD, Lincoln, Neb, and Peoria, Ill

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Matthew Liava’a, MBChB, Sanjay Theodore, MCh, Robin Brown, FRACS, Suvitesh Luthra, MCh, and James Tatoulis, FRACS, Melbourne, Victoria, Australia

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Roberto Manfredini, MD, Benedetta Boari, MD, Fabio Manfredini, MD, Raffaella Salmi, MD, Eduardo Bossone, MD, Davide Fabbri, MD, Edgardo Contato, MD, Francesco Mascoli, MD, and Massimo Gallarani, MD, Ferrara and Milan, Italy

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Sameer Bhat, MCh DNB(CVTS), Michael Rossiter-Thornton, BMEdSc(Hons), Stephen G. Cooper, MB, ChB, FRACP, Jonathan Gillis, PhD, FRACP, Andrew D. Cole, BAppSc(Hons), Gary S. Sholler, MBBS, FRACP, Richard B. Chard, BDS, MBBS, FRACS, and David S. Winlaw, MD, FRACS, Sydney, Australia

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