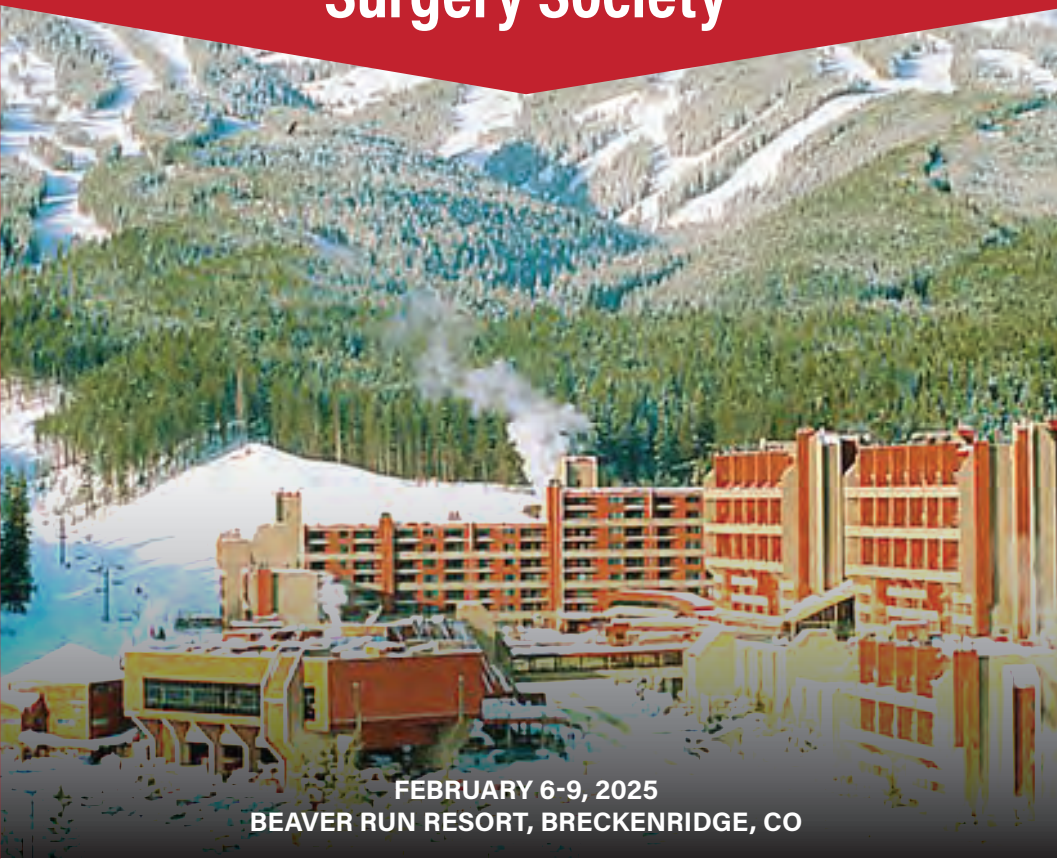


49th Annual Meeting

Vascular & Endovascular Surgery Society



FEBRUARY 6-9, 2025
BEAVER RUN RESORT, BRECKENRIDGE, CO



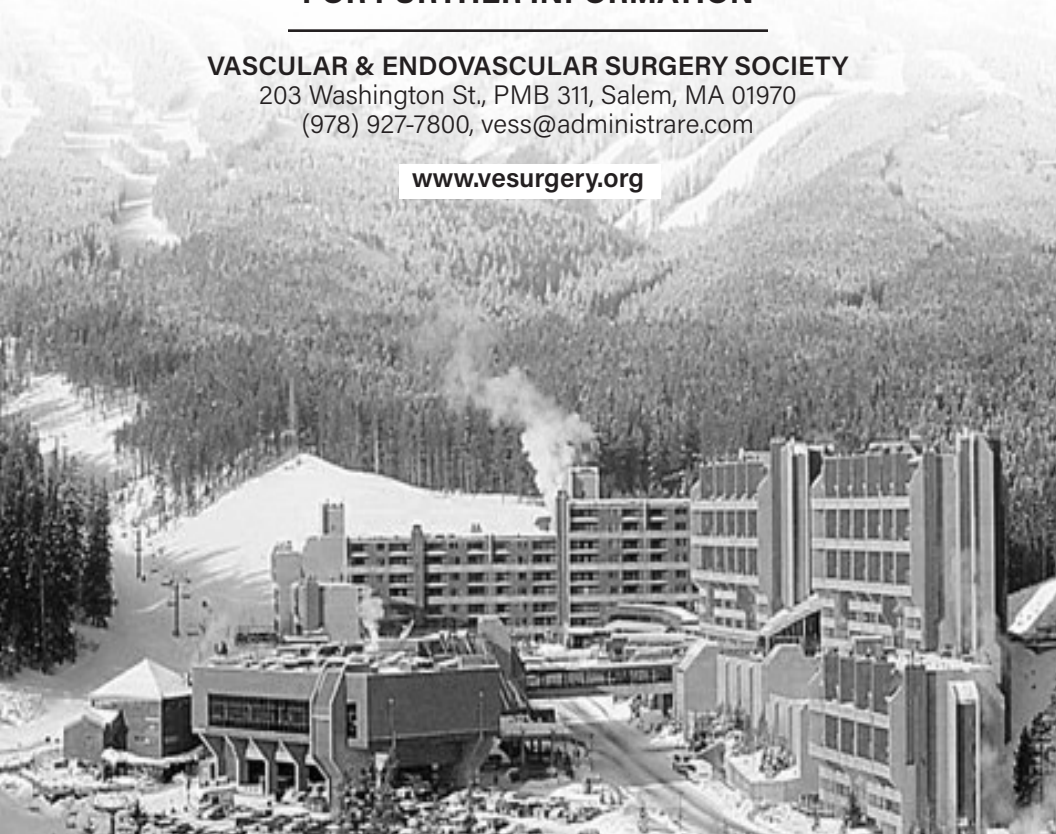
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FOR FURTHER INFORMATION

VASCULAR & ENDOVASCULAR SURGERY SOCIETY
203 Washington St., PMB 311, Salem, MA 01970
(978) 927-7800, vess@administrare.com

www.vesurgery.org



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Representative to the ACS Advisory Council
for Surgical Specialties.....Bernadette Aulivola, MD
SVS Strategic Board of Directors.....Bernadette Aulivola, MD

PAST PRESIDENTS & MEETINGS

Date	Location	President
1976	Chicago, IL	Organizational Meeting
1977	Dallas, TX	Steven M. Dosick
1978	San Francisco, CA	Robert G. Scribner
1979	Chicago, IL	William S. Gross
1980	Chicago, IL	Charles A. Andersen
1981	Dallas, TX	Larry H. Hollier
1982	Boston, MA	G. Edward Bone
1983	San Francisco, CA	Robert C. Batson
1984	Atlanta, GA	Lee C. Bloemendal
1985	Baltimore, MD	George J. Collins, Jr.
1986	New Orleans, LA	Jonathan B. Towne
1987	Toronto, Canada	Thomas S. Riles
1988	Chicago, IL	Paul T. McDonald
1989	New York, NY	Anthony J. Comerota
1990	Los Angeles, CA	John W. Hallett, Jr.
1991	Boston, MA	Paul M. Orecchia
1992	Chicago, IL	David L. Rollins
1993	Washington, DC	Frank T. Padberg, Jr.
1994	Seattle, WA	Peter G. Kalman
1995	New Orleans, LA	William J. Quinones-Baldrich
1996	Chicago, IL	Joseph L. Mills
1997	Boston, MA	Gary Giangola
1998	San Diego, CA	J. Gordon Wright
1999	Washington, DC	Jeffrey R. Rubin
2000	Toronto, Canada	Donald L. Akers, Jr.
2001	Baltimore, MD	Thomas F. Lindsay
2002	Boston, MA	R. Clement Darling, III

Date	Location	President
2003	Chicago, IL	Jeffrey L. Ballard
2004	Anaheim, CA	Samuel R. Money
2005	Chicago, IL	Lewis B. Schwartz
2006	Philadelphia, PA	Robert A. Cambria
2007	Baltimore, MD	William D. Jordan, Jr.
2008	San Diego, CA	W. Charles Sternbergh, III
2009	Denver, CO	Tina R. Desai
2010	Boston, MA	Karl A. Illig
2011	Chicago, IL	Marc A. Passman
2012	Baltimore, MD	Martin R. Back
2013	Park City, UT	Ruth L. Bush, MD
2014	Steamboat Springs, CO	W. Darrin Clouse
2015	Vail, CO	Vikram S. Kashyap
2016	Park City, UT	Sean P. Roddy
2017	Steamboat Springs, CO	Thomas S. Maldonado
2018	Vail, CO	Peter R. Nelson
2019	Snowbird, UT	Jonathan Eliason
2020	Steamboat Springs, CO	James H. Black
2021	Sun Valley, ID/Virtual	Matthew A. Corriere
2022	Snowmass, CO	Jason T. Lee
2023	Whistler, BC Canada	Ravi Veeraswamy
2024	Sun Valley, ID	Mark Conrad, MD

AWARD HISTORY

2011

Academic Award - Faculty	Guillermo A. Escobar
Academic Award - Fellow	Bjoern Suckow
Travel Award	Judith C. Lin

2012

Academic Award—Faculty	John Curci
Academic Award—Fellow	Kathleen Lamb
Travel Award	Karen Woo
Norman M. Rich Military Award	Cpt. Carole Villamaria

2013

Norman M. Rich Military Award	Cpt. Marlin Wayne Causey
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2014

Norman M. Rich Military Award	Cpt. Daniel Scott
Young Faculty Research Award	Dawn M. Coleman

2015

Early Career Faculty Research Award	Ryan McEnaney
W. L. Gore Travel Award	Matthew Mell

2016

Best Paper Award	Diego Ayo
W. L. Gore Travel Award	Justin Hurie

2017

Early Career Faculty Award	Jean Marie Ruddy
Medtronic Resident Research Award	Gayan de Silva
W. L. Gore Travel Award	Ying Wei Lum

2018

Early Career Faculty Award	Jeffrey Siracuse
Medtronic Resident Research Award	Frank Davis
W. L. Gore Travel Award	Nicolas Mouawad

2019

Early Career Faculty Award	Andrea Obi
Medtronic Resident Research Award	Elizabeth Chou

2020

Early Career Faculty Award	Sam C. Tyagi
Medtronic Resident Research Award	Christopher Audo
W. L. Gore Travel Award	Gregory A. Magee

2021

Early Career Faculty Award	Tammy Nguyen
Medtronic Resident Research Award	Kenneth Tran
Travel Award	Tze-Woei Tan

2022

Best Paper	Amir Ghaffarian
BSCI Early Career Investigator Award	Katherine Hekman
Medtronic Resident Research Award	Kevin Mangum
VESS Resident Research Award	Amanda Philips
Travel Award	Jonathan Bath

2023

Best Paper	Kaohinani Longwolf
BSCI Early Career Investigator Award	Frank Davis
Medtronic Resident Research Award	Tyler Bauer
VESS Resident Research Award	Calvin Chao
Travel Award	Elizabeth Genovese

2024

Travel Award	Nathan Liang, MD
VESS/Medtronic Resident Research Award	Sabina Sorondo, MD
Boston Scientific Early Career Investigator Award	Jocelyn Beach, MD

GENERAL INFORMATION

Registration

For security reasons, the scientific session hall and exhibit hall will be monitored for conference badges and/or hotel staff badges. Please wear your conference badge to all events. The VESS registration desk will be in the Colorado Ballroom Foyer. Registration hours are as follows:

Thursday, February 6	7:00 am – 6:00 pm
Friday, February 7	6:00 – 9:30 am
	3:00 – 6:30 pm
Saturday, February 8	6:00 – 9:30 am
	3:00 – 6:00 pm

Scientific Sessions

All scientific sessions will be conducted in the Colorado Ballroom (Peaks 4&5) (3rd Floor).

Speaker Ready Area

An A/V technician table will be located in the back of the Colorado Ballroom. A technician will be available during the following hours:

Thursday, February 6	7:00 am – 6:00 pm
Friday, February 7	6:00 – 9:30 am
	3:00 – 6:30 pm
Saturday, February 8	6:00 – 9:30 am
	3:00 – 6:00 pm

Technology Forum

The 2025 Technology Forum will be in the Colorado Ballroom (Peaks 1-3) **Note:** This program is not eligible for CME credits. The Technology Forum is open to all registered attendees.

DATE	Thursday, February 6
TIME	1:30 - 4:00 pm

Special Programming

The following programs/courses will be held during the 2025 Annual Meeting on Thursday February 6, 2025:

Vascular Fellows Program	7:30 am – 12:15 pm
	Breckenridge Ballroom (Peak 17) 1st Floor
General Surgery Resident Vascular Interest Program	7:30 am – 12:15 pm
	Colorado Ballroom (Peak 4) 3rd Floor
Early Career Surgeon Program	7:30 am – 12:15 pm
	Breckenridge Ballroom (Peak 14) (1st Floor)
Next Generation Medical Student Mentor Program	Didactic Session 7:30 am – 2:00 pm
	Breckenridge Ballroom (Peaks 15&16) 1st Floor
	Hands-on Session 12:30 – 2:00 pm
	Colorado Ballroom (Peak 4) 3rd Floor

ACCREDITATION INFORMATION

Joint Accreditation Statement

In support of improving patient care, this activity has been planned and implemented by Amedco LLC and Vascular and Endovascular Surgery Society. Amedco LLC is jointly accredited by the Accreditation Council for Continuing Medical Education (ACCME), the Accreditation Council for Pharmacy Education (ACPE), and the American Nurses Credentialing Center (ANCC), to provide continuing education for the healthcare team. Amedco Joint Accreditation #4008163.

Physicians (ACCME) Credit Designation

Amedco LLC designates this live activity for a maximum of 18.00 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Overall Learning Objectives

This activity is designed for physicians, surgeons and allied health care workers who manage patients with vascular disease. By participating in this activity, attendees will be able to:

- Identify novel research outcomes in endovascular and open surgical treatment of vascular disease.
- Discuss developments and limitations of artificial intelligence as it applies to vascular surgical planning, research methodology and imaging analysis.
- Explore up-to-date management of vascular trauma.
- Understand applications for robotic surgery in vascular disease.
- Consider improvements in intraoperative imaging modalities and techniques to lower radiation exposure.
- Learn tricks of the trade from seasoned vascular experts pertaining to complex case situations.
- Liaise with a broad array of industry partners and gain hands-on knowledge about technological and device advances.

SPONSORS/EXHIBITS

Exhibit Hall

Exhibits by our industry partners will be featured in the Summit Gallery (2nd Floor). The VESS asks that members and meeting attendees take some time to visit the exhibits during scheduled exhibit hall hours to acknowledge the generous support of the companies participating in the 2025 Annual Meeting.

All food functions (Breakfasts, Coffee Breaks & Welcome Reception) will take place in the Exhibit Hall – Check program for timing)

Set-Up

Thursday, February 6, 2025	10:00 am – 5:00 pm
----------------------------	--------------------

Scheduled Breaks in the Exhibit Hall

Friday, February 7, 2025	6:00 – 9:30 am
	3:00 – 6:30 pm
Saturday, February 8, 2025	6:00– 9:30 am
	3:00 – 6:30 pm

Tear Down

Saturday, February 8, 2025	6:30 – 9:30 pm
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ACKNOWLEDGMENTS

PLATINUM SPONSOR

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Boston Scientific, Medtronic

SILVER SPONSORS

Abbott Vascular
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Penumbra
Rooke Products
Salus Scientific
Shockwave
Surmodics
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NOTES

SCHEDULE AT A GLANCE

WEDNESDAY, FEBRUARY 5, 2025

6:00 pm – 9:00 pm **Executive Council Meeting**

THURSDAY, FEBRUARY 6, 2025

7:00 am **Registration**

7:00 am **Continental Breakfast**

7:30 am – 12:15 pm **Vascular Fellow Program**
Moderator: Adam Doyle, MD

7:30 am – 12:15 pm **General Surgery Resident
Vascular Interest Program**
Moderator: Reshma Brahmabhatt, MD

7:30 am – 12:15 pm **Early Career Faculty Program**
Moderator: Gabriela Velazquez, MD

7:30 am – 2:00 pm **Next Generation Medical Student
Mentor Program**
Moderator: Genevieve Hayek, MD

12:30 pm – 1:30 pm **Industry Sponsored Lunch Symposium
Sponsored by Boston Scientific**
Navigating the Future as a NextGen Leader
in Vascular Health
Faculty Panel: Misty Humphries, MD,
Nathan Aranson, MD, Venita Chandra, MD

1:30 – 4:00 pm **Vascular Technology Forum** (Hands on Session)
Open to all attendees
Moderator: Michael Curi, MD

4:15 – 6:15 pm

SCIENTIFIC SESSION 1

Moderators: Misty Humphries, MD & Bjoern Suckow, MD

4:15 – 4:27 pm	1	Use Of A Wireless Pressure Sensor To Prevent Temporal Losses In Sub-bandage Pressure During Compression Therapy
		Molly Calkins ¹ , Zachary Verzwylt ² , Salvatore Scali ² , Benjamin Jacobs ² , Scott Berceci ² , Scott Robinson ³ <i>¹Tufts Medical Center, Boston, MA; ²University of Florida, Gainesville, FL; ³Maine Health, Portland, ME</i>
4:27 – 4:39 pm	2	Expression Of The Peroxisome Proliferators-activated Receptors (ppars) In Ex Vivo Aortic Aneurysm Tissue And Its Association With Arterial Remodeling And Inflammatory Gene Expression
		Carlos A Hinojosa, Javier E. Anaya-Ayala, Ivan Torre-Villalvazo, Gabriela Aleman, Brenda J. Galicia-Vega, Jacqueline Mejia-Cervantes, Ingrid A. Landero-Aguilar, Brenda Marquina-Castillo <i>Instituto Nacional de Ciencias Medicas y Nutricion Salvador Zubiran, Mexico City, Mexico</i>
4:39 – 4:51 pm	3	Paravisceral Transaortic Endarterectomy: A Case Series At A Quaternary Care Center
		Seyed Pairawan, Alexander Shepard, Mitchell Weaver, Andi Peshkepija, Kevin Onofrey, Yasaman Kavousi, Timothy Nypaver, Loay Kabbani <i>Henry Ford Health, Detroit, MI</i>
4:51 – 5:03 pm	4	Operative Considerations And Long-term Outcomes Of Resection Of Primary Inferior Vena Cava Leiomyosarcoma With Or Without Caval Reconstruction
		Hamza Hanif, Ross M. Clark, Bridget Fahy, Muhammad A. Rana, Itzhak Nir <i>University of New Mexico, Albuquerque, NM</i>

SCHEDULE AT A GLANCE

5:03 – 5:11 pm	5 (RF)	Bypass Versus Endovascular Therapy In Chronic Limb Threatening Ischemia With Tissue Loss Requiring Infra-popliteal Interventions
		Randall A Bloch ¹ , Alex Lin ¹ , Elisa Caron ¹ , Scott G Prushik ¹ , Katie E Shean ¹ , Marc L Schermerhorn ² , Mark F Conrad ¹ <i>¹St. Elizabeth's Medical Center, Boston, MA; ²Beth Israel Deaconess Medical Center, Boston, MA</i>
5:11 – 5:19 pm	6 (RF)	Medical Centers With Vascular Surgery Training Programs Are More Likely To Utilize Autologous Vein And Vein Mapping
		Hassan Chamseddine, Loay Kabbani, Timothy Nypaver, Mitchell Weaver, Tamer Boules, Alexander Shepard <i>Henry Ford Hospital, Detroit, MI</i>
5:19 – 5:27 pm	7 (RF)	Factors Associated With Limb Occlusion In The Long-term After Endovascular Aortic Repair
		Jayne Raven Rice ¹ , Grace Wang ¹ , Olamide Alabi ² , Naveen Balasundaram ¹ <i>¹University of Pennsylvania, Philadelphia, PA; ²Emory University School of Medicine, Atlanta, GA</i>
5:27 – 5:39 pm	8	Long Term Outcomes Of The WavelinQ Device For Minimally Invasive AVF Creation
		Elizabeth M D'sa ¹ , Gavin Christy ¹ , David P Ebertz ¹ , Mark Zemela ² , Alejandro C Alvarez ¹ , Matthew R Smeds ¹ <i>¹Saint Louis University School of Medicine, Saint Louis, MO; ²Cooper University Health Care, Camden, NJ</i>
5:39 – 5:51 pm	9	5-year Outcomes After Fenestrated Evar In Octogenarians
		Rohan Basu, Joshua Davis, Mackenzie Madison, Hanaa Dakour-Aridi, Ashley Gutwein, John Maijub, Andres Fajardo <i>Indiana University, Indianapolis, IN</i>
5:51 – 6:03 pm	10	Amputation Recovery In The Unhoused Population
		Rylie O'Meara, Thomas Quigley, Akshita Gorantla, Pegge Halandras <i>Loyola University Medical Center, Maywood, IL</i>

SCHEDULE AT A GLANCE

6:03 – 6:15 pm	11	Open Aortic Repair Demonstrates Better Long-term Survival Than Endovascular Aortic Repair Regardless Of Frailty
		Zach M Feldman ¹ , Xinyan Zheng ² , Jialin Mao ³ , Brandon J Sumpio ¹ , Brandon Gaston ¹ , Nikolaos Zacharias ¹ , Sunita D Srivastava ¹ , Phil P Goodney ⁴ , Matthew J Eagleton ¹ , Abhisekh Mohapatra ¹ <i>¹Massachusetts General Hospital, Boston, MA; ²Weill Cornell Medical College, New York, NY; ³Weill Cornell Medicine, New York, NY; ⁴Dartmouth-Hitchcock Medical Center, Lebanon, NH</i>

6:15 – 6:25 pm **AHA PAD Guidelines Update**
 Luke Brewster, MD

6:30 – 7:45 pm **WELCOME RECEPTION**
 All attendees, guests & exhibitors are welcome

FRIDAY, FEBRUARY 7, 2025

6:15 – 7:45 am **Continental Breakfast in the Exhibit Hall**

6:15 – 9:30 am **Registration**

7:00 – 9:04 am **SCIENTIFIC SESSION II**
Moderators: Jordan Stern, MD & Olamide Alabi, MD

7:00 – 7:12 am	12	Projected Survival Benefit Of Fenestrated Endovascular Aneurysm Repair Versus Conservative Management For Complex Abdominal Aortic Aneurysms In Patients With Limited Expected Survival
		Hataka R Minami, Erin K Greenleaf, Besma J Nejm, Neal R Barshes <i>Baylor College of Medicine, Houston, TX</i>
7:12 – 7:24 am	13	Smoking Cessation Adjuncts Are Cost Effective Prior To Elective Revascularization
		Hasan Nassereldine, Katherine M. Reitz, Mikayla N. Lowenkamp, Michael C. Madigan, Rabih A. Chaer, Edith Tzeng, Kenneth J. Smith, Natalie D. Sridharan <i>UPMC, Pittsburgh, PA</i>
7:24 – 7:36 am	14	Two Year Results In Forty Patients With The Venovalve For Deep Venous Insufficiency
		Matthew R Smeds ¹ , Marc Glickman ² , David Dexter ³ , Eric Hager ⁴ , Cassius Iyad Ochoa Chara ⁵ ¹ <i>Saint Louis University, St. Louis, MO</i> ; ² <i>EnVeno Medical Corporation, Irvine, CA</i> ; ³ <i>Sentara Vascular Specialists, Norfolk, VA</i> ; ⁴ <i>University of Pittsburgh School of Medicine, Pittsburgh, PA</i> ; ⁵ <i>Yale University, New Haven, CT</i>

SCHEDULE AT A GLANCE

7:36 – 7:48 am	15	Radiation Reduction Strategies In Endovascular Repair Of Complex Thoracoabdominal Aneurysms
		Yash Pandya, Muhammad Mazroua, Michel Makaroun, Nathan Liang <i>UPMC, Pittsburgh, PA</i>
7:48 – 7:56 am	16 (RF)	Preliminary Results Of Utilizing Cine Angiography As An Alternative Modality During Visceral Vessel Cannulation To Reduce Radiation Exposure During F/BEVAR's
		Nikunj N Donde, Bret R Akins, Misty Humphries, Steven Maximus <i>University of California, Davis, Sacramento, CA</i>
7:56 – 8:04 am	17 (RF)	Beyond Race and Geography: Exploring Factors in Non-Traumatic Lower Extremity Amputations Through a Single Institution Analysis
		Hanaa Aridi, Mackenzie Madison, Rohan Basu, Mohineesh Kumar, Andrew A. Gonzalez, Greg Westin, Raghu Motaganahalli, Michael P. Murphy <i>Indiana University, Indianapolis, IN</i>
8:04 – 8:12 am	18 (RF)	Outcomes Of Interventions To Salvage The Jailed Profunda Femoris In CLTI
		Mark G Davies ¹ , Joseph P Hart ² <i>¹Ascension Health, Waco, TX; ²Medical College of Wisconsin, Milwaukee, WI</i>
8:12 – 8:24 am	19	Robotic Median Arcuate Ligament Release May Offer Superior Symptom Improvement To Laparoscopic Release
		Kayla Fay, Jennifer Stableford, Jesse Columbo, David Stone, David Finley <i>Dartmouth Hitchcock Medical Center, Lebanon, NH</i>
8:24 – 8:36 am	20	Outcomes Of Median Arcuate Ligament Release And Celiac Plexus Neurolysis In 72 Patients With Median Arcuate Ligament Syndrome
		David Grafton Kirk, Hannah Barone, Benjamin Starnes <i>University of Washington, Seattle, WA</i>

SCHEDULE AT A GLANCE

8:36 – 8:48 am	21	Glp-1 Receptor Agonists Associated With Improved Survival After Infrainguinal Bypass In Diabetic Patients
		Elonay Yehualashet, Muhammad S Mazroua, Marissa C Jarosinski, Nathan L Liang, Michael C Madigan, Rabih A Chaer, Natalie D Sridharan <i>University of Pittsburgh Medical Center, Pittsburgh, PA</i>
8:48 – 8:56 am	22 (RF)	Comparison Of Surgical Approaches And Prediction Of Symptom Improvement For Neurogenic Thoracic Outlet Syndrome
		Drew J Braet, Rija Awan, Thomas Basala, Alex Jog, Christopher Johnson-Harwitz, Justin Rodriguez, Amina Tanweer, Chandu Vemuri, Robert J Beaulieu <i>University of Michigan, Ann Arbor, MI</i>
8:56 – 9:04 am	23 (RF)	Predictive Patient Factors Impacting Lower Extremity Dialysis Patency: A Tool To Guide Decision Making For Creation Of New Av Access
		David P Ebertz ¹ , Gavin Christy ¹ , Saideep Bose ¹ , Jeffrey Siracuse ² , Matthew R Smeds ¹ <i>¹St Louis University, St Louis, MO; ²Boston University Chobanian & Avedisian School of Medicine, Boston, MA</i>

9:15 – 10:15 am **SPECIAL SESSION:
Artificial Intelligence**

Moderators: Nathan Liang, MD & Yana Etkin, MD

Panel: Sharon Kiang, MD, Loma Linda University
Aaron Prasad, Cydar Medical
Ehab Mahmoud, Astute Imaging
Wael Elseaidy, Astute Imaging

Panel Discussion	How has the AI boom shaped your product/ practice?
SS1	Natural Language Processing to Identify Abdominal Aortic Aneurysm Diameter In The VA System
	Garrett Healy ¹ , Clay Quintz ² <i>¹University of Colorado School of Medicine, Aurora, CO; ²Rocky Mountain Regional Veterans Affairs, Aurora, CO</i>
Panel Discussion	Drawbacks and concerns for AI in vascular surgery.
SS2	Comparative Performance of Clinician and Computational Approaches in Forecasting Adverse Outcomes In Intermittent Claudication
	Bharadhwaj Ravindhran, Joseph Cutteridge, Sean Pymer, Jonathon Prosser, Arthur Lim, Murad Hemadneh, Shahani Nazir, Abduraheem Mohamed, Ross Lathan, Brian Frederick Johnson, George Smith, Daniel Carradice, Ian C Chetter <i>Hull York Medical School, Hull, United Kingdom</i>
Panel Discussion	How can AI fit into the working life of a surgeon now and in the future?

1:00 – 3:00 pm

**CASE REPORTS & EXPERTS
WORST CASES SESSION**

Moderators: Lindsey Korepta, MD &
Nathan Aranson, MD

CR1	Distal Brachial And Radial Artery Muscular Entrapment In An Athlete
	Branson Taheri, Shawn Fortin, Alex Ebinger, Fraser Leversedge, Max Wohlauer <i>University of Colorado, Aurora, CO</i>
CR2	Axillary Artery Pseudoaneurysm Repair In A Neonate
	Alexandra Gobble, Kyongune B Lee <i>Ohio State University, Columbus, OH</i>
CR3	Near Complete Amputation—Worth Salvage?
	Chinmayee Potti, Benjamin Lee Kyongjune <i>The Ohio State University, Columbus, OH</i>
CR4	Unique Repair Of A Mycotic Extent IV TAAA Using Visceral Branching Technique
	Seyed S Pairawan, Alexander D Shepard, Loay Kabbani, Andi Peshkepja <i>Henry Ford Health, Detroit, MI</i>
CR5	Idiopathic Aortorenal Junction To Renal Vein Arteriovenous Fistula Managed With Fenestrated Endograft And Renal Artery Stenting
	Max Murray-Ramcharan, Amarseen Mikael, Aaron Dank, Nakul Rao, S. Christopher Frontario, Thomas Bernik <i>Englewood Health, Englewood, NJ</i>

SCHEDULE AT A GLANCE

CR6	A Novel Approach To Middle Aortic Syndrome
	Tej Amit Sura, Michael Sabarese, Vincent Narvaez, Luis Rodriguez Cartegena, Gregg Landis <i>Zucker School of Medicine at Hofstra/Northwell, New Hyde Park, NY</i>
	Worse Case Presentations from Invited Faculty
	Tina Desai, MD – University of California, San Francisco Matthew Corriere, MD – The Ohio State University Ravi Rajani, MD – Emory University

3:00 – 4:00 pm

Coffee/Snacks - Visit Exhibitors

All attendees, guests & exhibitors are welcome

SCHEDULE AT A GLANCE

4:00 – 6:00 pm

SCIENTIFIC SESSION III

Moderators: Jean Marie Ruddy, MD & S. Keisin Wang, MD

4:00 – 4:12 pm	24	Distal Extent Of Dissection Increases Risk Of Malperfusion Syndromes And Need For Reoperation In Patients With Acute Type B Aortic Dissection
		Michelle N Manesh ¹ , Helen A Potter ² , Alexander D DiBartolomeo ¹ , Sukgu M Han ¹ , Alyssa J Pyun ¹ , Niema Pahlevan ¹ , Gregory A Magee ¹ <i>¹University of Southern California, Los Angeles, CA; ²University of Buffalo, Buffalo, NY</i>
4:12 – 4:24 pm	25	Outcomes Of Surgical Decompression For Popliteal Artery Entrapment Syndrome
		Armin Tabiei, Jill J. Colglazier, Manju Kalra, Fahad Shuja, Todd E. Rasmussen, Randall R. DeMartino <i>Mayo Clinic, Rochester, MN</i>
4:24 – 4:36 pm	26	More Than One In Four Patients Undergo Peripheral Vascular Intervention For Claudication Without Any Preoperative Testing In The Outpatient Setting
		Terrence C Tsou ¹ , Chen Dun ¹ , Midori White ¹ , Katherine M McDermott ¹ , Yuan-Haw A Wu ¹ , Jeffrey J. Siracuse ² , James H. Black, III ¹ , Martin A. Makary ¹ , Caitlin W. Hicks ¹ <i>¹Johns Hopkins School of Medicine, Baltimore, MD; ²Boston Medical Center, Boston, MA</i>
4:36 – 4:48 pm	27	Survival Benefit Of Deceased Donor Kidney Transplantation Among Patients With Peripheral Artery Disease
		Li Ting Tan ¹ , Amber B Kernodle ² , Sile Yu ¹ , Katherine McDermott ¹ , Midori White ¹ , Courtenay M Holscher ³ , Ying Wei Lum ¹ , Dorry Segev ⁴ , Allan B Massie ⁴ , Elizabeth A King ¹ , James H Black, III ¹ , Caitlin W Hicks ¹ <i>¹Johns Hopkins University, Baltimore, MD; ²Brigham and Women's Hospital, Boston, MA; ³Johns Hopkins Bayview Medical Center, Baltimore, MD; ⁴NYU Grossman School of Medicine, New York, NY</i>

SCHEDULE AT A GLANCE

4:48 – 4:56 pm	28 (RF)	Emergency Management Of Arteriovenous Fistulas And Graft Bleeds
		Andrea Alonso ¹ , Sula Frausto ² , James Blum ¹ , Ijeoma Okafor ¹ , Khuaten Maaneb de Macedo ¹ , Alik Farber ¹ , Elizabeth King ¹ , Elissa M Schechter-Perkins ¹ , Brian J Yun ¹ , Jeffrey J Siracuse ¹ ¹ Boston University, Boston, MA; ² Perelman School of Medicine, Philadelphia, PA
4:56 – 5:04 pm	29 (RF)	Comparison Of Carotid Endarterectomy And Transcarotid Artery Revascularization In High Cervical Lesions
		Ezra Y Koh ¹ , Hanaa Dakour-Aridi ² , Mackenzie Madison ² , Arash Keyhani ¹ , Kourosh Keyhani ¹ , Raghu Motaganahalli ² , Andres Fajardo ² , Keisin Wang ¹ ¹ UT Houston, Houston, TX; ² Indiana University, Indianapolis, IN
5:04 – 5:12 pm	30 (RF)	Analysis Of Small Abdominal Aortic Aneurysms With The Radiotracer Technetium-99m-6-hydrazinylnicotinoyl -c-c-chemokine Receptor-2 Ligand (^{99m}Tc-hynic-ccr2-l) With Single-photon Emission Computed Tomography (SPECT)
		Carlos A Hinojosa ¹ , Javier E. Anaya-Ayala ¹ , Brenda J Galicia-Vega ¹ , Eleazar Ignacio-Alvarez ¹ , Jacqueline Mejia-Cervantes ¹ , Ingrid A. Landero-Aguilar ¹ , Gillermina Ferro-Flores ² , Brenda Gibbens-Bandala ² ¹ Instituto Nacional de Ciencias Medicas y Nutricion Salvador Zubiran, Mexico; ² Instituto Nacional de Investigaciones Nucleares, Mexico, Mexico
5:12 – 5:24 pm	31	Endovascular Repair Of Extent-II TAAA Secondary To Loeys Dietz Aortopathy Utilizing Endo-Thermal Septotomy And A 4 Vessel Fevar Device
		Kris M Boelitz ¹ , Thomas D Creeden ² , Andres Schanzer ¹ ¹ University of Massachusetts Chan Medical School, Worcester, MA; ² Mercy Hospital, Springfield, MO
5:24 – 5:36 pm	32	Comparison Of In-person And Virtual Integrated Vascular Surgery Residency Interviews From Applicant Perspective
		Arash Fereydooni, Andrea Fisher, Lucy Yang, Jaosn T Lee, Elizabeth L. George, Michael D Sgroi, Venita Chandra Stanford University, Stanford, CA

SCHEDULE AT A GLANCE

SCHEDULE AT A GLANCE

5:36 – 5:48 pm	33	Arm Vein Is Superior To Polytetrafluoroethylene In Infrainguinal Bypass To The Tibial Vessels
		Hassan Chamseddine ¹ , Alexander Shepard ¹ , Mohamad Chahrour ² , Timothy Nypaver ¹ , Mitchell Weaver ¹ , Yasaman Kavousi ¹ , Kevin Onofrey ¹ , Tamer Boules ¹ , Jamal J. Hoballah ³ , Loay Kabbani ¹ <i>¹Henry Ford Hospital, Detroit, MI; ²Iowa Hospitals and Clinics, Iowa, IA; ³American University of Beirut Medical Center, Beirut, Lebanon</i>
5:48 – 6:00 pm	34	Recanalization In Large Diameter Saphenous Veins After Thermal Ablation: A Restrospective Review Of Vascular Quality Initiative Data
		Vivek Anand Pisharody, Jonathan Gunasti, Ines Garcia, Ravi R Rajani, Christopher R Ramos, Manuel Garcia-Toca, Jaime Benarroch-Gampel <i>Emory University, Atlanta, GA</i>

6:00 pm **VESS MEMBER BUSINESS MEETING**

6:15 pm **Free Evening**

SATURDAY, FEBRUARY 8, 2025

6:15 – 7:45 am **Continental Breakfast in the Exhibit Hall**

6:15 – 9:30 am **Registration**

7:00 – 9:00 am **SCIENTIFIC SESSION IV**
Moderators: Daniel Han, MD & Natalie Sridharan, MD

7:00 – 7:12 am	35	Expanding Access To Vascular Imaging: Preliminary Results From The Development Of A Remote Surveillance Device
		Sean A Perez ¹ , Muyang Lin ¹ , Sai Zhou ¹ , Destiny Frederic ² , Erik Kistler ¹ , Andrew Barleben ¹ , Mahmoud Malas ¹ , Sheng Xu ² , Elsie Ross ¹ <i>¹University of California San Diego Health, La Jolla, CA; ²University of California San Diego School of Medicine, La Jolla, CA</i>
7:12 – 7:24 am	36	Salvage Of Failing Abdominal Aortic Aneurysm Repairs With Fenestrated Endovascular Aortic Repair
		Rohan Basu, Joshua Davis, Mackenzie Madison, Hanaa Dakour-Aridi, Ashley Gutwein, John Maijub, Andres Fajardo <i>Indiana University, Indianapolis, IN</i>
7:24 – 7:36 am	37	Transradial Approach In Malfunctioning Arteriovenous Access
		Agastya Vaidya ¹ , Rahman Sayed ¹ , Rithva Ramesh ¹ , Ashley Choi ¹ , Neil Patel ¹ , Jeffrey Indes ² , Evan Lipsitz ¹ , Paul Lajos ¹ <i>¹Albert Einstein College of Medicine, Bronx, NY; ²Lahey Hospital & Medical Center, Burlington, MA</i>

SCHEDULE AT A GLANCE

7:36 – 7:48 am	38	Outcomes Of Zone 0 Tevar And Hybrid Arch Repair Compared To Open Aortic Arch Replacement
		John J Kanitra ¹ , John B Eisenga ¹ , Kyle A. McCullough ² , William P Shutze ³ , Mazin I Foteh ³ , William T. Brinkman ³ <i>¹Baylor University Medical Center, Dallas, TX; ²Baylor Scott and White Research Institute, Plano, TX; ³Baylor Scott & White The Heart Hospital - Plano, Plano, TX</i>
7:48 – 7:56 am	39 (RF)	Transaxillary First Rib Resection In Adolescent Patients With Thoracic Outlet Syndrome
		Jyi Cheng Ng ¹ , Li Ting Tan ² , Courtenay Holscher ² , Caitlin W Hicks ² , Ying Wei Lum ² <i>¹Mayo Clinic, Rochester, MN; ²Johns Hopkins University School of Medicine, Baltimore, MD</i>
7:56 – 8:04 am	40 (RF)	Routine Postoperative Serum Laboratory Tests After Endovascular Aneurysm Repair
		Baqir J Kedwai, Ferda Tan, Irina Kanzafarova, Karina Newhall, Doran Mix, Michael Stoner, Grayson Pitcher <i>University of Rochester Medical Center, Rochester, NY</i>
8:04 – 8:12 am	41 (RF)	Access To Care And The Impact On Outcomes In Acute Limb Ischemia Patients
		Micaella R Zubkov, Zhixin Lun, Donald L Jacobs, Mark Nehler, Jeniann Yi <i>University of Colorado, Denver, CO</i>

8:15 – 9:00 am

AWARD SESSION

Moderators: Sam Tyagi, MD &
Misty Humphries, MD

UPDATE FROM 2024 AWARD WINNERS

VESS Travel Award:

Nathan Liang, MD

VESS Medtronic Resident Research Award:

Sabina Sorondo, MD

VESS BSCI Early Career Investigator Award:

Joceyln Beach, MD

2025 AWARD WINNERS ANNOUNCEMENT

VESS Travel Award

VESS Resident Research Award

VESS Early Career Faculty Award

9:00 – 9:15 am

Introduction of the President

Ravi Rajani, MD

9:15 – 10:00 am

PRESIDENTIAL ADDRESS

Misty Humphries, MD

10:30 – 12:30 pm

**SPECIAL SESSION:
Vascular Trauma**

Moderator: Mel Sharafuddin, MD

SS1	<p>Covered Endovascular Repair of The Aortic Bifurcation In The Setting Of Blunt Abdominal Injury Resulting In Polytrauma</p>
	<p>Micaela Cuneo¹, Christian Goei¹, Kevin Kniery², Marlin W Causey² ¹Brooke Army Medical Center, Ft Sam Houston, TX; ²Brooke Army Medical Center, Ft Sam Houston, TX</p>
SS2	<p>Is Anticoagulation for Thoracic Endovascular Repair Safe In Patients With Concomitant Traumatic Brain Injury And Blunt Thoracic Aortic Injury?</p>
	<p>Victor Andujo¹, Benjamin Chou², Eni Nako¹, Samantha Durbin¹, Scott Mcloud¹, Phillip Jenkins¹, Siran Abtin¹, Cherrie Abraham¹, Gregory Moneta¹, Julie Doberne¹, Martin Schreiber¹ ¹Oregon Health & Science University, Portland, OR; ²University of Oklahoma, Oklahoma City, OK</p>

1:00 – 3:00 pm	<p>CASE REPORTS & WORST CASE SESSION</p> <p>Moderators: Nathan Aranson, MD & Lindsey Korepta, MD</p>
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CR7	<p>Replaced Right Hepatic Artery Pseudoaneurysm Presenting With Gastrointestinal Bleed: Management Strategies</p>
	<p>Chason Farnell¹, Benjamin Chou¹, Joshua Gierman¹, Benjamin Greif¹, Michael Li² ¹University of Oklahoma, Oklahoma City, OK; ²University of Oklahoma College of Medicine, Oklahoma City, OK</p>
CR8	<p>Intussusception Of An Ileo-mesenteric Bypass Graft Causing An Enteric Fistula</p>
	<p>Nicolas A Stafforini, Janice Nam, Blake Murphy, Rebecca Sorber, John Scott, Erika Bisgaard, Niten Singh University of Washington, Seattle, WA</p>
CR9	<p>Giant Splenic Aneurysm Repair With A Staged Hybrid Approach</p>
	<p>Blaz Podgorsek, Kouros Keyhani, Akiko Tanaka, Keisin Wang, Arash Keyhani UTHealth Houston, Houston, TX</p>
CR10	<p>Left Subclavian Artery Mycotic Pseudoaneurysm Following First Rib Osteomyelitis: Diagnosis And Management Strategies</p>
	<p>Kristina Scott, William P Browne, Benjamin Greif, Joshua Gierman, Benjamin Chou University of Oklahoma Health Sciences Center, Oklahoma City, OK</p>
CR12	<p>Deep Venous Arterialization As A Treatment For Embolic Acute Limb Ischemia</p>
	<p>Alejandra Rodriguez, Antonio Solano, Sofia Babool, Suyue M Zhang, Michael C Siah University of Texas Southwestern Medical Center, Dallas, TX</p>

SCHEDULE AT A GLANCE

	Worse Case Presentations from Invited Faculty:
	Jason Lee, MD – Stanford University Dawn Coleman, MD – Duke University Ravi Veeraswamy, MD– Medical University of South Carolina

3:00 pm

Registration Re-Opens

3:00 – 4:00 pm

**Coffee/Snacks – Last Chance
to Visit Exhibitors**

4:00 – 6:00 pm **SCIENTIFIC SESSION V**
 Moderators: Dawn Coleman, MD & Ravi Rajani, MD

4:00 – 4:12 pm	42	Toe Brachial Indices Are An Accurate Peripheral Artery Disease Screening Tool In Vascular Deserts
		Carolina Aparicio ¹ , Caitlin Hicks ² , Clara Gomez-Sanchez ³ , Aaron Zaldana ¹ , Tomas Alamin ³ , Leigh Ann O'Banion ¹ ¹ University of California San Francisco, Fresno Campus, Fresno, CA; ² Johns Hopkins University, Baltimore, MD; ³ University of California San Francisco, San Francisco, CA
4:12 – 4:24 pm	43	Hospital And Program Support Staff Affect Educational Experience And Wellbeing Of Trainees
		Margaret A. Reilly ¹ , Christina L. Cui ² , Eric B. Pillado ¹ , Ruoqia D. Li ³ , Joshua S. Eng ⁴ , Leanne E. Grafmuller ⁵ , Kathryn L DiLosa ⁶ , Allan M Conway ⁷ , Guillermo A Escobar ⁸ , Palma M. Shaw ⁹ , Yue-Yung Hu ¹ , Karl Y Bilimoria ⁴ , Malachi G. Sheahan ¹⁰ , Dawn M. Coleman ² ¹ Northwestern University, Chicago, IL; ² Duke University, Raleigh, NC; ³ Loyola University, Chicago, IL; ⁴ Indiana University, Indianapolis, IN; ⁵ University of Rochester, Rochester, NY; ⁶ University of California Davis Health, Sacramento, CA; ⁷ University of California San Francisco, San Francisco, CA; ⁸ Emory University, Atlanta, GA; ⁹ SUNY Upstate Medical University, Syracuse, NY; ¹⁰ Louisiana State University, New Orleans, LA
4:24 – 4:36 pm	44	Impact Of Preoperative Ldl Level On Lower Extremity Revascularization Outcomes
		Warren J Carter, Uma Alappan, Ashwin Chetty, Nicholas Wells, Dana Alameddine, Martin D Slade, Stephen Possick, Cassius Iyad Ochoa Charar Yale School of Medicine, New Haven, CT
4:36 – 4:48 pm	45	Multi-institutional Study Of Outcomes From Portal Vein Reconstruction During Pancreatic Cancer Surgery
		Suma Gondi ¹ , Madeleine McSpadden ¹ , Chase Schlesselman ² , Michael Williams ² , Kristen Dougherty ² , Kyla M Bennett ³ , Leah M Gober ³ , Jonathan Bath ¹ ¹ University of Missouri, Columbia, MO; ² St. Louis University, St. Louis, MO; ³ University of Wisconsin, Madison, WI

SCHEDULE AT A GLANCE

4:48 – 4:56 pm	46 (RF)	Risk Factors And Consequences Of Bleeding Complications After Transcarotid Artery Revascularization In The Vascular Quality Initiative
		Christina L Cui, Laura B Pride, Young Kim <i>Duke University, Durham, NC</i>
4:56 – 5:04 pm	47 (RF)	Left Subclavian Artery Revascularization In TEVAR Has Increased Since FDA Approval Of The Gore Thoracic Branch Endoprosthesis
		Y.H. Andrew Wu ¹ , Chen Dun ¹ , Midori White ¹ , Terrence Tsou ¹ , Katherine McDermott ¹ , Sara Zettervall ² , Sukgu Han ³ , Andres Schanzer ⁴ , James H. Black, III ¹ , Caitlin W. Hicks ¹ <i>¹Johns Hopkins Hospital, Baltimore, MD; ²University of Washington, Seattle, WA; ³Keck Medical Center of University of Southern California, Los Angeles, CA; ⁴University of Massachusetts Chan Medical School, Worcester, MA</i>
5:04 – 5:12 pm	48 (RF)	Antithrombotic Therapy In Patients With Atrial Fibrillation Undergoing Peripheral Vascular Interventions
		Shreef Said, Dana Alameddine, Edouard Aboian, David Strosberg, Britt Tonnessen, Jonathan Cardella, Raul J Guzman, Cassius Iyad Ochoa Char <i>Yale University, School of Medicine, New Haven, CT</i>
5:12 – 5:24 pm	49	Stent Diameter, Not Sex, Is Predictive Of Reintervention After Common Iliac Artery Stenting
		Mikayla N Lowenkamp ¹ , Katherine M Reitz ¹ , Natalie Sridharan ¹ , Mohammad Eslami ² , Michael C Madigan ¹ <i>¹UPMC, Pittsburgh, PA; ²Charleston Area Medical Center, Charleston, WV</i>
5:24 – 5:36 pm	50	Impact Of Antiplatelet And Anticoagulation Therapy On Hemodialysis Reliable Outflow (HERO) Graft Patency
		Christina L Cui ¹ , Tristen T Chun ¹ , Charles Y. Kim ¹ , Ellen D Dillavou ² , Mitchell W Cox ³ , Kevin W Southerland ¹ , Young Kim ¹ <i>¹Duke University Medical Center, Durham, NC; ²WakeMed Health System, Raleigh, NC; ³University of Texas, Medical Branch, Galveston, TX</i>

SCHEDULE AT A GLANCE

5:36 – 5:48 pm	51	The Two-decade Experience Of Onco-vascular Reconstruction In Patients With Retroperitoneal Sarcoma
		Anita Zahir ¹ , Arash Fereydooni ¹ , Emily Eshraghian ¹ , Milan Ho ² , Daniel Delitto ³ , Byrne Lee ³ , George Poultsides ³ , Jeffrey Norton ³ , E. John Harris ¹ , Elizabeth Leigh George ¹ <i>¹Division of Vascular and Endovascular Surgery, Stanford University School of Medicine, Palo Alto, CA; ²UT Southwestern Medical School, Dallas, TX; ³Section of Surgical Oncology, Stanford School of Medicine, Palo Alto, CA</i>
5:48 – 5:56 pm	52 (RF)	Localization Of Noncompressible Torso Hemorrhage Using Minimally Invasive Endovascular Techniques To Detect Battlefield Relevant Injuries In Swine (sus Scrofa): A Pilot Study
		Micaela Cuneo ¹ , Ashley Flinn Patterson ¹ , Anna Rogalska ² , Maria Navarro ¹ , Christian Goei ¹ , Theodore Hart ³ , Jason Rall ⁴ , Marlin W Causey ³ <i>¹Brooke Army Medical Center, Ft Sam Houston, TX; ²University of Texas Health Science Center San Antonio, San Antonio, TX; ³Brooke Army Medical Center, Ft Sam Houston, TX; ⁴59th Medical Wing, Lackland Air Force Base, TX</i>
5:56 – 6:04 pm	53 (RF)	Inflammatory Cytokine And Chemokine Changes Following Mesenteric Revascularization: A Pilot Study
		Brett Salomon ¹ , Tiffany Johnson ² , Ryan Taylor ² , Mitchell Goldman ² , Deidra Mountain ² , Michael R Buckely ² <i>¹Massachusetts General Hospital, Boston, MA; ²University of Tennessee Medical Center Knoxville, Knoxville, TN</i>

SCHEDULE AT A GLANCE

7:00 – 10:00 pm

PRESIDENT'S DINNER

FULL PROGRAM & ABSTRACTS

WEDNESDAY, FEBRUARY 5, 2025

6:00 pm – 9:00 pm **Executive Council Meeting**

THURSDAY, FEBRUARY 6, 2025

7:00 am **Registration**

7:00 am **Continental Breakfast**

7:30 am – 12:15 pm **Vascular Fellow Program**
Moderator: Adam Doyle, MD

7:30 am – 12:15 pm **General Surgery Resident
Vascular Interest Program**
Moderator: Reshma Brahmbhatt, MD

7:30 am – 12:15 pm **Early Career Faculty Program**
Moderator: Gabriela Velazquez, MD

7:30 am – 2:00 pm **Next Generation Medical Student
Mentor Program**
Moderator: Genevieve Hayek, MD

12:30 pm – 1:30 pm **Industry Sponsored Lunch Symposium
Sponsored by Boston Scientific**
Navigating the Future as a NextGen Leader
in Vascular Health
Faculty Panel: Misty Humphries, MD,
Nathan Aranson, MD, Venita Chandra, MD

1:30 – 4:00 pm **Vascular Technology Forum** (Hands on Session)
Open to all attendees
Moderator: Michael Curi, MD

4:15 – 6:15 pm

SCIENTIFIC SESSION 1

Moderators: Misty Humphries, MD & Bjoern Suckow, MD

4:15 – 4:27 pm	1	Use Of A Wireless Pressure Sensor To Prevent Temporal Losses In Sub-bandage Pressure During Compression Therapy
		Molly Calkins ¹ , Zachary Verzwylt ² , Salvatore Scali ² , Benjamin Jacobs ² , Scott Berceli ² , Scott Robinson ³ ¹ Tufts Medical Center, Boston, MA; ² University of Florida, Gainesville, FL; ³ Maine Health, Portland, ME

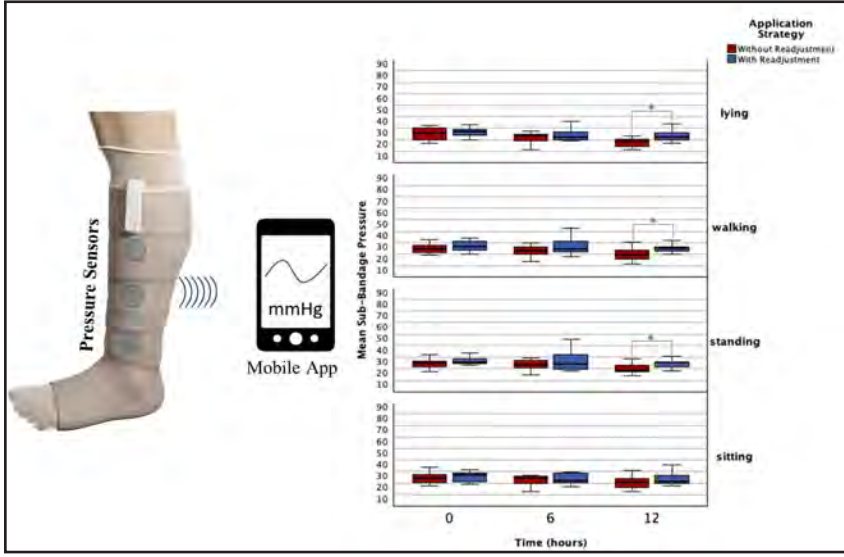
ABSTRACTS

Introduction and Objectives: Compression therapy for treatment of venous leg ulcers (VLUs) requires consistent and prolonged pressure to facilitate healing, but commercially available bandages can loosen over time. A multi-point wireless pressure sensor (MPS) continuously monitors sub-bandage pressure and identifies changes in sub-bandage pressure that occur with limb decongestion, material fatigue, or bandage disassembly. We sought to determine if a MPS could enable self-adjustment of a compression bandage to preserve therapeutic dosing of sub-bandage pressure during compression therapy.

Methods: A two-layer compression system was applied to healthy volunteers (n=14) with an MPS positioned underneath the bandage on the lateral calf transmitting sub-bandage pressure continuously to a smart phone. Bandages were applied at 30-40 mmHg, and were worn for 16 hours. Subjects underwent 2 application strategies: 1) no readjustment and 2) self-readjustment using real-time digital guidance if pressure decreased by >5mmHg. Mean pressure was captured during unsupervised activities (lying/sitting/ standing/walking) and was compared between application strategies. A Student’s t-test (two-tailed) was used for all pairwise comparisons.

Results: Eight out of 14 subjects performed self-readjustment of the bandage due to low sub-bandage pressure. After 12 hours, mean sub-bandage pressure at the proximal calf was higher in the self-readjustment group than the no-readjustment group (Figure) when lying(33.43±5.14 vs 27.56±4.11mmHg, p<0.005), walking(35.46±6.80 vs 29.98±4.39mmHg, p<0.01), and standing(35.84±5.21 vs 29.99±5.08mmHg, p<0.05).

Conclusions: Use of a MPS allowed users to detect decreases in sub-bandage pressure. Live monitoring of sub-bandage pressure enabled self-readjustment of compression bandages to offset temporal losses in sub-bandage pressure that occur over time. Use of an MPS with live guidance can empower patients to achieve a more consistent dose of pressure during compression therapy for VLUs.



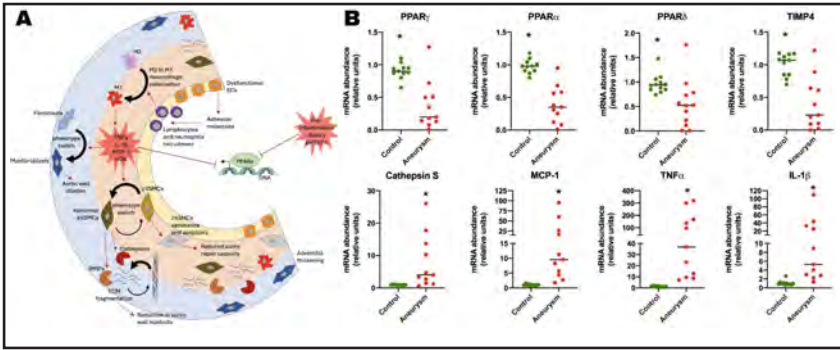
4:27 – 4:39 pm	2	<p>Expression Of The Peroxisome Proliferators-activated Receptors (ppars) In Ex Vivo Aortic Aneurysm Tissue And Its Association With Arterial Remodeling And Inflammatory Gene Expression</p>
		<p>Carlos A Hinojosa, Javier E. Anaya-Ayala, Ivan Torre-Villalvazo, Gabriela Aleman, Brenda J. Galicia-Vega, Jacqueline Mejia-Cervantes, Ingrid A. Landero-Aguilar, Brenda Marquina-Castillo <i>Instituto Nacional de Ciencias Medicas y Nutricion Salvador Zubiran, Mexico City, Mexico</i></p>

Introduction: The pathogenesis of abdominal aortic aneurysms (AAA) is multifactorial, characterized by complex pathophysiological processes. Peroxisome proliferators-activated receptors (PPARs) are a group of nuclear receptors that control the expression of genes for metabolic enzymes and cytokines. Our objective was to evaluate the association in the expression of PPARs in exvivo aortic tissue with gene expression of remodeling and inflammatory markers.

Methods: Aortic tissue samples from a total of 20 patients (mean age 69 years), that underwent open AAA repair were studied. Total RNA from both samples from each patient was extracted using TRIzol reagent and retrotranscribed using Oligo (dt)12-18 and M-MLV reverse transcriptase. All genes were quantified by real-time PCR using specific forward and reverse oligonucleotides and SybrGreen master mix in a LightCycler 480 Instrument. Target gene expression levels were normalized to HPRT mRNA abundance as the internal invariant control.

Results: The expression of PPARg, PPARa and PPARd was significantly lower in aneurysmal tissue compared to nondiseased control tissue (59%, 61% and 42%, respectively, $p < 0.01$). The expression of TIMP4 was significantly lower in the aneurysmal tissue in comparison to control (64%), while that of cathepsin S was 7-fold elevated in the aneurysmal aortic tissue ($p < 0.01$). Accordingly, gene expression of the monocyte chemoattractant protein-1 (MCP-1) and the cytokines TNF α and IL-1b were significantly upregulated in diseased compared to control nondiseased tissue. (20-fold, 83-fold and 18-fold, respectively, $p < 0.01$). (Figure 1A, B).

Conclusion: These results confirm an inverse correlation between PPARs gene expression and inflammatory cytokine mRNA content along with an unfavorable arterial remodeling gene expression. The reduction in the expression of the three PPARs in the arterial tissue favors abnormal arterial remodeling and the production of pro-inflammatory cytokines.



4:39 – 4:51 pm	3	Paravisceral Transaortic Endarterectomy: A Case Series At A Quaternary Care Center
		Seyed Pairawan, Alexander Shepard, Mitchell Weaver, Andi Peshkepija, Kevin Onofrey, Yasaman Kavousi, Timothy Nypaver, Loay Kabbani <i>Henry Ford Health, Detroit, MI</i>

Introduction and Objectives: Occlusive disease of the paravisceral aorta poses a challenge for an endovascular approach. We sought to evaluate the outcomes of paravisceral transaortic endarterectomy (PTE) at our quaternary care center.

Methods: A retrospective analysis was performed of patients who underwent PTE between 2006 and 2024.

Results: 14 patients were identified. The majority of our patients were of white race, non-Hispanic, and of female sex with a mean age of 66 years. Risk factors included active tobacco use, hypertension and hyperlipidemia in 50%, 79% and 79% of patients, respectively. Indications/Operations performed are listed in Table 1. Intraoperative duplex was performed in five patients, with re-intervention in three patients for retained distal plaque/raised endpoint. Supraceliac clamping was performed in 13 (93%) with a mean clamp time of 34.5 min. Mean operating room (OR) time and estimated blood loss was 470 min and 1100 mL, respectively. Postoperative complications included: pneumonia (29%), acute kidney injury (29%), and gastrointestinal bleeding (7%). One patient returned to the OR for a retroperitoneal hematoma. Mean hospital length of stay was 18.3 days. No mortalities were present at 30 days. One patient required readmission within 30 days and two patients required re-intervention at six and nine months. Mean follow-up was 28 months (1-84 months) with 11/14 (79%) alive without recurrent symptoms. Figure 1 illustrating before and after (4 years) PTE for CMI.

Conclusions: PTE for occlusive disease of the paravisceral aorta is an option with acceptable mortality, morbidity, and re-intervention rates. Intraoperative duplex may help ensure a good technical outcome.

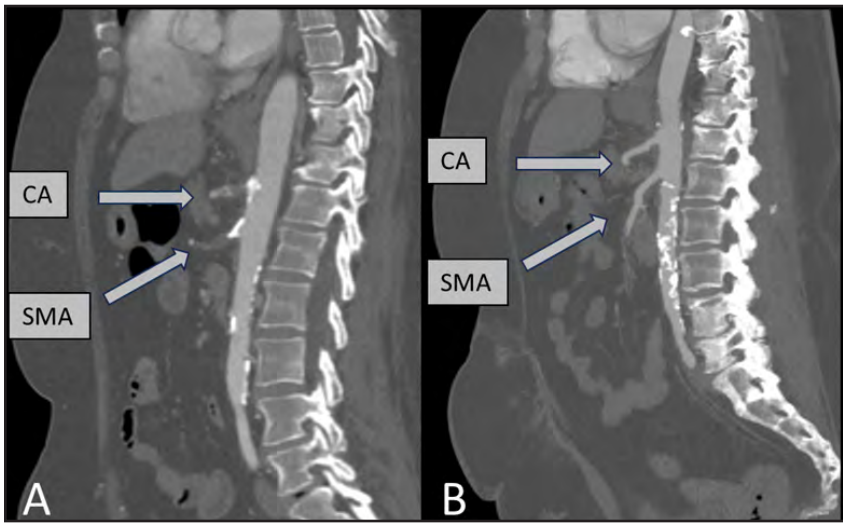
ABSTRACTS

Table 1. Indications and Operations performed.

Patients	Indications	Operation	Symptom resolution
9	CMI	PTE Including celiac (7/9) SMA (9/9) Celiac bypass (1/9)	9 out 9
1	AMI/CMI	PTE including celiac + SMA	Yes
3	Claudication	PTE including SMA 1/3RAs 2/3 Aortobifemoral bypass 3/3	3 out of 3
1	RVD + Claudication	PTE of SMA + RAs	Claudication resolved, developed end-stage renal disease

Abbreviations: CMI = Chronic mesenteric ischemia, PTE = Paravisceral transaortic endarterectomy, AMI = Acute mesenteric ischemia, RVD = Renovascular disease, RA = Renal artery, SMA = Superior mesenteric artery,

Figure 1. Illustrating before and after (4 years) PTE for CMI.



4:51 – 5:03 pm	4	Operative Considerations And Long-term Outcomes Of Resection Of Primary Inferior Vena Cava Leiomyosarcoma With Or Without Caval Reconstruction
		Hamza Hanif, Ross M. Clark, Bridget Fahy, Muhammad A. Rana, Itzhak Nir <i>University of New Mexico, Albuquerque, NM</i>

Introduction and Objectives: Inferior vena cava (IVC) leiomyosarcomas are rare tumors. We aim to report the technical considerations and long-term outcomes for resection and reconstruction of primary IVC leiomyosarcomas.

Methods: A single-center, retrospective review of patients undergoing surgical resection for primary IVC leiomyosarcoma between 2012-2024. The demographics, operative details, and mid-term outcomes were analyzed.

Results: Eight patients (5 females, 3 males) with a median age of 57.5 years (range 42-93) were treated. The median tumor size was 9.6 cm; 7 tumors (87.5%) were located at the right renocaval junction, and 1 (12.5%) hepatocaval junction. The median length of IVC resected was 68 mm. Reconstruction with a ringed PTFE graft was performed in 6 patients (75%), with left renal vein transposition onto the graft in 50% of these cases. Lateral IVC resection was done in 2 patients (25%). Intraoperative ultrasonography was used in all cases, and preoperative IVC venography with intravascular ultrasound were performed in 2 patients to assess collateralization, renal vein involvement, and tumor invasion. A midline incision was used initially, with a shift towards Chevron incision in the latter half of the study. Post-operative morbidity occurred in 3 patients (37.5%), including acute kidney injury and bile leak. The median hospital stay was 5 days, with no 30-day mortality. Mean follow-up was 42 months. Recurrence occurred in 4 patients (50%) at a median of 34 months. Adjuvant chemotherapy was given to 3 patients, and radiation to 1. One-year primary patency of the PTFE graft and branches was 100%. Overall survival was 100% at 1 year, 87.5% at 3 years, and 75% at 5 years.

Conclusions: Complete resection of IVC leiomyosarcoma with vascular reconstruction shows promising long-term outcomes. In our experience, these tumors arise most commonly from the renocaval junction. Preoperative venography and intraoperative ultrasound are crucial for operative planning.

5:03 – 5:11 pm	5 (RF)	Bypass Versus Endovascular Therapy In Chronic Limb Threatening Ischemia With Tissue Loss Requiring Infra-popliteal Interventions
		Randall A Bloch ¹ , Alex Lin ¹ , Elisa Caron ¹ , Scott G Prushik ¹ , Katie E Shean ¹ , Marc L Schermerhorn ² , Mark F Conrad ¹ ¹ St. Elizabeth's Medical Center, Boston, MA; ² Beth Israel Deaconess Medical Center, Boston, MA

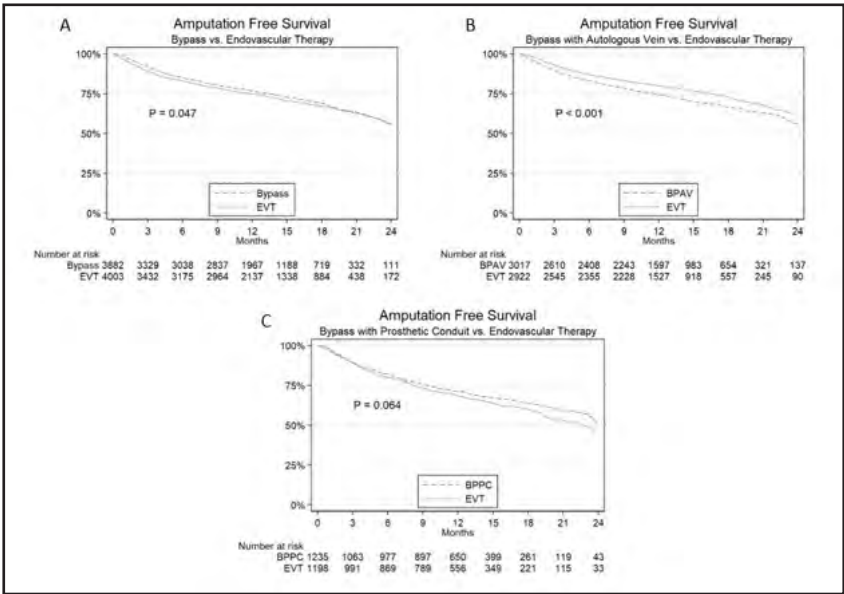
Introduction and Objectives: Chronic Limb Threatening Ischemia (CLTI) involving the crural arteries is clinically and anatomically challenging. The BASIL-2 trial and a subgroup analysis of the BEST-CLI trial examined the efficacy of endovascular therapy (EVT) versus surgical bypass among this cohort, but arrived at opposing conclusions. This study aimed to compare EVT and surgical bypass among patients with CLTI and tissue loss requiring infra-popliteal interventions.

Methods: All infra-popliteal procedures performed for CLTI with tissue loss were identified in the Vascular Quality Initiative(VQI) from 2017-2022. 36,396 EVT and 6,237 bypasses were identified with significantly different risk profiles. Propensity score-matched cohorts were constructed to compare EVT versus surgical bypass overall (BP), bypass with autologous vein (BPAV), and bypass with prosthetic conduit (BPPC). Amputation-free survival (AFS), overall survival (OS), and freedom from major amputation were examined.

Results: 4,203 well-matched pairs of EVTvsBP, 3,152 well-matched pairs of EVTvsBPAV, and 1,304 well-matched pairs of EVTvsBPPC were included. BP was associated with greater AFS than EVT (one-year AFS:72.5% vs 71.6%, P=0.047), which was driven by greater OS in the BP group (one-year OS:85.8% vs 83.6%, P<0.001). BPAV was associated with greater AFS than EVT (one-year AFS:74.7% vs 72.5%, P<0.001), also driven by greater OS in the BPAV group (one-year OS:86.3% vs 83.2%, P<0.001). BPPC and EVT demonstrated equivalent AFS, but BPPC was associated with greater OS (one-year OS:84.2% vs 79.8%, P<0.001) while EVT was associated with greater freedom from major amputation (one-year freedom from amputation:86.5% vs 73.6%, P<0.001).

Conclusion: When feasible, BPAV should be considered over EVT due to superior AFS. However, when autologous vein is unavailable, EVT may be preferred due to superior freedom from major amputation with similar AFS as BPPC.

Figure 1. Amputation-free survival compared between propensity score-matched cohorts BP vs EVT (A), BPAV vs EVT (B), and BPPC vs EVT (C). (Abbreviations: BP=overall bypass, EVT=endovascular therapy, BPAV=bypass with autologous vein conduit, BPPC=bypass with prosthetic conduit).



ABSTRACTS

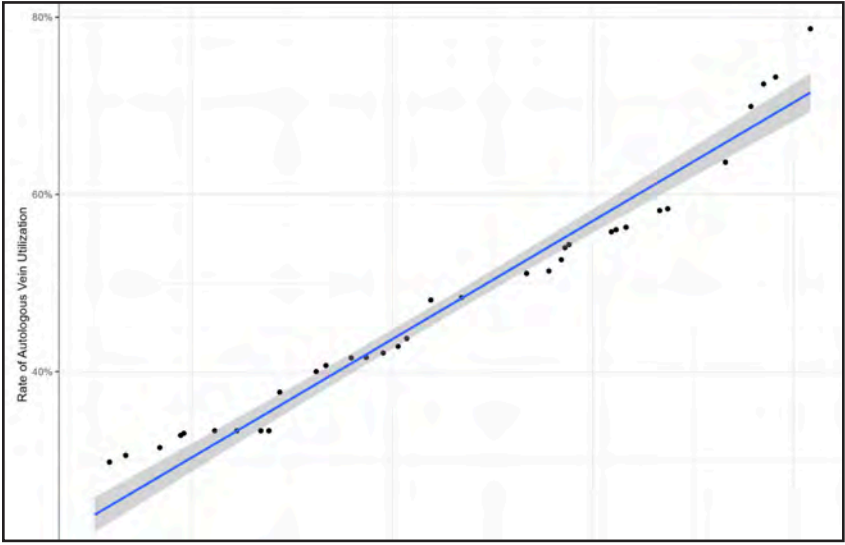
5:11 – 5:19 pm	6 (RF)	Medical Centers With Vascular Surgery Training Programs Are More Likely To Utilize Autologous Vein And Vein Mapping
		Hassan Chamseddine, Loay Kabbani, Timothy Nypaver, Mitchell Weaver, Tamer Boules, Alexander Shepard <i>Henry Ford Hospital, Detroit, MI</i>

Introduction and Objectives: The Society for Vascular Surgery recommends pre-operative vein mapping (PVM) and autologous vein conduits when available for patients undergoing infrainguinal bypass (IIB). This study aims to explore the potential relationship between the presence of a vascular surgery training program (VSTP) at medical centers and the utilization of PVM and autologous vein conduits for IIB.

Methods: Patients who underwent IIB between 2016-2022 were identified in a statewide vascular surgery registry of 49 different medical centers. Medical centers were split into those with and without a VSTP. Bayesian mixed effects logistic regression was used to evaluate the association between having a VSTP and the utilization of PVM and autologous vein conduits.

Results: A total of 5,951 patients and thirty-seven medical centers were included, of which 24% (9/37) had a VSTP. Hospital rates of PVM utilization varied (range 10%-82%, median 41%), while that of autologous vein utilization ranged between 16%-88% (median 44%). Centers with a VSTP were more likely to utilize PVM (58% vs 39%, $p < 0.001$) and autologous vein (55% vs 43%, $p < 0.001$) compared to those without a VSTP. On multivariate analysis, centers with a VSTP were associated with a two-fold increase in PVM utilization (OR 2.23; 95% CI 1.03-4.77) and were more likely to utilize autologous vein conduits (OR 1.83, 95% CI 1.61-2.08, $p < 0.001$). A strong linear relationship between PVM and autologous vein utilization was observed (R-squared=0.96) (Figure).

Conclusions: Medical centers with specialized vascular surgery training programs are more likely to utilize PVM and autologous vein conduits in patients undergoing IIB. This adherence to best medical practices may be attributed to a pervasive culture of scientific inquiry nurtured within the environment of a teaching program.



ABSTRACTS

5:19 – 5:27 pm	7 (RF)	Factors Associated With Limb Occlusion In The Long-term After Endovascular Aortic Repair
		Jayne Raven Rice ¹ , Grace Wang ¹ , Olamide Alabi ² , Naveen Balasundaram ¹ <i>¹University of Pennsylvania, Philadelphia, PA; ²Emory University School of Medicine, Atlanta, GA</i>

Introduction and Objectives: Limb occlusion after endovascular aortic aneurysm repair (EVAR) is an uncommon but serious complication leading to possible need for reintervention. It is unclear which factors are predictors of limb occlusion in the long-term followup (LO-LTFU) after EVAR.

Methods: We examined the long-term followup dataset of the Endovascular AAA registry in the Vascular Quality Initiative from 2014-2023. Sociodemographic, comorbidities, operative factors before the index surgery were analyzed. Bivariate log-rank test and stepwise multivariable cox analysis were used.

Results: Among 33,064 EVARs performed with 65,421 limbs, there were 498 (0.79%) LO-LTFU captured in the dataset. Mean followup was 453 days for the dataset, and there was a mean of 390 days till the first occlusion for LO-LTFU patients. Nonwhite patients ($p=0.007$) along with patients on Medicare/Medicaid or self-pay patients ($p<0.001$), had higher than expected rates of LO-LTFU. Patients who did not have the COVID vaccine ($p=0.006$) before their index procedure had higher rates of LO-LTFU. LO-LTFU patients were more likely to have iliac aneurysms ($p<0.001$), required iliac adjunctive procedures ($p=0.003$), and femoral adjunctive procedures during the index procedure. For cox regression, smoking, prior peripheral arterial disease (PAD) surgery, requiring an urgent repair, having open access, use of suprarenal fixation graft, placing multiple iliac limb grafts/extensions and covering/coiling the internal iliac were significant for increased risk of LO-LTFU (Table 1).

Conclusions: In patients with risk factors of smoking, prior PAD surgery, urgent repair, suprarenal fixation, use of multiple iliac limb grafts/extensions and coiling/covering the internal iliac artery more frequent surveillance should be considered, and the utility of interventions to identify and address issues to prolong primary assisted and secondary patency should be investigated.

Table I. Stepwise multivariable Cox regression for factors associated with limb occlusion in the long-term.

Variable	HR [95% CI]	P-Value
Age	0.98 [0.96-0.99]	<0.001
Female Sex	0.79 [0.60-1.05]	0.109
Internal iliac coiled/covered	2.29 [1.69-3.12]	<0.001
Multiple iliac grafts/extensions	1.58 [1.22-2.03]	<0.001
Medicare/Medicaid/Selfpay	1.10[0.99-1.24]	0.064
Currently smoking	1.47[1.18-1.82]	0.001
Treatment for occlusion in perioperative period	3.98[0.56-23.50]	0.168
Diabetes	0.62 [0.32-1.22]	0.169
Open Access	1.27[1.02-1.58]	0.032
Prior PAD surgery	1.70[1.26-2.27]	<0.001
Suprarenal aortic fixation graft	1.36 [1.08-1.71]	0.008
Current ASA/statin	1.20 [0.97-1.48]	0.079
Urgent repair	1.61 [1.07-2.43]	0.023
Total procedure time	1.00 [1.001-1.004]	<0.001
C-index	0.687	

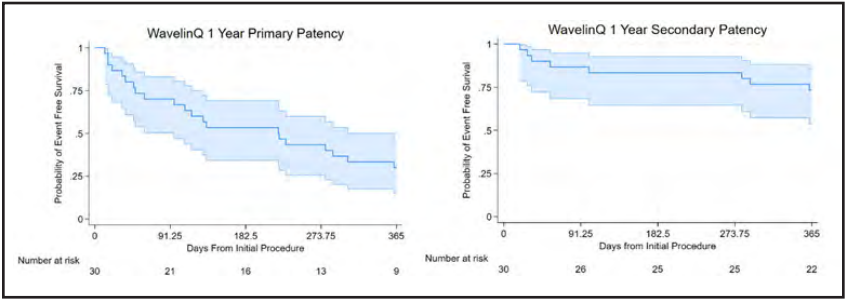
5:27 – 5:39 pm	8	Long Term Outcomes Of The WavelinQ Device For Minimally Invasive AVF Creation
		Elizabeth M D'sa ¹ , Gavin Christy ¹ , David P Ebertz ¹ , Mark Zemela ² , Alejandro C Alvarez ¹ , Matthew R Smeds ¹ <i>¹Saint Louis University School of Medicine, Saint Louis, MO; ²Cooper University Health Care, Camden, NJ</i>

Introduction and Objectives: The WavelinQ EndoAVF System has been used in the United States since 2018 to create minimally invasive arteriovenous fistulas (AVF) in the upper extremity. Our group previously published promising early short-term results of initial patients using this system with a patency of 88% at 2 months. With several years follow up, we sought to examine the long-term success of WavelinQ.

Methods: A prospective cohort study conducted at a single tertiary center followed 32 patients who underwent WavelinQ creation from October 2018 to July 2019. We followed the same cohort from our index study beyond the two-month timepoint. Kaplan-Meier univariate analysis was used to compare primary and secondary patency at 6 and 12 months. Secondary outcomes of flow volume, surgical site infection, steal syndrome, and intraoperative complications were tracked and compared using χ^2 analysis.

Results: 32 patients were followed out to an average of 960.8 days following WavelinQ placement. 34% (11/32) of patients were lost to follow up after one year and only 31% (10/32) followed up after four years. At one year, 70% (22/32) were still on dialysis and 38.7% (12/32) were still using WavelinQ, with an average flow volume of 1,052.3 cc/min. Primary patency was 53.3% at six months and 30.0% at one year. Secondary patency was 83.3% at six months and 73.3% at one year.

Conclusion: WavelinQ EndoAVF access has comparable primary and secondary patency with other minimally invasive devices on the market. Primary patency at one year was low with reasonable secondary patency rates. Further studies comparing long-term outcomes of percutaneous fistula with surgical fistula is necessary.



5:39 – 5:51 pm	9	5-year Outcomes After Fenestrated Evar In Octogenarians
		Rohan Basu, Joshua Davis, Mackenzie Madison, Hanaa Dakour-Aridi, Ashley Gutwein, John Maijub, Andres Fajardo <i>Indiana University, Indianapolis, IN</i>

Introduction and Objectives: Fenestrated endovascular aortic repair (FEVAR) can treat complex abdominal aortic aneurysms (AAA). Elderly patients are prone to complications in aortic surgery. We describe 5-year results with FEVAR using the Zenith Fenestrated device (ZFEN, Cook Medical) in an elderly population.

Methods: We retrospectively reviewed a prospectively maintained institutional database for patients undergoing FEVAR between January 2012 and August 2019. We compared 60-month outcomes for patients younger than 79.9 (Group 1) and greater than 80.0 years old (Group 2). Statistical analysis was performed using Stata 18 (StataCorp LLC, College Station, TX).

Results: Group 1 had more active smokers at surgery (50.0% vs. 18.5%, $p=0.003$) and higher BMI (29.0 +/- 6.1 vs. 25.4 +/- 3.4, $p=0.004$) (Table 1). Group 2 had higher perioperative blood loss (339.3 +/- 378.8 vs. 585.2 +/- 594.0 mL, $p=0.007$) and need for postoperative blood transfusion (11.1% vs. 33.3%, $p=0.003$) (Table 2). Need for facility discharge did not differ (10.3% vs. 7.4%, $p=0.125$, Table 1). There were no differences in overall 60-month survival (Figure 1).

Conclusions: FEVAR with ZFEN is safe for the treatment of complex AAA in patients older than 80 years. 5-year outcomes, overall survival, and complications did not differ between groups, suggesting benefit of performing elective aneurysm repair in well selected elderly patients.

Table I. Patient Characteristics.

Patient Characteristics			
	Group 1 (126)	Group 2 (27)	P-Value
Sex (Male)	113 (89.7)	22 (81.5)	0.319
Age (Years)	70.7 (+/-5.7)	84.0 (+/-2.9)	0.000
Coronary Artery Disease	72 (57.1)	18 (66.7)	0.362

Patient Characteristics			
Preoperative Myocardial Infarction	30 (23.8)	8 (29.6)	0.525
Arrhythmia	15 (11.9)	7 (25.9)	0.060
Congestive Heart Failure	12 (9.5)	3 (11.1)	0.730
Hypertension	114 (90.5)	24 (88.9)	0.730
Hyperlipidemia	97 (77.0)	18 (66.7)	0.260
Active Smoker	63 (50.0)	5 (18.5)	0.003
COPD	58 (46.0)	8 (29.6)	0.118
Home Oxygen	10 (7.9)	4 (14.8)	0.274
Diabetes	29 (23.0)	4 (14.8)	0.445
Baseline Creatinine (mg/dL)	1.2 (+/-0.5)	1.2 (+/-0.3)	0.830
EGFR <60 (mL/min/1.73 m2)	34 (27.0)	10 (37.0)	0.295
Hemodialysis	0	0	
Cerebrovascular Disease	22 (17.5)	4 (14.8)	1.000
Peripheral Artery Disease	19 (15.1)	6 (22.2)	0.362
Body Mass Index	29.0 (+/-6.1)	25.4 (+/-3.4)	0.004
Charlson Comorbidity Index	4.8 (+/-1.8)	5.8 (+/-1.3)	0.009
Aspirin	107 (84.9)	19 (70.4)	0.072
Plavix	27 (21.4)	8 (29.6)	0.357
Dual-antiplatelet	26 (20.6)	6 (22.2)	0.854
Anticoagulation	11 (8.7)	3 (11.1)	0.714
Statins	94 (74.6)	17 (63.0)	0.219
Nitrates	24 (19.1)	2 (7.4)	0.170
Calcium-channel Blocker	40 (31.8)	5 (18.5)	0.244
ACEi or ARB	65 (51.6)	14 (51.9)	0.980
Beta Blocker	71 (56.4)	18 (66.7)	0.324
Systemic Steroids	6 (4.8)	1 (3.7)	1.000
Prior Aneurysm Repair	15 (11.9)	5 (18.5)	0.353
Aneurysm Size (mm)	59.4 (+/-9.0)	63.2 (+/-14.6)	0.083
Abbreviations: COPD = chronic obstructive pulmonary disease, mg= milligrams, dL = deciliter, mL =milliliters, min = min, m2 = meters squared, EGFR = estimated glomerular filtration rate, ACEi = angiotensin-converting enzyme inhibitor, ARB= angiotensin receptor blocker, mm = millimeters			

ABSTRACTS

Table 2. Perioperative and Postoperative Outcomes.

Perioperative Outcomes

	Group 1 (126)	Group 2 (27)	P-Value
Upper Extremity Access	6 (4.8)	4 (14.8)	0.076
Open Femoral Access	57 (45.2)	17 (63.0)	0.094
Technical Success	122 (96.8)	27 (100)	1.000
Completion Endoleak	38 (30.4)	10 (37.0)	0.501
Estimated Blood Loss (mL)	339.3 (+/-378.8)	585.2 (+/-594.0)	0.007
Operative Time (Minutes)	220.6 (+/-85.4)	329.5 (+/-80.6)	0.293
Fluoroscopy Time (Minutes)	579 (+/-270)	65.6 (+/-29.6)	0.188
Radiation (rads)	395.0 (+/-252.7)	387.0 (+/-277.7)	0.886
Contrast Volume (mL)	89.3 (+/-37.3)	98.7 (+/-29.9)	0.223
Visceral Arteries Stented	2.3 (+/-0.7)	2.1 (+/-0.7)	0.255
Preoperative Lumbar Drain	4 (3.2)	1 (3.7)	1.000
Perioperative Mortality	3 (2.4)	2 (7.4)	0.213
Perioperative Reintervention	8 (6.4)	2 (7.4)	0.690
Perioperative Visceral Thrombosis	3 (2.4)	0	1.000
Perioperative Limb Occlusion	1 (0.8)	1 (3.7)	0.323
Perioperative Wound Complication	4 (3.2)	0	1.000
Perioperative Bowel Ischemia	3 (2.4)	1 (3.7)	0.544
Perioperative Myocardial Infarction	3 (2.4)	2 (7.4)	0.213
Perioperative Spinal Cord Ischemia	1 (0.8)	0	1.000
Perioperative Acute Kidney Injury	28 (22.2)	5 (18.5)	0.800
Perioperative Renal Failure	4 (3.2)	0	1.000
Perioperative Respiratory Failure	5 (4.0)	3 (11.1)	0.149
Perioperative Stroke	2 (1.6)	0	1.000
Postoperative Transfusion	14 (11.1)	9 (33.3)	0.003
Length of Stay (Days)	3.5 (+/-4.8)	3.7 (+/-2.7)	0.875
Discharge Location (Facility)	13 (10.3)	2 (7.4)	0.125

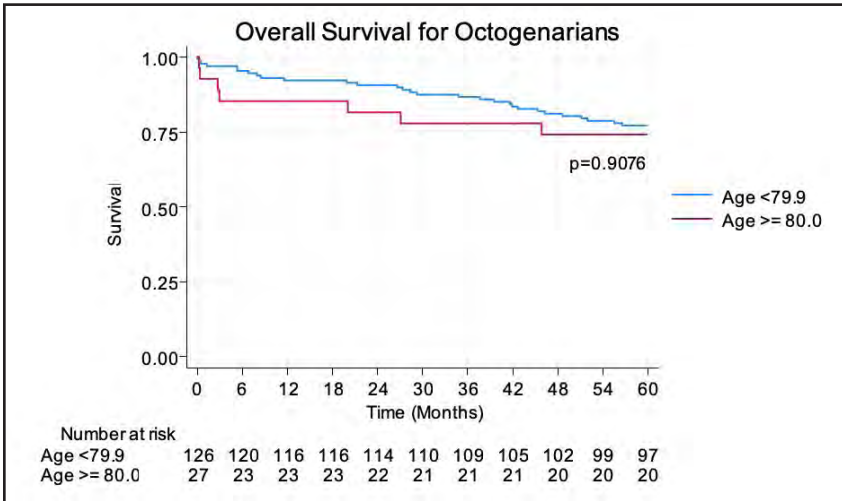
Abbreviations: mL=milliliters, CT=computerized tomography

5-Year Postoperative Outcomes			
	Group 1 (126)	Group 2 (27)	P-Value
Mortality	47 (37.3)	11 (40.7)	0.738
Rupture	3 (2.4)	0	1.000
New Hemodialysis	10 (7.9)	0	0.211
Visceral Thrombosis	15 (11.9)	0	0.074
Visceral Stenosis/Thrombosis Requiring Reintervention	11 (8.7)	0	0.214
Target Vessel Primary Patency Percentage	94.0% (+/-18.0%)	100% (+/-0)	0.086
Limb Occlusion	4 (3.2)	0	1.000
Bowel Ischemia	2 (1.6)	1 (3.7)	0.444
Endoleak at Last CT Scan	15 (11.9)	1 (3.7)	0.307
Need for Reintervention	37 (29.4)	5 (18.5)	0.343

Abbreviations: mL=milliliters, CT=computerized tomography

ABSTRACTS

Figure 1. Kaplan-Meier Overall 60-Month Survival Analysis.



5:51 – 6:03 pm	10	Amputation Recovery In The Unhoused Population
		Rylie O’Meara, Thomas Quigley, Akshita Gorantla, Pegge Halandras <i>Loyola University Medical Center, Maywood, IL</i>

Introduction and Objective: Individuals experiencing homelessness face disproportionately high rates of lower extremity amputation due to a range of factors including physical trauma, exposure to the elements, and management of chronic medical conditions. While recovery from lower leg amputation is challenging for any patient, individuals experiencing homelessness face greater difficulty with accessing follow-up care for a variety of reasons. This study aims to identify any disparities in functional recovery after lower extremity amputation between a housed control group and an unhoused comparison group.

Methods: This is a single institution, retrospective analysis of 1304 patients who underwent major lower extremity amputation (AKA, TKA, BKA) between 2007-2021. Generalized estimating equations were fit to assess differences between housed and unhoused populations. Multivariable models were fit assuming binomial distribution, Poisson distribution, or cumulative logistic regression.

Results: Table 1 contains post-op complications and shows that unhoused status is associated with a higher rate of SSI. Table 2 contains outcomes of interest and shows that unhoused status is associated with a longer LOS on univariable analysis. On multivariable analysis, unhoused status is associated with a longer time to ambulation and a lower likelihood of having follow-up with a vascular surgeon within a year following amputation.

Conclusion: As far as we are aware, this is the first study to investigate post-operative amputation outcomes in the unhoused population. Our analysis suggests that the unhoused experience a statistically significant longer non-ambulatory period and are less likely to see a vascular surgeon for follow-up care following major lower extremity amputation.

Table 1. Post-Op Complications

Variable	Overall (n=1304)	Housed (n=1252)	Unhoused (n=52)	P-Value
SSI	72 (5.5%)	65 (5.2%)	7 (13%)	p = 0.046
Wound dehiscence	48 (3.7%)	47 (3.8%)	1 (1.9%)	p = 0.509
AKI	389 (30%)	371 (30%)	18 (35%)	p = 0.607
Cardiac arrest	54 (4.1%)	47 (3.8%)	7 (13%)	p = 0.082
CVA	162 (12%)	160 (13%)	2 (3.8%)	p = 0.082
MI	273 (21%)	268 (21%)	5 (9.6%)	p = 0.105
Sepsis	228 (17%)	220 (18%)	8 (15%)	p = 0.772
VTE	193 (15%)	184 (15%)	9 (17%)	p = 0.768

ABSTRACTS

Table 2. Recovery Outcomes.

Variable		Overall (n=1304)	Housed (n=1252)	Unhoused (n=52)	Univariable P-Value	OR (95% CI)	Multi- variable P-Value
LOS (days)		11 (6, 19)	11 (6, 19)	19 (13, 28)	p = 0.003	1.316 (0.811- 2.137)	p = 0.27
Time from surgery to discharge (days)		6 (4, 11)	6 (4, 11)	12 (6, 21)	p = 0.006	1.31 (0.80- 2.13)	p = 0.28
Discharge location	Expired	84 (6.5%)	81 (6.5%)	3 (5.8%)	p = 0.966	1.58 (0.70- 3.59)	p = 0.27
	Facility	820 (63%)	786 (63%)	34 (65%)			
	Home	396 (30%)	381 (31%)	15 (29%)			
	Unknown	4	4	0			
Ambulatory		1047 (80%)	999 (80%)	48 (92%)	p = 0.09	2.32 (0.47-11.5)	p = 0.31
Time to ambulation (days)		2 (1, 6)	2 (1, 6)	3 (1, 7)	p = 0.425	0.13 (0.06- 0.31)	p < 0.001
Unknown		191	188	3			
30-day readmission		207 (16%)	203 (16%)	4 (7.7%)	p = 0.199	0.17 (0.02- 1.30)	p = 0.088
1-year vascular follow-up		510 (39%)	497 (40%)	13 (25%)	p = 0.195	0.30 (0.11- 0.81)	p = 0.018
30-day mortality		76 (5.8%)	75 (6.0%)	1 (1.9%)	p = 0.253	N/A*	
1-year mortality		129 (9.9%)	126 (10%)	3 (5.8%)	p = 0.442	N/A*	

* Too few events in unhoused group for these variables to be fit as outcomes in multivariable models.

6:03 – 6:15 pm	11	<p>Open Aortic Repair Demonstrates Better Long-term Survival Than Endovascular Aortic Repair Regardless Of Frailty</p>
		<p>Zach M Feldman¹, Xinyan Zheng², Jialin Mao³, Brandon J Sumpio¹, Brandon Gaston¹, Nikolaos Zacharias¹, Sunita D Srivastava¹, Phil P Goodney⁴, Matthew J Eagleton¹, Abhisekh Mohapatra¹</p> <p>¹Massachusetts General Hospital, Boston, MA; ²Weill Cornell Medical College, New York, NY; ³Weill Cornell Medicine, New York, NY; ⁴Dartmouth-Hitchcock Medical Center, Lebanon, NH</p>

ABSTRACTS

Introduction and Objectives: Despite advancements in endovascular aortic repair (EVAR), open aortic repair (OAR) remains the preferred option in certain clinical and anatomic situations, with patient frailty serving as an important input into patient-centered decision-making processes. Long-term outcomes after EVAR and OAR as a function of baseline frailty are not currently well-described.

Methods: A retrospective review included all patients undergoing index EVAR and OAR in the Vascular Implant Surveillance and Interventional Outcomes Network (VISION) from 2010-2019, with long-term survival, reintervention, and rupture stratified by baseline frailty quantified by the VQI-derived Frailty Score (VQI-FS, ranging 0-1), with a validated cutoff of 0.25 used to create low- and high-frailty groups. Propensity scores for OAR versus EVAR were constructed and included within propensity-matched Kaplan-Meier and Cox analyses stratified by the VQI-FS.

Results: From a total cohort of 22,747 patients (2,749 OAR and 20,068 EVAR), 2,270 OAR patients were propensity-matched with 2,270 EVAR patients, comprised of 3,102 low-frailty and 1,438 high-frailty patients. Median age (72 vs. 75) and preoperative AAA diameter (56mm vs. 57mm) were similar. After propensity-matching, long-term survival was superior for OAR in both the low-frailty group (p=0.048) and the high-frailty group (p<0.0001), driven primarily by a higher mortality after EVAR between 6 months and 4 years (HR 1.32, p=0.01 for low-frailty, HR 2.11, p<0.0001 for high-frailty). Medium-term rupture risk was also higher for EVAR patients regardless of frailty (HR 3.81, p=0.02 for low-frailty, HR 5.85, p=0.02 for high-frailty), as was medium-term reintervention risk (HR 1.56, p=0.006 for low-frailty, HR 1.85, p=0.003 for high-frailty).

Conclusion: Regardless of preoperative frailty, patients undergoing AAA repair demonstrate superior long-term survival and reduced rupture and reintervention rates with open aortic repair, even in the medium-term. These findings support wider use of OAR, even in patients considered high-frailty at baseline.

FULL PROGRAM & ABSTRACTS

6:15 – 6:25 pm

AHA PAD Guidelines Update

Luke Brewster, MD

6:30 – 7:45 pm

WELCOME RECEPTION

All attendees, guests & exhibitors are welcome

FULL PROGRAM & ABSTRACTS

FRIDAY, FEBRUARY 7, 2025

6:15 – 7:45 am **Continental Breakfast in the Exhibit Hall**

6:15 – 9:30 am **Registration**

7:00 – 9:04 am **SCIENTIFIC SESSION II**
Moderators: Jordan Stern, MD &
Olamide Alabi, MD

ABSTRACTS

7:00 – 7:12 am	12	Projected Survival Benefit Of Fenestrated Endovascular Aneurysm Repair Versus Conservative Management For Complex Abdominal Aortic Aneurysms In Patients With Limited Expected Survival
		Hataka R Minami, Erin K Greenleaf, Besma J Nejjim, Neal R Barshes <i>Baylor College of Medicine, Houston, TX</i>

Introduction and Objectives: Patients with limited expected survival due to advanced age and/or comorbidities may not derive a survival benefit from fenestrated endovascular aneurysm repair (FEVAR) of complex abdominal aortic aneurysms (cAAAs). We estimated the projected survival following FEVAR versus conservative management (CR) among patients with cAAAs deemed unsuitable for open repair.

Methods: We constructed a probabilistic Markov model to estimate projected survival among patients undergoing FEVAR versus CR. Baseline expected survival was derived from the validated Lee score survival calculator (age > 50 years). Patients underwent FEVAR with risk of complications and death, or CR subject to aneurysm growth and rupture. We modeled aneurysms 5.0-8.5 cm in women and 5.5-8.5 cm in men, and Lee scores 7-14. Simulations were run 1000 times for each combination of sex, Lee score, and aneurysm size.

Results: At 1 year, FEVAR had a survival advantage for larger aneurysms (> 6.0 cm in women and > 6.5 cm in men) regardless of Lee score (Table 1). However, for smaller aneurysms and depending on Lee score (5.5 cm OR 6.0 cm with Lee score >10 in men; 5.0 cm OR 5.5 cm with Lee score > 11 in women), FEVAR led to lower 1-year survival. At 5 years, FEVAR had a survival advantage regardless of Lee score or aneurysm size. The largest survival difference approaching 70% was noted when aneurysm size is > 7.5 cm with low Lee score.

Conclusions: FEVAR has a long-term survival advantage for patients with large cAAAs, even when expected survival is limited due to advanced age and/or comorbidities. This study has major implications on FEVAR practice patterns and shared decision-making between patients and surgeons.

Table 1. Difference in Percent Survival (FEVAR Minus Conservative Management).

Men: 1 Year								
	Aneurysm Size (cm)							
Lee Score	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
7	-	-2.6%	0.5%	5.8%	19.2%	30.9%	42.5%	54.0%
8	-	-2.9%	0.2%	5.2%	18.5%	30.2%	41.5%	52.9%
9	-	-2.9%	0.2%	5.1%	18.8%	30.3%	41.7%	53.0%
10	-	-3.5%	-0.5%	4.2%	17.5%	28.7%	39.7%	50.8%
11	-	-4.7%	-2.0%	2.6%	14.7%	25.2%	35.6%	45.8%
12	-	-4.7%	-1.7%	2.5%	15.0%	25.4%	35.7%	46.2%
13	-	-5.7%	-3.1%	1.0%	12.4%	22.2%	31.8%	41.3%
14	-	-6.2%	-3.6%	0.4%	11.8%	21.1%	30.3%	39.5%

Men: 5 Years								
	Aneurysm Size (cm)							
Lee Score	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
7	-	32.6%	54.7%	66.4%	69.5%	70.0%	70.0%	69.9%
8	-	29.3%	49.7%	60.8%	64.1%	64.3%	64.4%	64.4%
9	-	28.6%	49.6%	59.8%	63.2%	63.5%	63.7%	63.5%
10	-	22.5%	39.9%	48.8%	51.7%	51.9%	52.0%	52.3%
11	-	14.9%	27.5%	34.4%	36.3%	36.4%	36.7%	36.6%
12	-	14.7%	27.2%	33.8%	35.9%	35.9%	35.8%	36.0%
13	-	9.6%	18.0%	22.8%	24.0%	24.2%	24.4%	24.4%
14	-	8.1%	15.6%	19.8%	21.1%	21.0%	20.9%	21.0%

FULL PROGRAM & ABSTRACTS

Women: 1 Year								
	Aneurysm Size (cm)							
Lee Score	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
7	-1.6%	1.9%	13.1%	29.5%	50.8%	56.6%	62.1%	68.0%
8	-2.2%	1.4%	12.5%	28.8%	49.5%	55.6%	60.8%	66.5%
9	-1.9%	1.5%	12.4%	28.5%	49.7%	55.2%	60.9%	66.5%
10	-2.3%	0.8%	11.4%	27.3%	47.6%	53.0%	58.4%	64.1%
11	-4.0%	-0.8%	9.3%	23.9%	43.0%	48.0%	53.2%	58.2%
12	-3.7%	-0.8%	9.3%	23.8%	43.0%	48.4%	53.5%	58.6%
13	-5.0%	-2.0%	7.4%	20.7%	38.7%	43.6%	48.1%	52.9%
14	-5.2%	-2.3%	6.6%	19.5%	36.6%	41.6%	46.3%	51.1%

Women: 5 Years								
	Aneurysm Size (cm)							
Lee Score	5.0	5.5	6.0	6.5	7.0	7.5	8.0	8.5
7	39.0%	60.9%	67.7%	69.8%	69.8%	70.2%	70.1%	70.0%
8	35.0%	55.6%	62.2%	64.1%	64.4%	64.4%	64.5%	64.5%
9	34.4%	54.9%	61.4%	63.2%	63.6%	63.2%	63.6%	63.4%
10	26.9%	44.8%	50.1%	51.7%	52.0%	52.1%	51.8%	51.9%
11	18.5%	31.0%	35.2%	36.2%	36.7%	36.5%	36.6%	36.7%
12	17.7%	30.6%	34.7%	35.8%	35.8%	36.0%	36.1%	36.0%
13	11.9%	20.6%	23.5%	24.2%	24.4%	24.4%	24.3%	24.4%
14	10.2%	17.9%	20.3%	20.8%	21.2%	21.1%	21.2%	21.2%

ABSTRACTS

7:12 – 7:24 am	13	Smoking Cessation Adjuncts Are Cost Effective Prior To Elective Revascularization
		Hasan Nassereldine, Katherine M. Reitz, Mikayla N. Lowenkamp, Michael C. Madigan, Rabih A. Chaer, Edith Tzeng, Kenneth J. Smith, Natalie D. Sridharan <i>UPMC, Pittsburgh, PA</i>

Introduction and Objectives: Preoperative smoking cessation can reduce adverse postoperative wound and pulmonary outcomes. Investment in preoperative smoking cessation therapies has therefore proven cost effective for elective surgical interventions across numerous disciplines. Despite high rates of smoking among patients with peripheral artery disease (PAD), the cost effectiveness of smoking cessation before elective revascularization is unclear.

Methods: Using a Markov model, we evaluated the cost effectiveness of preoperative smoking cessation therapies (usual care, counseling, nicotine replacement, varenicline, bupropion) for 65-year-old patients undergoing open or endovascular revascularization for symptomatic PAD. Local data quantified smoking cessation therapy costs. Established literature informed therapy effectiveness, postoperative outcomes (stroke, myocardial infarction, major amputation, patency, death) frequency, and postoperative costs. Lifetime costs were quantified in US dollars and effectiveness in quality-adjusted life-years (QALYs), with a willingness-to-pay threshold of \$100,000/QALY-gained. Sensitivity analyses were performed to test model robustness.

Results: In the base-case scenario, varenicline was least expensive (\$417,647) and standard care was the costliest strategy (\$431,755). Varenicline was the most effective strategy (8.30 QALYs) prior to intervention, while standard care was the least effective (7.92 QALYs). Accordingly, varenicline dominated all other therapies (i.e., more effective and less costly) (Table). In the probabilistic simulation (where all parameters were randomly varied for 1000 iterations of the model), varenicline was favored in 82.1% of model iterations at \$100,000/QALY-gained. In one-way sensitivity analyses assuming no mortality difference between smokers and nonsmokers, model results were unchanged.

Conclusions: Smoking cessation adjuncts are cost effective prior to PAD interventions. Varenicline was less costly and more effective than all other smoking cessation strategies. Our results highlight the value of supplemented coverage for smoking cessation therapies among patients with PAD undergoing revascularization.

Table 1. Cost-effectiveness of base-case scenario.

Strategy	Total cost in US \$	Total QALY	Incremental QALY	Incremental Cost Effectiveness Ratio (ICER), \$/QALY	Category
Varenicline	417,647	8.30			Reference
Bupropion	421,943	8.18	-0.12	-34,664.46	Strictly dominated
Nicotine replacement	422,981	8.13	-0.17	-30,524.22	Strictly dominated
Counseling	428,185	8.01	-0.29	-36,784.56	Strictly dominated
Standard care	431,755	7.92	-0.38	-37,132.79	Strictly dominated

ABSTRACTS

7:24 – 7:36 am	14	<p>Two Year Results In Forty Patients With The Venovalue For Deep Venous Insufficiency</p>
		<p>Matthew R Smeds¹, Marc Glickman², David Dexter³, Eric Hager⁴, Cassius Iyad Ochoa Chara⁵ ¹Saint Louis University, St. Louis, MO; ²EnVeno Medical Corporation, Irvine, CA; ³Sentara Vascular Specialists, Norfolk, VA; ⁴University of Pittsburgh School of Medicine, Pittsburgh, PA; ⁵Yale University, New Haven, CT</p>

Introduction and Objectives: Few options exist for the treatment of patients with chronic venous insufficiency (CVI). The Venovalue is a novel surgically implanted bioprosthetic valve. We sought to report on the two-year outcomes in the first forty patients in the pivotal SAVVE trial.

Methods: Following implantation of the Venovalue in 75 patients, participants were evaluated with duplex ultrasound; VEINES qol/sym, VAS, and rVCSS evaluation; and limb ulceration measurements every three months and then yearly.

Results: The etiology of CVI was post-thrombotic syndrome in 31 (77%) patients and non-PTS in 9 (23%). 20 (50%) were classified as C6 patients with 14 (70%) having ulcers greater than 1 year duration; 35% were C5; and 15% were C4b/c. Of the 57/75 (76%) devices that were fully patent at one year, all remained patent at two-year follow-up. 67% of patients demonstrated continued clinical improvement, with average rVCSS scores decreasing from 15.8 at baseline to 6.4 at 24 months. Pain scores decreased from baseline average of 4.7 to 1.9, stabilizing from 12 months to 24 months. No new ulcers occurred in target extremities. All patients with ulcer duration of less than one year at time of surgery had healed their ulcers by one year. 6/14 (43%) patients with ulcers greater than one year duration at time of surgery had healed at 1 year follow-up with all remaining healed at 24 months. Of the 8 patients with unhealed ulcers at 1 year, ulcer area decreased from 21.23 to 3.76 cm square by two years. VEINES qol/sym scores and EQ5-D all demonstrated improvement.

Conclusions: Early two-year results indicate continued improvement of average rVCSS, VEINES qol/sym and EQ5-D scores. Patent Venovalue devices at one year remained patent with excellent wound healing in patients with ulcers. Further study is necessary to determine long-term outcomes in this complex patient population.

7:36 – 7:48 am	15	Radiation Reduction Strategies In Endovascular Repair Of Complex Thoracoabdominal Aneurysms
		Yash Pandya, Muhammad Mazroua, Michel Makaroun, Nathan Liang <i>UPMC, Pittsburgh, PA</i>

Introduction and Objectives: Complex endovascular aortic aneurysm repairs are often long, complicated procedures with significant radiation exposure. Modern imaging systems provide advanced radiation reduction options that can reduce the radiation dose if used appropriately. An aggressive radiation reduction strategy (RR) incorporating low-dose fluoroscopy, CT fusion, and digital zoom on a GE Discovery unit was utilized for certain cases in our institution beginning in 2022. The objective of this study is to evaluate the use of RR in complex endovascular aortic repair.

Methods: This was a retrospective review of all endovascular aortic repairs using fenestrated/branched endografts for visceral involvement from a single hospital (Jan 2018-Aug 2024). Standard radiation (SR) practices were compared to RR.

Results: Out of 105 cases, 26 utilized RR. The RR group had higher proportion of females, aneurysm complexity, and number of stent-incorporated target vessels (Table 1). RR group had longer median procedure (342.5 minutes IQR[274-422] vs. 259 [202-338]; p=0.001) and fluoroscopy times (67.6 min [54.1-97.2] vs. 51.1 [35.7-80.8], p=0.006), reflecting the increased complexity. Despite this, cumulative dose (CD) and dose-area product (DAP) did not differ between RR and SR, and cumulative dose per minute of fluoroscopy time (DPM) was significantly lower for RR (25.5 mGy/min IQR[14.3-32.3] vs. 34.3 [21.7-47.0], p=0.03). Half of RR cases occurred in 2024 (N=13/25); subanalysis of 2024 demonstrated a reduction in median DAP (85 Gy.cm² [78,143] vs 209 [137,283]; p=0.04) and DPM (19 mGy/min [13,25] vs. 27 [26, 42]; p=0.03). CD was lower but not statistically significant (883 mGy [716-1517] vs. 1571 [1307-2801]; p=0.1). Multivariate analysis adjusting for sex, age, and BMI did not show significance for RR.

Conclusion: Use of RR strategies significantly reduces radiation exposure during complex endovascular aortic repair.

ABSTRACTS

Table 1. Baseline and Operative Characteristics.

	Total Cohort (n=105)	Standard Radiation (n=79)	Radiation Reduction (n=26)	P-Value*
Age, mean (±SD)	74.6 (±71)	74.7 (±7.3)	74.0 (±6.6)	0.67
BMI, mean (±SD)	27.5 (±5.5)	27.9 (±5.2)	26.0 (±6.1)	0.19
Gender				0.001
Male	73 (69.5%)	62 (78%)	11 (42%)	
Female	32 (30.5%)	17 (22%)	15 (58%)	
Procedure Type				<0.001
- ZFEN	65 (61.9%)	62 (78%)	3 (12%)	
- PMEG	28 (26.7%)	6 (8%)	22 (85%)	
- TAMBE	7 (6.7%)	6 (8%)	1 (4%)	
- In-situ laser fenestration	5 (4.8%)	5 (6%)	0 (0%)	
Aneurysm Extent				0.002
- Juxtarenal	13 (12.4%)	11 (14%)	2 (8%)	
- Paravisceral	64 (61.0%)	54 (68%)	10 (38%)	
- Thoracoabdominal	28 (26.7%)	14 (18%)	14 (54%)	
Number of Incorporated Target Vessels, median (IQR)	2 (2, 4)	2 (2, 2)	4 (3, 4)	<0.001

*P-Value < 0.05 represents a statistically significant difference between the Standard Radiation and Radiation Reduction groups.

7:48 – 7:56 am	16 (RF)	Preliminary Results Of Utilizing Cine Angiography As An Alternative Modality During Visceral Vessel Cannulation To Reduce Radiation Exposure During F/BEVAR's
		Nikunj N Donde, Bret R Akins, Misty Humphries, Steven Maximus <i>University of California, Davis, Sacramento, CA</i>

Introduction and Objectives: Historically digital subtraction angiography (DSA) is used selectively to cannulate visceral vessels in fenestrated and/or branched endovascular aortic repair (F/BEVAR). Here we aim to describe an alternative imaging modality to use during visceral vessel cannulation to help reduce radiation exposure. CINE mode is often utilized in interventional cardiology procedures due to the higher frame rate and lower radiation dose required to obtain images in an area with high motion artifact.

Methods: 47 F/BEVAR were performed in similar fashion at a single institution over 12 months. Procedures were performed in a hybrid operating room in similar fashion. CINE mode was attempted originally in most patients but switched to DSA in patients where there was difficulty with visualization. This resulted in 40 F/BEVARs where DSA was used and 7 where only CINE mode was used during the visceral cannulation steps. Radiation doses, fluoro-time, contrast, and patient demographics were compared with student t-test and p-values were obtained.

Results: Similar case length was observed between DSA and CINE mode F/BEVAR cases. There was a significant reduction in DAP (1921.6 vs 338.9 Gy \cdot cm², p=0.017), Air Kerma (9261.8 vs 1974.7 mGy, p=0.0002), and fluoro time (145.6 vs 88.3 min, p=0.034) between the two modes. When comparing patient demographics, the BMI of the CINE mode patients was significantly lower at 23.4 compared to 28.6 in the DSA patients (p=0.035).

Conclusions: These data show promising results from F/BEVARs performed during a one-year period. Attempts to lower radiation dose from F/BEVAR using other adjuncts were not available due to limitations in availability at our institution. CINE mode was attempted in the latter half of the year in F/BEVAR and was found to greatly reduce radiation dose in patients with lower BMIs. In larger patients, DSA may still be required to achieve optimal visualization.

ABSTRACTS

7:56 – 8:04 am	17 (RF)	Beyond Race And Geography: Exploring Factors In Non-traumatic Lower Extremity Amputations Through A Single Institution Analysis
		Hanaa Aridi, Mackenzie Madison, Rohan Basu, Mohineesh Kumar, Andrew A. Gonzalez, Greg Westin, Raghu Motaganahalli, Michael P. Murphy <i>Indiana University, Indianapolis, IN</i>

Introduction and Objectives: The intersection of rural residence and race has been thoroughly explored as a risk factor for major amputation in patients with critical Limb threatening ischemia (CLTI). This study explores other risk factors for lower extremity amputation in a predominantly rural population.

Methods: Consecutive patients with CLTI between 2018 and 2022 in a tertiary referral center were analyzed. Patients who had a subsequent major amputation (above-ankle) were matched to those who did not based on age, sex and race. Patients’ home addresses were geocoded to identify socioeconomic factors including poverty, disability, unemployment, and social vulnerability indices. Multivariable logistic regression analysis was used to identify key factors associated with increased lower extremity amputation in the matched cohort.

Results: Among patients with CLTI, 16% (n=492) had a major lower extremity amputation within 5 years of their diagnosis. African American patients had significantly higher amputation rates compared to their White counterparts (21.9% vs.15%). Propensity score matching based on age, sex and race yielded two groups with 446 patients each. Compared to CLTI patients who did not have a major amputation, patients with major amputations were mostly diagnosed during an inpatient admission or in emergency care setting (71% vs.28%) [all p<0.05]. Poverty levels, disability, unemployment, or social vulnerability index were not significantly different between the two matched groups. On regression analysis, significant predictors of major amputation included an inpatient CLTI diagnosis [OR (95%CI):9.4(6.2-14.2)] instead of outpatient diagnosis, diabetes [3.1(2.0-4.7)], dialysis [1.7(1.1-2.5)], and not being on optimal medical therapy such antiplatelets [2.4(1.5-3.7)], anticoagulation [4.7(3.0-7.3)], and statins (2.5(1.6-4.0)) (all p<0.01). The model c-statistic was 85.3%.

Conclusions: This single institution analysis brings attention to the significant issue of limited access to preventative care for patients with peripheral arterial disease. It is evident that a considerable number of patients who underwent major amputations were diagnosed with CLTI while receiving inpatient care and were not receiving optimal medical therapy.

8:04 – 8:12 am	18 (RF)	Outcomes Of Interventions To Salvage The Jailed Profunda Femoris In CLTI
		Mark G Davies ¹ , Joseph P Hart ² <i>¹Ascension Health, Waco, TX; ²Medical College of Wisconsin, Milwaukee, WI</i>

Objective: Stenting across the profunda ostium (jailed profunda femoris) is increasing. This study analyzes the outcomes of interventions to salvage the jailed profunda femoris (PFA) in chronic limb-threatening ischemia (CLTI).

Methods: Between 2010 and 2024, all patients undergoing an intervention for a jailed PFA in the setting of CLTI were analyzed. Two groups were identified: those presenting with an occluded ostium and those with stenosed (>50%) ostium. Amputation-free survival (AFS; survival without major amputation) and freedom from major adverse limb events (MALE; Above ankle amputation of the index limb or major re-intervention (new bypass graft, jump/interposition graft revision) were evaluated.

Results: 112 patients (64% female, 69 ± 6yrs, mean ± SD) presented with Rutherford stage 4 and 5 disease. All had had numerous prior endovascular procedures related to extending stents from the superficial femoral artery into the common femoral artery and covering the PFA ostium (Table 1). 64% of patients underwent common femoral endarterectomy with excision of the stent and patch angioplasty over the profunda ostium, and the remainder, an interposition graft to the profunda 67% required concomitant ipsilateral iliac stenting . 26% required an infra-inguinal bypass. Primary, assisted primary, and secondary patencies of the PFA revascularization were 83 ± 7%, 91 ± 6%, 98±6*% (mean ± SEM). There was no difference in short-term outcomes, while freedom from MALE and AFS at five years was significantly lower in occluded compared to stenosed PFA ostia (Table 1)

Conclusions: Revascularization of the jailed PFA can be achieved with acceptable short-term outcomes and long-term patency. In the presence of CLTI, PFA revascularization is easily achieved and should be considered, regardless of the status of the profunda ostium.

ABSTRACTS

Table 1. Outcomes.

Initial Profunda Status	Stenosed	Occluded	P-Value
Patients (n)	67	45	-
Time from initial stent placement (mean ± SD, yrs)	3.6±0.6	1.1±0.3	0.01
Prior infra-inguinal interventions (Median)	5.1	5.4	NS
30-day MACE (%)	2%	2%	NS
30-day MALE (%)	4%	4%	NS
30-day Major Amputation (%)	3%	4%	NS
Freedom from MALE @ 5 yrs (mean ± SD)	63±4%	51±5%	0.03
Amputation free Survival @ 5 yrs mean ± SD)	69±3%	59±4%	0.01
NS, not significant.			

8:12 – 8:24 am	19	Robotic Median Arcuate Ligament Release May Offer Superior Symptom Improvement To Laparoscopic Release
		Kayla Fay, Jennifer Stableford, Jesse Columbo, David Stone, David Finley <i>Dartmouth Hitchcock Medical Center, Lebanon, NH</i>

Introduction and Objectives: Median arcuate ligament syndrome (MALS) is a challenging disease process to treat. Laparoscopic ligament release can lead to early symptom improvement, but symptom recurrence is common. Recently, MAL releases are being performed robotically at select institutions. The purpose of this study was to document symptom resolution and recurrence rates after laparoscopic and robotic MAL release (r-MALR) at our institution.

Methods: Retrospective review of all patients treated with MAL release at a single academic tertiary medical center from 2017 - 2023 was performed. We stratified patients by operative approach, laparoscopic versus robotic. Our primary outcome was symptom resolution at 6-month follow-up. We additionally captured demographic and clinical characteristics, presenting symptoms, MALS workup, perioperative details, post-operative complications and reintervention procedures.

Results: We identified 36 patients who underwent MAL release over the study interval, 25 (69.4%) that underwent laparoscopic release, and 11 (30.6%) that underwent r-MALR. Pre-operative characteristics similar between groups, include age (37.0 years vs. 41.1 years, $p=0.45$), male sex (24.0% vs. 18.2%, $p=1.0$), and preoperative psychiatric diagnosis (60.0% vs. 36.4%, $p=0.28$). Patients who underwent a r-MALR had a higher likelihood of postoperative symptom resolution when compared to those who underwent a laparoscopic release at both 1 month (81.8% vs. 20%, $p=0.001$) and 6 months (54.5% vs. 4%, $p=0.001$, table). Post-operative length of stay was lower in the laparoscopic group (median 0 days vs. 1 day, $p=0.03$), and there were slightly higher reports of new post-operative gastrointestinal symptoms after r-MALR (27.3% v. 4.0%, $p=0.08$).

Conclusions: r-MALR was associated with better symptom resolution at 1-month and 6-months post-operatively when compared to laparoscopic release. r-MALR should be considered for patients who have this challenging disease entity.

ABSTRACTS

Table 1. Perioperative Characteristics of Median Arcuate Ligament Syndrome (MALS) Patients.

	All n=36	Robotic Release n=11	Laparoscopic Release n=25	P-Value
Intra-operative complication, (%)	1 (2.8)	0 (0)	1 (4.0)	1
Length of Stay, days, median (IQR)	0 (0-1)	1 (0-1)	0 (0-1)	0.03
Resolution of symptoms at 1 month follow-up, (%)				
No	10 (27.8)	1 (9.1)	9 (36.0)	0.13
Improvement	9 (25.0)	1 (9.1)	8 (32.0)	0.22
Complete Resolution	14 (38.9)	9 (81.8)	5 (20.0)	0.001
Lost to Follow-up	3 (8.3)	0	3 (12.0)	0.54
New gastrointestinal symptoms, (%)	4 (11.1)	3 (27.3)	1 (4.0)	0.08
Recurrence, (%)	9 (25.0)	3 (27.3)	6 (24.0)	1
Time to Recurrence, weeks, median (IQR)	20 (12-32)	20 (12-20)	30 (10-120)	0.44
Multiple Interventions, (%)	2 (5.6)	0	2 (8.0)	1
Symptoms at 6-months				
No change	10 (27.8)	2 (18.2)	8 (32.0)	0.69
Improved	11 (30.6)	2 (18.2)	9 (36.0)	0.44
Resolved	7 (19.4)	6 (54.5)	1 (4.0)	0.001
Lost to follow-up	8 (22.2)	1 (9.1)	7 (28.0)	0.39

8:24 – 8:36 am	20	<p>Outcomes Of Median Arcuate Ligament Release And Celiac Plexus Neurolysis In 72 Patients With Median Arcuate Ligament Syndrome</p>
		<p>David Grafton Kirk, Hannah Barone, Benjamin Starnes <i>University of Washington, Seattle, WA</i></p>

Introduction and Objectives: Median arcuate ligament syndrome (MALS) involves compression of the celiac artery and celiac ganglion by the median arcuate ligament, classically leading to postprandial epigastric pain and weight loss. Typically, ultrasonography and CTA show increased celiac artery velocities and stenosis. Currently, no diagnostic algorithm exists to identify MALS patients most likely to benefit from median arcuate ligament release (MALR). We sought to determine the effect of age, underlying psychiatric diagnosis, and the presence of classic MALS imaging and symptomatology findings on post-surgical quality of life (QoL) to inform management of MALS.

Methods: This retrospective study used prospectively collected SF-36 QoL questionnaires, electronic medical record review, and patient interviews to document pre-surgical symptoms, imaging results, and demographic data on 72 patients who underwent MALR. Patients were stratified by prior psychiatric diagnosis and age (0-19, 20-29, 30-49, and over 50 years old).

Results: QoL in patients with both classic MALS symptoms and imaging (n = 31) improved by 1.35x, whereas patients with classic imaging who did not meet MALS symptom criteria (n = 11) improved by 0.35-fold (p < 0.004) (Figure 1). Subjects with (n = 30) and without (n = 13) prior psychiatric diagnosis exhibited 0.97x and 1.12x improvement, respectively (p < 0.784). One way analysis of variance did not demonstrate a difference in improvement between age groups (p < 0.302).

Conclusions: In the largest single institution study on MALS to date, classic symptoms and imaging led to greater QoL improvements than imaging findings alone. Psychiatric history and age were not significant predictors of QoL improvement following MALR. Classic symptoms and imaging, regardless of psychiatric history or age, indicate the greatest benefit from MALR.

ABSTRACTS

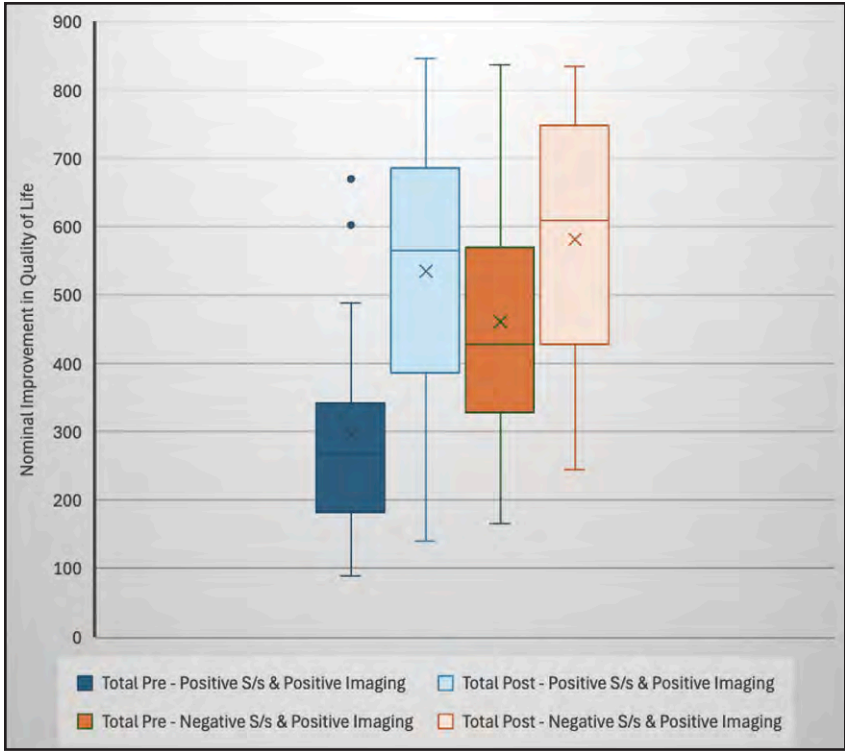


Figure 1. Nominal improvement in post-surgical quality of life for patients with MALS (based on summation of SF-36 scores; min score: 0, max score: 900).

8:36 – 8:48 am	21	Glp-1 Receptor Agonists Associated With Improved Survival After Infrainguinal Bypass In Diabetic Patients
		Elonay Yehualashet, Muhammad S Mazroua, Marissa C Jarosinski, Nathan L Liang, Michael C Madigan, Rabih A Chaer, Natalie D Sridharan <i>University of Pittsburgh Medical Center, Pittsburgh, PA</i>

Introduction and Objectives: Diabetes is common in patients with peripheral arterial disease (PAD) requiring bypass. The American Diabetes Association recommends the use of glucagon-like-peptide-1 receptor agonists (GLP1-RAs) (e.g. Ozempic) for patients with atherosclerotic cardiovascular disease, including PAD. We hypothesized increasing use of GLP1-RAs would be associated with improved outcomes after bypass.

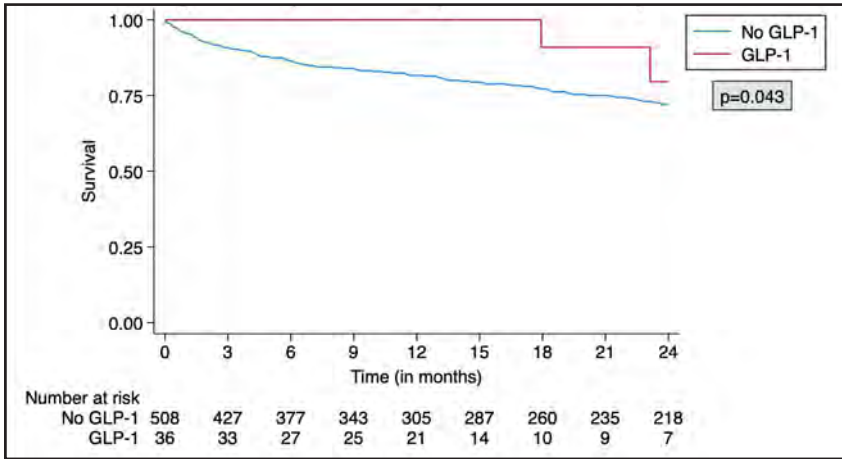
Methods: Retrospective review of all diabetic patients undergoing infrainguinal bypass at a multi-hospital institution between January 2017-June 2024 was conducted, including patient characteristics, operative details, and outcomes. Primary outcome was survival. Secondary outcomes included perioperative complications, major adverse limb events (MALE), and major adverse cardiovascular events (MACE). Kaplan-Meier estimation and Cox-proportional hazards evaluated outcomes.

Results: 528 patients (65.3% male, 78.4% white, mean age 68.3yr+10.3) underwent 544 bypasses. Use of GLP1-RAs increased from 5.0% to 14.6% over the study period. Patients on preoperative GLP1-RAs (n=36, 6.8%) had a higher median BMI (31.1 kg/m², IQR [27.8-34.5] vs 27.7 [24.4-31.9], p=0.002) and were younger (63.6yr+8.0 vs. 68.7+10.4, p=0.005). Median follow-up was 1.47yr, IQR [0.45-3.43]. Improved 2-year survival was seen in GLP1-RAs patients (80% [39%-95%] vs. 72% [67%-76%], p=0.043).

Figure-1. On adjusted analysis, GLP1-RAs was associated with increased survival (HR=0.24 [95%CI: 0.06-0.97], p=0.045) while increasing age (HR=1.04 [95%CI: 1.02-1.06], p<0.001), CHF (HR=2.0 [95%CI: 1.43-2.80], p<0.001), and COPD (HR=1.41 [95%CI: 1.01-1.98], p=0.046) were associated with decreased survival. Analysis of secondary outcomes, including perioperative respiratory complications, did not demonstrate significant differences.

Conclusions: GLP1-RAs usage is increasingly common in patients undergoing lower extremity bypass and was associated with significantly improved post-operative survival without an increase in perioperative complications. Further studies are required to confirm reasons for difference in outcomes, and to explore if the survival benefit extends to all patients with PAD.

Figure I. Kaplan Meier 2-year Survival Analysis.



8:48 – 8:56 am	22 (RF)	Comparison Of Surgical Approaches And Prediction Of Symptom Improvement For Neurogenic Thoracic Outlet Syndrome
		Drew J Braet, Rija Awan, Thomas Basala, Alex Jog, Christopher Johnson-Harwitz, Justin Rodriguez, Amina Tanweer, Chandu Vemuri, Robert J Beaulieu <i>University of Michigan, Ann Arbor, MI</i>

Introduction and Objectives: Studies comparing outcomes between transaxillary (TA) or supraclavicular/infraclavicular (SC/IC) approaches for neurogenic thoracic outlet syndrome (nTOS) decompression are limited. This study aimed to assess differences in patient reported outcomes (PROs) between TA and SC/IC nTOS decompression.

Methods: Patients who underwent nTOS decompression from 2016-2024 were retrospectively identified. Demographics, symptoms, preoperative testing, and surgical approach were collected. PRO-questionnaire scores, including the Disabilities of the Arm, Shoulder, and Hand (DASH), Brief Pain Inventory (BPI), and Pain Catastrophizing Scale (PCS), were evaluated pre-and-postoperatively. Operative details, complications, reoperations, and symptoms were collected. Outcomes were any improvement in PROs or symptom improvement. Differences between treatment groups and outcomes were evaluated using t-tests, Kruskal-Wallis tests, and chi-squared tests. Cut-points for pre-operative PRO-questionnaire values associated with symptom improvement were evaluated using receiver operator characteristic (ROC) curves.

Results: 132 nTOS patients [93 (70.4%) SC/IC and 39 (29.6%) TA] were included. There were no differences in demographics, estimated blood loss, complications, reoperations, postoperative symptoms, or improvements in PRO scores between surgical approaches. Average time from date of operation to pre-operative and post-operative PROs were -4.3 ± 3.3 and 3.9 ± 4.1 months, respectively. Nineteen (14.4%) patients reported no symptom improvement, with no difference between TA and IC/SC decompression (10.3% vs 16.1%, $p=0.641$). Higher preoperative BPI and PCS scores were associated with no symptom improvement ($p<0.001$). A BPI score of 73.5 was optimal for predicting lack of symptom improvement (sensitivity:89%, specificity:79%, AUC:0.84).

Conclusions: There were no differences in clinical outcomes or PROs between TA and SC/IC surgical approaches for nTOS. Higher preoperative BPI and PCS scores were associated with no symptom improvement after nTOS decompression. Patients with a pre-operative BPI of above 73.5 may be less likely to experience symptom relief, regardless of surgical approach. These findings highlight the importance of including PROs in patient selection for surgical management of TOS.

8:56 – 9:04 am	23 (RF)	Predictive Patient Factors Impacting Lower Extremity Dialysis Patency: A Tool To Guide Decision Making For Creation Of New Av Access
		David P Ebertz ¹ , Gavin Christy ¹ , Saideep Bose ¹ , Jeffrey Siracuse ² , Matthew R Smeds ¹ ¹ St Louis University, St Louis, MO; ² Boston University Chobanian & Avedisian School of Medicine, Boston, MA

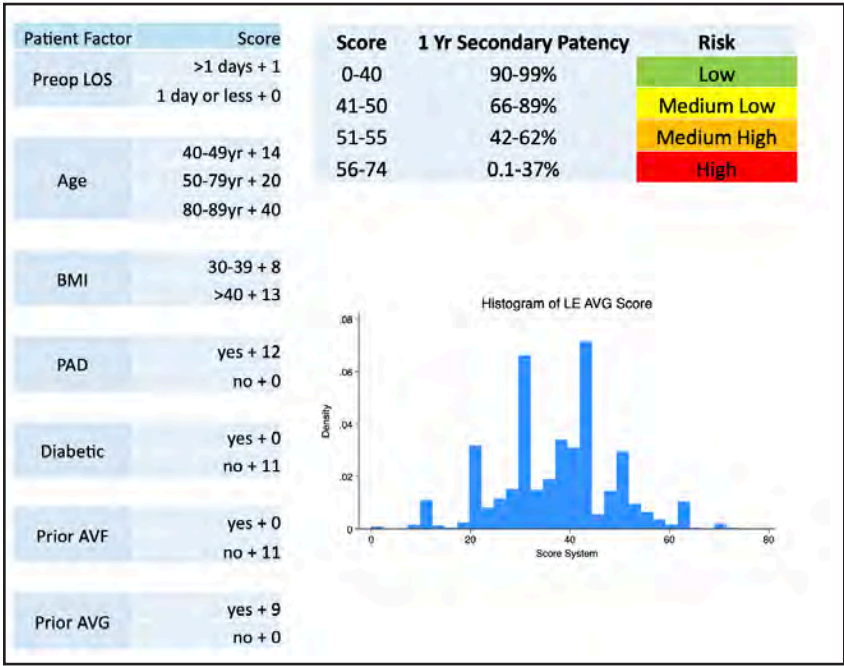
Introduction and Objectives: Lower extremity access remains a last resort for most patients needing dialysis. We sought to identify patient factors impacting lower extremity AV fistula (AVF) and graft (AVG) patency and created a novel clinical tool to help guide decision making.

Methods: Patients in the Vascular Quality Initiative dialysis module undergoing lower extremity access creation from 2011-2023 were separated into two cohorts (AVF/AVG) and retrospectively analyzed. Univariate Kaplan-Meier and multivariable regression analyses were conducted with outcomes being overall survival and primary/secondary patency. Significant factors were standardized and scaled to create scores for loss of secondary patency. This model was then internally validated and imported into a clinical calculator.

Results: 1,213 patients underwent creation of lower extremity access from 2011-2023 with 151 (12.45%) AVF and 1,062 (87.5%) AVG. One-year primary patency was 52.18% and secondary patency was 77.56%. No difference was seen with primary patency based on access type (AVF 60.5%/AVG 50.9%, p=0.068), however AVG had worse secondary patency (AVF 90.3%/AVG 75.5%, p = 0.05). Factors increasing loss of secondary patency included: length of stay, age, BMI, PAD, diabetes, and prior AVF/AVG. These factors were standardized and scaled to create a scoring system of 0 to 74 that predicts loss of secondary patency at one year, with a score of 74 being near 100% risk. This model (0-40 = low risk, 41-50 = medium low risk, 51-55 = medium high risk, and 56-74 = high risk) was validated with a concordance index of 0.79.

Conclusions: Lower extremity AVG have worse secondary patency compared to AVF, but are more commonly placed. We have created a risk stratification score to determine which patients may benefit from a lower extremity AVG.

Figure I. LE Secondary Patency Risk Score Calculator and Histogram of patient score within VQI.



ABSTRACTS

9:15 – 10:15 am

**SPECIAL SESSION:
Artificial Intelligence**

Moderators: Nathan Liang, MD & Yana Etkin, MD
 Panel: Sharon Kiang, MD, Loma Linda University
 Aaron Prasad, Cydar Medical
 Ehab Mahmoud, Astute Imaging
 Wael Elseaidy, Astute Imaging

Panel Discussion	How has the AI boom shaped your product/practice?
SS1	Natural Language Processing to Identify Abdominal Aortic Aneurysm Diameter In The VA System
	Garrett Healy ¹ , Clay Quintz ² <i>¹University of Colorado School of Medicine, Aurora, CO; ²Rocky Mountain Regional Veterans Affairs, Aurora, CO</i>
Panel Discussion	Drawbacks and concerns for AI in vascular surgery.
SS2	Comparative Performance of Clinician and Computational Approaches in Forecasting Adverse Outcomes In Intermittent Claudication
	Bharadhwaj Ravindhnan, Joseph Cutteridge, Sean Pymer, Jonathon Prosser, Arthur Lim, Murad Hemadneh, Shahani Nazir, Abduraheem Mohamed, Ross Lathan, Brian Frederick Johnson, George Smith, Daniel Carradice, Ian C Chetter <i>Hull York Medical School, Hull, United Kingdom</i>
Panel Discussion	How can AI fit into the working life of a surgeon now and in the future?

1:00 – 3:00 pm **CASE REPORTS & EXPERTS
WORST CASES SESSION**
Moderator: Lindsey Korepta, MD & Nathan Aranson, MD

1:00 – 3:00 pm	CR1	Distal Brachial And Radial Artery Muscular Entrapment In An Athlete
		Branson Taheri, Shawn Fortin, Alex Ebinger, Fraser Leversedge, Max Wohlauer <i>University of Colorado, Aurora, CO</i>

Introduction and Objectives: Compression of the median nerve at the level of the elbow is a well-described phenomenon and is caused by hypertrophy of the bicipital aponeurosis, known as the lacertus fibrosus, most commonly in athletes. However, arterial compression at this level is a much more rarely described phenomenon. In this case, we describe surgical treatment for compression of the distal brachial and proximal radial arteries by the lacertus fibrosus in a professional baseball pitcher.

Methods: We received verbal consent from the patient involved to submit an abstract describing this case.

Results: A professional baseball pitcher presented with an acute brachial artery thrombus. Previously, the patient had been treated at multiple institutions for recurrent right upper extremity arterial occlusions and had previously undergone a right first rib resection for arterial thoracic outlet syndrome. The patient underwent thrombectomy of the brachial thrombus. Subsequent outpatient imaging included an unremarkable CT-angiogram with provocative TOS maneuvers, an inconclusive dynamic MRI, and a right upper extremity arterial duplex with an increase in radial artery velocities with the arm abducted to 90 degrees. We decided to pursue right brachial and radial artery exploration and release. Angiography showed luminal irregularity of the right radial artery with the arm abducted and flexed in the "pitching" position. Our hand surgery team dissected and released the right lacertus fibrosus. On repeat angiography, the luminal irregularity had been corrected.

Conclusion: The patient did well post-operatively without additional episodes of arterial occlusion after nearly three years of follow-up.

CASE REPORTS

Figure 1. Pre-operative radial artery duplex with provocative maneuver (flexed to 90 degrees at the elbow), showing an elevated velocity indicating a more proximal stenosis.

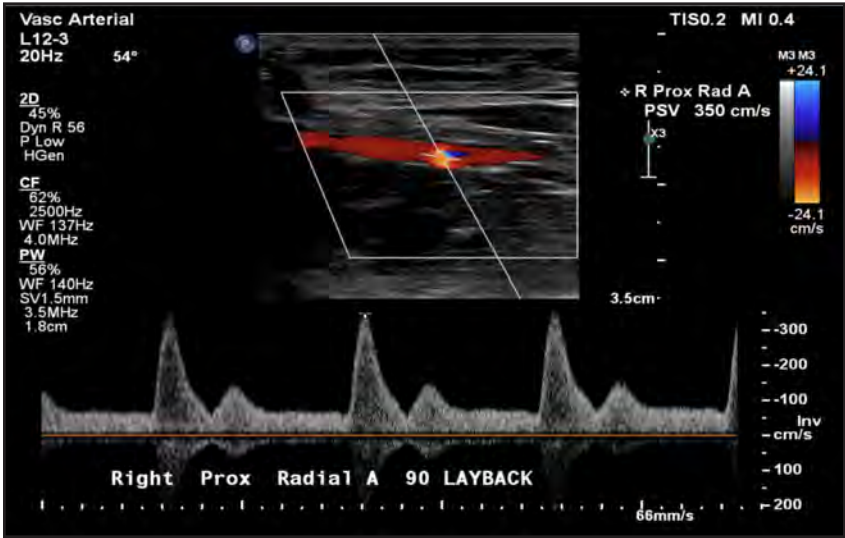
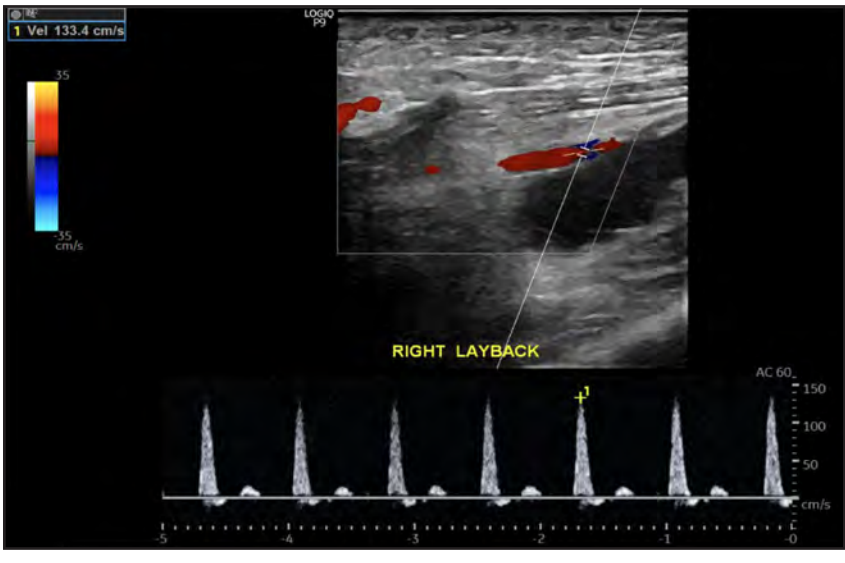


Figure 2. Post-operative radial artery duplex with provocative maneuver (flexed to 90 degrees at the elbow), showing a slightly elevated velocity indicating the stenosis had been corrected.



CASE REPORTS

1:00 – 3:00 pm	CR2	Axillary Artery Pseudoaneurysm Repair In A Neonate
		Alexandra Gobble, Kyongune B Lee <i>Ohio State University, Columbus, OH</i>

Introduction and Objectives: Pediatric vascular diseases are uncommon, yet present significant challenges. There are few published reports, and often no clear guidelines on management. We present a case of a neonate with a pseudoaneurysm.

Methods: Patient was born at 37 weeks with pulmonary atresia, intact ventricular septum, tricuspid atresia, and hypoplastic right heart. On day 13 of life, he underwent left heart catheterization via left axillary artery with 4 French sheath for patent ductus arteriosus stent placement, manual pressure held and HemCon Patch placed post-procedure. The next day, arterial duplex demonstrated 2.3x3.0cm pseudoaneurysm of access artery. This was initially managed conservatively as he had intact pulses and neuromotor exam. On day 26 of life, he developed skin changes (Figure 1) . CT obtained demonstrated 5.5cm pseudoaneurysm (Figure 2).

Results: Patient was taken to the operating room for repair. Left infraclavicular incision was made for axillary artery exposure. Due to mass effect from the pseudoaneurysm, the artery was difficult to visualize. Doppler probe was used to help identify the artery. Arterial control was obtained using focal pressure with a kitner proximally and digital pressure distally. The pseudoaneurysm was evacuated, and arterial defect repaired primarily using 6-0 monofilament suture. A 10 French drain was placed and the incision primarily closed. Patient tolerated procedure and retained palpable distal pulses. At follow-up, he had complete resolution of his cavity and skin injury.

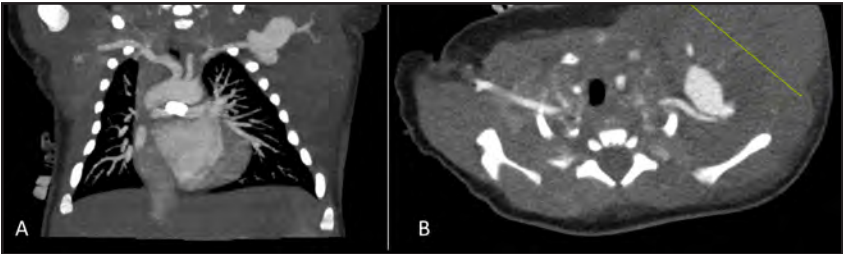
Conclusion: This case highlights challenges associated with managing neonatal vascular emergencies. We demonstrated that in small vasculature, effective arterial control can be achieved without full vessel dissection while performing the repair safely.

CASE REPORTS

Figure 1. Day 26 of life, he developed skin changes.



Figure 2. CT obtained demonstrated 5.5cm pseudoaneurysm.



1:00 – 3:00 pm	CR3	Near Complete Amputation—Worth Salvage?
		Chinmayee Potti, Benjamin Lee Kyongjune <i>The Ohio State University, Columbus, OH</i>

Introduction and Objectives: Management of severely mangled or near complete amputations, especially in upper extremities poses the question of salvage or amputation. Traditionally, a Mangled extremity score (MESS) of 7 or more has been considered a predictor of primary amputation. This has recently been challenged in contemporary data. Interpretation of MESS in addition to multi-disciplinary consideration of severity of injuries, hemodynamic stability, and availability of resources is required when considering limb salvage.

Case: We present a case of an 18-year-old female who presented after an all-terrain vehicle crash, 5 hours post-injury with near complete amputation of her right upper extremity, held together by her radial and ulnar nerves with complete transection of all other tissue except 2 cm of skin. She was pulseless, cold, without sensory or motor function, and hypotensive, with a mangled extremity score of 9. In conjunction with a multi-disciplinary surgical team, we performed a brachial artery shunt with concurrent external fixation of the humerus along with brachial arterial as well as venous bypasses using reversed great saphenous veins to salvage the limb. This was followed by multiple stages of nerve reconstruction and soft tissue closure. She has since healed with the ability to move her fingers while in active physical therapy.

Conclusions: Limb salvage was successfully carried out in a young patient with near complete amputation, MESS of 9, with arterial and venous bypasses. For near-complete amputation or high MESS score, consideration of venous bypasses is important for limb salvage.

CASE REPORTS

Figure 1. (a) X-ray demonstrating comminuted displaced right humeral shaft fracture and corresponding (b) clinically on exam.

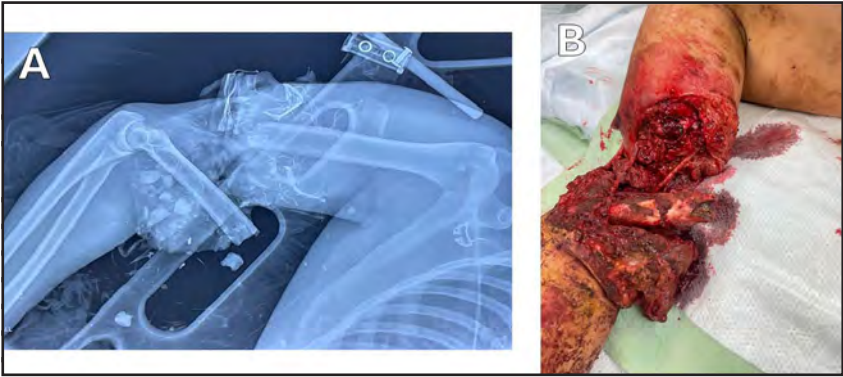
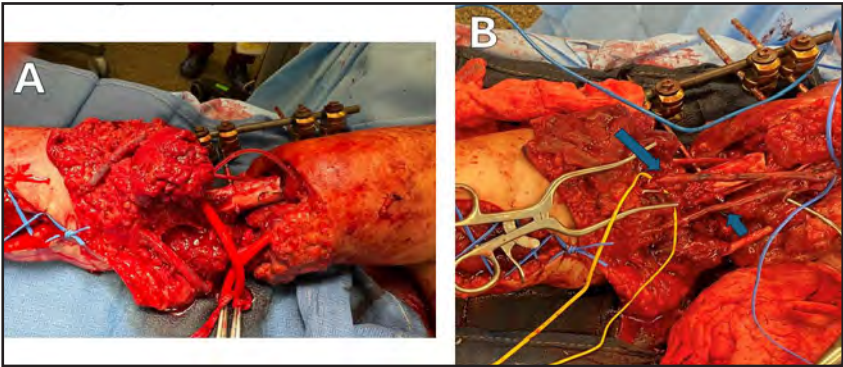


Figure 2. (a) Argyle shunt of the brachial artery and external fixation of the humerus with (b) brachial artery and vein interposition bypass with reversed great saphenous vein.



1:00 – 3:00 pm	CR4	Unique Repair Of A Mycotic Extent IV TAAA Using Visceral Branching Technique
		Seyed S Pairawan, Alexander D Shepard, Loay Kabbani, Andi Peshkepija <i>Henry Ford Health, Detroit, MI</i>

Introduction and Objectives: A mycotic extent IV thoracoabdominal aneurysm (TAAA) is a lethal condition. This case study highlights a unique approach in the management of a mycotic extent IV TAAA.

Methods: A 78-year-old male with a history of axillobifemoral bypass for lower extremity ischemia presented with a mycotic extent IV TAAA. He underwent resection/repair with a visceral branching (VB) technique utilizing a rifampin-soaked bifurcated Dacron graft modified with two additional sidearms through a thoracoabdominal approach. The graft was sewn end-to-side to the distal descending thoracic aorta. After stapling of the aorta just below the anastomosis, the aneurysm sac was opened and perfusion catheters (Figure 1) were inserted into the four visceral arteries. Aggressive debridement of the aneurysm sac was performed. Cultures demonstrated *Bacteroides Fragilis*. The postoperative course was complicated by temporary spinal cord ischemia managed aggressively, with elevated mean arterial pressure and a spinal drain and, with full recovery. Patient was discharged on 6 weeks of Intravenous and lifelong suppressive antibiotics. Figure 2 demonstrating post reconstruction CTA.

Results: Contemporary repair of a mycotic extent IV TAAA involves aortic debridement and reconstruction while providing visceral and renal protection. Aortic cross-clamping produces significant hemodynamic effects, not well tolerated in many patients. VB decreases visceral ischemia time while circumventing the hemodynamic effects of aortic clamping. This is particularly advantageous in patients with limited physiological reserve.

Conclusions: This report demonstrates the feasibility of modifying a standard bifurcated graft during an open mycotic extent IV TAAA repair without the need for circulatory support.

CASE REPORTS

Figure 1. After stapling of the aorta just below the anastomosis, the aneurysm sac was opened and perfusion catheters were inserted into the four visceral arteries.

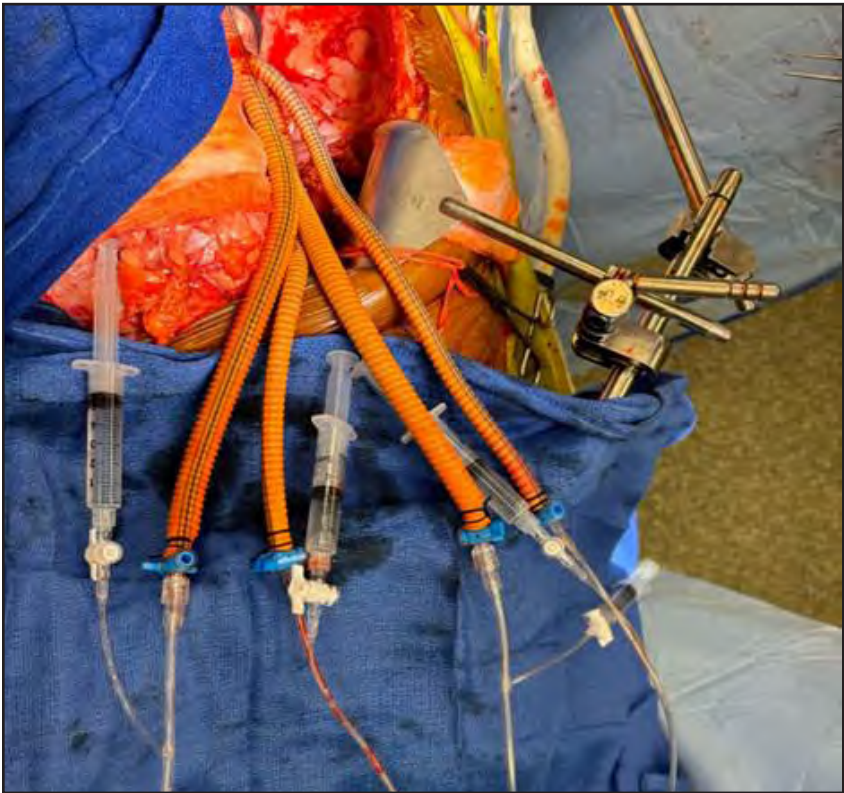


Figure 2. Demonstrating post reconstruction CTA.



CASE REPORTS

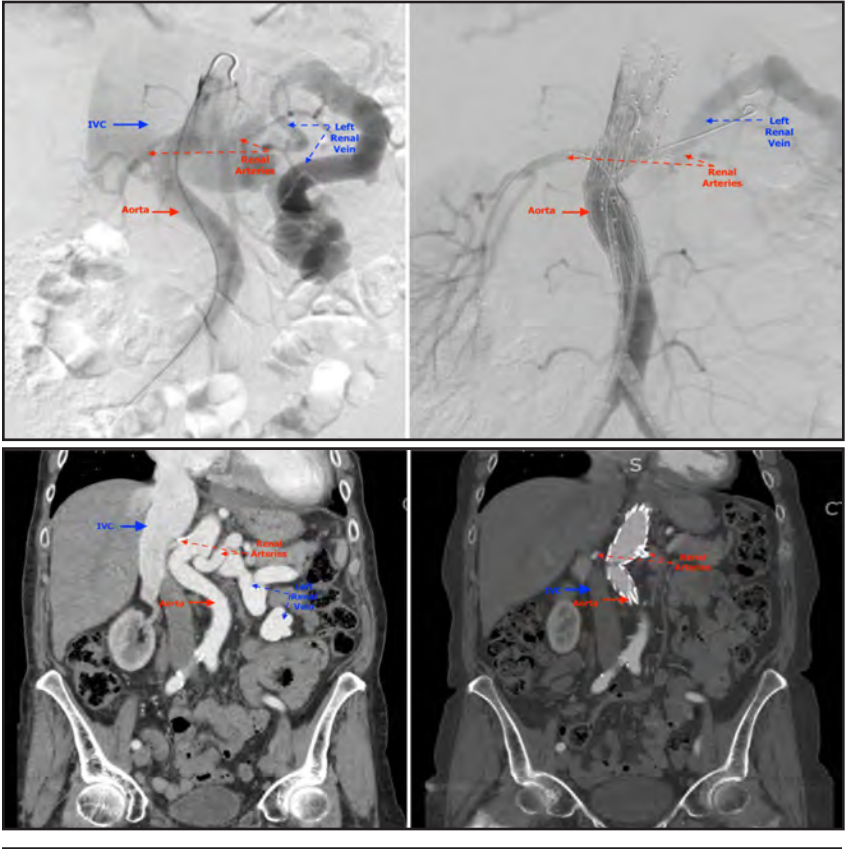
1:00 – 3:00 pm	CR5	Idiopathic Aortorenal Junction To Renal Vein Arteriovenous Fistula Managed With Fenestrated Endograft And Renal Artery Stenting
		Max Murray-Ramcharan, Amarseen Mikael, Aaron Dank, Nakul Rao, S. Christopher Frontario, Thomas Bernik <i>Englewood Health, Englewood, NJ</i>

Introduction and Objectives: Clinically significant idiopathic arteriovenous fistulas (AVF) between the aorta and the renal vein are infrequently encountered and challenging to manage. We present a case of spontaneous aortorenal junction to renal vein AVF and associated surgical management.

Methods: A 74-year-old female presented for acute cardiac failure. During the workup, echocardiogram demonstrated high-output cardiac failure and labs were significant for hematuria. Computed-tomography imaging demonstrated a left aortorenal junction to renal vein AVF, and severe hydronephrosis secondary to associated compression of the renal pelvis. She had no history of prior surgery or trauma. Given the AVF location, surgical options were limited. Open surgery would risk significant morbidity given underlying heart failure. Neither simple embolization, renal stenting nor a standard endovascular aortic repair would adequately treat the AVF. Due to this complex pathology, we elected to use a custom fenestrated aortic endograft with a superior mesenteric artery scallop and bilateral renal stents to exclude the fistula.

Results: The fenestrated endograft was successfully deployed, and intraoperative imaging showed dramatically decreased flow of the AVF with preservation of renal and visceral perfusion. Serial surveillance with duplex ultrasound and computed-tomography angiography at up to 2 years follow-up showed no residual AVF, and widely patent aortorenal system. Clinically, the patient had resolution of heart failure symptoms, hydronephrosis and hematuria.

Conclusions: This case represents a unique and strategic approach to a challenging pathology. Advancements in diagnostic and surgical technology allowed this complex pathology to be treated via a minimally invasive approach with desirable long-term results.



CASE REPORTS

1:00 – 3:00 pm	CR6	A Novel Approach To Middle Aortic Syndrome
		Tej Amit Sura, Michael Sabarese, Vincent Narvaez, Luis Rodriguez Cartegena, Gregg Landis <i>Zucker School of Medicine at Hofstra/Northwell, New Hyde Park, NY</i>

Introduction and Objectives: Middle aortic syndrome (MAS) is a rare medical condition. Presenting symptoms include uncontrolled hypertension, mesenteric ischemia, and lower extremity rest pain and claudication. Although medical therapy has shown to improve symptoms, surgical intervention is usually the main treatment for MAS. The purpose of this case presentation is to detail our management of MAS in a pediatric patient treated in a novel manner.

Methods: This is an interesting case presentation.

Results: The patient was a nine-year-old with refractory hypertension secondary to MAS. This was treated with an ascending aorta to left common iliac artery bypass and auto-transplantation of her right kidney. This operation was performed in conjunction with cardiac and transplant surgery. The patient had elevated velocities in the right renal artery and an atrophic left kidney on preoperative imaging. The patient tolerated the procedure well and her hypertension was better controlled post-operatively.

Conclusions: In our review of published literature, aorto-aortic bypass and auto-transplantation of a kidney for multidrug resistant renovascular hypertension have been previously reported; however, bypass from the ascending aorta and to the iliac artery have not been previously described. Typically, patients with MAS require intervention with bypass to allow blood flow to circumvent the stenotic lesion and maintain visceral and lower extremity perfusion, especially when young. This case highlights a one-stage surgical repair using a unique approach that accounted for the patient's young age and solitary kidney. This case also highlights the multidisciplinary collaboration between multiple surgical and pediatric specialty teams at our institution.

	Worse Case Presentations from Invited Faculty
	Tina Desai, MD – University of California, San Francisco Matthew Corriere, MD – The Ohio State University Ravi Rajani, MD – Emory University

3:00 – 4:00 pm

Coffee/Snacks - Visit Exhibitors

All attendees, guests & exhibitors are welcome

4:00 – 6:00 pm

SCIENTIFIC SESSION III

Moderators: Jean Marie Ruddy, MD & S. Keisin Wang, MD

4:00 – 4:12 pm	24	Distal Extent Of Dissection Increases Risk Of Malperfusion Syndromes And Need For Reoperation In Patients With Acute Type B Aortic Dissection
		Michelle N Manesh ¹ , Helen A Potter ² , Alexander D DiBartolomeo ¹ , Sukgu M Han ¹ , Alyssa J Pyun ¹ , Niema Pahlevan ¹ , Gregory A Magee ¹ <i>¹University of Southern California, Los Angeles, CA; ²University of Buffalo, Buffalo, NY</i>

Introduction and Objectives: Limited data exists on the impact of distal extent of dissection (DoD) in patients with acute type B aortic dissection (aTBAD). We aimed to evaluate the impact of DoD on malperfusion syndromes, reintervention, and mortality in patients undergoing TEVAR for aTBAD.

Methods: SVS VQI registry was queried from 2012-2022 for patients undergoing TEVAR for aTBAD. Primary exposure variable was DoD, categorized as thoracic (zones 2-5), abdominal (zones 6-9) or iliac (zones 10-11). Primary outcomes were malperfusion on presentation (renal, mesenteric, lower extremity [LE]) and mortality after TEVAR. Secondary outcomes were reoperation and resolution of malperfusion after TEVAR. Multivariable logistic regression was performed for 30-day and 2-year mortality.

Results: Of 2,455 included patients, DoD was relatively evenly distributed between thoracic (32%), abdominal (26%), and iliac (42%) regions. A more DoD was associated with stepwise increase in intestinal (5% vs. 14% vs. 20%, $p < .0001$), renal (7% vs. 18% vs. 27%, $p < .0001$), and LE malperfusion (6% vs. 9% vs. 27%, $p < .0001$) on presentation. DoD was associated with reoperation (11% vs. 15% vs. 17%, $p = .0017$), and residual intestinal (2% vs. 5% vs. 6%, $p < .0001$) and renal (3% vs. 5.5% vs. 6%, $p = 0.0036$) malperfusion. DoD was also associated with higher rates of resolution of renal, intestinal and LE malperfusion after TEVAR ($p < .0001$ for all). DoD was not associated with mortality ($p > 0.05$ for all).

Conclusions: DoD is not independently associated with mortality, but is associated with need for reoperation and residual intestinal and renal malperfusion after TEVAR. However, DoD is also associated with increased likelihood of resolution of malperfusion after TEVAR. These findings suggest that flow dynamics in aTBAD are dependent on DoD and may fluctuate soon after TEVAR.

Table 1. Outcomes associated with distal extent of dissection in patients with aTBAD undergoing TEVAR.

	Total (n=2455)	Thoracic (n=779)	Abdominal (n=634)	Iliac (n=1042)	P-Value
Preoperative Malperfusion					
Intestinal ischemia	332 (13.5%)	40 (5.1%)	86 (13.6%)	206 (19.8%)	<0.0001
Renal ischemia	448 (18.3%)	52 (6.7%)	112 (17.7%)	284 (27.3%)	<0.0001
Leg ischemia	385 (15.7%)	45 (5.8%)	55 (8.7%)	285 (27.4%)	<0.0001
Postoperative Malperfusion					
Intestinal ischemia	112 (4.6%)	19 (2.4%)	29 (4.6%)	64 (6.1%)	0.0009
Renal ischemia	118 (4.8%)	21 (2.7%)	35 (5.5%)	62 (6.0%)	0.0036
Leg ischemia	58 (2.4%)	13 (1.7%)	13 (2.1%)	32 (3.1%)	0.1253
Re-operation					
For Aorta/branch	153 (6.5%)	41 (5.5%)	45 (7.4%)	67 (6.8%)	0.3513
For Rupture	4 (0.2%)	1 (0.1%)	1 (0.2%)	2 (0.2%)	0.99
For Aortic enlargement	5 (0.2%)	2 (0.3%)	2 (0.3%)	1 (0.1%)	0.62
For False lumen patency	12 (0.5%)	4 (0.6%)	3 (0.5%)	5 (0.5%)	0.99
For Extension of dissection	19 (0.9%)	5 (0.7%)	6 (1.0%)	8 (0.9%)	0.7964
For Malperfusion	51 (2.3%)	6 (0.8%)	16 (2.7%)	29 (3.1%)	0.0052
For Device factors	9 (0.4%)	0 (0.0%)	5 (0.9%)	4 (0.4%)	0.03
For Bleeding	5 (0.2%)	3 (0.4%)	1 (0.2%)	1 (0.1%)	0.46
For Other reason	33 (1.5%)	12 (1.7%)	8 (1.4%)	13 (1.4%)	0.8942
30-day mortality	193 (7.9%)	51 (6.5%)	58 (9.1%)	84 (8.1%)	0.1859

4:12 – 4:24 pm	25	Outcomes Of Surgical Decompression For Popliteal Artery Entrapment Syndrome
		Armin Tabiei, Jill J. Colglazier, Manju Kalra, Fahad Shuja, Todd E. Rasmussen, Randall R. DeMartino <i>Mayo Clinic, Rochester, MN</i>

Introduction and Objectives: Functional popliteal artery entrapment syndrome (FPAES) is a rare cause of claudication, predominantly affecting young females. Optimal workup, approach and outcomes remains poorly defined. We aim to evaluate our institutional experience in surgical decompression of FPAES.

Methods: This is a retrospective review of all patients undergoing surgical decompression for FPAES between January 2010 - January 2024 at our institution. Pre-operative imaging, operative approach, reintervention, and symptomatic improvement at last follow-up were analyzed.

Results: 66 patients (109 limbs) with a mean age of 25 ± 12 years were identified. 53 patients (80.3%) were female. Median time from onset of symptoms to surgical management was 34 months. All patients underwent pre-operative magnetic resonance imaging and ultrasound with provocative maneuvers and 39 patients (59.1%) underwent pre-operative angiogram. Nine patients (13.6%) had undergone previous popliteal artery decompression at outside institutions and were referred for refractory or recurrent symptoms. A medial approach to popliteal decompression was utilized in 84 limbs (77.1%). Posterior approach was utilized in 25 limbs. Perioperative complications occurred in six patients (9.1%). Median follow-up was 10.5 months (interquartile range, 4-27 months). Initial symptomatic improvement was reported in 85 limbs (81.0%), 12 (14.1%) of which, had recurrent symptoms at last follow-up. A reintervention was performed due to recurrent or persistent symptoms in 10 limbs (9.5%). Symptomatic improvement at last follow-up in patients undergoing first-time intervention was reported in 78.9% of limbs and was similar for medial versus posterior approach. Symptomatic improvement in patients undergoing redo popliteal artery decompression was reported in 42.9% of limbs.

Conclusions: Surgical decompression for the treatment of functional popliteal artery entrapment syndrome can be an effective treatment for selected symptomatic individuals. However, persistent or recurrent symptoms require further study for proper patient selection. A multidisciplinary team and evolving multimodal testing are required to achieve optimal results.

4:24 – 4:36 pm	26	<p>More Than One In Four Patients Undergo Peripheral Vascular Intervention For Claudication Without Any Preoperative Testing In The Outpatient Setting</p>
		<p>Terrence C Tsou¹, Chen Dun¹, Midori White¹, Katherine M McDermott¹, Yuan-Haw A Wu¹, Jeffrey J. Siracuse², James H. Black, III¹, Martin A. Makary¹, Caitlin W. Hicks¹ ¹Johns Hopkins School of Medicine, Baltimore, MD; ²Boston Medical Center, Boston, MA</p>

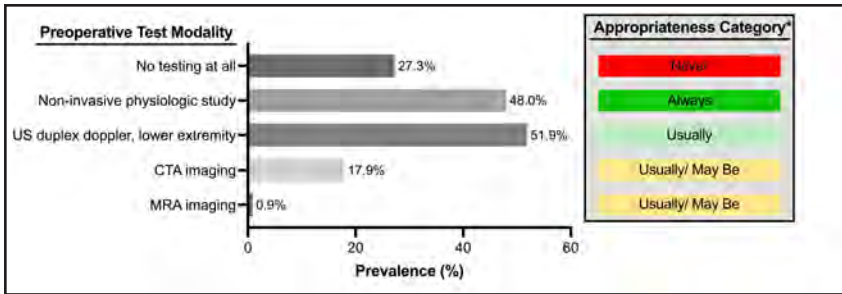
Introduction and Objectives: Guidelines across vascular surgery, cardiology, and radiology specialties recommend appropriate preoperative testing prior to revascularization for claudication. We aimed to identify patient and physician characteristics associated with the absence of preoperative imaging before peripheral vascular interventions (PVI) performed for claudication.

Methods: Using 100% Medicare fee-for-service claims data, we identified all patients undergoing an index PVI for claudication between 01/2017-12/2023. We identified preoperative testing (noninvasive physiologic or imaging studies) using CPT codes. Lack of preoperative testing was defined as no appropriate preoperative test within 3 months prior to index PVI. We evaluated the associations of patient and physician characteristics with the lack of preoperative testing using multivariable hierarchical logistic regression.

Results: Of 159,114 patients undergoing PVI for claudication by 9,631 physicians, 27.3% received no preoperative testing (Figure). The odds of receiving no preoperative testing significantly increased over time (aOR 1.03 per year, 95%CI 1.02-1.04). Patients without preoperative testing were more likely to be age ≤64 years (aOR 1.06, 95% CI 1.01-1.11), nonwhite race (aOR 1.11, 95%CI 1.07-1.15), of the lowest income bracket (aOR 1.09, 95%CI 1.03-1.14), and receive an iliac intervention (aOR 1.29, 95%CI 1.23-1.35). Physicians performing PVI without preoperative testing had higher odds of being male (aOR 1.16, 95%CI 1.06-1.30), of cardiology (aOR 1.96, 95%CI 1.87-2.06) or radiology specialties (aOR 1.15, 95%CI 1.07-1.24), and practice in urban (aOR 1.14 95%CI 1.05-1.23) and low-volume PVI settings (aOR 1.25, 95%CI 1.16-1.35).

Conclusions: Compliance with society guidelines for appropriate preoperative testing prior to PVI for claudication varies substantially by patient and physician characteristics. Cross-specialty adherence will help ensure patients with claudication receive consistent, evidence-based, and high-value care.

ABSTRACTS



*Expert Panel on Vascular 1, Azene EM, Steigner ML, et al. ACR Appropriateness Criteria (R) Lower Extremity Arterial Claudication-Imaging Assessment for Revascularization: 2022 Update. J Am Coll Radiol. Nov 2022; 19 (11S): S364-S373. doi: 10.1016/j.jacr.2022.09.002

4:36 – 4:48 pm	27	<p>Survival Benefit Of Deceased Donor Kidney Transplantation Among Patients With Peripheral Artery Disease</p>
		<p>Li Ting Tan¹, Amber B Kernodle², Sile Yu¹, Katherine McDermott¹, Midori White¹, Courtenay M Holscher³, Ying Wei Lum¹, Dorry Segev⁴, Allan B Massie⁴, Elizabeth A King¹, James H Black, III¹, Caitlin W Hicks¹ ¹Johns Hopkins University, Baltimore, MD; ²Brigham and Women's Hospital, Boston, MA; ³Johns Hopkins Bayview Medical Center, Baltimore, MD; ⁴NYU Grossman School of Medicine, New York, NY</p>

Introduction and Objectives: Peripheral artery disease (PAD) is a common comorbidity among patients waitlisted for deceased donor kidney transplant (DDKT). However, some centers consider PAD a relative contraindication for transplant given the higher risk of post-operative complications. We aimed to examine the survival benefit of DDKT among patients with and without PAD.

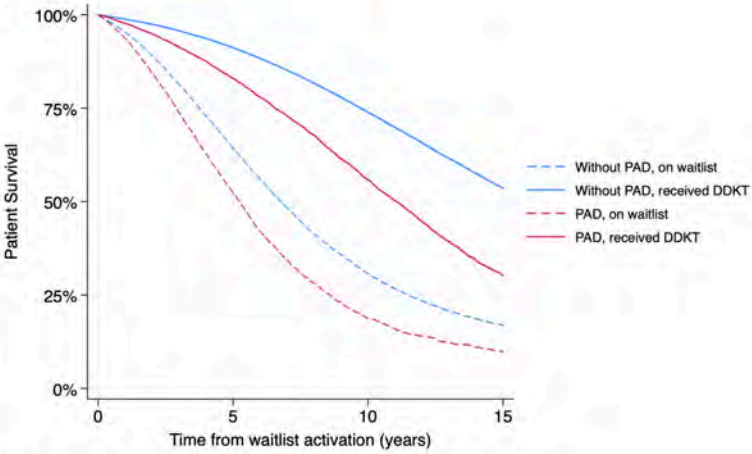
Methods: We used data from the Scientific Registry of Transplant Recipients (SRTR) from January 2003 to December 2022 to identify all DDKT waitlist candidates. Kaplan-Meier survival estimates and multivariable time-varying Cox proportional hazards models were used to compare patient mortality for those who received a DDKT versus those remaining on the waitlist stratified by PAD status.

Results: 506,785 candidates were listed for kidney transplant during the study period, of which 8.7% had PAD and 36.0% received a DDKT. After a median follow-up time of 3.21 years from waitlist activation [interquartile range 1.11-7.03 years], mortality varied significantly according to DDKT and PAD status (Figure 1). After adjusting for baseline differences, DDKT was associated with a significantly lower hazard of death compared to remaining on the waitlist, regardless of PAD status [adjusted hazards ratio (aHR) 0.45-0.60, P<0.001; Figure 2]. Further stratifying by sex, race and ethnicity, and diabetes status did not substantially alter these results.

Conclusions: DDKT conferred a similar long-term survival benefit relative to remaining on the waitlist for candidates with and without PAD. Therefore, PAD should not constitute an absolute contraindication to DDKT.

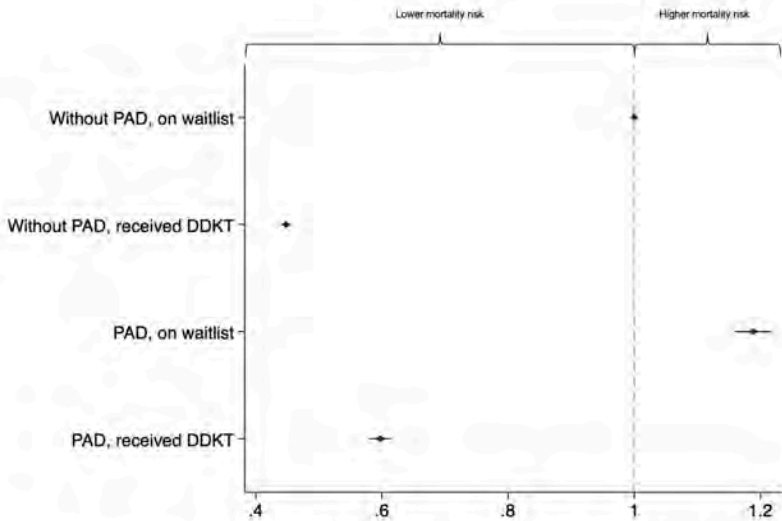
ABSTRACTS

Figure 1: Mortality among adult kidney-only waitlist candidates who did versus did not receive a kidney transplant, stratified by PAD status.



DDKT, deceased donor kidney transplant; PAD, peripheral artery disease

Figure 2: Forest plot: Cox proportional hazard analysis for mortality among adult kidney-only waitlist candidates between January 2003 to December 2022 in the United States, by PAD and transplant status.



Cox proportional hazard analysis for mortality among adult kidney-only waitlist candidates, grouped by PAD and transplant status

DDKT, deceased donor kidney transplant; PAD, peripheral artery disease

4:48 – 4:56 pm	28 (RF)	Emergency Management Of Arteriovenous Fistulas And Graft Bleeds
		Andrea Alonso ¹ , Sula Frausto ² , James Blum ¹ , Ijeoma Okafor ¹ , Khuaten Maaneb de Macedo ¹ , Alik Farber ¹ , Elizabeth King ¹ , Elissa M Schechter-Perkins ¹ , Brian J Yun ¹ , Jeffrey J Siracuse ¹ <i>¹Boston University, Boston, MA; ²Perelman School of Medicine, Philadelphia, PA</i>

Introduction and Objectives: Arteriovenous (AV) access bleeding can be severe requiring prompt management. Our goal was to evaluate emergency management of AV access bleeds and their outcomes. Methods: All emergency department (ED) visits for AV access bleeding at a single academic level 1 trauma center between 2014-2022 were retrospectively analyzed. Presentation, severity, management, and outcomes were evaluated.

Results: There were 68 patients who met the inclusion criteria. Mean age was 65.3 years, 53% were male, 67.7% were Black, and 17.7% were of Hispanic ethnicity. Access included brachiocephalic (35.3%), brachiobasilic (27.9), radiocephalic (8.8%) fistulas, upper extremity AV grafts (17.7%), and lower extremity access (5.9%). Mean time from creation was 3.69 years. The majority (76.5%) were post-cannulation bleeds followed by ulceration. Using the emergency support instrument (ESI), ED presentation was classified as life-threatening (5.9%), emergency (30.9%), urgent (61.8%), and semi-urgent (1.5%). On arrival, 7.4% of patients had a tourniquet in place.

ED interventions included manual pressure (36.8%), suturing (25%), topical hemostatic agents (14.7%), clamp device (13.2%), and tourniquet placement (1.5%). Vascular surgery was consulted in 46% of cases. There were 36.8% admitted with 63.2% discharged from the ED. Tunneled dialysis catheters were placed in 11.8% of patients. There were 16.2% that required an intervention (45.5% open and 54.6% endovascular). Open operations were 60% AV revisions and 40% ligations. Three-fourths of fistulograms required an intervention. At 30 days, 8.8% revisited the ED, with half for access-related issues. At one-year, 22.1% of patients underwent new AV access creation. Six-month follow-up with an access surgeon was only 47.1%.

Conclusions: Over one-third of AV access bleeds presenting to the ED were of emergency or life-threatening severity requiring prompt management. Many required a new AV access within one year. Improved interdepartmental communication and close patient follow-up remain opportunities for improved outcomes.

4:56 – 5:04 pm	29 (RF)	Comparison Of Carotid Endarterectomy And Transcarotid Artery Revascularization In High Cervical Lesions
		Ezra Y Koh ¹ , Hanaa Dakour-Aridi ² , Mackenzie Madison ² , Arash Keyhani ¹ , Kourosh Keyhani ¹ , Raghu Motaganahalli ² , Andres Fajardo ² , Keisin Wang ¹ ¹ UT Houston, Houston, TX; ² Indiana University, Indianapolis, IN

Introduction and Objectives: High cervical lesions increase intraoperative complexity in carotid endarterectomy (CEA). For these lesions, transcarotid artery revascularization (TCAR) may offer an alternative to avoid obtaining distal arterial control. The aim of this study was to compare outcomes of CEA and TCAR in patients with high cervical lesions.

Methods: Demographics and outcomes of patients who underwent CEA or TCAR were retrospectively captured at two institutions for procedures performed between 2003 and 2023. Patients with high cervical lesions, defined as target clamp sites above the C2 vertebra, were included for review. Patients were dichotomized according to surgical procedure. Univariate analysis was performed comparing baseline characteristics and outcomes in both groups at an $\alpha < 0.05$.

Results: A total of 2,250 patients were reviewed, of which 106 patients (5%) were identified with a high lesion, of which 73 patients (69%) underwent TCAR and 33 patients (31%) underwent CEA. There were no significant differences in patient demographics between groups. Perioperative (30-day) morbidity was similar between both groups (ipsilateral stroke was 2.7% vs 6.1%, $p = 0.406$, myocardial infarction was 1.4% vs. 0%, $p = 0.499$, cranial nerve injury was 1.4% vs. 6.1%, $p = 0.406$, and mortality was 1.4% vs. 0%, $p = 0.499$). However, operative time and estimated blood loss were higher in patients who underwent CEA (72.9 ± 31.8 minutes vs. 132.5 ± 53.2 minutes, $p < 0.001$, and 471 ± 57.3 mL vs. 214.2 ± 285.7 mL, $p < 0.001$).

Conclusions: This study demonstrates similar outcomes between CEA and TCAR with high cervical lesions. However, TCAR was associated with a shorter operative time, suggesting that this may be an advantageous approach for these patients.

FULL PROGRAM & ABSTRACTS

	TCAR (N=73)	CEA (N=33)	P-Value
Technical success	71 (97%)	33 (100%)	0.344
Reintervention	1 (1%)	0 (0%)	0.499
Cranial nerve palsy	1 (1.4%)	2 (6.1%)	0.178
Hematoma	1 (1.4%)	2 (6.1%)	0.178
Thrombosis	1 (1.4%)	0 (0%)	0.906
Ipsilateral stroke	2 (2.7%)	2 (6.1%)	0.406
MI	1 (1.4%)	0 (0%)	0.499
Death	1 (1.4%)	0 (0%)	0.499
Length of stay, days	2.6 ± 4.9	3.0 ± 4.0	0.738
Operative time, minutes	72.9 ± 31.8	132.5 ± 53.2	<0.001 *
Estimated blood loss, mL	47.1 ± 57.3	214.2 ± 285.7	<0.001 *

ABSTRACTS

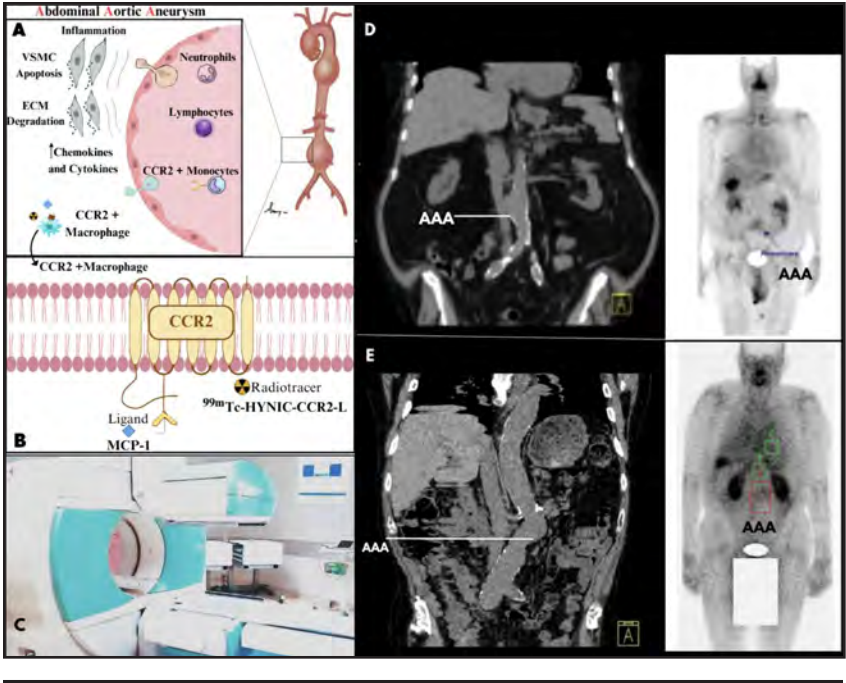
5:04 – 5:12 pm	30 (RF)	Analysis Of Small Abdominal Aortic Aneurysms With The Radiotracer Technetium-99m-6-hydrazinylnicotinoyl -c-c-chemokine Receptor-2 Ligand (99mTc-hynic-ccr2-l) With Single-photon Emission Computed Tomography (SPECT).
		Carlos A Hinojosa ¹ , Javier E. Anaya-Ayala ¹ , Brenda J Galicia-Vega ¹ , Eleazar Ignacio-Alvarez ¹ , Jacqueline Mejia-Cervantes ¹ , Ingrid A. Landero-Aguilar ¹ , Gillermina Ferro-Flores ² , Brenda Gibbens-Bandala ² <i>¹Instituto Nacional de Ciencias Medicas y Nutricion Salvador Zubiran, Mexico; ²Instituto Nacional de Investigaciones Nucleares, Mexico, Mexico</i>

Introduction and Objectives: Monocyte chemoattractant protein-1 (MCP-1/CCL2) plays a key role for infiltration of monocytes/ macrophages; and studies have demonstrated that the MCP-1/C-C Chemokine receptor 2 (CCR2) axis might be involved in the pathogenesis and progression of Abdominal Aortic Aneurysms (AAA) (**Fig. 1A, B**). Molecular imaging has demonstrated potential for human research studies; we evaluated the expression of CCR2 in patients with AAA utilizing single-photon emission computed tomography (SPECT) with the radiotracer technetium-99m- 6-hydrazinylnicotinoyl -C-C-Chemokine receptor-2 ligand (^{99m}Tc-HYNIC-CCR2-L).

Methods: Pilot study to evaluate patients with small, atherosclerotic, asymptomatic AAAs. The equipment utilized was a Siemens (Symbia T2, Germany), with radiolabeled 99mTc-HYNIC-CCR2-L (**Fig. 1C**). The SPECT uptake and activity were assessed based on 'Region of Interest' (ROI), and nonparametric statistics was employed to analyze and compare the aneurysms site, left ventricle (Control 1), and regions with nondiseased aorta (Control 2).

Results: The three patients were males (100%) [mean age 81 years, and mean AAA maximum diameter of 40 millimeters (mm) SD 3 mm]. All were former smokers without known family history of aneurysmal disease in aorta. They tolerated the nuclear studies well, images were obtained at one, two and four hours. The ROI mean value of the aneurysm site was 37783 (SD 11890), compared to left ventricle (Control 1) 16779 (SD 4397) (p value = 0.0001); ROI for the nondiseased aortic region (Control 2) was significantly lower 12520 (SD 2141) (p value =0.0001). (**Fig. 1D, E**)

Conclusions: Significant differences of CCR2 expression were found in the AAA site compared to left ventricle and nondiseased aortic segments. The introduction of well-designed longitudinal studies with nuclear imaging modalities may assist in the molecular characterization of aneurysmal progression and possible rupture prediction.



ABSTRACTS

5:12 – 5:24 pm	31	Endovascular Repair Of Extent-II TAAA Secondary To Loeys Dietz Aortopathy Utilizing Endo-Thermal Septotomy And A 4 Vessel Fevar Device
		Kris M Boelitz ¹ , Thomas D Creeden ² , Andres Schanzer ¹ ¹ University of Massachusetts Chan Medical School, Worcester, MA; ² Mercy Hospital, Springfield, MO

This video demonstrates endovascular treatment of an extent II thoracoabdominal aneurysm secondary to chronic dissection in a patient with Loeys Dietz connective tissue disorder. In order to treat this patient's TAAA with extremely narrow true lumen, an endo-thermal septotomy was performed and then the aneurysm was treated with TEVAR, 4 vessel FEVAR and a standard EVAR sealing in to the bilaterally common iliac arteries.

This video depicts a total endovascular repair of an extent-II TAAA. A 45-year-old man with Loeys-Dietz Syndrome presented with a 7.2 cm extent II TAAA of the visceral segment secondary to chronic aortic dissection, and multiple prior surgeries. He underwent Bentall procedure with simultaneous proximalization of the innominate and left common carotid artery. Twenty years later, he had a redo sternotomy with extension of his ascending repair with classic elephant trunk technique extending to zone 3, and subsequent L CCA to L SCA bypass. Finally, in a third stage, the elephant trunk was further extended to zone 5 via a left thoracotomy approach. He presented with further degeneration. The dissection extended through the visceral segment to the aortic bifurcation with severely narrowed true lumen. He was evaluated and planned for total endovascular repair.

A patient-specific endograft was designed utilizing four fenestrations. The repair also included a TEVAR graft to achieve proximal seal in the prior surgical graft, and a bifurcate graft to achieve distal seal in both common iliac arteries. To create adequate true lumen diameter, thermal septotomy was performed from zone 5 to the aortic bifurcation.

Completion cone-beam CT demonstrated all bridging stent grafts in good position, & no appreciable endoleaks. The patient has continued to do well in outpatient follow-up.

5:24 – 5:36 pm	32	Comparison Of In-person And Virtual Integrated Vascular Surgery Residency Interviews From Applicant Perspective
		Arash Fereydooni, Andrea Fisher, Lucy Yang, Jaosn T Lee, Elizabeth L George, Michael D Sgroi, Venita Chandra <i>Stanford University, Stanford, CA</i>

Introduction and Objectives: The COVID-19 pandemic provoked transition from in-person to virtual format interviews for integrated vascular surgery residency (IVSR). Recently, 12 programs (15.8%) resumed in-person interviews in 2023-2024. We evaluated the applicant perspective on both interview approaches.

Methods: Students who matched to IVSR programs in 2024 completed a voluntary, anonymous survey regarding their interview experience.

Results: 78/100 matched students completed the survey (53.85% male and 35.9% Caucasian). The median number of interviews was 29, 61% of participants did >1 interview/day, 92.21% attended at least one in-person interview (median: 3, IQR: 1-5) and 100% experienced a virtual interview (median: 22, IQR: 15-26). 71.43% thought programs with virtual interviews should offer optional second-look visits after program rank lists finalization. Of those who attended a second-look visit (41.56%), 65.62% moved the visited program(s) up on their rank list.

The majority (57.14%) preferred virtual interviews, followed by 22.08% in-person and 20.78% hybrid interview. Most (89.33%) agreed that they would feel pressured to interview in-person if both options were offered. In-person interviews were helpful for developing an overall impression of a program, connecting with faculty and residents, and assessing culture, facilities, and quality of life in an area. Virtual interviews were easier to plan and conflicted less with applicants' personal wellness. Both interview types were equal in assessing a program's clinical volume and conveying one's strength (Table).

Conclusion: Despite reporting more comprehensive assessment with in-person interviews, applicants overwhelmingly prefer virtual interviews, primarily for planning and personal well-being purposes. Additionally, second-looks after virtual interviews can boost a program's standing in an applicant's rank list. Finding solutions to assist with scheduling and offsetting the cost would result in an improved application process.

ABSTRACTS

Table 1: Comparison of interview formats.

The superior interview format in applicant's opinion for each of the following aspects.	Virtual	Both are equal	In-person
To develop an overall impression	1.4% (1)	21.1% (15)	77.5% (55)
To meet/connect with faculty in a program	4.2% (3)	29.6% (21)	66.2% (47)
To meet residents and ask questions	11.3% (8)	23.9% (17)	64.8% (46)
To assess the culture/collegiality of a program	2.8% (2)	18.3% (13)	78.9% (56)
To assess the clinical volume of a program	5.6% (4)	74.7% (53)	19.7% (14)
To assess the facilities/resources of a program	1.4% (1)	14.1% (10)	84.5% (60)
To convey my strengths/appeal to the program	5.6% (4)	52.1% (37)	42.3% (30)
To assess the quality of life in the area	1.4% (1)	8.5% (6)	90.1% (64)
To easily plan/schedule the interview	92.9% (66)	2.8% (2)	4.2% (3)
To manage my personal wellness and stress	73.2% (52)	19.7% (14)	7% (5)

5:36 – 5:48 pm	33	Arm Vein Is Superior To Polytetrafluoroethylene In Infrainguinal Bypass To The Tibial Vessels
		Hassan Chamseddine ¹ , Alexander Shepard ¹ , Mohamad Chahrour ² Timothy Nypaver ¹ , Mitchell Weaver ¹ , Yasaman Kavousi ¹ , Kevin Onofrey ¹ , Tamer Boules ¹ , Jamal J. Hoballah ³ , Loay Kabbani ¹ <i>¹Henry Ford Hospital, Detroit, MI; ²Iowa Hospitals and Clinics, Iowa, IA; ³American University of Beirut Medical Center, Beirut, Lebanon</i>

ABSTRACTS

Introduction and Objectives: When single-segment great saphenous vein (ssGSV) is unavailable, commonly used conduits include alternative source autologous veins and polytetrafluoroethylene (PTFE). This study aims to compare the outcomes of arm veins and PTFE in infrainguinal bypass (IIB).

Methods: Patients undergoing an IIB from a femoral origin between 2003-2023 were identified in the VQI. Patients who received an arm vein were 1:3:3 propensity-matched with those who received ssGSV and PTFE respectively. Cox-regression was used to evaluate the long-term outcomes of patency, amputation, reoperation, and major adverse limb events (MALE).

Results: 894 patients undergoing IIB using an arm vein (73% single segment, 27% spliced) were matched to 2,682 patients receiving ssGSV and 2,682 patients receiving PTFE. The three groups were similar in all baseline characteristics. When the popliteal artery is the distal outflow site, arm veins and PTFE exhibited similar primary patency (67% vs 73%, p=0.074), primary-assisted patency (83% vs 78%, p=0.270), and secondary patency (86% vs 87%, p=0.605) at 1-year. When a tibial artery is the distal outflow site, arm veins had similar primary patency (63% vs 65%, p=0.460), but higher primary-assisted patency (80% vs 70%, p<0.001) and secondary patency (83% vs 77%, p=0.009) compared to PTFE at 1-year. Using an arm vein for a femoral-to-tibial bypass was associated with a 61% decrease in the risk of amputation (HR 0.39 [0.27-0.56], p<0.001), 53% decrease in thrombectomy/lysis to re-establish patency (HR 0.47 [0.30-0.74], p=0.001), and 30% decrease in the loss of secondary patency (HR 0.70 [0.54-0.92], p=0.009) compared to using PTFE. No difference was observed between single-segment and spliced arm vein.

Conclusions: Arm vein for femoral-to-tibial bypass is associated with higher long-term patency and lower amputation rates compared to PTFE. In the absence of a suitable ssGSV, using an arm vein should be considered before resorting to a PTFE graft.

5:48 – 6:00 pm	34	Recanalization In Large Diameter Saphenous Veins After Thermal Ablation: A Restrospective Review Of Vascular Quality Initiative Data
		Vivek Anand Pisharody, Jonathan Gunasti, Ines Garcia, Ravi R Rajani, Christopher R Ramos, Manuel Garcia-Toca, Jaime Benarroch-Gampel <i>Emory University, Atlanta, GA</i>

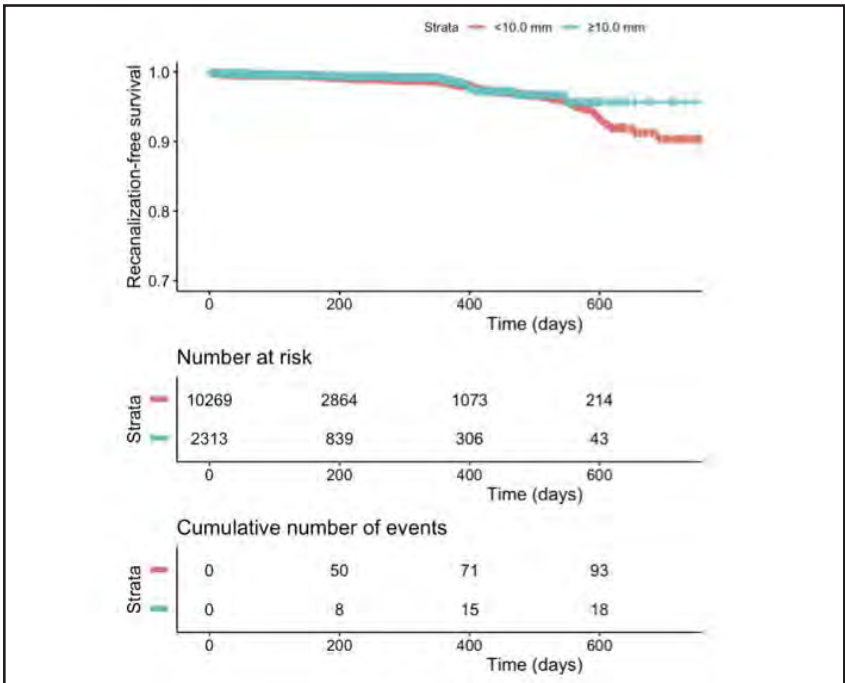
Introduction and Objectives: Endovenous ablation has become the treatment of choice for saphenous venous insufficiency in recent years. There is debate whether veins with large diameters are more likely to recanalize. In this study, we explore the relationship between vein diameter and recanalization rates using a nationwide database.

Methods: Patients undergoing thermal ablation of the great or small saphenous veins between 2015-2018 were identified from the Vascular Quality Initiative varicose vein module. Demographics, vein diameter, procedure characteristics, and post-operative course were queried from the database. Patients were divided into large ($\geq 10\text{mm}$) and small diameter vein cohorts. Multivariate logistic regression and Cox proportional hazards models were used to compare outcomes. Sensitivity analysis was performed to compare outcomes using diameter cutoffs from 7-9mm.

Results: 13,263 patients were identified, including 2,504 patients with large veins (mean diameter 13.0mm vs 6.8mm). 16,937 procedures were performed, of which 14,930 (88.2%) included great saphenous ablations. Patients with large veins were more likely to develop hematomas (0.7%vs0.4%, $p=0.0195$) or superficial phlebitis (1.5%vs0.8%, $p<0.001$). There were no significant differences in rates of other post-operative complications. Post-intervention symptom improvement was significantly greater in patients with large veins (-7.47vs-7.01 on standardized Heaviness-Achiness-Swelling-Throbbing-Itching scale, $p=0.001$). There was no difference in overall recanalization rate (0.6%vs0.7%, $p=0.412$). In multivariate regression, large diameter was not associated with worse recanalization rates (adjusted model OR=0.718, 95% CI 0.412-1.174, $p=0.21$). With Cox proportional hazards modeling, large veins were not associated with worse recanalization-free survival (OR 0.74, $p=0.24$). Sensitivity analysis produced unchanged results.

Conclusions: Large vein diameter was not associated with worse recanalization after thermal ablation. Thermal ablation procedures should be considered as a first line treatment to manage large veins.

Figure 1. Large vein diameter was not associated with worse recanalization-free survival after thermal ablation ($p=0.24$ on Cox proportional hazards modeling).



6:00 pm **VESS MEMBER BUSINESS MEETING**

6:15 pm **Free Evening**

FULL PROGRAM & ABSTRACTS

SATURDAY, FEBRUARY 8, 2025

6:15 – 7:45 am **Continental Breakfast in the Exhibit Hall**

6:15 – 9:30 am **Registration**

7:00 – 9:00 am **SCIENTIFIC SESSION IV**
Moderators: Daniel Han, MD &
Natalie Sridharan, MD

7:30 – 7:42 am	35	Expanding Access To Vascular Imaging: Preliminary Results From The Development Of A Remote Surveillance Device
		Sean A Perez ¹ , Muyang Lin ¹ , Sai Zhou ¹ , Destiny Frederic ² , Erik Kistler ¹ , Andrew Barleben ¹ , Mahmoud Malas ¹ , Sheng Xu ² , Elsie Ross ¹ ¹ University of California San Diego Health, La Jolla, CA; ² University of California San Diego School of Medicine, La Jolla, CA

Introduction and Objectives: Patients undergoing surgical procedures for peripheral artery disease (PAD) and carotid artery stenosis (CAS) are recommended to undergo surveillance imaging at regular intervals. With > 250,000 patients undergoing interventions for both annually, the number of patients requiring interval surveillance increases in parallel, placing strain on an already overburdened health system. This project aims to develop a wearable, patient-friendly, ultrasound patch to eventually facilitate remote monitoring of patients who undergo vascular procedures.

Methods: The prototype wearable ultrasound device was developed by a team of nanoengineers and utilizes an autonomous algorithm to track the motion of a moving vessel and identify the center of the vessel. The device was tested on 31 healthy volunteers. The results of imaging and spectral flow from the device were compared to standard of care (SOC) ultrasounds of the CFA, SFA, ICA and CCA.

Results: The demographics of participants are in Table 1. The mean absolute difference (MAD) between the prototype and SOC for peak systolic velocity (PSV) of the CFA, SFA, CCA, and ICA were 3.06 cm/s, 2.27 cm/s, 3.51 cm/s, and 3.55 cm/s, respectively (Figure 1). Overall, measurements recorded by the prototype did not significantly differ from the SOC.

Conclusions: It is feasible to make a small, wearable ultrasound device that can collect accurate waveform data from healthy volunteers. Such a device has the potential to expand access to vascular imaging to low resource regions and improve the surveillance of patients after vascular surgery procedures.

Figure 1. Bland-Altman plot of arterial flow velocity measurements. Y-axis represents difference of measurements from peak systolic velocities obtained from standard of care vascular ultrasound machine (x-axis).

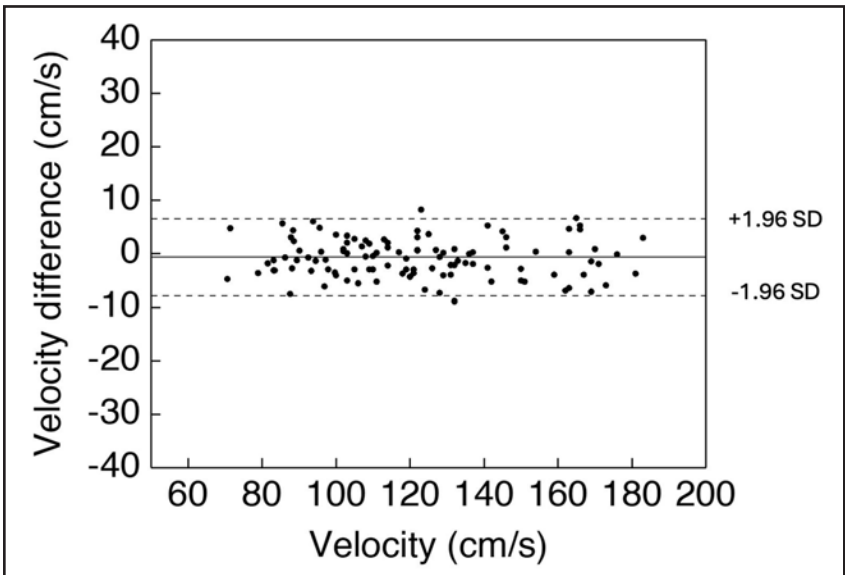


Table 1. Participant Demographics

	N = 31 (%)
Age (Years), Median (Range)	28 (23-40)
Gender	
Female	13 (41.9%)
BMI (± SD)	23.4 ± 2.6
Ethnicity	
White	8 (25.8%)
Black	5 (16.1%)
Middle Eastern	3 (9.7%)
Asian	8 (25.8%)
Latinx	2 (6.5%)
Afro-Latinx	2 (6.5%)
Indian	1 (3.2%)
Black/Caucasian	2 (6.5%)

7:42 – 7:54 am	36	Salvage Of Failing Abdominal Aortic Aneurysm Repairs With Fenestrated Endovascular Aortic Repair
		Rohan Basu, Joshua Davis, Mackenzie Madison, Hanaa Dakour-Aridi, Ashley Gutwein, John Maijub, Andres Fajardo <i>Indiana University, Indianapolis, IN</i>

Introduction and Objectives: Treating failing abdominal aortic aneurysm (AAA) repairs is complex. Fenestrated endovascular aortic repair (FEVAR) can salvage such repairs. We describe our experience with the Zenith fenestrated (ZFEN, Cook Medical, Bloomington, IN) platform to salvage failing AAA repairs.

Method: We retrospectively reviewed a prospectively maintained institutional database from January 2012 until August 2019 to compare primary FEVAR repairs against reoperative FEVAR (RFEVAR) repairs done for salvage of prior open or endovascular aneurysm repairs. 20 RFEVAR repairs and 133 primary repairs were performed during this period. Statistical analyses were performed using Stata18 (StataCorp LLC, College Station, TX).

Results: RFEVAR repairs were associated with greater operative time (217.6 vs. 265.6 minutes, $p=0.018$), fluoroscopy time (57.4 vs. 71.2 minutes, $p=0.036$), radiation dose (377.6 vs. 502.1 rads, $p=0.048$), and number of visceral arteries stented (2.2 vs. 2.6, $p=0.021$) (Table 1). Survival and reintervention-free survival was not different between groups (Figure 1, Figure 2).

Conclusions: We present the first 5-year follow up data demonstrating RFEVAR using ZFEN is effective to salvage failing AAA repairs, with outcomes comparable to primary repair of AAA using FEVAR. Longer operative and fluoroscopy times and higher radiation doses are likely due to increased case complexity, represented by a higher number of visceral arteries requiring stenting. RFEVAR is attractive over traditional open approaches in these cases as it avoids significant morbidity with acceptable outcomes.

ABSTRACTS

Table 1. Perioperative and Postoperative Outcomes.

	Primary FEVAR (133)	RFEVAR (20)	P-Value
Perioperative Characteristics and Outcomes			
Upper Extremity Access	7 (5.3)	3 (15.0)	0.126
Open Femoral Access	61 (45.9)	13 (65.0)	0.110
Technical Success	130 (97.7)	19 (95.0)	0.432
Completion Endoleak	43 (32.3)	5 (26.3)	0.793
Preoperative Lumbar Drain	3 (2.3)	2 (10.0)	0.128
Estimated Blood Loss (mL)	368.0 (+/-442.8)	480 (+/-351.8)	0.282
Operative Time (Minutes)	217.6 (+/-83.2)	265.6 (+/-84.3)	0.018
Fluoroscopy Time (Minutes)	57.4 (+/-27.5)	71.2 (+/-24.9)	0.036
Radiation (rads)	377.6 (+/-247.1)	502.1 (+/-296.9)	0.048
Contrast Volume (mL)	89.8 (+/-36.5)	98.8 (+/-34.4)	0.305
Visceral Arteries Stented	2.2 (+/-0.6)	2.6 (+/-1.1)	0.021
Perioperative Mortality	3 (2.3)	2 (10.0)	0.128
Perioperative Reintervention	10 (7.5)	0	0.361
Perioperative Visceral Thrombosis	3 (2.3)	0	1.000
Perioperative Limb Occlusion	2 (1.5)	0	1.000
Perioperative Wound Complication	3 (2.3)	1 (5.0)	0.432
Perioperative Bowel Ischemia	4 (3.0)	0	1.000
Perioperative Myocardial Infarction	5 (3.8)	0	1.000
Perioperative Spinal Cord Ischemia	1 (.8)	0	1.000
Perioperative Acute Kidney Injury	29 (21.8)	4 (20.0)	1.000
Perioperative Renal Failure	4 (3.0)	0	1.000
Perioperative Respiratory Failure	8 (6.0)	0	0.598
Perioperative Stroke	2 (1.5)	0	1.000
Postoperative Transfusion	19 (14.3)	4 (20.0)	0.506
Length of Stay (Days)	3.7 (+/-4.8)	2.4 (+/-1.6)	0.223
Abbreviations: mL= milliliters, CT= computerized tomography			

	Primary FEVAR (133)	RFEVAR (20)	P-Value
5-Year Postoperative Outcomes			
Mortality	52 (39.1)	6 (30.0)	0.434
Rupture	3 (2.3)	0	1.000
New Hemodialysis	9 (6.8)	1 (5.0)	1.000
Visceral Thrombosis	13 (9.8)	2 (10.0)	1.000
Visceral Stenosis/Thrombosis Requiring Reintervention	10 (7.5)	1 (5.0)	1.000
Target Vessel Primary Patency	94.7% (+/-17.3%)	97.4% (+/-7.9%)	0.516
Limb Occlusion	4 (3.0)	0	1.000
Bowel Ischemia	3 (2.3)	0	1.000
Endoleak at Last CT Scan	13 (9.8)	3 (15.0)	0.442
Need for Reintervention	38 (28.6)	4 (20.0)	0.593
Abbreviations: mL= milliliters, CT= computerized tomography			

Figure 1. 60-Month Kaplan-Meier Overall Survival Analysis.

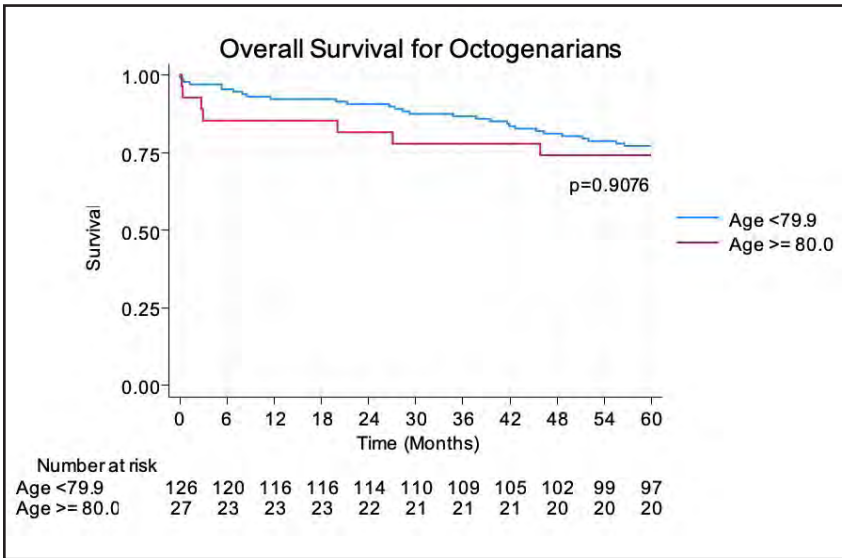
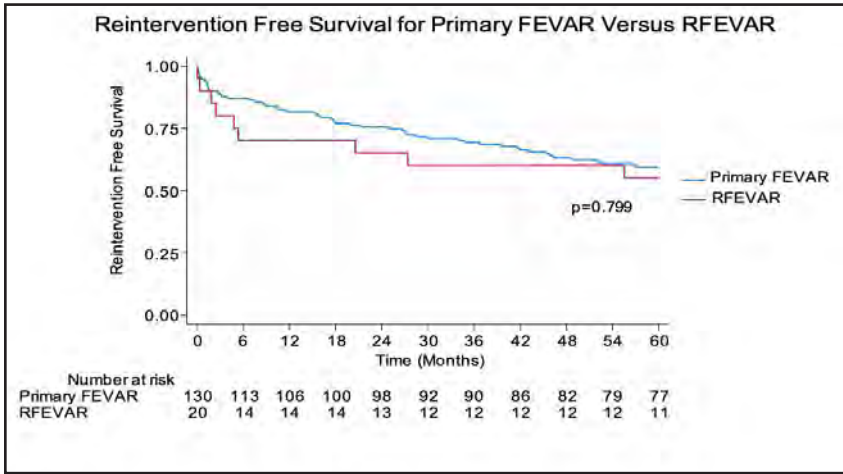


Figure 2. 60-Month Kaplan-Meier Reintervention-Free Survival Analysis.



7:54 – 8:06 am	37	Transradial Approach In Malfunctioning Arteriovenous Access
		Agastya Vaidya ¹ , Rahman Sayed ¹ , Rithva Ramesh ¹ , Ashley Choi ¹ , Neil Patel ¹ , Jeffrey Indes ² , Evan Lipsitz ¹ , Paul Lajos ¹ ¹ Albert Einstein College of Medicine, Bronx, NY; ² Lahey Hospital & Medical Center, Burlington, MA

Introduction and Objectives: Traditional endovascular interventions for arteriovenous (AV) access procedures typically are performed with direct fistula or graft puncture. The transradial approach (TRA) offers both arterial and venous limb visualizations and therapeutic interventions through a single access point. Our objective was to assess clinical success, functional patency, flow rates, and complications in patients undergoing TRA fistulograms.

Methods: A retrospective analysis was conducted on patients who underwent TRA fistulograms between 2017 and 2023. Patient demographics, stenotic lesion type, and 3-month postoperative complications were analyzed. Patency and clinical success were assessed by measuring flow rates before the operation and at 1-month, 3-month, and 6-month intervals afterward. Paired t-tests were performed to compare flow rates prior to and after intervention.

Results: A total of 255 patients (mean age 61.9 years, 58% male) underwent TRA fistulograms. The predominant lesion types were venous outflow (71%), juxta-anastomotic (8.6%), and mixed between the two (12.2%). The mean preoperative flow rate was 456.5 cc/min, increasing to 751, 878, and 741 after one, three, and six-months, respectively. Flow rates were significantly higher in at the one and three and 6-month intervals ($p < 0.05$). Technical success was observed in 94.9% of cases and complications included ruptures in 1.6% of cases, access site complications in 3.9% of cases, and AV fistula thrombosis in 6.7% of cases.

Conclusions: The TRA for fistulograms offers functional patency rates that show significant improvement in those with malfunctioning AV access while offering minimal complications. This method offers a convenient alternative to traditional access, specifically for venous and juxta-anastomotic lesions through a single puncture.

ABSTRACTS

Table 1. Mean Flow Rates with Associated Paired T-Test Compared to Flow Before Fistulogram.

Time Point Assessed	Mean	One-sided p	Two-sided p
Flow Before Fistulogram	457	-	
Most Recent Flow Post-Op (cc/min)	738	< 0.001	< 0.001
Patency at 1 month (cc/min)	751	< 0.001	< 0.001
Patency at 3 months (cc/min)	879	.035	.07
Patency at 6 months (cc/min)	742		

8:06 – 8:18 am	38	Outcomes Of Zone 0 Tevar And Hybrid Arch Repair Compared To Open Aortic Arch Replacement
		John J Kanitra ¹ , John B Eisenga ¹ , Kyle A. McCullough ² , William P Shutze ³ , Mazin I Foteh ³ , William T. Brinkman ³ ¹ Baylor University Medical Center, Dallas, TX; ² Baylor Scott and White Research Institute, Plano, TX; ³ Baylor Scott & White The Heart Hospital - Plano, Plano, TX

Introduction and Objectives: Zone-0 Thoracic endovascular aortic repair (TEVAR)/Hybrid arch repair has been shown to be an alternative to open aortic arch replacement in prohibitive risk patients. Despite proven feasibility, there is little information regarding outcomes of Zone-0 TEVAR/hybrid compared to open arch replacement.

Methods: All patients who underwent Zone-0 TEVAR/hybrid arch repair, or open aortic arch replacement from 2013-2023 were retrospectively identified an included in analysis. The primary outcome was 30-day survival. Secondary outcomes included periprocedural complications, length of stay (LOS) and 1-year survival.

Results: 39 patients underwent zone 0 TEVAR/hybrid arch repair and 276 patients underwent open aortic arch replacement. The median age and sex distribution was similar between the cohorts. 24 patients underwent hybrid arch repair: 8 type-1, 3 type-2, and 13 type-3. The median LOS for TEVAR, Hybrid and Open was 9.8 + 8, 10.6 + 8.7 and 18 + 8.3 days (p = 0.44). Periprocedural stroke rates were significantly lower in open repair at 4.7% compared to TEVAR and Hybrid repair at 26.7% and 17% (p <0.001). The incidence of postoperative dialysis was 0%, 4.2% and 7.2% in the TEVAR, hybrid and open group (p = 0.23). Mortality at 30-days was: 13.3% (2/15) TEVAR, 4.2% (1/24) hybrid, and 13.1% (35/263) open; p=0.4. Mortality at 1-year was TEVAR, hybrid and open groups were: 20% (3/15), 12.5% (3/24) and 18% (17/263); p = 0.0742.

Conclusions: Compared to open arch replacement, TEVAR and hybrid repair offer similar LOS and survival rates. Zone 0 TEVAR is a viable alternative for patients who are not candidates for open repair, though it is associated with a higher stroke rate. Open aortic arch repair remains the gold standard. Further research is needed to identify strategies to reduce the stroke rate associated with Zone 0 TEVAR.

ABSTRACTS

8:18 – 8:26 am	39 (RF)	Transaxillary First Rib Resection In Adolescent Patients With Thoracic Outlet Syndrome
		<p>Jyi Cheng Ng¹, Li Ting Tan², Courtenay Holscher³, Caitlin W Hicks³, Ying Wei Lum⁴ <i>¹Mayo Clinic, Rochester, MN; ²Johns Hopkins University School of Medicine, Baltimore, MD; ³Johns Hopkins University School of Medicine, Baltimore, MD; ⁴Johns Hopkins University School of Medicine, Baltimore, MD</i></p>

Introduction and Objectives: Thoracic Outlet Syndrome (TOS), although rarer in adolescents, can significantly impact quality of life. While surgical management in the adult population is well reported, data on transaxillary first rib resection (TFRR) in the adolescent population is scarce. We aimed to assess the outcomes of TFRR in adolescent patients with TOS.

Methods: We performed a retrospective review of all patients aged 18 or younger who underwent TFRR for TOS at a single institution between 2012 to 2023. We described treatment approach and long-term outcomes after TFRR.

Results: TFRR was performed in 88 patients (median age 17 years [range 12-18 years], 66.7% female, 85.3% White), including 42 neurogenic (nTOS), 51 venous (vTOS), 3 arterial (aTOS), and 6 mixed TOS. The median symptom duration was 770 days for nTOS and 52 days for vTOS. All but two nTOS patients were managed with physical therapy and scalene injections before TFRR; two patients who had upfront surgery had cervical ribs and longstanding symptoms. After a median follow-up of 12 months, 97.8% of nTOS patients reported symptomatic improvement post-TFRR. Among patients with vTOS, 88.2% had effort thrombosis, with 8 patients diagnosed with hypercoagulable disorders. All patients with vTOS had a venogram 2-4 weeks following surgery, where 21.4% had widely patent veins, 64.3% had axillo-subclavian vein stenoses and underwent successful balloon angioplasty, while 14.3% had completely occluded axillo-subclavian veins. After a median follow-up of 13 months, 87.3% of patients with vTOS had patent axillo-subclavian veins on duplex ultrasound with 98.2% reporting symptomatic improvement. Of the 5 patients with aTOS, four had cervical ribs. All patients with aTOS reported symptomatic improvement after TFRR.

Conclusions: In this case series, we demonstrated that TFRR confers a benefit to patients with TOS in the adolescent age group, regardless of TOS type, with symptomatic improvement in up to 97.8-100%.

8:26 – 8:34 am	40 (RF)	Routine Postoperative Serum Laboratory Tests After Endovascular Aneurysm Repair
		Baqir J Kedwai, Ferda Tan, Irina Kanzafarova, Karina Newhall, Doran Mix, Michael Stoner, Grayson Pitcher <i>University of Rochester Medical Center, Rochester, NY</i>

Introduction and Objectives: This study aimed to evaluate the impact of protocolized postoperative Day 1 (POD1) laboratory tests after elective endovascular aneurysm repair (EVAR) on short-term clinical outcomes.

Methods: A retrospective review was conducted of all patients undergoing elective EVARs from 2015 to 2023 at a single institution. Clinical data were collected from a prospectively maintained database and patients’ electronic records. POD1 lab values of interest were hemoglobin, white blood cell count, platelets, potassium, creatinine, and glucose. The primary outcome was 30 day-readmission in patients with and without POD1 labs.

Results: 432 patients underwent elective EVAR, of which 311 (72%) underwent routine POD1 lab testing. 12% of patients with POD1 labs were readmitted within 30 days, compared to 1% of patients without labs (RR = 15, 95% CI: 3 - 261, p < 0.01). In patients with eGFR < 90, 30-day readmission was only observed in the cohort with POD1 labs (13% versus 0%, RR = NA). Overall, POD1 testing resulted in 1760 postoperative lab values, of which 256 (15%) were abnormal, and 19 (1%) were actively intervened upon. The most frequent interventions were transfusion for low hemoglobin (26%) and initiation of an insulin sliding scale for hyperglycemia (21%). Based on the Medicare Clinical Laboratory Fee Schedule, the cumulative cost of POD1 tests was \$6062.

Conclusions: Protocolized POD1 labs are a common practice after EVAR. However, the data obtained from these routine tests rarely influences perioperative clinical decision-making and is not associated with a reduction in 30-day readmission rates. Judicious use of postoperative serum laboratory testing may achieve more efficient and cost-effective care.

Table 1. Frequency of common postoperative day 1 lab test abnormalities and corresponding interventions.

Lab Abnormality	Number of Abnormal Results (%)	Number of Interventions (%)	Common Interventions
Anemia	12 (4.3)	6 (2.1)	Transfusion of packed red blood cells
Hyperglycemia	28 (9.0)	5 (1.6)	Initiation of insulin sliding scale
Acute Kidney Injury	11 (3.5)	4 (1.3)	Intravenous fluid bolus
Hyperkalemia	7 (2.3)	1 (0.3)	Intravenous dextrose and insulin, EKG
Thrombocytopenia	97 (35.9)	1 (0.4)	Initiation of fondaparinux

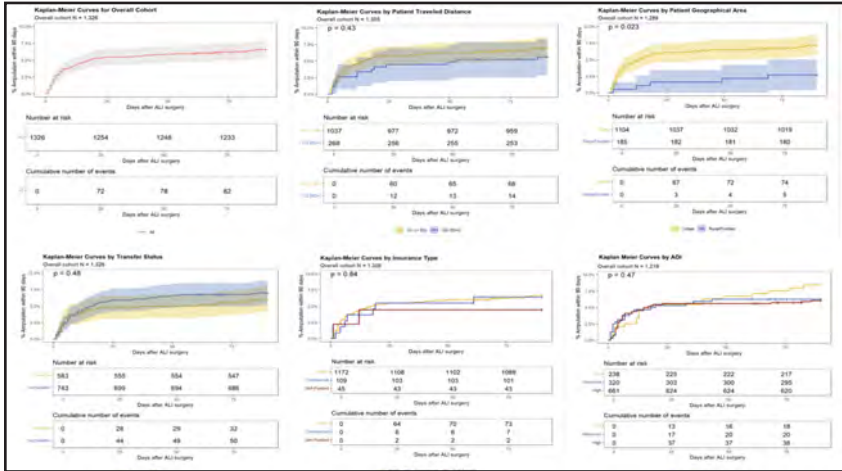
8:34 – 8:42 am	41 (RF)	Access To Care And The Impact On Outcomes In Acute Limb Ischemia Patients
		Micaella R Zubkov, Zhixin Lun, Donald L Jacobs, Mark Nehler, Jeniann Yi <i>University of Colorado, Denver, CO</i>

Introduction and Objectives: Acute limb ischemia (ALI) is a time-sensitive vascular emergency requiring immediate access to care. We examined the impact of patient demographics and care accessibility on ALI outcomes in a state with vast rural areas and natural barriers to travel.

Methods: A statewide All Payer Claims Database was queried for ALI patients requiring intervention (2012-2019). Distance traveled (G1<50 miles, G2≥50 miles), Area Deprivation Index (ADI), rural/urban designation, insurance, transfer status and other patient characteristics were analyzed in association with all-cause and vascular-associated readmission, vascular-related reoperation and amputation over 1-year. 50 miles approximated distance between rural and urban areas with healthcare accessibility.

Results: 1,326 patients traveled 0-1230 miles (median=12 [7,35]) to their ALI surgery. 14% were rural patients, 90.7% had public insurance, and 44% required transfer. Amputation occurred in 4.4% on initial admission, 5.4% at 30-days, and 8.4% at 1-year. All-cause readmission within 30-days was 27%; vascular readmission was 14% at 30-days and 25% at 1-year. 31% required multiple operations; vascular reoperation was seen in 2.5% of patients at 30-days and 9.1% of patients at 1-year. G2 was more likely to live in rural areas with high ADI, have public insurance, and more likely to require transfer; transfer status was associated with higher 30-day and 1-year vascular readmission. Urban patients had higher rates of amputation overall, and emergent status was associated with amputation at initial admission. Distance traveled and ADI were not associated with amputation, reoperation, or readmission outcomes.

Conclusions: There was no difference in amputation or reoperation based on distance traveled, insurance, ADI, or transfer status in this analysis. Further research is needed to identify modifiable factors reflecting access to care in ALI patients.



8:15 – 9:00 am

AWARD SESSION

Moderators: Sam Tyagi, MD &
Misty Humphries, MD

UPDATE FROM 2024 AWARD WINNERS

VESS Travel Award:

Nathan Liang, MD

VESS Medtronic Resident Research Award:

Sabina Sorondo, MD

VESS BSCI Early Career Investigator Award:

Joceyln Beach, MD

2025 AWARD WINNERS ANNOUNCEMENT

VESS Travel Award

VESS Resident Research Award

VESS Early Career Faculty Award

9:00 – 9:15 am

Introduction of the President

Ravi Rajani, MD

9:15 – 10:00 am

PRESIDENTIAL ADDRESS

Misty Humphries, MD

10:30 – 12:30 pm

**SPECIAL SESSION:
Vascular Trauma**

Moderator: Mel Sharafuddin, MD

ABSTRACTS

SS1	<p>Covered Endovascular Repair of The Aortic Bifurcation In The Setting Of Blunt Abdominal Injury Resulting In Polytrauma</p>
	<p>Micaela Cuneo¹, Christian Goei¹, Kevin Kniery², Marlin W Causey² ¹Brooke Army Medical Center, Ft Sam Houston, TX; ²Brooke Army Medical Center, Ft Sam Houston, TX</p>
SS2	<p>Is Anticoagulation for Thoracic Endovascular Repair Safe In Patients With Concomitant Traumatic Brain Injury And Blunt Thoracic Aortic Injury?</p>
	<p>Victor Andujo¹, Benjamin Chou², Eni Nako¹, Samantha Durbin¹, Scott Mcloud¹, Phillip Jenkins¹, Siran Abtin¹, Cherrie Abraham¹, Gregory Moneta¹, Julie Doberne¹, Martin Schreiber¹ ¹Oregon Health & Science University, Portland, OR; ²University of Oklahoma, Oklahoma City, OK</p>

1:00 – 3:00 pm **CASE REPORTS & WORST CASE SESSION**
 Moderator: Nathan Aranson, MD & Lindsey Korepta, MD

1:00 – 3:00pm	CR7	Replaced Right Hepatic Artery Pseudoaneurysm Presenting With Gastrointestinal Bleed: Management Strategies
		Chason Farnell, Benjamin Chou, Joshua Gierman, Benjamin Greif, Michael Li <i>University of Oklahoma, Oklahoma City, OK</i>

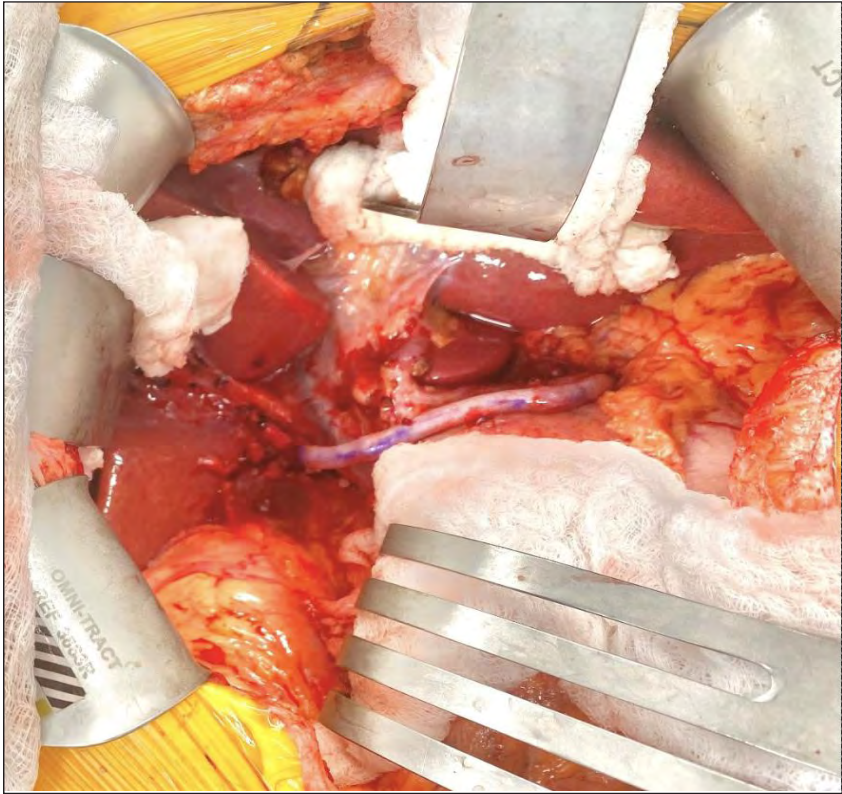
Introduction and Objectives: Symptomatic visceral artery aneurysms (VAA) and pseudoaneurysms (PSA) are rare entities but carry high morbidity and mortality rate. Endovascular interventions including embolization and stent grafting are becoming the preferred management strategy for most symptomatic VAA and PSA. However, hepatic artery aneurysm and PSA presents a unique challenge due to the need to preserve end-organ perfusion and avoid ischemic hepatic necrosis. Gastrointestinal bleed in these patients can indicate hemobilia, duodenal erosion, or more rarely, hemosuccus pancreaticus, which is rupture of the PSA into the pancreatic duct.

Methods: A 39-year-old male patient presented with replaced right hepatic artery (RRHA) pseudoaneurysm measuring 3.5cm on CT imaging associated with epigastric pain, hematochezia and syncope. The RRHA measured 3-4mm in diameter and originated from the superior mesenteric artery (SMA). Given his hematochezia and the location of the PSA, we were concerned for acute GI hemorrhage. We elected to proceed with an urgent open surgical repair secondary to small vessel diameter, need for end-organ perfusion, and his young age. He underwent a splenic artery to RRHA bypass with great saphenous vein, cholecystectomy, and ligation of the RRHA at its origin.

Results: Postoperatively, he had immediate resolution of his epigastric pain. He developed postoperative ileus, which resolved with decompression. Repeat CTA abdomen showed a thrombosed PSA and patent bypass graft. Esophagogastroduodenoscopy prior to discharge revealed 5mm healing gastric body ulcer.

CASE REPORTS

Conclusions: Endovascular management strategies of VAA and PSA, while effective for many, can place the liver at risk for ischemia leading to hepatic abscess. In patients with concomitant symptoms of gastrointestinal bleeding, expeditious management is prudent and open surgical repair should be preferred in patients who are operative candidates.



1:00 – 3:00pm	CR8	Intussusception Of An Ileo-mesenteric Bypass Graft Causing An Enteric Fistula
		Nicolas A Stafforini ¹ , Janice Nam ¹ , Blake Murphy ¹ , Rebecca Sorber ¹ , John Scott ² , Erika Bisgaard ² , Niten Singh ¹ <i>¹University of Washington, Seattle, WA; ²University of Washington, Seattle, WA</i>

Introduction and Objectives: Enteric fistula following an ilio-mesenteric bypass is a rare complication with significant morbidity and mortality. We present the successful management of an occluded and intussuscepted ileo-superior mesenteric artery (SMA) bypass, causing an enteric fistula.

Methods: A 57-year-old male with history of a thrombosed SMA aneurysm requiring a right common iliac artery (CIA)-SMA bypass with PTFE (2021) presented with a 3-day history of abdominal pain. The patient was hemodynamically stable without peritoneal signs. A CT angiogram (CTA) revealed an occluded bypass and likely a graft-enteric fistula, with a patent distal SMA (Figure 1).

Results: An exploratory laparotomy revealed the bypass graft intussuscepted into the duodenum and avulsed from the SMA anastomosis. (Figure 2) After controlling the proximal aorta and bilateral iliac arteries, the graft was excised from the right CIA. The CIA was divided, the proximal end was oversewn, and the distal CIA was transposed onto the left CIA. (Figure 3) The SMA anastomosis had good back bleeding and was oversewn. General surgery performed a bowel resection and a side-to-side duodenojejunostomy. The patient was discharged on postoperative day nine on oral antibiotics. 1-month follow-up CTA showed a patent transposition, with the patient returning to baseline.

Conclusions: This case represents a unique presentation of enteric fistulization of an ileo-SMA bypass successfully managed with autogenous reconstruction, avoiding the need for a new prosthetic graft.

CASE REPORTS

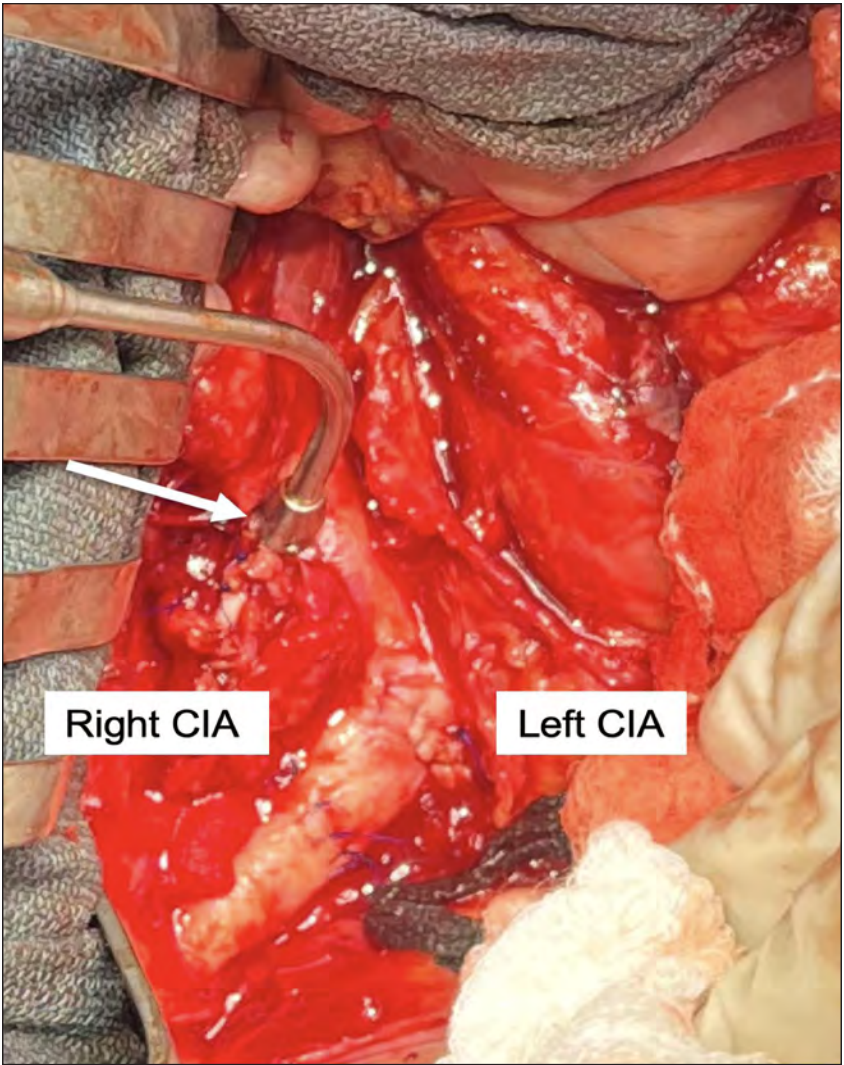
Figure 1. Admission computed tomography (CTA) abdomen and pelvis demonstrating the intussuscepted ilio-mesenteric bypass into the Duodenum (arrow).



Figure 2. Intraoperative image of intussuscepted ileo-mesenteric bypass graft into the Duodenum.



Figure 3. Intraoperative image of transposed right common iliac artery onto the left common iliac artery. Oversewn proximal right common iliac artery (arrow).



1:00 – 3:00pm	CR9	Giant Splenic Aneurysm Repair With A Staged Hybrid Approach
		Blaz Podgorsek, Kourosh Keyhani, Akiko Tanaka, Keisin Wang, Arash Keyhani <i>UTHealth Houston, Houston, TX</i>

Background: Recent advancements in vascular surgery have established standardized protocols and treatment modalities for splenic aneurysms. However, due to the rarity of certain variations of this pathology, a tailored, individualized approach remains imperative to ensure optimal patient outcomes. We describe a hybrid staged approach to a life threatening giant splenic aneurysm.

Method: We present a single case report of staged splenic artery embolization and open aneurysm repair in a 54-year-old patient with a giant splenic artery aneurysm. The patient was transferred to our hospital with worsening abdominal pain that began one month ago, following a motor vehicle collision four months earlier. Initial diagnostic evaluation with CT and MRCP revealed a large mixed density aneurysm originating from the proximal splenic artery measuring 16.4 x 15.3 x 17.69 cm with surrounding inflammation, concerning for impending rupture. We staged our approach and first performed a visceral angiogram and splenic artery coil embolization as well as vascular plug placement. Two days later we performed exploratory laparotomy and supraceliac cross clamp placement to ensure safe aneurysm resection in case of massive bleeding. We then proceeded with splenectomy and entered the aneurysm evacuating thrombus. Orifice of the splenic artery was oversewn and aneurysmorrhaphy performed. An omental flap and two drains were placed in the surgical area. The abdomen was closed in a standard fashion.

Results: Patient was extubated in the operating room and brought to the ICU. Postoperative course was complicated by urinary tract infection, but was otherwise uneventful. Patient was doing well during a recent clinic visit.

Conclusions: Staged hybrid giant splenic aneurysm repair can be performed safely to prevent possible catastrophic bleeding. Detailed preoperative imaging and a coordinated multi-disciplinary, team approach is critical to achieving optimal outcomes. Follow up studies are needed to evaluate durability of these approach.

FULL PROGRAM & ABSTRACTS

1:00 – 3:00pm	CR10	Left Subclavian Artery Mycotic Pseudoaneurysm Following First Rib Osteomyelitis: Diagnosis And Management Strategies
		Kristina Scott, William P Browne, Benjamin Greif, Joshua Gierman, Benjamin Chou <i>University of Oklahoma Health Sciences Center, Oklahoma City, OK</i>

Introduction and Objectives: Subclavian artery pseudoaneurysms (PSA) are rare. Etiologies include direct trauma, systemic infection, or iatrogenic injuries. Management of subclavian artery PSA can be complex, with more endovascular first strategies reported recently. We present a patient presenting with a large left subclavian artery mycotic PSA following first rib osteomyelitis.

Methods: A 20-year-old male presented to the referring facility with left neck swelling, pain, and leukocytosis. CT angiogram demonstrated a 13 cm left subclavian artery PSA. He was in an MVC two months prior, with facial, right clavicular, and bilateral first rib hairline fractures, and a transient MSSA bacteremia, managed with a course of oral antibiotics. He had no prior instrumentation to the left neck or chest. As he was acutely symptomatic, we elected to temporize with a covered stent. His initial CT scan showed left first rib erosion, concerning for osteomyelitis and associated mycotic aneurysm. Blood cultures were consistent with MSSA bacteremia. We proceeded with definitive repair with a left subclavian artery to axillary bypass with autogenous femoral vein, left first rib resection, debridement of the PSA, and stent excision.

Results: The patient tolerated the procedures well. Cultures of the aneurysm and rib were positive for MSSA. He was treated with a prolonged course of antibiotics and was discharged on POD 6 in good condition.

Conclusions: Mycotic aneurysms of the subclavian artery are exceedingly rare. However, there should be a high index of suspicion in patients with a recent history of bacteremia and adjacent infectious processes. Endovascular management with a covered stent is an excellent temporizing measure. Once the diagnosis of a mycotic aneurysm is made, open reconstruction should be the treatment of choice.

CASE REPORTS



1:00 – 3:00pm	CR12	Deep Venous Arterialization As A Treatment For Embolic Acute Limb Ischemia
		Alejandra Rodriguez, Antonio Solano, Sofia Babool, Suyue M Zhang, Michael C Siah <i>University of Texas Southwestern Medical Center, Dallas, TX</i>

Introduction and Objectives: Deep vein arterialization (DVA) is a therapy for patients without conventional revascularization options in the treatment of critical limb-threatening ischemia (CLTI). To our knowledge, this is the first reported case utilizing deep venous arterialization (DVA) as a salvage procedure for embolic occlusion of the pedal circulation.

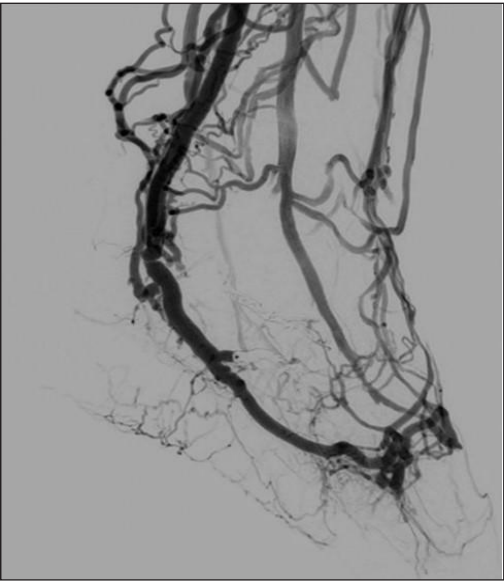
Methods: An 80-year-old male presents with left lower extremity CLTI after attempted revascularization of an occluded superficial femoral artery (SFA) stent. The procedure was complicated by distal embolization of the pedal perfusion. Given worsening rest pain and Rutherford IIa changes on his left foot, emergent DVA was offered for limb salvage.

Results: The patient underwent lower extremity angiography and initial images revealed tibial flow to the ankle with absence of pedal flow. Through antegrade SFA access and retrograde posterior tibial vein access (PTV), the Pioneer reentry device was used to create an arteriovenous fistula. A series of balloons were used for dilation of the fistulous connection between the PTA and PTV. Then, a 5 mm Viabahn stent was deployed to formalize the DVA, followed by plantar vein angioplasty with cutting balloons. The patient’s postoperative course was uncomplicated, and he was discharged on dual antiplatelet therapy. After serial debridements, lateral plantar vein branch embolization, and skin grafting, wound healing was achieved.

Conclusions: DVA is effective and safe as a method to treat embolic occlusion of the pedal bloodflow.

CASE REPORTS





CASE REPORTS

FULL PROGRAM & ABSTRACTS

	Worse Case Presentations from Invited Faculty:
	Jason Lee, MD – Stanford University Dawn Coleman, MD – Duke University Ravi Veeraswamy – Medical University of South Carolina

3:00 pm

Registration Re-Opens

3:00 – 4:00 pm

**Coffee/Snacks – Last Chance
to Visit Exhibitors**

4:00 – 6:00 pm

SCIENTIFIC SESSION V

Moderators: Dawn Coleman, MD & Ravi Rajani, MD

4:00 – 4:12 pm	42	Toe Brachial Indices Are An Accurate Peripheral Artery Disease Screening Tool In Vascular Deserts
		Carolina Aparicio ¹ , Caitlin Hicks ² , Clara Gomez-Sanchez ³ , Aaron Zaldana ¹ , Tomas Alamin ³ , Leigh Ann O'Banion ¹ <i>¹University of California San Francisco, Fresno Campus, Fresno, CA; ²Johns Hopkins University, Baltimore, MD; ³University of California San Francisco, San Francisco, CA</i>

ABSTRACTS

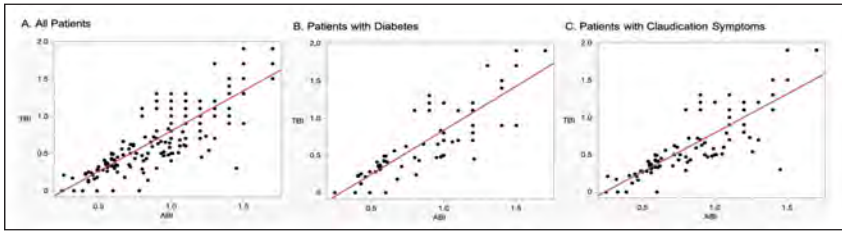
Introduction and Objectives: Targeted cardiovascular screening in vascular deserts (VD), regions lacking vascular providers, is necessary to address issues of health literacy and poor access to care in high-risk socioeconomically disadvantaged populations. This study aims to evaluate toe brachial indices (TBI) as an accurate way to screen this patient population.

Methods: Patients screened for PAD in VD were combined with 50 retrospective patients seen in the vascular clinic (VC) who underwent ABI/TBI testing. PAD was defined as an ABI <0.9 or TBI <0.7 and non-compressibility (NC) as ABI ≥1.4. ANOVA and correlation analyses were used to assess relationships between ABI and TBI overall and among patients without NC, stratified by diabetes status and claudication symptoms.

Results: 99 patients were screened. Average age was 60±19 years, 38% smokers and 36% previously diagnosed with diabetes or a screened HbA1c >5.7%. PAD was diagnosed in 36%, and 8% were NC. There were significant and graded associations of TBI with ABI: among patients with ABI<0.9, mean TBI was 0.38 (95% CI 0.31, 0.45), compared to 0.90 (95% CI 0.84, 0.96) among patients with .9<ABI<1.4, and 1.33 (95% CI 1.18, 1.48) among patients with ABI≥1.4 (P<0.001). Strong correlation was identified between ABI and TBI (Pearson’s correlation coefficient [PCC] 0.82, P<0.001) overall and in patients with measurable ABI (PCC 0.83, P<0.001), but not among patients with NC ABIs (PCC 0.38, P<0.001). Results were similar when stratified by diabetes and claudication (P<0.001; Figure).

Conclusion: TBI mirrors ABI and is an efficient and accurate tool to screen at risk patients for PAD, particularly those with DM and non-compressible vessels, and can provide valuable information to providers in vascular deserts.

Figure I. Correlation between ABI and TBI overall and among patients with diabetes and claudication symptoms.



4:12 – 4:24 pm	43	<p>Hospital And Program Support Staff Affect Educational Experience And Wellbeing Of Trainees</p>
		<p>Margaret A. Reilly¹, Christina L. Cui², Eric B. Pillado¹, Ruojia D. Li³, Joshua S. Eng⁴, Leanne E. Grafmuller⁵, Kathryn L. DiLosa⁶, Allan M Conway⁷, Guillermo A Escobar⁸, Palma M. Shaw⁹, Yue-Yung Hu¹, Karl Y Bilimoria⁴, Malachi G. Sheahan¹⁰, Dawn M. Coleman²</p> <p>¹Northwestern University, Chicago, IL; ²Duke University, Raleigh, NC; ³Loyola University, Chicago, IL; ⁴Indiana University, Indianapolis, IN; ⁵University of Rochester, Rochester, NY; ⁶University of California Davis Health, Sacramento, CA; ⁷University of California San Francisco, San Francisco, CA; ⁸Emory University, Atlanta, GA; ⁹SUNY Upstate Medical University, Syracuse, NY; ¹⁰Louisiana State University, New Orleans, LA</p>

ABSTRACTS

Introduction and Objectives: Many stakeholders contribute to an effective training environment for surgical residents, including program coordinators (PC) and nursing staff. This study evaluates associations of program support staff and protected educational time on trainee burnout and wellness.

Methods: Through the SECOND Trial, data was collected through a confidential voluntary survey of vascular trainees. Trainees were asked about interactions with support staff and contributions to clinical training. Responses were recorded using a five-point Likert scale and dichotomized as positive or negative. Trainees were grouped based on positive perceptions of support staff utilization and endorsement of adequate educational time. Multivariable logistic regression was used to evaluate the associations of support staff and educational time with burnout.

Results: A total of 532 trainees participated in the survey (78% response rate). Most trainees felt their PC supported their education (N=432, 95.8%). Approximately 32.4% (N=160) of trainees reported weekly symptoms of burnout. Those without weekly burnout symptoms were more likely to report meaningful protection of their educational time (p<0.001), feeling respected and helped by nurses (p<0.001 and p<0.001, respectively), and agree their program was responsive to educational and staffing concerns (p<0.001). On univariable analysis, trainees who felt there was adequate support staff were significantly more likely to have positive responses to wellness metrics. On multivariable analysis, this was driven by burnout (odds ratio (OR) 0.44, 95% confidence interval (CI) 0.2-0.8) and thoughts of attrition (OR 0.22, 95% CI 0.1-0.5), although they also had decreased satisfaction with time for personal health maintenance (OR 0.3, 95% CI 0.2-0.6).

Conclusions: Having adequate support staff and protected educational time were protective against burnout and thoughts of attrition. However, these positive perceptions are also associated with decreased odds of satisfaction with time for personal health maintenance, indicating a complex relationship that merits further investigation.

4:24 – 4:36 pm	44	Impact Of Preoperative Ldl Level On Lower Extremity Revascularization Outcomes
		Warren J Carter, Uma Alappan, Ashwin Chetty, Nicholas Wells, Dana Alameddine, Martin D Slade, Stephen Possick, Cassius Iyad Ochoa Char <i>Yale School of Medicine, New Haven, CT</i>

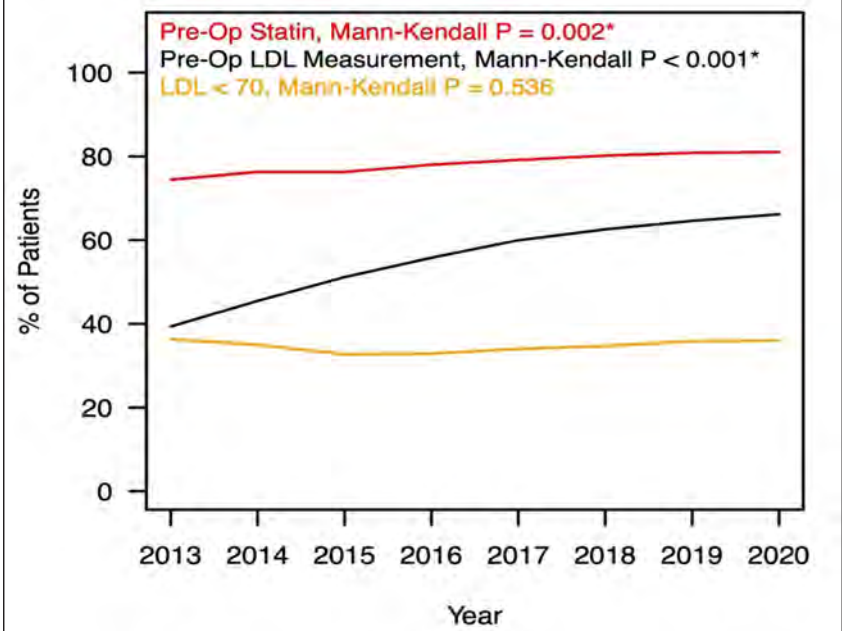
Introduction and Objectives: Recent guidelines for optimal medical therapy in patients with peripheral arterial disease (PAD) recommend achieving LDL<70 mg/dL. This study assesses the trends in LDL testing and its impact on lower extremity revascularization (LER) outcomes in a tertiary center.

Methods: A retrospective review of patients who underwent LER between 2013-2020 in a tertiary care center was performed. Patients were divided into two groups based on baseline LDL<70mg/dL or higher. Characteristics and outcomes of the two groups were compared.

Results: A total of 2,039 patients underwent LER and 33.1% did not have lipid testing prior to initial LER. The proportion of patients with preoperative LDL testing significantly increased over the study period (39.3% to 66.2%) concomitantly with increased statin use (74.4% to 81%) while the proportion of patients achieving target LDL<70mg/dL remained low without significant change (~36%) (Figure). Patients with low LDL were more likely to be older white males with significantly higher burden of comorbidities and be treated for chronic limb-threatening ischemia (CLTI). On follow up, the reintervention rate and survival were higher in patients with high LDL (Table). However, KM analysis as well as cox regression analysis did not demonstrate any significant association of achieving target LDL<70mg/dL with MALE, MACE or mortality. CLTI was significantly associated with MALE(HR=1.67[1.4-1.99]), MACE(HR=1.29[1.04-1.6]), and mortality(HR=1.84[1.41-2.4]) compared to claudication.

Conclusions: Lipid testing and statin use have increased prior to LER but target LDL level was not achieved in most patients. LDL<70mg/dL does not appear to significantly impact LER outcomes in this study.

Figure I. Trends in Preoperative LDL and Statin Use.



N = 1,364	Pre-Op LDL < 70N = 490 (35.9%)	Pre-Op LDL ≥ 70N = 874 (64.1%)	P-Value
Demographics			
Age, Mean (SD)	71 (11)	69 (11)	<0.001*
Male	354 (72.2%)	515 (58.9%)	<0.001*
Race			0.004*
White	386 (78.8%)	633 (72.7%)	
Black	59 (12.0%)	165 (18.9%)	
Other	45 (9.2%)	73 (8.4%)	
BMI, Mean (SD)	28 (7)	28 (6)	0.474
Comorbidities			
Coronary Artery Disease	324 (66.9%)	478 (54.9%)	<0.001*
Hypertension	451 (92.2%)	791 (90.5%)	0.283
BMI: body mass index; VTE: venous thromboembolism; LDL: low density lipoprotein; HDL: high density lipoprotein; SD: standard deviation; MACE: major adverse cardiac event (Stroke, MI, PCI [percutaneous coronary intervention], or CABG [coronary artery bypass graft]); MALE: major adverse limb event (major amputation or ipsilateral reintervention)			

FULL PROGRAM & ABSTRACTS

N = 1,364	Pre-Op LDL < 70N = 490 (35.9%)	Pre-Op LDL ≥ 70N = 874 (64.1%)	P-Value
Hyperlipidemia	439 (89.6%)	745 (85.2%)	0.023*
Congestive Heart Failure	110 (22.6%)	169 (19.4%)	0.161
Diabetes	324 (66.1%)	485 (55.5%)	<0.001*
Smoking	392 (80.3%)	710 (81.5%)	0.592
Chronic Renal Insufficiency	133 (27.4%)	162 (18.7%)	<0.001*
End-Stage Renal Disease	66 (13.6%)	75 (8.7%)	0.005*
Stroke	110 (22.6%)	169 (19.4%)	0.161
Prior Endovascular Procedure	96 (19.8%)	147 (17.0%)	0.196
Prior Open Procedure	52 (10.7%)	86 (9.9%)	0.639
LIPID Profile			
LDL, Mean (SD)	51 (13)	109 (34)	<0.001*
HDL, Mean (SD)	45 (19)	47 (16)	<0.001*
Total Cholesterol, Mean (SD)	124 (30)	188 (85)	<0.001*
Pre-OP Medications			
Statins	429 (87.7%)	661 (75.8%)	<0.001*
ASA	376 (76.9%)	653 (75.0%)	0.428
P2Y12 Inhibitors	159 (32.4%)	245 (28.0%)	0.086
Anticoagulants	116 (23.7%)	171 (19.6%)	0.074
Procedural Characteristics			
Indication			<0.001*
Claudication	206 (42.2%)	467 (53.8%)	
CLTI	282 (57.8%)	401 (46.2%)	
Surgical Approach			0.860
Open Surgery (Bypass or Endarterectomy)	47 (9.6%)	79 (9.0%)	
Endovascular	431 (88.0%)	770 (88.1%)	
Hybrid	12 (2.4%)	25 (2.9%)	
BMI: body mass index; VTE: venous thromboembolism; LDL: low density lipoprotein; HDL: high density lipoprotein; SD: standard deviation; MACE: major adverse cardiac event (Stroke, MI, PCI [percutaneous coronary intervention], or CABG [coronary artery bypass graft]); MALE: major adverse limb event (major amputation or ipsilateral reintervention)			

FULL PROGRAM & ABSTRACTS

N = 1,364	Pre-Op LDL < 70N = 490 (35.9%)	Pre-Op LDL ≥ 70N = 874 (64.1%)	P-Value
Long-Term Outcomes			
Follow-up Time, Mean (SD)	3.81 (2.51)	4.28 (2.61)	0.003*
Ipsilateral Major Amputation	52 (10.8%)	65 (7.6%)	0.052
Ipsilateral Reintervention	193 (39.4%)	396 (45.3%)	0.034*
Number of Ipsilateral Reinterventions, Mean (SD)	1.80 (1.27)	1.88 (1.45)	0.711
MALE	216 (44.8%)	414 (48.2%)	0.234
MACE	148 (30.5%)	280 (32.4%)	0.467
Mortality	219 (44.7%)	299 (34.4%)	<0.001*
BMI: body mass index; VTE: venous thromboembolism; LDL: low density lipoprotein; HDL: high density lipoprotein; SD: standard deviation; MACE: major adverse cardiac event (Stroke, MI, PCI [percutaneous coronary intervention], or CABG [coronary artery bypass graft]); MALE: major adverse limb event (major amputation or ipsilateral reintervention)			

ABSTRACTS

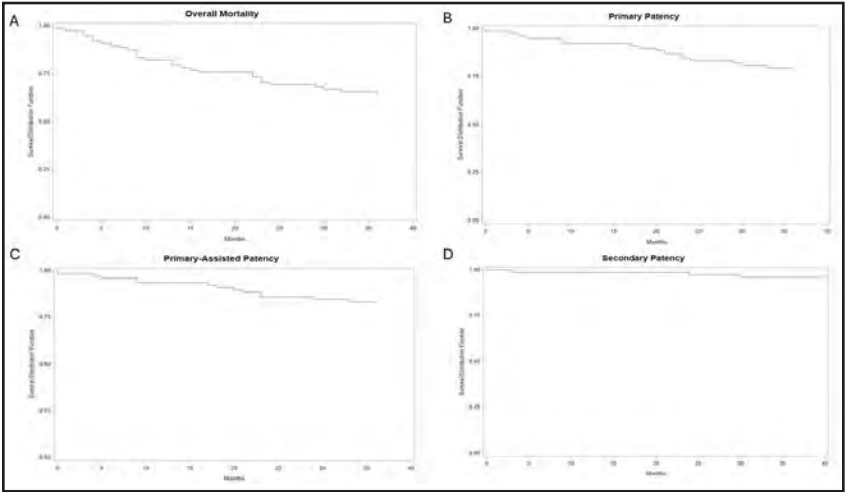
4:36 – 4:48 pm	45	Multi-institutional Study Of Outcomes From Portal Vein Reconstruction During Pancreatic Cancer Surgery
		Suma Gondi ¹ , Madeleine McSpadden ¹ , Chase Schlesselman ² , Michael Williams ² , Kristen Dougherty ² , Kyla M Bennett ³ , Leah M Gober ³ , Jonathan Bath ¹ <i>¹University of Missouri, Columbia, MO; ²St. Louis University, St. Louis, MO; ³University of Wisconsin, Madison, WI</i>

Introduction and Objectives: Portal vein reconstruction (PVR) is undertaken to enhance resectability during pancreatic cancer surgery. We report outcomes of patients undergoing PVR at three academic institutions.

Methods: Patients (2013-2023) undergoing PVR for pancreatic cancer surgery were identified at three academic institutions. Chi-square and Kaplan-Meier analysis were used to evaluate outcomes.

Results: 80 patients were captured with 53% men, 45% women. Preoperative chemoradiation was undertaken in 70% of patients. Pancreaticoduodenectomy was undertaken in 79 patients (92%) with distal pancreatectomy in one (1.2%). Primary repair was undertaken in 46 patients (58%), bovine patch in 22 (28%), other vein patch in 2 (3%) with interposition conduits such as IJ, GSV, SFV and PTFE in 10 (13%). Thirty-day complications included four deaths (5%), one stroke (1.3%) and one MACE (1.3%). Overall complications included death in 45 patients (56%), mesenteric ischemia in one (1.3%) and reintervention in one patient (1.3%). Postoperative medications included ASA in 43 patients (54%), Plavix in one (1.3%), dual antiplatelet therapy in three (4%) and anticoagulation in 17 (21%). Over 21 months mean follow-up, 18 reconstructions occluded (23%) with three reopened (4%) at mean 6.3 months from index procedure with no association with type of repair. At 36 months, estimated survival was 66%, primary, primary-assisted and secondary patency was 80%, 83% and 96% respectively (Figure 1 panels A-D).

Conclusions: PVR during pancreatic cancer surgery is safe and durable. A quarter of all reconstructions fail at medium-term follow-up with no early failures, and very few require reintervention for clinical symptoms. This suggests that long-term patency of PVR is less important and, other than infectious considerations, it may not be important what conduit or type of reconstruction is performed.



4:48 – 4:56 pm	46 (RF)	Risk Factors And Consequences Of Bleeding Complications After Transcarotid Artery Revascularization In The Vascular Quality Initiative
		Christina L Cui, Laura B Pride, Young Kim <i>Duke University, Durham, NC</i>

Introduction and Objectives: Previous studies on post-operative bleeding complications after transcarotid artery revascularization (TCAR) have primarily been through case series. The purpose of this study is to evaluate risk factors and consequences of bleeding complications after TCAR on a national level.

Methods: The Vascular Quality Initiative (VQI) database was retrospectively queried for all patients undergoing TCAR between 2017 to 2023. The primary outcome of interest was postoperative bleeding complications, including all neck hematomas, surgical bleeding, and pseudoaneurysms. Univariate tests and multivariable logistic regression analyses were utilized.

Results: A total of 50,909 TCAR procedures were included. The overall incidence of bleeding complications was 1.9%. The strongest risk factor for postoperative bleeding complications was lack of intraoperative protamine (adjusted odds ratio [aOR] 3.91 [95% CI, 3.41-4.47], $p < 0.0001$). Other risk factors included prior carotid endarterectomy (aOR 1.44 [95% CI, 1.18-1.75], $p = 0.0004$), neck radiation (aOR 1.42 [95% CI, 1.08-1.85], $p = 0.01$), and symptomatic stenosis (aOR 1.19 [95% CI, 1.04-1.35], $p = 0.009$). Preoperative and discharge AC were not associated with bleeding complications. Patients suffering postoperative bleeding complications had a longer index hospitalization and more unplanned reoperations for bleeding ($p < 0.0001$ both). Non-bleeding complications were also more common among patients suffering bleeding complications, including cranial nerve injury, postoperative stroke, reperfusion injury, myocardial infarction, dysrhythmia, carotid stenosis or occlusion, CHF exacerbation and wound infection ($p < 0.0001$ each, Table 1).

Conclusions: Postoperative bleeding complications are rare after TCAR and may be associated with adverse outcomes, including systemic and neurologic sequelae. Bleeding complications are not associated with AC or AP regimen. However, intraoperative protamine use may reduce risk of surgical bleeding complications and should be considered during TCAR operations.

Table I. Postoperative outcomes for patients with and without bleeding complications.

	All patients (n=50,909)	No bleeding complication (n=49,926)	Bleeding complica- tion (n=983)	P-Value
Bleeding complication				
Neck hematoma or surgical site bleeding	971 (1.9%)	-	-	-
Pseudoaneurysm	25 (0.1%)	-	-	-
Postoperative LOS (d)	1 (1-2)	1 (1-2)	2 (1-4)	<0.0001
Reoperation for bleeding	331 (0.7%)	0 (0.0%)	331 (33.7%)	<0.0001
Non-bleeding complications				
Cranial nerve injury	161 (0.3%)	149 (0.3%)	12 (1.2%)	<0.0001
Stroke or TIA	895 (1.8%)	844 (1.7%)	51 (5.2%)	<0.0001
Reperfusion injury	230 (0.5%)	207 (0.4%)	23 (2.3%)	<0.0001
MI	112 (0.2%)	104 (0.2%)	8 (0.8%)	<0.0001
Dysrhythmia	792 (1.6%)	754 (1.5%)	38 (3.9%)	<0.0001
Stenosis/occlusion	153 (0.3%)	140 (0.3%)	13 (1.3%)	<0.0001
CHF exacerbation	85 (0.2%)	64 (0.1%)	21 (2.1%)	<0.0001
Infection	12 (0.0%)	8 (0.0%)	4 (0.4%)	<0.0001
30-day mortality	237 (0.5%)	231 (0.5%)	6 (0.6%)	0.50

4:56 – 5:04 pm	47 (RF)	Left Subclavian Artery Revascularization In TEVAR Has Increased Since FDA Approval Of The Gore Thoracic Branch Endoprosthesis
		Y.H. Andrew Wu ¹ , Chen Dun ¹ , Midori White ¹ , Terrence Tsou ¹ , Katherine McDermott ¹ , Sara Zettervall ² , Sukgu Han ³ , Andres Schanzer ⁴ , James H. Black, III ¹ , Caitlin W. Hicks ¹ <i>¹Johns Hopkins Hospital, Baltimore, MD; ²University of Washington, Seattle, WA; ³Keck Medical Center of University of Southern California, Los Angeles, CA ⁴University of Massachusetts Chan Medical School, Worcester, MA</i>

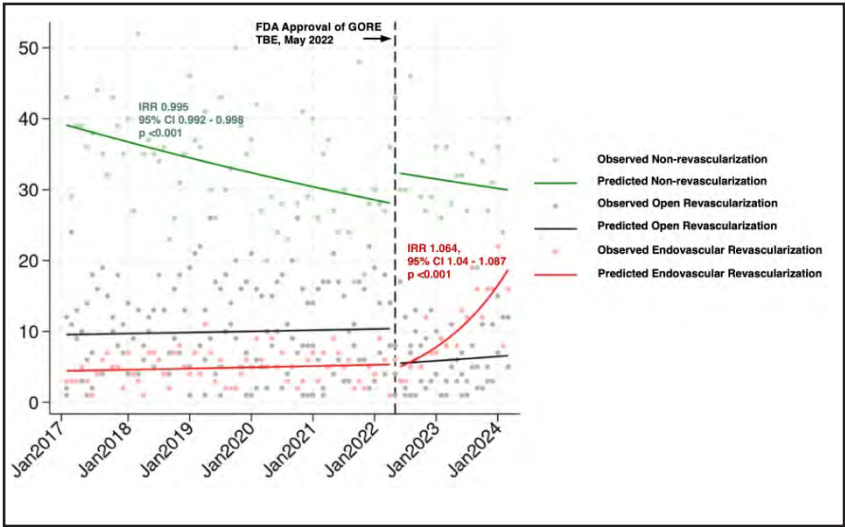
Introduction and Objectives: Revascularization of a covered left subclavian artery (LSCA) with thoracic endovascular aortic repair (TEVAR) is recommended by professional guidelines. In 2022, the thoracic branch endoprosthesis (TBE) was approved to provide an endovascular solution for LSCA revascularization. We aimed to compare physician practice patterns associated with LSCA revascularization for TEVAR before versus after TBE approval.

Methods: We performed a retrospective analysis of 100% Medicare fee-for-service claims data from 01/2017 to 03/2024 to identify patients who underwent TEVAR with LSCA coverage for any indication. Interrupted time series analysis was used to compare monthly trends of revascularization before and after May 2022 (TBE approval). Negative binomial regression was used to calculate incidence rate ratios of number of procedures by revascularization type. Multivariable logistic regression was conducted to assess factors associated with LSCA revascularization.

Results: 5,129 patients underwent TEVAR with LSCA coverage (Mean age 73.7 years, 42.1% female, 78.1% White Race), of which 44.5% underwent LSCA revascularization. Prior to 2022, there was a significant increase in patients who received LSCA revascularization ($P < 0.001$), with similar increases for both open and endovascular revascularization (Figure). After 2022, endovascular LSCA revascularization increased significantly at monthly rate of 6% (IRR 1.06, 95% CI 1.04 - 1.09). After risk adjustment, the main covariates associated with lack of LSCA revascularization were traumatic (aOR 0.12, 95% CI 0.06 - 0.24) and non-elective (aOR 0.40, 95% CI 0.31 - 0.49) indications, age > 74 years (aOR 0.77, 95% CI 0.66 - 0.89), and repair by a low-volume provider (aOR 0.71, 95% CI 0.59 - 0.84). Stroke rates did not change significantly over time ($P = 0.24$).

Conclusions: Adherence to guidelines around LSCA management for TEVAR has improved. Approval of the TBE device was associated with a significant increase in endovascular LSCA revascularization for TEVAR without increasing stroke rate, indicating the importance of novel device commercialization.

Figure I. Interrupted Time Series Analysis Comparing Trends in Left Subclavian Artery Revascularization Before and After Thoracic Branched Endoprosthesis Approval.



ABSTRACTS

5:04 – 5:12 pm	48 (RF)	Antithrombotic Therapy In Patients With Atrial Fibrillation Undergoing Peripheral Vascular Interventions
		Shreef Said, Dana Alameddine, Edouard Aboian, David Strosberg, Britt Tonnessen, Jonathan Cardella, Raul J Guzman, Cassius lyad Ochoa Chaar <i>Yale University, School of Medicine, New Haven, CT</i>

Introduction and Objectives: Atrial fibrillation (AF) affects 15% of patients undergoing peripheral vascular interventions (PVI) and frequently requires anticoagulation (AC). Recent guidelines include a weak suggestion to add a single antiplatelet therapy (SAPT) to AC after PVI based on limited data. This study leverages the Vascular Quality Improvement (VQI) to shed light on this recommendation and assess the impact of SAPT in addition to AC after PVI.

Methods: The VQI PVI files were reviewed. Only patients treated for PAD with AF on AC were included. The characteristics and outcomes of patients discharged on AC alone were compared to those discharged on AC+SAPT (aspirin or P2Y12 inhibitor).

Results: A total of 9,643 patients with AF underwent PVI and 82.5%(N=7,959) were discharged on AC+SAPT. Patients discharged on AC+SAPT were more likely to be younger males with increased comorbidities compared to patients discharged on AC only. Patients receiving AC+SAPT were more likely to be treated for claudication and undergo stenting. (Table) Despite lower perioperative hematoma and myocardial infarction, the long-term mortality was higher in patients on AC only as demonstrated on the KM curve. (Figure) Regression analysis demonstrated that chronic limb-threatening ischemia was associated with mortality (HR=2.42[2.16-2.7]) and MALE (HR=2.47[2.12-2.9]) and that AC+SAPT had a trend toward lower mortality compared to the AC only group (HR=0.92 [0.83-1.02]; p=0.104).

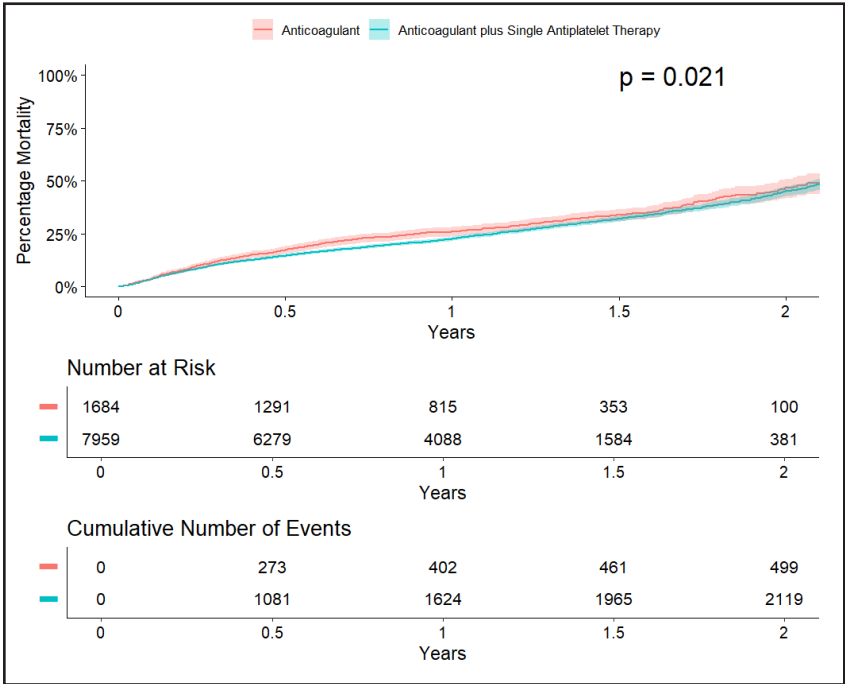
Conclusions: The addition of SAPT to AC after PVI for PAD seems to improve survival in patients with AF on AC. This study based on the VQI strengthens the evidence of the recent guideline recommendation.

Table I. Basic characteristics and outcomes of patients undergoing revascularization for peripheral arterial disease with concomitant atrial fibrillation, discharged on anticoagulant versus anticoagulant plus single antiplatelet therapy.

Characteristics	Anticoagulant N= 1,684 (17.5%)¹	Anticoagulant plus Single Antiplatelet Therapy N = 7,959 (82.5%)¹	P-Value²
Demographics			
Age, mean (SD)	77 (10)	75 (10)	<0.001*
Sex (Male)	1,004 (60%)	5,195 (65%)	<0.001*
Race (White)	1,416 (84%)	6,594 (83%)	0.041*
Ethnicity (non-Hispanic)	1,609 (96%)	7,578 (95%)	0.6
Living status: home	1,500 (91.5%)	7,148 (93%)	0.026*
Comorbidities			
Hypertension	1,569 (93%)	7,441 (94%)	0.5
Diabetes	888 (53%)	4,337 (54%)	0.2
Smoking (current or prior)	1,088 (65%)	5,632 (71%)	<0.001*
Coronary artery disease	485 (29%)	3,359 (42%)	<0.001*
Prior Procedures			
Prior percutaneous coronary intervention	249 (15%)	2,096 (27%)	<0.001*
Prior lower extremity revascularization	397 (24%)	2,541 (32%)	<0.001*
Prior amputation (including minor)	256 (15%)	1,413 (18%)	0.012*
Preoperative Medications			
ACE inhibitor	775 (46%)	3,831 (48%)	0.12
Statin	1,118 (66%)	6,089 (77%)	<0.001*
¹ N; number(%); ² Pearson's Chi-squared test; Fisher's exact test; ³ MALE includes reintervention or major amputation. Bold *, statistically significant difference for P<0.05			

Characteristics	Anticoagulant N= 1,684 (17.5%) ¹	Anticoagulant plus Single Antiplatelet Therapy N = 7,959 (82.5%) ¹	P-Value ²
Procedural Characteristics			
Indication			0.025*
Claudication	377 (26%)	1,960 (29%)	
Chronic limb-threatening ischemia	1,072 (74%)	4,810 (71%)	
Type of the procedure			<0.001*
Atherectomy	250 (15%)	916 (12%)	
Atherectomy and stenting	64 (3.8%)	414 (5.2%)	
Balloon angioplasty	922 (55%)	3,852 (48%)	
Stenting	448 (27%)	2,777 (35%)	
Level of the procedure			<0.001*
Aortoiliac	283 (17%)	1,318 (17%)	
Femoropopliteal	499 (30%)	2,732 (34%)	
Tibial	438 (26%)	1,548 (20%)	
Multilevel	455 (27%)	2,324 (29%)	
Outcomes			
Periprocedural outcomes (30-day)			
Technical success	1,438 (88%)	7,059 (91%)	<0.001*
Hematoma	33 (2.0%)	234 (2.9%)	0.026*
Distal Embolization	7 (0.4%)	53 (0.7%)	0.2
Myocardial Infarction	1 (<0.1%)	34 (0.4%)	0.023*
Mortality	47 (2.8%)	217 (2.7%)	0.9
Long-term outcomes			
Secondary patency	519 (89%)	2,775 (90%)	0.2
Reintervention	131 (14%)	625 (13%)	0.7
Major amputation	106 (11%)	456 (10.0%)	0.2
Major adverse limb events (MALE) ³	222 (22%)	1,020 (20%)	0.3
Mortality	561 (33%)	2,387 (30%)	0.007*
¹ N; number(%); ² Pearson's Chi-squared test; Fisher's exact test; ³ MALE includes reintervention or major amputation. Bold *, statistically significant difference for P<0.05			

Figure I. Kaplan-Meier Curve for Mortality.



ABSTRACTS

5:12 – 5:24 pm	49	Stent Diameter, Not Sex, Is Predictive Of Reintervention After Common Iliac Artery Stenting
		Mikayla N Lowenkamp ¹ , Katherine M Reitz ¹ , Natalie Sridharan ¹ , Mohammad Eslami ² , Michael C Madigan ¹ ¹ UPMC, Pittsburgh, PA; ² Charleston Area Medical Center, Charleston, WV

Introduction and Objectives: Female sex is associated with adverse limb events following revascularization for peripheral artery disease (PAD). Specifically, poorer patency with more reinterventions following iliac artery stenting. We hypothesize stent diameter will be associated with an increased risk of reintervention among all patients regardless of sex group.

Methods: We included adults undergoing unilateral, elective, index, common iliac stenting only for PAD (VQI peripheral vascular interventions database; 2015-2022) excluding those with aneurysms and lacking follow up. Stents <8mm were defined as small. Kaplan-Meier and multivariable Cox regression compared one-year reintervention. Interaction terms evaluated subgroups.

Results: We identified 4,844 patients including 1,935(40.0%) females. Females were older (67.8±10.7 v. 67.1±9.7) with fewer comorbidities and were less frequently prescribed perioperative aspirin (72.9% v. 76.2%) or statins (75.8% v. 79.6%, all p<0.05). Most stents were for claudication (64.4%), yet females had more critical limb threatening ischemia (39.5% vs 32.7%; p<0.001). While females received smaller stents (38.0% vs.17.8%, p<0.001), sex was not associated with reintervention (**Figure 1,3**). Smaller stents were associated with increased reintervention (p<0.001) (**Figure 2-3**). The association between small stents and increased reinterventions did not differ between sexes (p-interaction>0.05).

Conclusion: Small stent diameter, not female sex, was associated with an increased risk of reintervention following iliac stents for PAD. However, females were less frequently medically optimized and received smaller stents, possibly contributing to long-term stent failure described elsewhere.

Figure I. Reintervention by Sex.

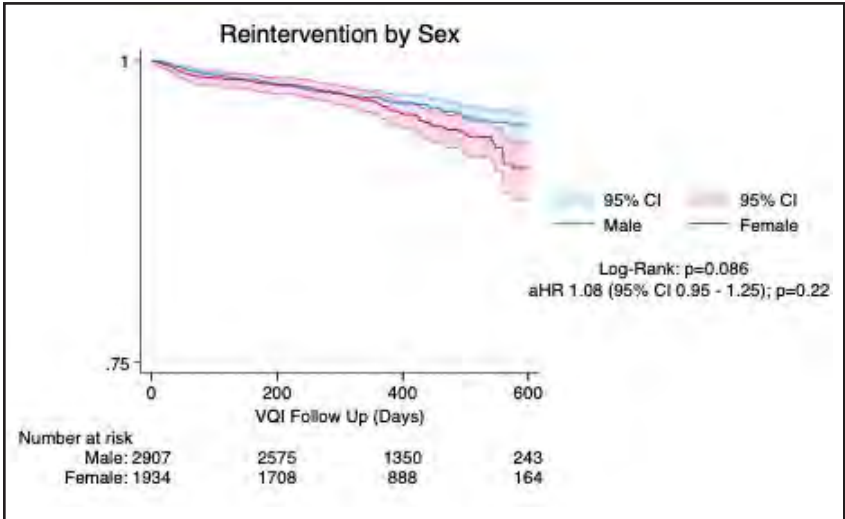


Figure I. Reintervention by Stent Size.

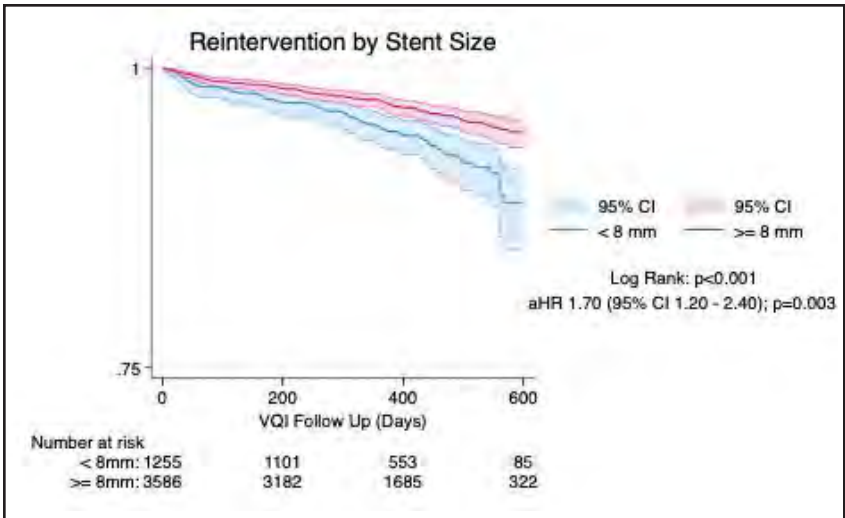
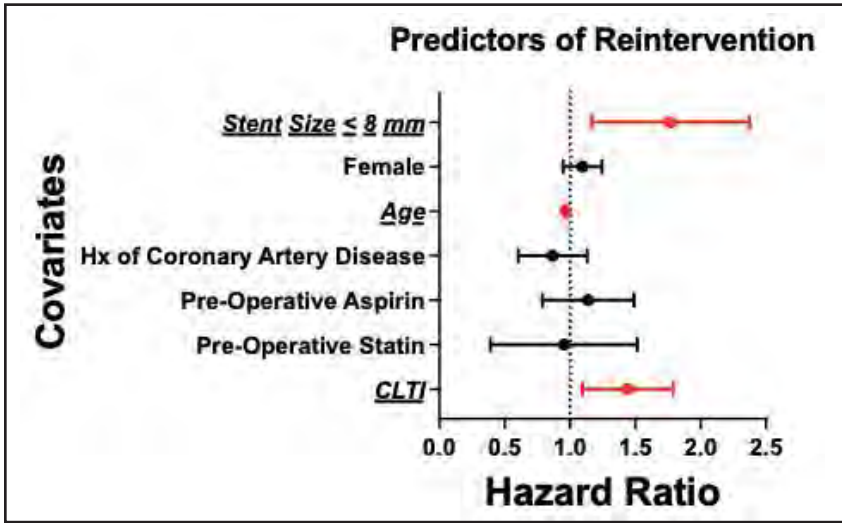


Figure I. Predictors of Reintervention.



5:24 – 5:36 pm	50	Impact Of Antiplatelet And Anticoagulation Therapy On Hemodialysis Reliable Outflow (HeRO) Graft Patency
		Christina L Cui ¹ , Tristen T Chun ¹ , Charles Y. Kim ¹ , Ellen D Dillavou ² , Mitchell W Cox ³ , Kevin W Southerland ¹ , Young Kim ¹ ¹ Duke University Medical Center, Durham, NC; ² WakeMed Health System, Raleigh, NC; ³ University of Texas, Medical Branch, Galveston, TX

Introduction and Objectives: The impact of anticoagulation and antiplatelet (AC/AP) medications on Hemodialysis Reliable Outflow (HeRO) graft patency is poorly understood.

Methods: Institutional medical records were retrospectively queried for all HeRO graft procedures performed from 2014 to 2023. Data on demographics, comorbidities, operative details, and perioperative AC/AP use were collected. Cox proportional hazards modeling was used to identify risk factors for loss of primary patency, which was defined as the interval from HeRO graft creation to first reintervention, occlusion, or abandonment.

Results: A total of 232 patients with end stage renal disease underwent HeRO graft implantation across three hospitals, with a median follow-up of 1.5 years. Patients were separated into six cohorts: mono-antiplatelet therapy (MAPT, n=38[16.4%]), dual-antiplatelet therapy (DAPT, n=57[24.6%]), anticoagulation (AC) only (n=38[16.4%]), MAPT with AC (n=66[28.4%]), DAPT with AC (n=28[12.1%]), and none (n=5[2.2%]). There were no differences in bleeding or thrombotic complications. One-year primary patency rates were highest among patients on AP therapy (16.7±6.2% [no AP] vs 40.2±5.4% [MAPT] vs 33.7±5.6% [DAPT], log-rank p=0.016). (Figure 1, Table 1) There was no difference in primary patency with AC use (38.6±5.4% [no AC] vs 28.8±4.3% [AC], log-rank P=0.11). After adjusting for patient factors, MAPT (hazard ratio [HR] 0.54, 95% confidence interval [CI] 0.35-0.83, p=0.005) and DAPT (HR 0.64, 95% CI 0.41-1.01, p=0.05) were protective, whereas AC (HR 1.07, 95% CI 0.76-1.50, p=0.70) did not impact primary patency rates.

Conclusions: Among patients undergoing HeRO graft implantation, the use of antiplatelet medications was associated with improved primary patency rates.

ABSTRACTS

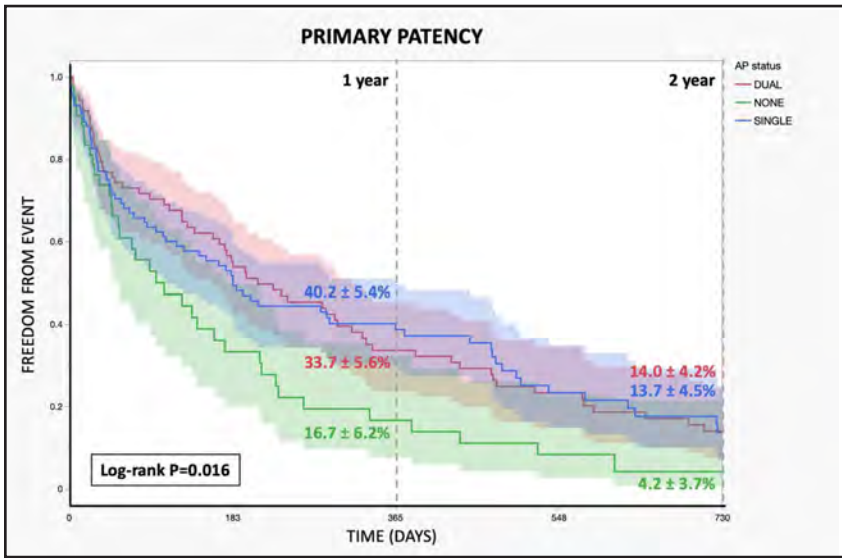


Table I. Factors associated with primary graft patency following HeRO procedure.

	Hazard Ratio	95% Confidence Interval	P-Value
Age (per year)	1.00	(0.99-1.01)	0.740
Female sex (versus male)	1.38	(1.01-1.89)	0.042
Black race (versus white)	1.20	(0.75-1.93)	0.440
Anticoagulation (versus none)	1.07	(0.76-1.50)	0.700
Single Antiplatelet Agent (versus none)	0.54	(0.35-0.83)	0.005
Dual antiplatelet agent (versus none)	0.64	(0.41-1.01)	0.050

5:36 – 5:48 pm	51	The Two-decade Experience Of Onco-vascular Reconstruction In Patients With Retroperitoneal Sarcoma
		Anita Zahiri ¹ , Arash Fereydooni ¹ , Emily Eshraghian ¹ , Milan Ho ² , Daniel Delitto ³ , Byrne Lee ³ , George Poultsides ³ , Jeffrey Norton ³ , E. John Harris ¹ , Elizabeth Leigh George ¹ <i>¹Division of Vascular and Endovascular Surgery, Stanford University School of Medicine, Palo Alto, CA; ²UT Southwestern Medical School, Dallas, TX; ³Section of Surgical Oncology, Stanford School of Medicine, Palo Alto, CA</i>

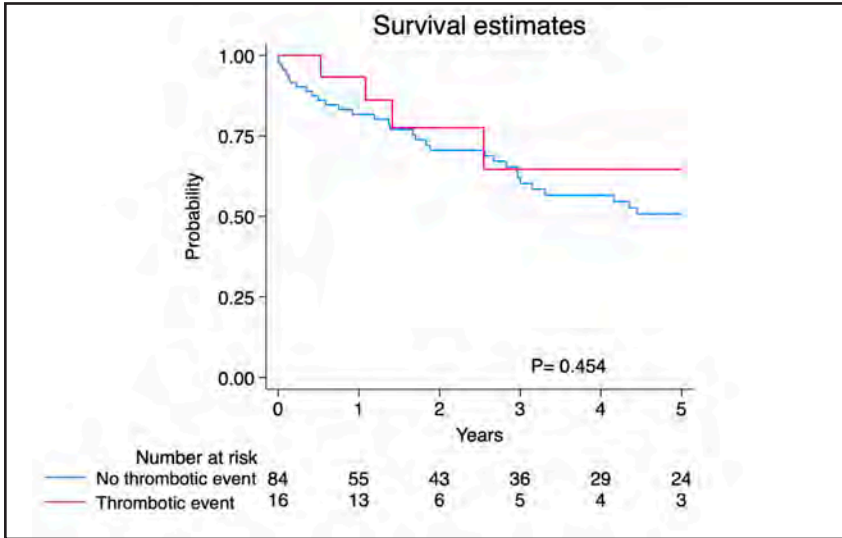
Introduction and Objectives: While surgical resection is the mainstay treatment for sarcomas, the feasibility of these procedures is challenged by tumor involvement of critical vasculature. A collaborative, multi-disciplinary approach involving vascular surgery has addressed this; however, there is a paucity of data on long-term outcomes of these joint procedures.

Methods: A retrospective chart review of patients with retroperitoneal sarcomas who underwent surgical resection with vascular reconstruction at a tertiary referral center between 2001-2024.

Results: 263 vascular interventions were performed in 101 patients (median age 59 years; 52% female) during tumor resection. 36.3% had prior sarcoma resections, 53.5% of patients had prior chemoradiation, and 41.7% had stage 4 disease, most commonly leiomyosarcoma (34.7%). The most common concurrent procedures were nephrectomy (53.5%) and colectomy (36.3%). Overall, the 30-day mortality rate was 5%, with a 64.4% Clavien-Dindo grade II+ complication rate. The median overall survival was 5.9 years. 11.9% of patients underwent vascular patency-related reinterventions. The vascular reintervention-free survival rate at 1 year was 90.5%, with no difference in survival between those with and without repair thrombosis (Figure 1). Diabetes, combined anticoagulation with dual antiplatelet therapy, iliac vein reconstruction with cryopreserved conduit, and 90-day readmission were found to be associated with graft thrombosis on univariate analysis. After adjusting for these factors, cryopreserved allografts for iliac vein reconstruction were found to be significantly associated with thrombosis (OR: 12.75 [95% CI:1.68-18.93], P = 0.019).

Conclusions: This study highlights two decades of single-institution experience with good overall patency of onco-vascular interventions, noting unique challenges with iliac vein reconstruction. Despite complex surgeries involving concurrent organ resections and post-operative complications, the low failure-to-rescue rate reflects excellent patient care of these high-acuity patients.

Figure I. Kaplan Meier survival comparison of patients with and without thrombosis of their vascular repair.



5:48 – 5:56 pm	52 (RF)	<p>Localization Of Noncompressible Torso Hemorrhage Using Minimally Invasive Endovascular Techniques To Detect Battlefield Relevant Injuries In Swine (sus Scrofa): A Pilot Study</p>
		<p>Micaela Cuneo¹, Ashley Flinn Patterson¹, Anna Rogalska², Maria Navarro¹, Christian Goei¹, Theodore Hart³, Jason Rall⁴, Marlin W Causey³</p> <p>¹Brooke Army Medical Center, Ft Sam Houston, TX; ²University of Texas Health Science Center San Antonio, San Antonio, TX; ³Brooke Army Medical Center, Ft Sam Houston, TX; ⁴59th Medical Wing, Lackland Air Force Base, TX</p>

ABSTRACTS

Introduction and Objectives: Non-compressible torso hemorrhage is a leading cause of battlefield deaths and a potentially preventable source of trauma-related mortality, more broadly. It is widely appreciated that austere wartime environments present unique challenges for the timely diagnosis of internal bleeding. This protocol sought to develop a reproducible model of creating solid organ and aortic branch vessel injuries. A dual-sensor pressure catheter was used to obtain readings proximal and distal to injury sites.

Methods: Twenty-four Sus scrofa pigs were randomized to solid organ (liver, spleen, or kidney) injury or aortic branch vessel (hepatic artery, renal artery, splenic artery, or superior mesenteric artery) injury. A dual-sensor pressure catheter was inserted via a 6 Fr sheath in the femoral artery and positioned at the site of the injury. Laparotomy or laparoscopy were performed to create each injury. In the arterial injury model, a shunt system was used from the target artery to a nearby vein. The pressure catheter was “pulled back” beginning proximal to the injury while recording data. Pullbacks were done at multiple flow rates to simulate different degrees of hemorrhage.

Results: The unaided flow rates of the arterial injury varied corresponding to the caliber of the vessel. As the flow was manipulated, pressure differences were detected most reliably at higher flow rates including exsanguination. Pressure differences became more detectable in later pullbacks of the solid organ injury model as the animals exsanguinated.

Conclusions: A dual sensor pressure catheter can reliably detect arterial injury. Solid organ injury detection is more complex due to the ability to tamponade in retroperitoneal structures. The arterial injury model particularly allows for multiple data collections to be performed without significant harm to the animal. This model can be used for further testing of diagnostic instruments in intra-abdominal vascular and solid organ injuries.

5:56 – 6:04 pm	53 (RF)	Inflammatory Cytokine And Chemokine Changes Following Mesenteric Revascularization: A Pilot Study
		Brett Salomon ¹ , Tiffany Johnson ² , Ryan Taylor ² , Mitchell Goldman ² , Deidra Mountain ² , Michael R Buckley ² <i>¹Massachusetts General Hospital, Boston, MA; ²University of Tennessee Medical Center Knoxville, Knoxville, TN</i>

Introduction and Objectives: Chronically ischemic tissue can generate a proinflammatory reperfusion-ischemia injury following revascularization. Transplant literature and animal models detail this process regarding proinflammatory reperfusion-ischemia injury of the liver and intestines after transplant or mesenteric ischemia model. Much about cytokine and chemokine response is extrapolated to mesenteric revascularization.

Methods: Patients undergoing mesenteric bypass or mesenteric endovascular procedure for chronic or acute on chronic mesenteric ischemia were prospectively enrolled. Blood was collected preoperatively, 30 minutes after revascularization, 6 hours after revascularization or prior to discharge for endovascular patients, and at follow-up appointment. Open interventions had a sample collected 24 hours after revascularization. High-sensitivity enzyme-linked immunosorbent assays (ELISA) were used to quantify serum levels of inflammatory cytokines IL-1b, IL-6, TNF- α , INF-g, and CXCL8.

Results: Fourteen patients were enrolled in this initial pilot study. Eight patients underwent open mesenteric bypass or required supraceliac aortic cross clamping, and six patients underwent endovascular intervention. IL-1b and IL-6 high-sensitivity ELISAs demonstrated elevated levels postoperatively at 30 minutes, 6 hours, and 24 hours. CXCL8 ELISA demonstrated elevated levels at 6 hours, 24 hours and to a lesser extent at 1 week. IL-1b, IL-6, and CXCL8 did not demonstrate significant trends in the endovascular cohort. TNF- α and INF-g did not demonstrate any systemic elevations.

Conclusions: Serum IL-6, IL-1b, and CXCL8 levels were systemically elevated following open intervention but were unchanged following endovascular procedure, possibly demonstrating a less intense inflammatory response. Future study will investigate a larger patient cohort and characterize different inflammatory cytokines and chemokines.

Table 1. Change over Baseline for IL-6 Serum Values.

Open Revascularization								
	Patient 1	Patient 4	Patient 9	Patient 10			Mean	Standard Error
Baseline	1	1	1	1			1	0
30 minutes	17794.34	4.952776	7626661	0.703189			4.427542 ^a	5823.116
6 hours	25760.56	4.611723	3.851284	1.407215			3.290074 ^a	8431.046
24 hours	20211.72	2.825885	8.634987	1.432218			4.297697 ^a	6614.431
1-2 weeks	4455.735						4455.735	0
Endovascular Revascularization								
	Patient 2	Patient 3	Patient 5	Patient 6	Patient 7	Patient 8	Mean	Standard Error
Baseline	1	1	1	1	1	1	1	0
30 minutes	35.71381	1.413428	0.072277	0.213946	0.776468	1.356914	0.766606	0.262845
6 hours	69.13644	1.184149	0.61141	0.357916	0.649546	2.244251	1.009454	0.31747
1-2 weeks	-5.7855		0.145773	0.168618			0.157196	0.009327
Notes. ^a Patient 1 excluded from mean due to extreme outlier of increase.								

Table 2. Change over Baseline for CXCL8 Serum Values.

Open Revascularization								
	Patient 1	Patient 4	Patient 11	Patient 12	Patient 13	Patient 15	Mean	Standard Error
Baseline	1	1	1	1	1	1	1	0
30 minutes	1.993947	1.006052	0.767317	0.92915	0.630754	1.008358	1.05593	0.205804
6 hours	2.976744	1.015903	4.777748	1.201834	0.580172	1.25491	1.967885	0.683316
24 hours	3.579643	0.948069	4.789783		1.03351	2.157543	2.50171	0.701905
1-2 weeks	1.813953				1.553869		1.683911	0.067153
Endovascular Revascularization								
	Patient 2	Patient 3	Patient 6	Patient 8			Mean	Standard Error
Baseline	1	1	1	1			1	0
30 minutes	1.47764	0.322176	0.469759	1.867916			1.034373	0.313259
6 hours	2.408776	0.919891	0.359931	1.635375			1.330993	0.367714
1-2 weeks	1.031493		0.615345				0.823419	0.169891

7:00 – 10:00 pm

PRESIDENT'S DINNER

Tickets Required –

Can be purchased at the Registration Desk

VESS BYLAWS

ARTICLE I - NAME

The name of this organization shall be the "Vascular and Endovascular Surgery Society" (hereinafter the "Society"). *Formerly Peripheral Vascular Surgery Society, Established in 1976.*

ARTICLE II - MISSION & OBJECTIVES

The Mission of the Society shall be to improve the quality and safety of vascular & endovascular surgical procedures and general vascular care through education, scholarship, advocacy and leadership.

The Objectives of the Society shall be:

1. To provide a diverse and inclusive forum for the early career vascular surgeon.
2. To promote basic, translational, clinical health services research pertaining to vascular and endovascular surgery.
3. To educate vascular surgeons on effective procedures, therapies and approaches to care.

The Society shall carry on activities:

- As a corporation exempt from Federal income tax under Section 501 (C) (3), of the Internal Revenue Code of 1954 (or the corresponding provision of any future United States Internal Revenue Law), or;
- As a corporation, contributions to which are deductible under Section 170; Furthermore, no part of the net income of the Society or its property or assets shall at any time inure to the benefit of any individual member, or of any private individual, or be used to promote the candidacy of any person seeking political office.

ARTICLE III - MEMBERSHIP

There shall be six types of membership:

- a) Active
 - b) Inactive
 - c) Honorary
 - d) Candidate
 - e) Associate
 - f) Medical Student
-
- a) **Active Membership** of this Society shall be limited to physicians of good professional standing who have completed an ACGME-approved vascular surgical residency or fellowship, or equivalent foreign advanced training, who have a sustained major interest and active practice in vascular and endovascular surgery and who are certified or eligible for certification by the Vascular Surgery Board of the American Board of Surgery or its equivalent. Active Members shall be required to pay annual dues. Active members have voting privileges, can serve on committees, sponsor new member applications as well as submit and sponsor papers for presentation at the annual meeting. Active Members who have been in practice for greater than 15 years may complete their term of elected office but are ineligible for any new position. This same group of Active Members may sponsor but may not present papers at Society meetings nor may they apply for or receive any grant funding.
 - b) **Inactive Membership** shall be granted to Members upon receipt of written request. Inactive members will no longer receive a subscription to the Journal. Inactive members are not required to pay annual dues, nor are they allowed to sponsor new member applications or papers submitted to the annual meeting. Inactive members may reactivate their membership by requesting in writing and paying all back dues or three times the current year's dues.
 - c) **Honorary Membership** shall be granted to individuals at the discretion of the Executive Council. Honorary Members pay no dues and are not eligible for election as Society officers.
 - d) **Candidate Membership** shall be granted to participants who are in good professional standing in an ACGME accredited general surgery, or vascular training programs recognized by the Society. Candidate Members must provide the name of their program and program director on their application. Candidate Members may serve on Committees but shall have no voting rights. Candidate

Members may present papers at the annual meeting if sponsored by an Active Member. Candidate Members may be promoted to Active Membership upon completion of their vascular surgery training and upon receipt by the society office, of a copy of their vascular surgery training certificate or a letter of endorsement from an Active VESS member Sponsor. At that time, the newly promoted Active Member will be bound by the requirements of active membership in the society.

- e) **Associate Membership** shall be limited to non-vascular trained physicians and surgeons with either an MD or DO degree, scientists active in vascular research, physician extenders in vascular specialties (RN's, PA's, NP's) and/or vascular technologists. These members shall pay half dues, have no voting rights, and may not be elected as officers of the society. They may, however, submit abstracts and papers to meetings for presentation.
- f) **Medical Student Membership** shall be open to those enrolled in an accredited allopathic or osteopathic medical school.

ARTICLE IV - ELECTION OF MEMBERS

The process of election of active members to the Society shall be as follows:

- a) Membership enrollment in the Society shall be completed via electronic application through the website.
- b) Completed applications shall be submitted 3 months prior to any scheduled business meeting, at which time the candidate shall be considered for election. A recommendation from an active society member is required to complete the application.
- c) The names of the applicants recommended for membership by the Executive Committee shall be submitted to the members at the business meeting.
- d) Election to membership shall be by secret ballot, by a three-fourths (3/4) affirmative vote of the membership present.
- e) An applicant who fails to be elected at one meeting may be reconsidered at the next two business meetings of the Society.

ARTICLE V - DUES AND FEES

- a) Dues and fees shall be levied by the Executive Committee and approved by the membership at the annual meeting.
- b) Any member whose dues remain unpaid for a period of three years shall be dropped from membership, provided that notification of such lapse is given at least three months prior to its effective date. The member may be reinstated on approval of the Executive Committee following payment of the dues in arrears.

ARTICLE VI - RESIGNATIONS, EXPULSIONS

- a) Resignations of members otherwise in good standing shall be accepted by a majority vote of the Executive Committee.
- b) Charges of unprofessional or unethical conduct against any member of the Society, if proffered in writing and submitted to the Executive Committee, must be acted upon within one year. The Executive Committee's concurrence or disallowance of the charges shall be presented to the membership at the annual meeting. A three-fourths (3/4) affirmative vote of the members present shall be required for expulsion.

ARTICLE VII - OFFICERS: ELECTIONS AND DUTIES

- a) The officers of this Society shall consist of a president, president-elect, secretary, treasurer, and recorder; all to be elected as provided in these bylaws.
- b) The president shall preside at Executive Committee meetings and the Annual Meeting. Successors to vacated offices of the Society shall be appointed by the president until the position is filled at the next annual meeting.
- c) The president and president-elect of the Society shall be elected for terms of one year each. The secretary, treasurer & recorder, shall be elected for three-year terms; and councilors at large shall be elected for 2-year terms.
- d) The president-elect, in the absence or incapacity of the president, shall perform the duties of the president's office.
- e) In the absence of both the president and president-elect, the chair shall be assumed by a president pro tempore, elected by such members of the Executive Committee as are present.

- f) The secretary shall keep minutes at the meetings of the Society and the Executive Committee, update the Executive Committee on membership database and new applicant files and conduct correspondence of the Society. The Secretary will issue an annual written report at the Annual Meeting.
- g) The Treasurer shall receive all monies and funds belonging to the Society, pay all bills, render bills for dues and assessments, and report to the membership at the annual meeting. The treasurer will prepare an annual report for audit.
- h) The Recorder shall receive all papers presented before the Society. The recorder shall be responsible for assuring prompt editorial review of manuscripts in concert with other Society members.
- i) The Councilors-at-large shall be elected for two-year terms, with election of two councilors occurring annually so as to provide overlapping terms.

ARTICLE VIII - EXECUTIVE COUNCIL

- a) There shall be an Executive Committee consisting of the president, president- elect, secretary, treasurer, recorder, councilors-at-large, and the two most recent past presidents.
- b) Committee Chairs shall be non-voting members of the EC and are invited to attend the Executive Committee Meetings and Conference Calls at the direction of the President.
- c) The Executive Committee shall be the governing body of the Society and shall have full power to manage and act on all affairs of the Society.
- d) Executive Committee meetings shall be held at the call of the president of the Society.
- e) A majority of the members of the Executive Committee shall constitute a quorum for the transaction of business.
- f) All members of the executive committee will be required to complete a conflict of interest declaration prior to their appointment. This declaration must be approved by a majority of the remaining executive committee members. If the executive committee requests, the member must divest themselves of a designated conflict of interest prior to assumption of the appointment. A conflict of interest is defined as any direct financial reimbursement to an individual or their spouse. It does not include non-specified research contributions to an institution.

ARTICLE IX – COMMITTEES AND REPRESENTATIVES

Standing committees of the Society shall consist of a nominating committee, a spring program committee, a winter program committee, a grants & scholarship committee, a fundraising committee, a bylaws committee, a membership development committee, a diversity, equity & inclusion committee, a vascular resident education committee, a student education committee and a communications committee.

The **Nominating Committee** shall consist of the current president in office, the president-elect and the three most recent past presidents. Its functions shall be to make up a slate of officers for the Society, and to nominate representatives to affiliated societies to be presented to the Executive Committee at the annual meeting. The proposed slate shall then be presented for vote during the Annual Member Business Meeting.

Representatives shall be appointed by the nominating committee in concert with the Executive Committee to serve on the American College of Surgeons Board of Governors, American College of Surgeons Advisory Council for Surgical Specialties, Vascular Surgery Board of the American Board of Surgery and the Society for Vascular Surgery (SVS) Executive Committee. Each representative shall serve a three-year term unless otherwise noted by the Executive Committee. From time to time, as other organizations may seek representation from the Society, additional representatives shall be appointed in a similar manner outlined above.

The **Spring Program Committee** shall work in concert with the SVS Program Committee to select papers and make up the program for upcoming meetings. The Spring Program Chair shall be named by the Executive Committee and serve a term of two years. The Committee will consist of 6 additional society members serving a term of two years each, with three members alternating years in such a manner as to allow for overlap.

The **Winter Program Committee** shall solicit papers and other presentations from members and other individuals and make up the programs for upcoming meetings. The Winter Program Chair shall be named by the Executive Committee and serve a term of one year. The Executive Committee will also name a Vice Chair for the Winter Program Committee for continuity. The Vice Chair will advance to the Chair. Winter Program Committee members will be asked to serve as ad hoc reviews for manuscripts presented at the Winter Meeting and submitted to Annals of Vascular Surgery for publication.

The **Grants & Scholarships Committee** shall review all applications submitted for any of the Society's educational grants. Applications will be scored and ranked, and winners will be chosen and submitted to the Executive Committee and announced at the Annual Winter Meeting.

The function of the **Fundraising Committee** shall be to research and implement comprehensive fundraising campaigns to support the Society.

The function of the **Bylaws Committee** is to review the By-Laws from time to time as directed by the Council and when appropriate, make recommendations regarding amendments. The committee will also be charged with developing policies and procedures for the Society.

The function of the Membership Development Committee is to review all applications and present their nominations for membership to the Executive Committee for review and ratification at the Annual Business Meeting. The Committee shall also assist the Secretary with membership development and expansion campaigns.

The function of the **Diversity, Equity & Inclusion Committee** is to identify and promote ways to address issues of diversity, equity, and inclusion in vascular surgery, and encourage women and minorities to actively participate in the society and its committees.

The Communications Committee shall consist of two sub-committees:

- 1) **Website sub-committee** that is responsible for all web-based and electronic communication, maintenance of the Society website and social media accounts.
- 2) **Newsletter sub-committee** is responsible for population of content for the membership newsletters.

The function of the **Vascular Resident Education Committee** is to organize and execute the Fellows Program and the Technology Forum at the VESS Annual Meeting and other initiatives focused on the education and recruitment of Vascular Surgery trainees.

The function of the **Student Education Committee** is to organize and execute the Student Mentor Program during the VESS Annual Meeting and other initiatives focused on the education and recruitment of medical students.

ARTICLE X - MEETINGS

- a) The Society shall hold an annual meeting, customarily in winter, and held at a time and place selected by the Executive Committee.
- b) The business meeting of the Society shall be conducted during the annual meeting.
- c) All active members are encouraged to attend the annual meeting one year out of every three years. There is no attendance requirement for any other member category.
- d) Special meetings may be called at any time by the president, or a simple majority of the Executive Committee.

ARTICLE XI - QUORUM

The members present at any official meeting of the society shall constitute a quorum necessary to change the constitution and bylaws of the Society, to make assessments, to authorize appropriations or expenditures of money other than those required in the routine business of the Society, to elect officers and members, and to expel members.

ARTICLE XII - ALTERATIONS, REPEAL

Bylaws may be altered or repealed at the annual meeting by a two-thirds (2/3) affirmative vote of the members present.

ARTICLE XIII - PROCEDURE

Proceedings of the Society shall be conducted under Robert's Rules of Order.

Amended – August, 2012

Amended – February, 2013

Amended – January, 2014

Amended – February, 2016

Amended – February 2018

Amended – February 2019

Amended – June 2020

Amended – January 2021

Amended – January 2022

Amended – February 2023

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MEMBER UPDATE FORM

Please help the VESS keep your membership information current. We require an email address from all members for communication purposes, as well as your preferred mailing address.

Please return to the VESS Registration Desk or email to **vess@administrare.com**.

MEMBER INFORMATION (required for all members)

Name

Institution City State

Email Address

MAILING INFORMATION

Preferred Mailing Address: Work Home

Please provide preferred mailing address below:

Mailing Address

Mailing Address (*continued*)

City State Postal Code Country

Daytime Telephone

Thank you!

SCHEDULE OF EVENTS

Wednesday, February 5, 2025

6:00 – 9:00 pm Executive Council Meeting

Thursday, February 6, 2025

7:00 am Registration
7:00 am Continental Breakfast
7:30 am – 12:15 pm Vascular Fellow Program
7:30 am – 12:15 pm General Surgery Resident Program
7:30 am – 12:15 pm Early Career Faculty Program
7:30 am – 2:00 pm Next Generation Student Mentor Program
12:30 – 1:30 pm Industry Sponsored Lunch Symposium
1:30 – 4:00 pm Vascular Technology Forum (Hands-on)
4:15 – 6:15 pm Scientific Session I
6:15 – 6:25 pm AHA PAD Guidelines Update
6:30 – 7:45 pm Welcome Reception

Friday, February 7, 2025

6:15 – 7:45 am Continental Breakfast in the Exhibit Hall
6:15 – 9:30 am Registration
7:00 – 9:04 am Scientific Session II
9:15 – 10:15 am Special Session: Artificial Intelligence
1:00 – 3:00 pm Case Reports & Experts Worst Cases Session
3:00 – 4:00 pm Coffee/Snacks – Visit Exhibitors
4:00 – 6:00 pm Scientific Session III
6:00 pm VESS Member Business Meeting

Saturday, February 8, 2025

6:15 – 7:45 am Continental Breakfast in the Exhibit Hall
6:15 – 9:30 am Registration
7:00 – 9:00 am Scientific Session IV
8:15 – 9:00 am Award Session
9:00 – 9:15 am Introduction of the President
9:15 – 10:00 am Presidential Address
10:30 – 12:30 pm Special Session: Vascular Trauma
1:00 – 3:00 pm Case Reports & Worst Case Session
3:00 pm Registration Re-Opens
3:00 – 4:00 pm Coffee/Snacks – Last Chance to Visit Exhibitors
4:00 – 6:00 pm Scientific Session V
7:00 – 10:00 pm President's Dinner