The Journal of Invasive Cardiology®

ORIGINAL CONTRIBUTIONS

Coronary Artery Disease
2 Preoperative Intraaortic Balloon Pump Improves Early Outcomes Following High-Risk Coronary Artery Bypass Graft Surgery: A Meta-analysis of Randomized Trials and Prospective Study Design
Penelope P. Rampersad, MD, MSc; Jacob A. Udell, MD, MPH; Rami Zawi, MD; Maral Ouzounian, MD, PhD; Christopher B. Ovegaard, MD, MS; Vinoda Sharma, MD; Vivek Rao, MD, PhD; Michael E. Farkouh, MD, MS; Vladimír Džavík, MD
Because evidence to support pre-emptive intraaortic balloon pump (IABP) insertion for patients undergoing high-risk coronary artery bypass graft (CABG) surgery remains limited, we sought to review outcomes in randomized controlled trials of anticipatory IABP use vs controls in patients undergoing high-risk CABG through meta-analysis.

Coronary Artery Disease
10 Drug-Eluting vs Bare-Metal Stents in Patients With Chronic Kidney Disease and Coronary Artery Disease: Insights From a Systematic Review and Meta-Analysis
Alexander Volodarskiy, MD; Sunil Kumar, MD; Radoslaw Pracon, MD; Mandeep Sidhu, MD; Evgeny Kretov, MD; Tomasz Mazurek, MD; Olga Bockeria, MD; Upendra Kaul, MD; Sripal Bangalore, MD, MHA
Most trials of drug-eluting stents have excluded patients with chronic kidney disease (CKD). The efficacy of drug-eluting stent implantation in patients with CKD is therefore not known. We sought to evaluate the outcomes with drug-eluting vs bare-metal stents in patients with CKD.

Radial Access Technique
18 Comparison of Radial Access, Guided Femoral Access and Non-Guided Femoral Access Among Women Undergoing Percutaneous Coronary Intervention
Linda M. Koshy, MD; Laura H. Aberle, BSPH; Mitchell W. Knueff, MD; Connie N. Hess, MD, MHS; Ernest Mazzarotti, Jr, MD; Sanjit S. Jolly, MD, MS; Alice Jacobs, MD; C. Michael Gibson, MD; Roxana Mehran, MD; Ian C. Gilchrist, MD; Sunil V. Rao, MD
While the radial approach has been shown to be superior to femoral approach in reducing bleeding and vascular complications, whether the use of micropuncture, fluoroscopy, or ultrasound mitigates these differences is unknown. This study was conducted to determine the association between radial access, guided femoral access, and non-guided femoral access on post-procedural bleeding and vascular complications after percutaneous coronary intervention.

Transcatheter Aortic Valve Replacement
23 Avoiding S3 Valve Over-Sizing by Deployment Balloon Over-Filling: Impact on Rates of Permanent Pacemaker and Other Procedural Complications During TAVI
Tej Sheth, MD; Madhu K. Natarajan, MD, MS; Catherine Kretasoulas, PhD; Richard Whitlock, MD, PhD; Dominic Parry, MD; Victor Chu, MD; Amanda Smith, RN, PhD; James L. Velianou, MD
Patients with annular areas just above nominal Sapien 3 (S3) valve areas are at increased risk of over-sizing if a larger valve is implanted. We therefore evaluated the rate of permanent pacemaker implantation associated with avoiding over-sizing by selective deployment balloon over-filling during transcatheter aortic valve replacement with the S3 valve.

Coronary Imaging
28 Radiation Reduction in the Pediatric Catheterization Laboratory Using a Novel Imaging System
Stephen Manu, MD; Patchanapong Sintathos, MD; Gerard J. Boyle, MD; Lu Wang, MS; Lourdes R. Prieto, MD
Radiation dose was compared between two modern imaging systems with different x-ray tube technology (Megalix vs Gigalix) and detector type (amorphous vs crystalline silicon) in the same institution.
Periperal Vascular Disease

35 Association of Anemia With Outcomes in Patients Undergoing Percutaneous Peripheral Vascular Intervention: Insights From the Blue Cross Blue Shield of Michigan Cardiovascular Consortium (BMC2 VIC) 
Nikhil V. Ambudkar, MD; Scott F. Grey, PhD; Howard S. Rosman, MD; Husscin Othman, MD; Thomas P. Davis, MD; Timothy J. Nypaver, MD; Theodore Schreiber, MD; Hiroshi Yamasaki, MD; Thomas A. Lalonde, MD; Peter K. Henke, MD; Hitinder S. Gurn, MD; Rajendra H. Mehta, MD, MS; P. Michael Grossman, MD; on Behalf of Blue Cross Blue Shield of Michigan Cardiovascular Consortium (BMC2) Investigators

To evaluate the clinical features and outcomes of patients with anemia undergong percutaneous peripheral vascular intervention (PVI) in a contemporary registry, we evaluated the differences in the clinical features and outcomes of patients with and without anemia undergoing PVI in the BMC2 VIC registry. Anemia was defined using WHO criteria.

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BRIEF COMMUNICATION

E1 The Use of Intraprocedural Reinfusion During MitraClip to Reduce Blood Loss and Transfusion Requirements
Claire E. Raphael, MBBS, PhD; Elad Maar, MD, PhD; Sidakpal S. Panaich, MD; Guy Reeder, MD; Charanjit S. Rihal, MD, MBA; Mackram F. Eleid, MD
We assess the utility of intraprocedural reinfusion of blood aspirated during MitraClip implantation.

CLINICAL IMAGES

E4 Combined Radial-Tibial Access Strategy With Radial-Tibial Reverse CART, Radial-Tibial Kiss, and Tibial-Tibial Kiss
Elias B. Hanna, MD; Bashar A. Ababneh, MD; Amrit N. Amin, MD
A 45-year-old male smoker presented with extensive non-healing ulcerations and an occluded right CFA. His left forearm had contractures from a prior stroke. We describe a combined radial-tibial access revascularization strategy.

E7 Cardioembolic Stroke in Patient with Transcatheter Occluded Left Atrial Appendage
Umberto Cucchiini, MD, PhD; Denisa Muraru, MD, PhD; Luigi P. Badano, MD, PhD
A cerebral ischemic event in a patient managed with LAA transcatheter obliteration is illustrated. Transesophageal echocardiography allowed identification and accurate definition of the LAA device leakage.

E9 Transcarotid Transcatheter Aortic Valve Replacement as Preferred Alternative Access in a Patient With Bilateral Carotid Artery Disease
Puja B. Parikh, MD; Shang Loh, MD; Luis Gruberg, MD; Neal Patel, MD; Jonathan Weinstein, DO; Henry Tannous, MD; Thomas Bilfinger, MD
A 78-year-old man presented with severe symptomatic aortic stenosis and a heavily calcified, stenotic aortic valve. Given multiple comorbidities, the heart team agreed on a transcatheter approach via the left common carotid artery.

E11 Migration of Intracorotic Balloon Pump Placed Via the Axillary Artery
Yaron D. Baroc, MD, PhD; Hazim Alwair, MD; David F. Kong, MD, AM, BMT; Chetan B. Patel, MD; Mani A. Daneshmand, MD; Carmelo A. Milano, MD; Jacob N. Schroder, MD
Axillary artery IABP placement enables those awaiting transplant to ambulate and get stronger, but motion increases risk of IABP migration. The management of a migrated pump in a 44-year-old man with heart failure is described.

E12 Healing of Iatrogenic Coronary Dissection and Intramural Hematoma: Insights From OCT
Samual Hayman, MBBS, MSc and Shahar Lavi, MD, PhD
A 57-year-old female presented with Canadian Cardiovascular Society class 2 angina and a positive stress test. Angiography was performed via right radial approach, resulting in spiral dissection and TIMI 0 flow.

E13 2017 Reviewer Acknowledgment

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ORIGINAL CONTRIBUTIONS

Coronary Artery Disease

43 Current Perspectives and Practices on Chronic Total Occlusion Percutaneous Coronary Interventions
Siddharth M. Patel, MD; Rohan V. Menon, MD; M. Nicolas Burke, MD; Farouc A. Jaffer, MD, PhD; Robert W. Yeh, MD, MBA; Minh Vô, MD; Dimitri Karmpaliotis, MD, PhD; Lorenzo Azzalini, MD; Mauro Carlino, MD; Kambis Mashayekhi, MD; Alfredo R. Galassi, MD; Stephane Rinfit, MD; Stephen G. Ellis, MD; Mital Patel, MD; Banana V. Rangan, BDS, MPH; Aris Kanatasakis, MD; Barbara A. Danek, MD; Judit Karacsonyi, MD; Erica Resendes, BS, MPH; Subhash Banerjee, MD; Emmanouil S. Brilakis, MD, PhD

We sought to examine contemporary perspectives and practices on chronic total occlusion percutaneous coronary intervention.

Coronary Artery Disease

51 Lower Repeat Revascularization Rates Among Patients With Prior Coronary Artery Bypass Graft Surgery are Due to Lack of Adequate Target Vessels
Anirudh Kumar, MD; John F. Wagener, MD; Daniel Wojdyla, MS; W. Schuyler Jones, MD; Manesh R. Patel, MD; Sunil V. Rao, MD

Patients with multivessel coronary artery disease who received coronary artery bypass graft (n = 861) or percutaneous coronary intervention (n = 694) were enrolled in the Duke Databank for Cardiovascular Disease (2003-2012). Incidence of major adverse cardiovascular and cerebrovascular events between the two groups was compared.

Coronary Artery Disease

56 Predictors of Hemodynamic Improvement and Stabilization Following Intraaortic Balloon Pump Implantation in Patients With Advanced Heart Failure
Teruhiko Imamura, MD, PhD; Colleen Juricek, RN; Ann Nguyen, MD; Ben Chung, MD; Daniel Rodgers, BA; Gabriel Sayer, MD; Nisatha Sarsoot, MD; Gene Kim, MD; Jayant Ratkhelkar, MD; Takeyeshi Ota, MD, PhD; Tae Song, MD; David Ongsanger, MD; Daniel Burklof, MD, PhD; Valluvan Jeevanandam, MD; Nir Uziel, MD, MS

The intraaortic balloon pump is currently an essential tool to improve hemodynamics in patients with advanced heart failure. This study investigated predictors for hemodynamic improvement or stabilization with intraaortic balloon pump therapy in patients with advanced heart failure.

Coronary Artery Disease

62 One-Year Clinical Outcomes of the Hybrid CTO Revascularization Strategy After Hospital Discharge: A Subanalysis of the Multicenter RECHARGE Registry
Joren Maeremans, MSc; Alexandre Arnaud, MD; Simon Walsh, MD; Paul Knaapen, MD, PhD; Colm G. Hannatty, MD; Benjamin Faure, MD, PhD; Pierfrancesco Agostoni, MD; Evan Bressollette, MD; Peter Kayaert, MD; Dave Smith, MD; Alexander Chase, MD, PhD; Margaret B. Mercier, MD, PhD; William H. T. Smith, MB, BCH, MD, FRCP; Ahun Harcombe, MD; John Irving, MD; Andrew Ladoviniec, MD; James C. Spratt, MD; Jo Deus, MD, PhD; on behalf of the RECHARGE Investigators

This study assessed the long-term clinical outcomes of the hybrid chronic total occlusion practice, when applied by operators with varying experience levels.

Coronary Artery Disease

71 Operator Pelvic Radiation Exposure During Percutaneous Coronary Procedures
Alessandro Sciahbasi, MD, PhD; Emanuelu Piccaluga, MD; Alessandro Sarandrea, Eng; Giacomo Nucci, MD; Nicola Careto, MD, Phys; Stefano Riggatti, MD, PhD; Silvio Fedele, MD; Silvio Romano, MD; Maria Penco, MD

Operator radiation exposure to the pelvic region during percutaneous coronary procedures is significantly higher compared to thorax radiation dose independently of the vascular access site employed.
Commentary

75 Occupational Hazards in the Cath Lab – Physician, Protect Thyself!
Lloyd W. Klein, MD and Enrique Padilla Campos, MD

In interventional cardiology, the safety of the men and women who work in the cath lab must keep pace with a rapidly growing field. The onus remains with physicians to minimize workplace hazards, but administrative and organizational roadblocks need to be negotiated in order to address the rising health-related costs of working in the cath lab. New insights at the level of hospital administration are essential to revise labor practices and prioritize investments in updated safety technologies.

Coronary Artery Disease

77 Impact of the Use of Intravascular Imaging on Patients Who Underwent Orbital Atherectomy
Michael S. Lee, MD; Evan Shlofmitz, DO; Jeremy Kong, MD; Gentian Lluri, MD, PhD; Pratyaksh K. Srivastava, MD; Richard Shlofmitz, MD

We assessed the impact of intravascular ultrasound/optical coherence tomography (IVUS/OCT) on the outcomes of 138 patients who underwent orbital atherectomy with either imaging modality. Orbital atherectomy guided by intravascular imaging is feasible and safe. A large prospective randomized trial is needed to determine the clinical benefit of IVUS/OCT during PCI with orbital atherectomy.

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CLINICAL IMAGES

E16 Multimodality Imaging and Percutaneous Closure of a Large LMCA to SVC Fistula
Sanjay S. Mehta, MD and Atman P. Shah, MD

Images illustrate 3D reconstruction CT showing fistula arising from the left main coronary artery draining into the superior vena cava. Additional angiographic images show the fistula before and after percutaneous closure with Amplatzer Vascular plugs.

E18 Coronary Artery Straightening Causing Acute Severe Mitral Regurgitation
Farshad Forouzan-deh, MD, PhD and John S. Douglas, Jr, MD

A 79-year-old woman had an atritic LIMA to LAD but without significant LAD stenosis, patent SVG to OM1, patent SVG to RCA, and severe tandem lesions in a very tortuous LCX for which she underwent PCI. Placement of a BMW coronary guidewire into the LCX resulted in the straightening of the vessel.

E20 Unusual Case of Three Total Occlusions
Ahmed M.S.E.K. Abdelaty, MRCP, MSc; Anvesha Singh, MBChB, PhD; Gerry P. McCann, MD

This case highlights the value of extensive coronary collaterals in maintaining myocardial viability in severe coronary artery disease, and the role of cardiac MRI in guiding revascularization decisions.

E21 Thromboembolic Occlusion of Left Coronary Artery During Transcatheter Aortic Valve Implantation
Kajetan Grodecki; Zenon Huzek, MD, PhD; Piotr Scislo, MD, PhD; Janusz Kochman, MD, PhD; Krzysztof J. Filipiak, MD, PhD; Grzegorz Opolski, MD, PhD

Non-cerebral thromboembolic complications of transcatheter aortic valve implantation are rare, but life threatening. We report a 62-year-old woman with aortic stenosis who qualified for TAVI due to obesity and developed hypotension and bradycardia as a result of thromboembolic occlusion of the LCA.
Coronary Artery Disease

81 Mechanical Circulatory Support in Chronic Total Occlusion Percutaneous Coronary Intervention: Insights From a Multicenter U.S. Registry
Barbara A. Danek, MD; Mir B. Basir, DO; William W. O’Neill, MD; Mohammad Alqarqaz, MD; Aris Karatasakis, MD; Dimitri Karmpaliotis, MD; Farouc A. Jaffer, MD, PhD; Robert W. Yeh, MD; Michael Wyman, MD; William L. Lombardi, MD; David Kandzari, MD; Nicholas Lembo, MD; Anthony D’Onofrio, MD; Mitul Patel, MD; Ehtisham Mahmud, MD; James W. Choi, MD; Catalin Toma, MD; Jeffrey W. Moses, MD; Ajay Kirtane, MD; Manish Parikh, MD; Ziad A. Ali, MD; Santiago Garcia, MD; Judit Karacsonyi, MD; Banana V. Rangan, MD, MPH; Craig A. Thompson, MD, MMM; Subhash Banerjee, MD; Emmanouil S. Brilakis, MD, PhD; Khaldoon Alaswad, MD

We examined the characteristics and outcomes of 1598 CTO-PCIs. Despite more complex clinical and angiographic characteristics, we found that elective use of mechanical circulatory support (MCS) in high-risk patients was associated with similar technical and procedural success rates, but higher risk of complications, compared to cases without elective MCS.

Coronary Artery Disease

89 Retrograde CTO-PCI of Native Coronary Arteries Via Left Internal Mammary Artery Grafts: Insights From a Multicenter U.S. Registry
Peter Tajti, MD; Aris Karatasakis, MD; Dimitri Karmpaliotis, MD; Khaldoon Alaswad, MD; Farouc A. Jaffer, MD, PhD; Robert W. Yeh, MD; Mitul Patel, MD; Ehtisham Mahmud, MD; James W. Choi, MD; Anthony H. D’Onofrio, MD; Catalin Toma, MD; Barry Uretsky, MD; Santiago Garcia, MD; Jeffrey W. Moses, MD; Manish Parikh, MD; Ajay Kirtane, MD; Ziad A. Ali, MD; Raja Hatem, MD; Judit Karacsonyi, MD; Barbara A. Danek, MD; Banana V. Rangan, MD, MPH; Subhash Banerjee, MD; Imre Ungi, MD, PhD; Emmanouil S. Brilakis, MD, PhD

We compared the characteristics and outcomes of retrograde CTO-PCI through LIMA grafts vs other conduits in a contemporary CTO registry. Retrograde CTO-PCI is infrequently performed via LIMA grafts, but was associated with success/major in-hospital complication rates similar to retrograde CTO-PCI via other conduits in this study.

Coronary Artery Disease

98 Short-Term Outcome After Left Main Interventions in Patients Presenting With Acute Coronary Syndrome
Slayman Obeid, MD; Nooraldaem Yousif, MD; Andreas Schelldorfer, MD; Mohammady Shahin, MD; Lorenz Räber, MD; Baris Gencer, MD; François Mach, MD; Marco Roffi, MD; Christian M. Matter, MD; Stephan Windecker, MD; Thomas F. Lüscher, MD, FRCP

A group of 2899 patients with acute coronary syndromes was studied to compare the safety and efficacy of those with LMCA disease vs those without LMCA disease. The primary endpoints of independently adjudicated major adverse cardiovascular and cerebrovascular events and net adverse clinical events were determined at 30-day follow-up.

Transcatheter Aortic Valve Replacement

105 Favorable Short-Term and Long-Term Outcomes Among Patients With Prior History of Malignancy Undergoing Transcatheter Aortic Valve Implantation
Anat Berkovitch, MD; Victor Guetta, MD; Israel M. Barbash, MD; Noam Fink, MD; Ehud Regev, MD; Elad Maor, MD, PhD; Yotam Vered, BA; Yoni Grossman, MD; Amotz Younis, MD; Rafael Kuperstein, MD; Micha Feinberg, MD; Elad Asher, MD; Amit Segev, MD; Paul Fefer, MD

We investigated 477 patients who underwent TAVR and divided subjects into two groups according to malignancy status. We found that mere history of malignancy among elderly patients does not adversely affect outcomes after TAVR; however, history of recent (<1 year) cancer-related treatment increases the risk for long-term mortality after TAVR.
Radial Access Technique

110 Forearm Versus Femoral Approach for Cardiac Catheterization in End-Stage Renal Disease Patients
Michael Koutouzis, MD, PhD; George S. Sfyroeras, MD, PhD; Christos Maniotis, MD, PhD; Konstantinos Kintis, MD, PhD; Sotiris Patilinakos, MD, PhD; Panagiotis Tsivverdis, MD; Giannis Giannikouris, MD; Ioannis Tsiafakouzis, MD; Efstatios Lazaris, MD; Michalis Hamilos, MD, PhD

End-stage renal disease (ESRD) is a relative contraindication for forearm cardiac catheterization, yet this approach is used in everyday practice. We compared femoral and forearm approach for cardiac catheterization in ESRD patients.

Coronary Artery Disease

115 Suggested Bony Landmarks for Safe Axillary Artery Access
Mohammad Thawabi, MD; Rajiv Tyal, MD, MPH; Zain Khakwani, MD; Michael Sinclair; Marc Cohen, MD; Najam Wasty, MD

Axillary artery cannulation is an important alternate access site for catheter-based procedures in selected patients. Our objective was to identify a fluoroscopic bony landmark for safe percutaneous axillary artery cannulation.

Editorial

119 The Apopheia of Interventional Cardiology
Lloyd W. Klein, MD

Operator quality assessment in PCI is disposed to the view that the more cases the interventionist performs, the more proficient the operator. However, the evidence does not support any particular volume level as a quality indicator.

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E23 Role of Diastology in Transcatheter Aortic Valve Implantation
Sivasankaran Sivasubramonian, DM; Arun Gopalakrishnan, DM; Bijulal Sasidharan, DM; Ajitkumar Valaparambil, DM

Transient elevation of LV diastolic pressure above LA pressure can occur in severe aortic regurgitation in the diastasis phase. Mitral E wave reversal in such a situation could serve as non-invasive evidence of elevated left ventricular diastolic pressures, thereby guiding therapeutic decision making.

E25 Kinking of Right Coronary Artery as a Complication in Pulmonary and Tricuspid Valve Replacement
Simon Davies, MD and Osama Samara, MD

A 47-year-old patient with severe tricuspid and pulmonary regurgitation was electively admitted for surgical replacement of both valves. Post-op ECG changes suggested acute myocardial ischemia. Angiography revealed kinking in the distal RCA causing significant stenosis, which was treated by stenting.

E26 High-Risk Atherosclerotic Plaque in Aberrant Circumflex Coronary Artery
Daniel R. Obaid, PhD; Patrick A. Calvert, PhD; Martin R. Bennett, PhD; Nick E.J. West, MD

A 45-year-old man presented after an episode of central chest pain. Catheter angiography revealed an aberrant circumflex artery and high-grade stenosis in the mid RCA and proximal CX arteries. Previous case series have suggested that the retroaortic portion of aberrant circumflex arteries may be particularly prone to the development of atherosclerosis.

E27 Quadricuspid Aortic Valve Stenosis: Expanding our Experience in Transcatheter Aortic Valve Implantation
Majid Ibrahim, MD; Keattiyoat Wattanakit, MD; Marco Borzallo, MD; Sudhir Mungee, MD

To our knowledge, this is the first documented case of successful TAVI for severe quadricuspid aortic valve (QAV) stenosis performed in the U.S. and the first documented Sapien 3 valve implantation in a severely stenotic QAV.
Chronic Total Occlusions
121  Multicenter Registry of Real-World Patients With Severely Calcified Coronary Lesions Undergoing Orbital Atherectomy: 1-Year Outcomes
  Michael S. Lee, MD; Evan Shlofmitz, DO; Alec Goldberg, BS; Richard Shlofmitz, MD
  Although we previously reported the safety of orbital atherectomy at 30 days in all-comers with severely calcified coronary lesions, longer-term follow-up is unknown. In this study, we report the 1-year outcomes of patients with severely calcified coronary arteries who underwent orbital atherectomy.

Electrophysiology
126  Catheter Ablation of Focal Atrial Tachycardia Using Remote Magnetic Navigation
  Xiao-yu Liu, MD; Peter Karl Jacobsen, MD; Steen Pehrson, MD; Xu Chen, MD
  The outcomes of catheter ablation in focal atrial tachycardia (AT) using remote magnetic navigation (RMN) are still controversial. The objectives of this study were to assess the acute and long-term outcomes of catheter ablation in focal AT using RMN. A total of 53 patients with focal AT who underwent catheter ablation using RMN were included.

Coronary Artery Disease
133  One-Year Clinical Outcomes of Forty-Eight Millimeter Everolimus-Eluting Stent Implanted in Very Long Lesions: A Propensity-Matched Comparison (The FREIUS Study)
  Gioel Gabrio Secco, MD, PhD; Matteo Tebaldi, MD; Rosario Parisi, MD; Andrea Cuccio, MD; Carlo Di Mario, MD, PhD; Pietro Sangiorgio, MD; Alfonso Ielasi, MD; Antonio Centola, MD; Rossella Fattori, MD, PhD; Matteo Vercellino, MD; Giovanni Longo, MD; Gianfranco Pistis, MD; Simone Biscaglia, MD; Antonio Ruggiero, MD; Paolo Nicola Marino, MD; Gianluca Camplini, MD
  The presence of overlapped segments of metal struts and polymer might trigger an abnormal inflammatory reaction in long coronary lesions, resulting in a higher restenosis rate. The aim of our study was to evaluate the safety, feasibility, and cost effectiveness of a 48 mm everolimus-eluting stent (EES) during treatment of very long coronary lesions.

Transcatheter Aortic Valve Replacement
138  Hemodynamic Effects of Valve Asymmetry in Sapien 3 Transcatheter Aortic Valves
  Daniel R. Mangels, MD; Mary Siki, BS; Rohan Menon, BS; Joseph Bavaria, MD; Saif Anwaruddin, MD; Jay Giri, MD; Nimesh Desai, MD; Wilson Y. Szeto, MD; Prashanth Vallabhajosyula, MD; Howard C. Herrmann, MD
  Eccentric valve deployment after transcatheter aortic valve replacement has been associated with abnormal leaflet shear stresses that may accelerate structural valve deterioration. This phenomenon has not been studied in patients receiving Sapien 3 prostheses (Edwards Lifesciences), therefore, we performed a retrospective cohort analysis of 100 patients who received Sapien 3 valves between 2013.

Peripheral Vascular Disease
145  Dissections in Peripheral Vascular Interventions: A Proposed Classification Using Intravascular Ultrasound
  Nicolas W. Shammas, MD, MS; James T. Torey, PA-C; W. John Shammas, BS
  Dissections following interventions in the infragenual arteries occur very frequently and are mostly under-appreciated on angiographic imaging. We propose a classification combining depth of injury from intima to adventitia with circumference of dissection.
Mechanisms of Lead Failure by Recall Status and Manufacturer: Results From the Pacemaker and Implantable Defibrillator Leads Survival Study (“PAIDLESS”)

Sam N. Schwarzwald, BS; Daniel J. Kersten, BA; Zohaib A. Shaikh, BSE; Brandon S. Needelman, BS; Alyssa M. Feldman, MS; Joseph Germano, DO; Shahidul Islam, PStat®, MPH, CPH; Todd J. Cohen, MD

The aim of this study was to determine the differences in lead failure mechanisms across the major United States implantable defibrillator lead manufacturers (Boston Scientific, Medtronic, and St. Jude Medical), between all non-recalled and recalled leads, and between two recalled lead families (Medtronic Sprint Fidelis and the St. Jude Medical Riata and Riata ST).

Coronary Artery Disease


Christopher C. Smitson, MD; Lawrence Ang, MD; Ali Poundjabbar, MD; Ryan Reeves, MD; Mitul Patel, MD; Ehtisham Mahmud, MD

The goal of this study is to evaluate the safety and efficacy of the second-generation robotic-assisted system CorPath GRX (Corindus) for percutaneous coronary intervention.

CLINICAL IMAGES

E28 Very Late Migration of Balloon-Expandable Transcatheter Aortic Valve

Ankur Kalra, MD; Eleonora Avenatti, MD; Ponraj Chinnadurai, MBBS, MMST; Michael J. Reardon, MD; Neal S. Kleiman, MD; Stephen H. Little, MD; Colin M. Barker, MD

Color-flow Doppler TEE during valve-in-valve TAVR illustrates the placement of a 23 mm Edwards Sapien 3 valve carefully positioned within a displaced 23 mm Edwards Sapien XT valve.

CLINICAL IMAGES

E31 Rotational Atherectomy and Simultaneous Temporary Venous Pacing Through a Forearm Approach

Ioannis Tsiafakou, MD, PhD; Theodoros Zografos, MD, PhD; Nikolaos Bourboulis, MD, PhD; Apostolos Katsivas, MD, PhD

To the best of our knowledge, this is the first reported RA procedure using venous pacing utilizing a complete forearm approach, which illustrates the feasibility of this procedure and its advantages for the patient.

CLINICAL IMAGES

E33 Rupture of a Non-Obstructive Plaque

Mohamad Amer Alaiti, MD; Anas Fares, MD; Hiram G. Bezerra, MD, PhD

This invasive and non-invasive imaging series represents a classic rupture of a non-obstructive plaque with thin-cap fibroatheroma.

CLINICAL IMAGES

E35 Atherosclerosis of the Internal Mammary Artery: Intravascular Ultrasound and Virtual Histology Imaging

Sanjay S. Mehta, MD; Falak B. Shah, MD; Ann Connor, MD

Atherosclerotic disease of the shaft of the IMA is rare. Angiography or arterial duplex ultrasound before bypass surgery of the IMA should be performed even when considering the patient for an emergent bypass surgery.