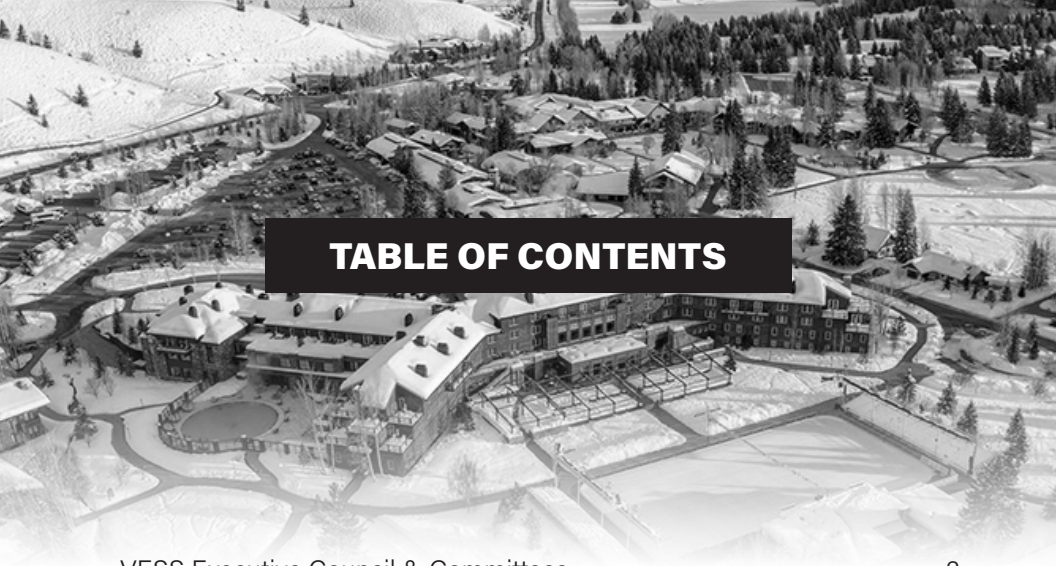

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FOR FURTHER INFORMATION

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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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
2003	Chicago, IL	Jeffrey L. Ballard

Date	Location	President
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

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

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

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 located in Limelight Promenade of the Sun Valley Inn Registration hours are as follows:

Thursday, January 18	7:00 am – 6:00 pm
Friday, January 19	6:00 – 9:30 am
	3:00 – 6:30 pm
Saturday, January 20	6:00 – 9:30 am
	3:00 – 6:00 pm

Scientific Sessions

All scientific sessions will be conducted in Limelight B/C at the Sun Valley Inn unless otherwise noted.

Speaker Ready Area

An A/V technician table will be located in the back of the general session hall (Limelight B/C). A technician will be available during the following hours:

Thursday, January 18	7:00 am – 6:00 pm
Friday, January 19	6:00 – 9:30 am
	3:00 – 6:30 pm
Saturday, January 20	6:00 – 9:30 am
	3:00 – 6:00 pm

Technology Forum

The 2024 Technology Forum will focus on broad vascular pathology and will showcase some of the best that industry has to offer. The emphasis of this program is for industry to provide insight into current and up-and-coming technology, as well as what treating physicians may see in the near future as it relates to developments in the pipeline. It will also provide opportunity for an intensive, hands-on experience in a small group format that provides a granular experience for the participating physicians. Note: This program is not eligible for CME credits. The Technology Forum is open to all registered attendees.

DATE	Thursday, January 18, 2024
TIME	1:00 - 4:00 pm

Special Programming

The following programs/courses will be held during the 2024 Annual Meeting:

- Vascular Fellows Program
- Next Generation Medical Student Mentor Program
- General Surgery Resident Vascular Interest Program
- Early Career Faculty Program

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 15.00 AMA PRA Category 1 Credits™. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Learning Objectives

This activity is designed for vascular surgeons and health care workers involved in the management of patients with vascular disease. Upon completion of this course, attendees should be able to:

- Define the role of the vascular surgeon in acute care at a tertiary hospital
- Explain upper extremity venous arterialization for no option CLTI
- Describe a remote outcome measure for diagnosis of SSI
- Analyze market forces impacting PAD treatments
- Appraise the role of volume and surgical outcomes in AAA repair
- Review the association between viral URI and acute aortic syndromes
- Illustrate volumetric analysis in EVAR surveillance
- Compare EVAR outcomes based on SES
- Contrast gender differences in outcome after complex EVAR
- Explain quality of life and ambulatory outcomes following ALI

2024 SPONSORS/EXHIBITS

Exhibit Hall

Exhibits by our industry partners will be featured in Continental Room at the Sun Valley Inn. 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 2024 Annual Meeting.

Set-Up	
Thursday, January 18, 2024	10:00 am – 5:00 pm

Scheduled Breaks in the Exhibit Hall	
Friday, January 19, 2024	6:00 – 9:30 am
	3:00 – 6:30 pm
Saturday, January 20, 2024	6:00– 9:30 am
	3:00 – 6:30 pm

Tear Down	
Saturday, January 20, 2024	6:30 – 9:30 pm

ACKNOWLEDGMENTS

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NOTES

SCHEDULE AT A GLANCE

THURSDAY, JANUARY 18, 2024

7:00 am – 5:00 pm	**Registration**
7:00 am	**Continental Breakfast**
7:30 am – 12:00 pm	**Vascular Fellow Program** Moderator: Reshma Brahmbhatt, MD
7:30 am – 12:00 pm	**General Surgery Resident Program** Moderator: Adam Doyle, MD
7:30 am – 12:00 pm	**Early Career Faculty Program** Moderator: Karan Garg, MD
7:30 am – 2:00 pm	**Next Generation Student Mentor Program** Moderator: Max Wohlauer, MD
12:00 – 1:00 pm	**Lunch Break / Symposium**
1:00 – 4:00 pm	**Technology Forum – Didactic & Hands-On** Moderator: Matthew Wooster, MD

4:15 – 6:15 pm	**SCIENTIFIC SESSION 1** Moderators: Mark Conrad & Roan Glocker

4:15 – 4:27 pm	1	**Use Of Intravascular Ultrasound During Peripheral Vascular Interventions For Claudication Is Not Associated With Improved Outcomes**
		Sanuja Bose[1], Chen Dun[1], Katherine M. McDermott[1], Sarah E. Deery[2], James H. Black, III[1], Martin A. Makary[1], Caitlin W. Hicks[1] *[1]The Johns Hopkins University School of Medicine, Baltimore, MD; [2]Maine Medical Center, Portland, ME*

4:27 – 4:39 pm	2	**Understanding The Scope Of Acute Care Vascular Surgery At A Tertiary Academic Medical Center**
		Elizabeth Hope Weissler, Zachary F. Williams, Kevin Southerland, Chandler Long, Adam Johnson, Dawn Coleman, Young Kim *Duke University School of Medicine, Durham, NC*
4:39 – 4:51 pm	3	**Aortic Luminal Contrast Attenuation Varies With Dissection Morphology And Is Associated With Need For Intervention**
		Zach M Feldman, Brandon J Sumpio, Sujin Lee, Marlena Sabatino, Charles S DeCarlo, Thomas Fedrigoni, Sunita D Srivastava, Matthew J Eagleton, Jahan Mohebali *Massachusetts General Hospital, Boston, MA*
4:51 – 5:03 pm	4	**Assist: Validation Of A Novel Hybrid Clinician-patient Remote Outcome Measure For Diagnosis Of Surgical Site Infection**
		Ross Lathan, Louise Hitchman, Bharadhwaj Ravindhran, Misha Sidapra, Josephine Walshaw, Judith Long, Joshua Totty, Carradice Daniel, George Smith, Ian Chetter *Hull University Teaching Hospitals NHS Trust, Hull, United Kingdom*
5:03 – 5:11 pm	5 (RF)	**Concomitant Pedal Interventions Improve Outcomes For Isolated Tibial Interventions In Chronic Limb-threatening Ischemia**
		Joseph P. Hart[2]; Mark G. Davies[1] *[1]Ascension Health, Waco, TX, [2]Medical College of Wisconsin, Milwaukee, WI*
5:11 – 5:19 pm	6 (RF)	**Upper Extremity Dorsal Venous Arterialization For No-option Chronic Limb Threatening Ischemia**
		Sarah A Loh[1], Anand Brahmandam[2], David Colen[1], David S Strosberg[1] *[1]Yale New Haven Hospital, New Haven, CT; [2]Northwestern University, Chicago, IL*
5:19 – 5:27 pm	7 (RF)	**Updated Carotid Stenosis Criteria May Support A Reduction In Healthcare Expenses**
		Camila Villacreses, Christian Barksdale, Hollis Chillura, Rupak Mukherjee, Jean M Ruddy *Medical University of South Carolina, Charleston, SC*

5:27 – 5:39 pm	8	**Elevated Hba1c Levels Induced Coagulopathy Identified By Viscoelastic Testing**
		Ivy Lee, Shiv S Patel, Katherine Morrow, Fanah Hagos, Tasya Rakasiwi, Aniket Agrawal, Sasha Suarez, Ryan Hall, Nikolaos Zacharias, Anahita Dua *Massachusetts General Hospital, Boston, MA*
5:39 – 5:51 pm	9	**Post Thrombotic Syndrome Morbidity In Mechanical Thrombectomy Versus Catheter-directed Thrombolysis Of Iliofemoral Deep Venous Thrombosis**
		Jack K Donohue, Rachel Kann, Lena Vodovotz, Adham N Abou Ali, Rabih A Chaer, Natalie D Sridharan *University of Pittsburgh, Pittsburgh, PA*
5:51 – 6:03 pm	10	**Carotid Endarterectomy Vs Transcarotid Stenting For Unstable Plaques**
		Samuel D Leonard[1], Nathaniel Debovever[1], Regina Husman[1], Kourosh Keyhani[1], Arash Keyhani[1], Raghu Motaganahalli[2], Andres Fajardo[2], Shihuan K Wang[1] *[1]UT Houston Medical School, Houston, TX; [2]Indiana University School of Medicine, Indianapolis, IN*
6:03 – 6:15 pm	11	**Polygenic Score Informed Models Can Improve Screening For Abdominal Aortic Aneurysms**
		David Jiang[1], Zhuqing Shi[2], Jun Wei[2], Huy Tran[2], Lilly S Zheng[2], Jianfeng Xu[2], Cheong J Lee[2] *[1]University of Chicago, Chicago, IL; [2]NorthShore University HealthSystem, Evanston, IL*

6:15 – 7:30 pm **WELCOME RECEPTION**
All attendees, guests & exhibitors are welcome

6:00 – 7:00 am **Continental Breakfast in the Exhibit Hall**

6:00 – 9:30 am **Registration**

7:00 – 9:04 am **SCIENTIFIC SESSION II**
Moderators: Michael Soult & Bjoern Suckow

7:00 – 7:12 am	12	**Association Between Regional Market Competition And Early Femoropopliteal Interventions For Claudication**
		Chen Dun[1], Sanuja Bose[1], David P Stonko[1], Midori White[1], Katherine M McDermott[1], James H Black[1], Corey A Kalbaugh[2], M Libby Weaver[3], Martin Makary[1], Caitlin W Hicks[1] *[1]Johns Hopkins University, Baltimore, MD; [2]Indiana University School of Public Health- Bloomington, Bloomington, IN; [3]University of Virginia, Charlottesville, VA*
7:12 – 7:24 am	13	**Early Opioid Use And Postoperative Delirium Following Open Abdominal Aortic Aneurysm Repair**
		Richard D Gutierrez, Lejla Pepic, Elizabeth Lancaster, Warren J Gasper, Jade S Hiramoto, Michael S Conte, Tasce Bongiovanni, James Iannuzzi *University of California, San Francisco, San Francisco, CA*
7:24 – 7:36 am	14	**The Future Of Traumatic Vascular Injury Management: Contemporary Operative Experiences In Vascular Trauma Among Surgical Trainees**
		Nicole Heidt, Christina Cui, Chandler Long, Dawn Coleman, Young Kim *Duke University Medical Center, Durham, NC*
7:36 – 7:48 am	15	**Physician Modified Endografts Achieve Equivalent Patient Survival And Target Visceral Vessel Related Outcomes To Custom Factory Made Fenestrated Endografts In Treating Complex Aortic Pathology**
		Michael C Soult, Nikita Ganeshan, Ruojia Li, Ashley Penton, Carlos F Bechara, Matthew Blecha *Loyola University Chicago, Maywood, IL*

7:48 – 7:56 am	16 (RF)	**Impact Of Elective Open Abdominal Aortic Aneurysm Repair Volume Cutoffs On Patient Access To Surgical Care In New York State**
		Joshua Geiger, Baqir Kedwai, Daniel Lehane, Michael Stoner, Karina Newhall, Adam Doyle *University of Rochester School of Medicine and Dentistry, Rochester, NY*
7:56 – 8:04 am	17 (RF)	**Gender Disparities Of Thoracic Outlet Syndrome In The PAC-12 Athletic Conference**
		Stephanie Diane Talutis[1], Jesus G Ulloa[2], Sharon L Hame[2], Hugh A Gelabert[2] *[1]Tufts Medical Center, Boston, MA; [2]University of California Los Angeles, Los Angeles, CA*
8:04 – 8:12 am	18 (RF)	**Off-the-shelf Percutaneous Deep Vein Arterialization In No-option Critical Limb Ischemia Patients**
		Michael C Siah, Gerardo Gonzalez, Khalil Chamseddin, Lawrence Lavery, Michael Shih, Jordan Stern, Melissa Kirkwood *UT Southwestern, Dallas, TX*
8:12 – 8:24 am	19	**Outpatient Anticoagulation Is Associated With Improved Acute Limb Ischemia Outcomes Following The Advent Of Direct Oral Anticoagulation**
		Marissa Jarosinski, Jason Kennedy, Stuthi Iyer, Edith Tzeng, Natalie Sridharan, Katherine Reitz University of Pittsburgh Medical Center, Pittsburgh, PA
8:24 – 8:36 am	20	**Increased Risk Of Acute Aortic Syndromes Following Respiratory Viral Infections**
		Ethan S Rosenfeld, Cali E. Johnson, Claire L Griffin, Brigitte K Smith, Kaohinani J Longwolf, Mark R Sarfati, Larry W. Kraiss, Benjamin S Brooke *University of Utah, Salt Lake City, UT*
8:36 – 8:48 am	21	**The Utility Of Small Artery Disease (SAD) And Medial Arterial Calcification (MAC) Scores In Chronic Wound And Amputation Healing: Can It Tell Us More?**
		Saranya Sundaram, Christian Barksdale, Stephanie Rodriguez, Mathew Wooster *Medical University of South Carolina, Charleston, SC*

8:48 – 8:56 am	22 (RF)	**Validation Of The Rapid Estimate Of Adult Literacy In Vascular Surgery (real_vs) In A Veteran Patient Population**
		Tania Gupta, Kedar S Lavingia, Michael F Amendola, Kathryn Fong *Virginia Commonwealth University, Richmond, VA*
8:56 – 9:04 am	23 (RF)	**Supervised Exercise Therapy With Smartphones In Patients With Claudication**
		John Swetenburg, Sagar Gandhi *Prisma Health-Upstate, Greenville, SC*

9:15 – 10:15 am **CASE REPORT SESSION I**
Moderators: Dawn Coleman & Elina Quiroga

9:15 – 10:15 am	CR01	**Polymer Embolization After Fenestrated Aortic Repairs Mimicking Spinal Cord Ischemia**
		Amos Zimmermann[1], Pierce Massie[2], Hillary Elwood[2], Ross Clark[2], Muhammad Ali Rana[2] *[1]University of Virginia, Charlottesville, VA; [2]University of New Mexico, Albuquerque, NM*
	CR02	**Vascular Hydatidosis: A Case Report**
		Bhavna Girdhani, Yogesh Niwariya, Kishan Magatapalli, Surendra Yaav *AIIMS, Bhopal, India*
	CR03	**Persistent Sciatic Artery Presenting As Large Gluteal Aneurysm In An Octogenarian**
		S. Christopher Frontario, Emma Morel, Nakul Rao, Thomas Bernik *Englewood Health, Englewood, NJ*
	CR04	**Pediatric Midaortic Syndrome Associated With Ascending Aortic Aneurysm**
		Eden Singh, Chandler Long, Matthew McDaniel, Joseph Turek, Waleska Pabon-Ramos, Anna Williams, Dawn Coleman *Duke University School of Medicine, Durham, NC*

	CR05	**Unusual Case Of Symptomatic Internal Carotid Artery Compression With Rotation Of The Head Secondary To Lateral Thyrohyoid Ligament And Superior Cornu Of Thyroid Cartilage Impingement**
		Kaitlyn Dickinson, Brian Cervenka, Susan M Nikels, Tamas Seres, Ryan Gupta, Max V Wohlauer *University of Colorado Anschutz Medical Campus, Aurora, CO*
	CR06	**Gastroduodenal Artery Aneurysm In A Patient With Celiac Artery Atresia**
		John Earl Shaughnessy, Randall Bloch, Robert Cambria, Katie Shean, Scott Prushik, Mark Conrad *St Elizabeth's Medical Center, Brighton, MA*

3:00 – 4:00 pm **SPECIAL SESSION** –
Non-clinical Early Career Advice
Moderators: Olamide Alabi & Faisal Aziz

Journal Reviews and the Editorial Process
Ravi Rajani, MD

The Role of Advocacy in Your Practice
Yazan Duwayri, MD

Building Your Brand as a Young Surgeon
Alissa Hart, MD

Managing Your Social Media Presence
Laura Drudi, MD

3:00 pm **Registration Re-Opens**

3:00 – 4:00 pm **Coffee/Snacks – Visit Exhibitors**

4:00 – 6:00 pm **SCIENTIFIC SESSION III**
Moderators: Nathan Liang & Jordan Stern

4:00 – 4:12 pm	24	**Streamlining Preoperative Evaluation For Dialysis (SPEEDY) Access: A Pilot Study**
		Shannon N Radomski[1], Rebecca Sorber[1], Christine E Haugen[2], Courtenay M Holscher[1], Jessica M Ruck[1], Avinash L Ganti[1], Thomas Reifsnyder[1] *[1]Johns Hopkins Medical Institutions, Baltimore, MD; [2]Columbia University, NY, NY*
4:12 – 4:24 pm	25	**The Value Of Restaging WIfI After Initial Vascular And Podiatric Intervention**
		Mark G Davies[1], Joseph P Hart[2] *[1]Ascension Health, Waco, TX; [2]Medical College of Wisconsin, Milwaukee, WI*
4:24 – 4:36 pm	26	**The Association Between Completion Of Supervised Exercise Therapy And Long-term Outcomes In Patients With Intermittent Claudication,concomitant Sarcopenia And Cardiometabolic Multimorbidity**
		Bharadhwaj Ravindhran, Chukwuemeka Igwe, Shahani Nazir, Arthur Lim, Daniel Carradice, Jonathon Prosser, George Smith, Ian Chetter, Sean Pymer *Hull York Medical School, Hull, United Kingdom*
4:36 – 4:48 pm	27	**Influence Of Closure On Groin Complications Among Obese Patients Undergoing Vascular Procedures**
		Randall A Bloch, Jacob L Neir, Elisa Caron, Katie E Shean, Scott G Prushik, Mark F Conrad *St. Elizabeth's Medical Center, Boston, MA*
4:48 – 4:56 pm	28 (RF)	**Missed Opportunities For Use Of Advanced Care Planning And Palliative Care In Open Aortic Surgery**
		Aaron Barrera-Alvarez, Mimmie Kwong *U.C. Davis, Sacramento, CA*

4:56 – 5:04 pm	29 (RF)	**Predictive Factors Of Success For Endovascular And Surgical Management Of Neurogenic Thoracic Outlet Syndrome**
		Meghan He[1], Jenny Wang[2], Snehal Bindra[3], Sam Ahn[4] *[1]University of British Columbia Faculty of Medicine, Vancouver, BC, Canada [2]University of California, Irvine School of Medicine, Irvine, CA; [3]Vanderbilt School of Medicine, Nashville, TN; [4]Burnett School of Medicine at TCU, Fort Worth, TX*
5:04 – 5:12 pm	30 (RF)	**Volumetric Abdominal Aortic Aneurysm Analysis In Post Evar Surveillance Settings**
		David Weiss[1], Mariam Aboian[1], MingDe Lin[2], Wolfgang Holler[3], Daniel Renninghoff[3], Sean Harris[1], Uwe Fischer[1], Cassius Iyad Ochoa Chaar[1], Cornelius Deuschl[4], Edouard Aboian[1] *[1]Yale University, New Haven, CT; [2]Visage Imaging, Inc., San Diego, CA; [3]Visage Imaging, GmbH, Berlin, Germany; [4]Essen University Hospital, Essen, Germany*
5:12 – 5:24 pm	31	**Co-existing Vascular Surgery Integrated Residencies Positively Impact General Surgery Resident Operative Competency And Autonomy In Vascular Cases**
		Gabrielle K Steinl[1], Ting Sun[2], W Darrin Clouse[1], Brigitte K Smith[2], M Libby Weaver[1] *[1]University of Virginia, Charlottesville, VA; [2]University of Utah, Salt Lake City, UT*
5:24 – 5:36 pm	32	**Allogenic Vertebral Body Adherent Mesenchymal Stromal Cells Promote Muscle Recovery In Diabetic Mouse Model Of Limb Ischemia**
		Mackenzie K Madison, Theresa Doiron, Jennifer Stashevsky, Hanaa Dakour Aridi, Nancy Zhang, Chang-Hyun Gil, Steven Miller, Michael Murphy *Indiana University School of Medicine, Indianapolis, IN*

5:36 – 5:48 pm	33	**Single Or Dual Antiplatelet Therapy Improves One-year Arteriovenous Graft Patency And Overall Survival**
		David P Ebertz[1], Saideep Bose[2], Armando De Valle[2], Satinderjit Locham[3], Mahmoud B. Malas Malas[4], Matthew R Smeds[2] *[1]Case Western University Cleveland Medical Center, Cleveland, OH; [2]St Louis University, St Louis, MO; [3]University of Rochester, Rochester, NY; [4]UC San Diego Health Center, San Diego, CA*
5:48 – 6:00 pm	34	**Socioeconomic Status Based On Area Deprivation Index Does Not Affect Postoperative Outcomes In Patients Undergoing Endovascular Aortic Aneurysm Repair In The Va Healthcare System**
		Karishma Setia, Diana Otoya, Sally Boyd, Kathryn Fong, Michael F Amendola, Kedar S Lavingia *Virginia Commonwealth University, Richmond, VA*

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

6:15 pm **Educational Symposium**

SATURDAY, JANUARY 20, 2024

6:00 – 7:00 am	**Continental Breakfast in the Exhibit Hall**
6:00 – 9:30 am	**Registration**
7:00 – 7:30 am	**AWARD SESSION** (5 min presentations) Moderators: Mark Conrad & Sam Tyagi

UPDATE FROM 2023 AWARD WINNERS
Travel Award:
Elizabeth Genovese, MD

Medtronic Resident Research Award:
Tyler Bauer, MD

Resident Research Award:
Calvin Chao, MD

BSCI Early Career Investigator Award:
Frank Davis, MD

2024 AWARD WINNERS ANNOUNCEMENT
Travel Award
Resident Research Award
Early Career Faculty Award

7:30 – 8:45 am **SCIENTIFIC SESSION IV**
Moderators: Lindsey Korepta & Karan Garg

7:30 – 7:42 am	35	**Proteomics Of Acute Limb Ischemia**
		Robert Stegman[1], Max V Wohlauer[2] *[1]University of Colorado School of Medicine, Aurora, CO; [2]UCHealth Heart and Vascular Center - Anschutz Medical Campus, Aurora, CO*
7:42 – 7:54 am	36	**Trainee Perception Of Virtual Support, Interviews And Meetings On Vascular Surgery Culture And Community**
		Margaret A. Reilly[1], Christina L. Cui[2], Eric B. Pillado[1], Ruojia 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, III[10], Dawn M. Coleman[2] *[1]Northwestern University, Chicago, IL; [2]Duke University, Durham, NC; [3]Loyola University, Maywood, IL; [4]Indiana University, Indianapolis, IN; [5]University of Rochester, Rochester, NY; [6]University of California Davis, Sacramento, CA; [7]University of California San Francisco, San Francisco, CA; [8]Emory University, Atlanta, GA; [9]Upstate Medical University, Syracuse, NY; [10]Louisiana State University, New Orleans, LA*
7:54 – 8:06 am	37	**Sex Related Differences In Perioperative Outcomes After Complex Endovascular Aneurysm Repair**
		Claudia Trogolo Franco, Shernaz S Dossabhoy, Sabina M Sorondo, Kenneth Tran, Jordan R Stern, Jason T Lee *Stanford School of Medicine, Palo Alto, CA*
8:06 – 8:18 am	38	**Moderate To Severe Preoperative Anemia Is Associated With Increased Postoperative Myocardial Infarction And Mortality In Patients Undergoing Transcarotid Artery Revascularization**
		Heepeel Chang[1], Frank Veith[2], Thomas S Maldonado[3], Igor Laskowski[1], Caron B Rockman[2], Muhammad Zeeshan[1], Glenn R Jacobowitz[2], Mikaiel Ebanks[1], Chirag Gandhi[1], Ji Chong[1], Romeo Mateo[1], Sateesh Babu[1], Karan Garg[2] *[1]Westchester Medical Center, New York Medical College, Valhalla, NY; [2]New York University Langone Medical Center, Valhalla, NY*

8:18 – 8:26 am	39 (RF)	**Effect Of Chronic Obstructive Pulmonary Disease On Mortality Following Thoracic And Complex Endovascular Aortic Repair**
		Alexander DiBartolomeo, Li Ding, Sukgu Han, Fred Weaver, Gregory Magee *University of Southern California, Los Angeles, CA*
8:26 – 8:34 am	40 (RF)	**Patients Treated For Ruptured Abdominal Aortic Aneurysms Have Fewer Hospital-free Days When Undergoing Open Repair Or Treated At Low Volume Hospitals**
		Quang Le[1], Yekaterina Khamzina[2], Edith Tzeng[2], Katherine Reitz[2], Nathan Liang[2] *[1]University of Virginia School of Medicine, Charlottesville, VA;* *[2]University of Pittsburgh Medical Center, Pittsburgh, PA*
8:34 – 8:42 am	41 (RF)	**Robotic Assisted Laparoscopic Ivc Filter Removal: A Small Institutional Review**
		Paul Haddad, Alan Lumsden, Charudatta Bavare *Houston Methodist Hospital, Houston, TX*

8:45 am – 9:00 am **Introduction of the President**
Misty Humphries, MD

9:00 – 9:45 am **PRESIDENTIAL ADDRESS**
Mark Conrad, MD

10:00 – 11:00am **CASE REPORT SESSION 2**
Moderators: Gabriela Velazquez & Sam Tyagi

10:00 – 11:00am	CR07	**Robotic Nephrectomy And Ex-vivo Repair Of Renal Artery Aneurysm**
		Paola Batarseh, Danielle Haakinson, Cassius Iyad Ochoa Chaar, Jonathan A Cardella, David S Strosberg *Yale New Haven Health, New Haven, CT*
	CR08	**Contained Rupture Of Perivisceral Aspergillus Mycotic Aortic Aneurysm Treated With Open Repair With Visceral Perfusion**
		Vy T Ho, Venita Chandra *Stanford University, Palo Alto, CA*
	CR09	**Thoracic Aorta To Inferior Mesenteric Artery Bypass For Treatment Of Chronic Mesenteric Ischemia**
		Marjorie R. Liggett[1], Margaret A. Reilly[1], Nicholas S. Lysak[2], Neel A. Mansukhani[1] *[1]Northwestern University, Chicago, IL; [2]Advocate Health Care, Chicago, IL*
	CR10	**Use Of A Thoracic Branch Endoprosthesis For Management Of A Right-sided Aortic Arch, Aberrant Left Subclavian Artery, And Kommerell Diverticulum**
		Justin R King, Mackenzie K Madison, Humraaz S Samra, Hanaa Dakour Aridi, Joel S Corvera, Raghu L Motaganahalli *Indiana University, Indianapolis, IN*
	CR11	**Open Thoracic Aortic Sac Decompression Following TEVAR For Large Ruptured Thoracic Aortic Aneurysm**
		Daniel Delgadillo, Tyler M Liang, Ali Mahtabifard, Nishant Sharma, Isabella J Kuo, Anthony H Chau, Nii-Kabu Kabutey, Roy M Fujitani, Samuel L Chen *University of California Irvine, Orange, CA*
	CR12	**Stylocarotid Syndrome With Internal Carotid Artery Stenosis Treated With Transcarotid Artery Revascularization Case Report**
		K. Matter[1], G. Lenth1, S. Maximus[2], J. Crawford[1] *[1]Sutter Health Roseville Medical Center, Roseville, CA, [2]Unviersity of California, Davis, Sacramento, CA*

3:00 – 4:00 pm **SPECIAL SESSION**
Hot Topics in Vascular Surgery
Moderators: Kristine Orion & Jeniann Yi

OBL - Rewards and risks to vascular surgery
Todd Berland, MD

Atherectomy - When is it best used
Lindsey Korepta, MD

CMS/carotid stenting - Why it matters and future implications
Malachi Sheahan, MD

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: Gegory Magee & Jean Marie Ruddy

4:00 – 4:12 pm	42	**Quality Of Life And Ambulation Outcomes In Acute Limb Ischemia Patients**
		Dhruva Kadiyala[1], Kaitlyn Dobesh[2], Seyed Pairawan[3], Alexander Shepard[3], Abdul K Natour[2], Timothy Nypaver[3], Loay S Kabbani[3] *[1]Wayne State University School of Medicine, Detroit, MI; [2]Henry Ford Health, Detroit, MI; [3]Henry Ford Health, Detroit, MI*
4:12 – 4:24 pm	43	**Sex-specific Risk Model For The Development Of Peripheral Arterial Disease With Immediate Integration Capabilities In Current Institutional Electronic Medical Records**
		Elizabeth Genovese[1], Kit Simpson[2], Ravi Veeraswamy[2] *[1]University of Pennsylvania, Philadelphia, PA; [2]Medical University of South Carolina, Charleston, SC*

4:24 – 4:36 pm	44	**Identifying Risk Factors For Poor Outcomes Following Popliteal Artery Injuries**
		Jack Layman[1], Dr. Jason Sciarretta[2], Dr. Ravi R Rajani[3], Vignesh J Muraldharan[4], Dr. Jaime Benarroch-Gampel[3], Dr. Manuel García-Toca[3], Dr. Chris Ramos[3] *[1]Augusta University/ University of Georgia Medical Partnership, Athens, GA; [2]Grady Memorial Hospital, Atlanta, GA; [3]Emory University School of Medicine, Atlanta, GA; [4]Emory University, Atlanta, GA*
4:36 – 4:48 pm	45	**Using Vascular Deserts As A Guide For Limb Preservation Outreach Programs Successfully Targets Underserved Populations**
		Kathryn L DiLosa[1], Misty Humphries[1], Vanessa Mora[2], Theresa Daniele[2], Leigh Ann O'Banion[2] *[1]UC Davis, Sacramento, CA; [2]UCSF Fresno, Fresno, CA*
4:48 – 4:56 pm	46 (RF)	**Disease-specific Patient-reported Quality Of Life After Fenestrated/branched Endovascular Aortic Aneurysm Repair**
		Andrew Hoel[1], Tanvi Nayak[1], Aravind Ponukumati[2], Neel A Mansukhani[1], David H. Stone[2], David P. Kuwayama[3], Brian Nolan[4], Bjoern D. Suckow[2] *[1]Northwestern University Feinberg School of Medicine, Chicago, IL; [2]Dartmouth Hitchcock Medical Center, Lebanon, NH; [3]Yale Medical School, New Haven, CT; [4]Maine Medical Center, Portland, ME*
4:56 – 5:04 pm	47 (RF)	**Early Transplantation Or Conversion To Peritoneal Dialysis After First Time AV Access Creation**
		Max Zhu, Alik Farber, Elizabeth King, Andrea Alonso, Anna Kobzeva-Herzog, Jeffrey J. Siracuse *Boston University, Boston, MA*
5:04 – 5:12 pm	48 (RF)	**In-hospital Outcomes After Transcarotid Artery Revascularization And Timing Of Antiplatelet Administration**
		Hanaa Dakour Aridi[1], Mackenzie Madison[1], Shihuan K Wang[2], Andres Fajardo[1], Michael P. Murphy[1], Marc L. Schermerhorn[3], Grace Wang[4], Jens Eldrup-Jorgensen[5], Vikram Kashyap[6], Raghu L Motaganahalli[1] *[1]Indiana University, Indianapolis, IN; [2]University of Texas Health Science Center, Houston, TX; [3]Beth Israel Deaconess Medical Center, Boston, MA; [4]Hospital Of The University Of Pennsylvania, Philadelphia, PA; [5]Maine Medical Center, Portland, ME; [6]Frederik Meijer Heart And Vascular Institute, Grand Rapids, MI*

5:12 – 5:24 pm	49	**Long-term Outcomes Of Vein Adjuncts In Distal Infrainguinal Bypass**
		Stephanie L Rakestraw, Zdenek Novak, Michael Y Wang, Tarun Kore, Emily L Spangler, Adam W Beck, Danielle C Sutzko *University of Alabama at Birmingham, Birmingham, AL*
5:24 – 5:36 pm	50	**Outcomes Of Percutaneous Aspiration Thrombectomy In Acute Thrombosis Of Arteriovenous Access**
		Sellers Colton Boudreau, Abindra C Sigdel *University of Louisville, Louisville, KY*
5:36 – 5:48 pm	51	**Evaluating Receipt of Optimal Medical Therapy Among Disadvantaged Groups Undergoing Amputation**
		B. M. Mize[1], A. Saati[2], M. Wichhart Donzo[1], N. Forrester[1], A. Mustapha[1], C. C. Grant[3], A. Neill[1], Y. Duwayri[1], O. Alabi[1] *[1]Emory University School of Medicine, Atlanta, GA, [2]Atlanta VA Health Care System, Decatur, GA, [3]Department of Preventative Medicine, The University of Tennessee Health Science Center, Memphis, TN*
5:48 – 5:56 pm	52 (RF)	**The Geographic Distribution Of Vascular Surgeons And Trainees By State In 2023**
		Nolan Henning, Wato Nsa, Joseph Edmonds, Anne Marie Nguyen, Arad Abadi, Peter Nelson, Juell Homco, Fernando Motta, William Jennings, Kimberly Zamor, Prashanth Iyer, Marshall Warren, Lucas Phi, Kelly Kempe *University of Oklahoma School of Community Medicine, Tulsa, OK*
5:56 – 6:04 pm	53 (RF)	**Limb Salvage Outcomes Worsened During The COVID-19 Public Health Emergency And Disproportionally Affected More Deprived Patients**
		Bowen Xie, Dana Semaan, Salim Habib, Lindsey Olivere, Michael Madigan, Ulka Sachdev, Mohammad Eslami, Karim Salem *UPMC, Pittsburgh, PA*

7:00 – 10:00 pm **PRESIDENT'S DINNER**

Tickets Required –
Can be purchased at the Registration Desk

FULL PROGRAM & ABSTRACTS

THURSDAY, JANUARY 18, 2024

7:00 am – 5:00 pm	**Registration**
7:00 am	**Continental Breakfast**
7:30 am – 12:00 pm	**Vascular Fellow Program** Moderator: Reshma Brahmbhatt, MD
7:30 am – 12:00 pm	**General Surgery Resident Program** Moderator: Adam Doyle, MD
7:30 am – 12:00 pm	**Early Career Faculty Program** Moderator: Karan Garg, MD
7:30 am – 2:00 pm	**Next Generation Student Mentor Program** Moderator: Max Wohlauer, MD
12:00 – 1:00 pm	**Lunch Break / Symposium**
1:00 – 4:00 pm	**Technology Forum – Didactic & Hands-On** Moderator: Matthew Wooster, MD

4:15 – 6:15 pm **SCIENTIFIC SESSION 1**
Moderators: Mark Conrad & Roan Glocker

4:15 – 4:27 pm	1	**Use Of Intravascular Ultrasound During Peripheral Vascular Interventions For Claudication Is Not Associated With Improved Outcomes**
		Sanuja Bose[1], Chen Dun[1], Katherine M. McDermott[1], Sarah E. Deery[2], James H. Black, III[1], Martin A. Makary[1], Caitlin W. Hicks[1] *[1]The Johns Hopkins University School of Medicine, Baltimore, MD; [2]Maine Medical Center, Portland, ME*

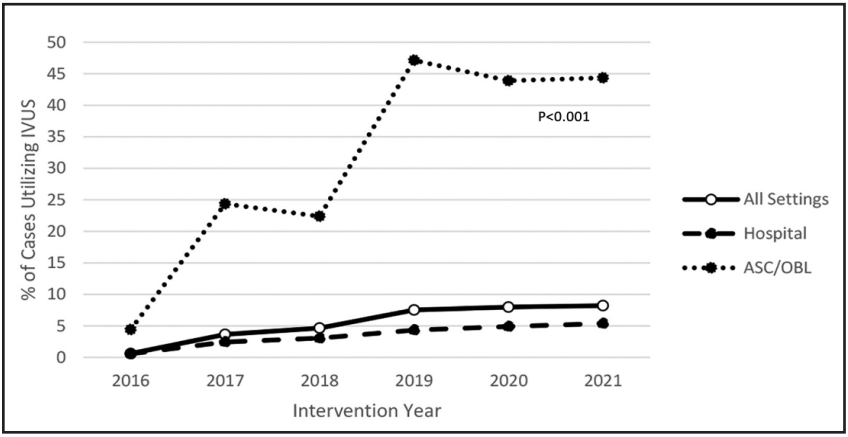
Introduction and Objectives: The efficacy of intravascular ultrasound (IVUS) in improving outcomes of peripheral vascular interventions (PVI) has not been well studied. We aimed to evaluate the association of IVUS with long-term outcomes in patients undergoing PVI for claudication.

Methods: Using 100% of Medicare fee-for-service claims, we identified all patients who underwent an index (first-time) femoropopliteal PVI for claudication between 2018-2022, excluding patients with prior CLTI and acute limb ischemia. We quantified IVUS use over time using linear regression. We used Cox proportional hazards models to assess the association of IVUS with repeat PVI and conversion to CLTI after adjusting for patient characteristics and clustering by physician.

Results: We captured 69,092 Medicare beneficiaries (mean age 74.5 years, 40.5% female, 12.1% non-Hispanic Black) who underwent an index femoropopliteal PVI for claudication, 22.1% (N=15,253) of whom received IVUS. Mean follow-up time was 2.73±1.47 years. More patients who received IVUS also received atherectomy (49.9% vs. 37.5%) and tibial interventions (41.6% vs. 19.6%) and were treated in ASC/OBLs (84.1% vs. 34.4%) than patients without IVUS (all, P<0.001). IVUS use increased significantly over time, particularly in ASC/OBLs (P<0.001; Figure). After adjustment, IVUS was associated with significantly greater hazards of repeat PVI (aHR 1.07, 95%CI 1.02-1.12) and conversion to CLTI (aHR 1.11, 95%CI 1.03-1.20) compared to PVI without IVUS. IVUS was associated with conversion to CLTI in subgroups receiving atherectomy (aHR 1.14, 95% 1.03-1.26) and those treated in ASC/OBLs (aHR 1.13, 95%CI 1.03-1.22), but not among patients treated with non-atherectomy or in hospitals.

Conclusions: The use of IVUS in the treatment of claudication is rapidly increasing, without clear benefits in outcomes. The role of IVUS in treating claudication deserves further investigation.

Figure 1. The proportion of Medicare beneficiaries who underwent an index femoropopliteal peripheral vascular intervention for claudication between 2016-2021 who also received an intravascular ultrasound, overall and by procedure setting.



4:27 – 4:39 pm	2	**Understanding The Scope Of Acute Care Vascular Surgery At A Tertiary Academic Medical Center**
		Elizabeth Hope Weissler, Zachary F. Williams, Kevin Southerland, Chandler Long, Adam Johnson, Dawn Coleman, Young Kim *Duke University School of Medicine, Durham, NC*

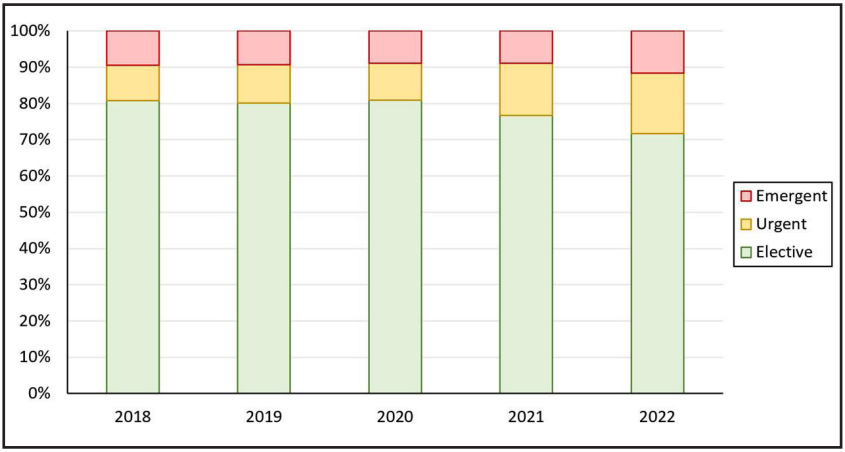
Introduction and Objectives: Non-elective general surgery has been restructured into an acute care paradigm nationally. Although vascular surgery maintains one of the highest acuity rates among surgical specialties, the acute care vascular surgery (ACVS) practice model has not been widely adopted. In the present study, we investigated the scope and burden of ACVS in an academic medical system.

Methods: All vascular surgical procedures performed at a large tertiary academic medical center were retrospectively queried through electronic medical records. Data were collected on procedure, acuity, timing of intervention, primary service, admission type, and total costs/charges. Patients were stratified by acuity of surgical intervention; ACVS was defined as urgent or emergent operation.

Results: There were 12,699 vascular surgeries performed from 2018 to 2022. ACVS cases comprised 22.1% (n=2,804) procedures of total vascular surgeries (12.5% urgent, 9.6% emergent), with an annual burden ranging from 19.2% to 28.3% (Figure). Vascular surgeons served as primary surgeon in 90.9% and co-surgeon in 8.1% of ACVS cases. Fifteen separate surgical specialties requested acute vascular assistance, most commonly cardiac surgery (n=114, 4.1%), trauma/acute care surgery (n=37, 1.3%), and orthopedic surgery (n=35, 1.2%). ACVS cases were more frequently performed after-hours (30.8% vs 11.7%) and on weekends (27.1% vs 2.0%) compared with elective cases ($p<0.0001$ each). The majority of ACVS cases originated from inpatient (n=2,354, 85.0%) and emergency department (n=379, 13.5%) consultations. Overall, ACVS generated $37.5 million in charges, accounting for 15% of total procedure-related charges over the study period.

Conclusions: ACVS comprises a substantial portion of modern vascular practice and is associated with significant expenditure of human and healthcare resources. These data support the development of practice models dedicated to acute vascular surgical care.

Figure 1. Relative burden of urgent and emergent ACVS cases by year.



4:39 – 4:51 pm	3	**Aortic Luminal Contrast Attenuation Varies With Dissection Morphology And Is Associated With Need For Intervention**
		Zach M Feldman, Brandon J Sumpio, Sujin Lee, Marlena Sabatino, Charles S DeCarlo, Thomas Fedrigoni, Sunita D Srivastava, Matthew J Eagleton, Jahan Mohebali *Massachusetts General Hospital, Boston, MA*

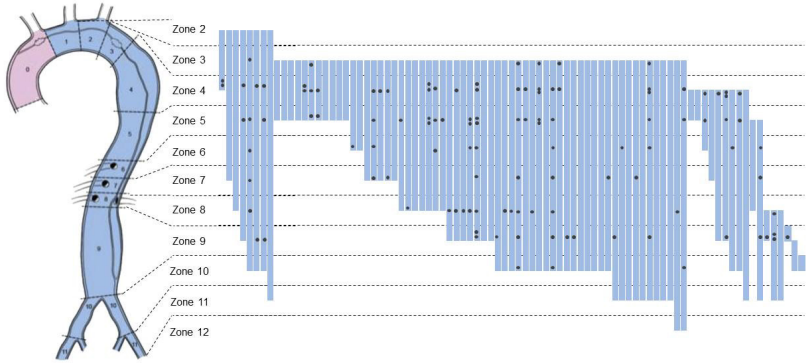
Introduction and Objectives: Prognostication after acute Type B aortic dissection (aTBAD) may be limited when relying upon static computed tomographic angiography (CTA) images to evaluate a dynamic process. We performed an exploratory study to characterize variations in luminal contrast attenuation on CTA, as a surrogate for blood flow in dissection, and to determine whether the resulting parameters held prognostic value.

Methods: Retrospective, single-institution data for patients with aTBAD were gathered from 1999-2020. Patients with prior dissection repairs were excluded. Dissection morphology was classified by the SVS/STS scheme and location/number of fenestrations. Hounsfield unit ratios (HUR) comparing lumina, phases, and aortic zone were calculated. Aortic growth, false lumen thrombosis, and need for intervention were evaluated with univariable logistic regression.

Results: After exclusions, 85 patients were identified (mean age 61.9 years, 69.4% male). SVS/STS B3,10 (20%) and B3,5 (12.9%) predominated (Figure). Overall mean arterial false-to-true HUR was 0.83. Most fenestrations were in Zone 4/5 (56.5%) and associated with more equilibrated HUR (0.93) compared to dissections without fenestration (0.70, $p = 0.04$). Intervention occurred in 65.9%, frequently for aneurysmal degeneration (43.8%) and visceral/limb ischemia (32.6%). Increased arterial false-to-true HUR was strongly associated with eventual need for intervention (OR 25.3 [95% CI 4.15-188.4], $p = 0.001$). Median interval prior to intervention for growth was 792 days versus 9.7 days for ischemia. False lumen thrombosis demonstrated no significant associations with HUR.

Conclusions: In patients with aTBAD, calculated permutations of HUR across lumina and between CTA phases may give insight into blood flow dynamics, which in turn likely impact need for intervention. Future prospective studies of time-resolved CTA are likely to hold significant prognostic value and alter management.

Figure. Histogram of Type B aortic dissection patient cohort displayed according to dissection extent, with fenestrations indicated by black circles.



4:51 – 5:03 pm	4	**Assist: Validation Of A Novel Hybrid Clinician-patient Remote Outcome Measure For Diagnosis Of Surgical Site Infection**
		Ross Lathan, Louise Hitchman, Bharadhwaj Ravindhran, Misha Sidapra, Josephine Walshaw, Judith Long, Joshua Totty, Carradice Daniel, George Smith, Ian Chetter *Hull University Teaching Hospitals NHS Trust, Hull, United Kingdom*

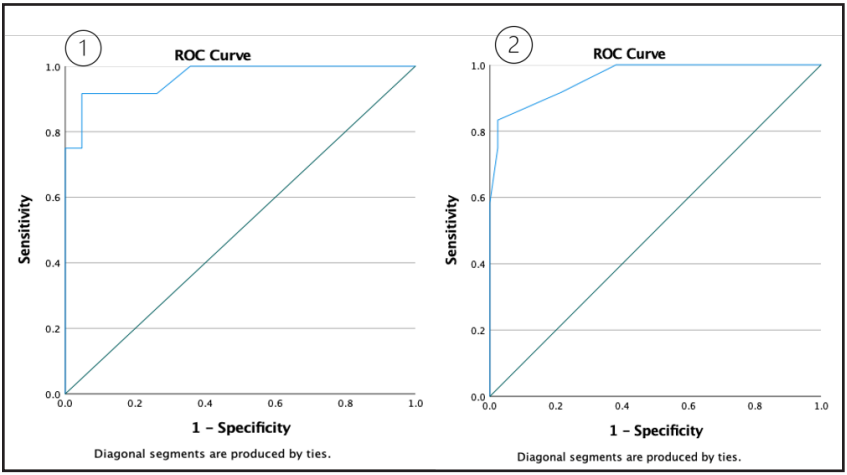
Introduction and Objectives: Current remote methods of surgical site infection diagnosis have high specificity but lack sensitivity in diagnosis. This study evaluates the acceptability, reliability and validity of a novel hybrid clinician-patient remote outcome measure (ASSIST) for detecting SSI.

Methods: Patients completed the Bluebelle wound healing questionnaire (WHQ) at 30 days post-surgery and additionally submitted wound image(s). Images were reviewed two independent clinicians. Internal consistency of the unidimensional scale was assessed. Inter-rater and intra-rater reliability assessments were performed. Sensitivity and specificity for SSI discrimination against face-to-face CDC diagnosis were evaluated and receiver operator characteristic (ROC) curve plotted with calculation of the area under the curve.

Results: 69 participants were included and no questionnaires contained missing items. The single scale showed strong Internal consistency (α= 0.9). Intra-rater reliability was good with intraclass correlation (ICC) of 0.818 (95% CI, 0.672-0.903, $p<0.001$). Inter-rater agreement was excellent (ICC 0.915, 95% CI 0.733-0.903, $p<0.001$). Sensitivity and specificity for SSI diagnosis were excellent at 91.7% and 97.6% respectively. Discrimination for SSI was high (figure 1) with an area under the receiver operating characteristic curve of 0.966 (95%CI 0.913-1.000).

Conclusions: The ASSIST measure is acceptable, reliable, and valid for diagnosis of SSI. Implementation can be safely utilized in both patient-initiated follow-up or at pre-determined time points for safe post discharge surveillance.

Figure 1. Receiver operator characteristic curve showing excellent discriminative capacity for surgical site infection using the ASSIST measure for both observer 1 and observer 2. AUC for 1. 0.966 (95%CI 0.913-1.000) and 2. 0.961 (95%CI 0.906-1.000).



5:03 – 5:11 pm	5 (RF)	**Concomitant Pedal Interventions Improve Outcomes For Isolated Tibial Interventions In Chronic Limb-threatening Ischemia**
		Joseph P. Hart[2]; Mark G. Davies[1] *[1]Ascension Health, Waco, TX, [2]Medical College of Wisconsin, Milwaukee, WI*

Introduction and Objectives: Tibial interventions with poor pedal runoff is associated with worse outcomes. The aim of this study was to examine the impact of pedal interventions to improve poor pedal runoff on the outcomes following tibial Interventions.

Methods: A database of patients undergoing isolated tibial interventions for CLTI between 2010 and 2022 was retrospectively queried. Pre-intervention and post-intervention angiograms were reviewed to assess pedal runoff using a previously reported and validated foot runoff score for tarsal vessels (range 1 to 10). This results in two run-off score groups: good vs. poor, < 7 and ≥7, respectively. The poor runoff group was segmented by the presence or absence of a pedal intervention. Outcomes of 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: 1768 patients (63% male, age 67±12years, mean±SD) with CLTI underwent tibial intervention on a median of 2 tibial vessels. All patients had WIfI grade 3 and 4 disease. 40% of cases had good runoff, 38% had poor runoff and no pedal intervention, and 22% had poor runoff and underwent a concomitant pedal intervention (Table 1). Pedal intervention was performed on a median of two tarsal vessels with a technical success of 91% and overall improved pedal runoff. Patients with a successful concomitant pedal intervention had improved 30-day and long-term outcomes compared to the poor runoff group with no pedal intervention (Table 1),

Conclusion: Concomitant pedal intervention to improve pedal runoff during a tibial intervention for CLTI results in improved short-term and long-term outcomes.

Table I. OUTCOMES

Runoff	Good (Score <7)	Poor (Score ≥7)	Poor (Score ≥7)
Pedal Intervention		**No Intervention**	**Intervention**
Patients (n)	707	672	389
Pre-Operative Pedal runoff	4.4±1.1	8.6±0.8	8.7±0.6
Post-Operative Pedal runoff			6.5±2.1
30-day MALE rate	7%	12%*	7%
30-day Amputation rate	5%	11%*	5%
Ulcer healing @ 3 months	73±4%	25±3%**	55±4%*
Freedom from MALE @ 5yrs	46±4%	17±8%**	41±8%
Amputation-free Survival @ 5yrs	51±5%	11±6%**	48±5%
*p<0.05, **p<0.01 compared to Good Runoff group			

5:11 – 5:19 pm	6 (RF)	**Upper Extremity Dorsal Venous Arterialization For No-option Chronic Limb Threatening Ischemia**
		Sarah A Loh[1], Anand Brahmandam[2], David Colen[1], David S Strosberg[1] *[1]Yale New Haven Hospital, New Haven, CT; [2]Northwestern University, Chicago, IL*

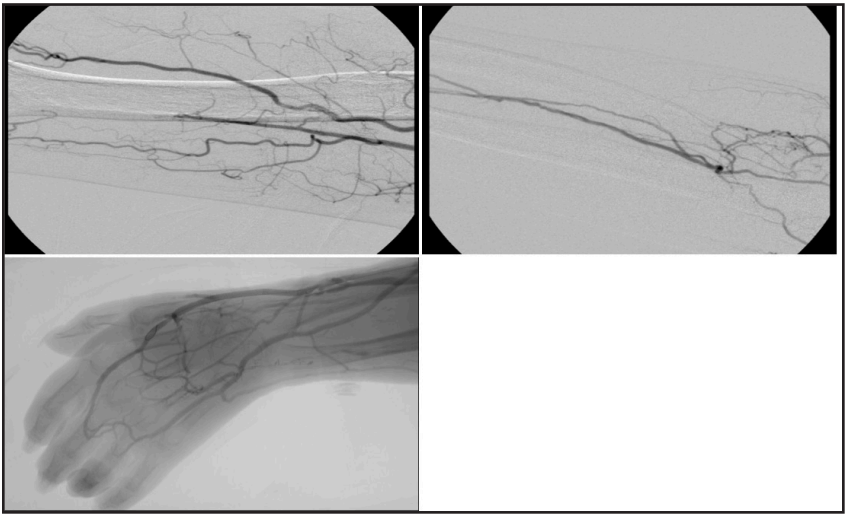
Introduction: Upper extremity chronic limb-threatening ischemia (CLTI) can significantly impact functionality and quality of life. Deep venous arterialization has been described for revascularization of lower extremities in patients with no-option CLTI. We present a case of successful hybrid upper extremity venous arterialization via axillary artery-cephalic vein bypass using a great saphenous vein (GSV) conduit for no-option CLTI.

Methods: A 61-year-old right-handed female smoker presented with right hand rest pain and dry gangrene of the 2nd and 3rd digits. Medical history was notable for a myeloproliferative disorder (JAK2 mutation) with thrombocytosis managed with hydroxyurea. Six months prior, she underwent an unsuccessful right brachial artery thrombectomy at an unaffiliated center. Transfemoral angiography demonstrated a diseased brachial artery occluding proximal to the elbow and interosseous branch reconstitution, without inline flow to the hand. The proximal anastomosis was performed to the axillary artery. Intraoperatively, the interosseous branch was deemed to be an inadequate target, therefore the distal GSV anastomosis was performed to the cephalic vein. Valvulotomy of the distal cephalic vein into the mid-hand was performed. The graft had a palpable pulse upon completion. Planned secondary angioplasty and additional lysis of distal valves was performed two days later. One large valve in the distal cephalic vein required drug-coated balloon angioplasty and stenting.

Results: She underwent planned distal finger amputations by the Hand Surgery service and was discharged home on post-operative day 6. At 1-year follow-up, the patient is without rest pain or cardiovascular morbidity and has healed amputation sites.

Conclusion: Upper extremity hybrid venous arterialization is a safe and effective treatment for no-option CLTI. Multidisciplinary approach, utilizing the expertise of hand specialists, can be considered to improve patient outcomes.

Figure 6. Pre-operative angiograms demonstrating occlusion of brachial artery at the mid-humerus (top left panel) and reconstitution of the interosseous artery from collateral arteries just distal to the elbow joint (top right panel). Completion angiogram after axillary artery-cephalic vein dorsal venous arterialization with angioplasty and stenting for valve lysis in the distal cephalic vein (bottom left panel).



5:19 – 5:27 pm	7 (RF)	**Updated Carotid Stenosis Criteria May Support A Reduction In Healthcare Expenses**
		Camila Villacreses, Christian Barksdale, Hollis Chillura, Rupak Mukherjee, Jean M Ruddy *Medical University of South Carolina, Charleston, SC*

Introduction and Objectives: Current guidelines recommend screening for carotid artery stenosis (CAS) in patients with multiple risk factors and annual surveillance is recommended for those with >50% stenosis. Therefore, the duplex ultrasound (DUS) criteria defining the threshold for 50% stenosis carries great influence for lifelong healthcare expense. The IAC recently revised these criteria and we hypothesize that this elevated threshold will reduce healthcare costs.

Methods: Updated carotid DUS criteria were adopted in May of 2022, to include PSV>125 AND ICA/CCA ratio 2-4 as evidence of 50-69% stenosis. A quality improvement analysis was conducted retrospectively to compare carotid DUS performed in the 6-month period before (Group A) and after (Group B) the criteria change. Prior carotid revascularization, intra-aortic balloon pumps, or left-ventricular assistance devices were excluded. Chi-square testing was used for statistical analysis.

Results: A total of 1,053 DUS were performed in Group A and 1,000 in Group B. The percentage of patients with <50% CAS increased from Group A to Group B (72% vs 79%, $p<0.05$), with a corresponding reduction in those testing at 50-69% stenosis (20 vs 16%, $p<0.05$). Unexpectedly, the Group B patients with >70% stenosis was also significantly decreased ($p<0.05$). When considering the expense of the DUS in our health system ($1653) and a moderate complexity physician clinic visit ($259), we have estimated that the patient/healthcare system can save approximately $168,256 annually. As an additional benefit, we estimate an additional 88 ultra-sonographer work-hours that may be directed toward alternative diagnostic studies.

Conclusion: While screening carotid DUS is a valuable tool to reduce the incidence of stroke, the subsequent lifelong surveillance for patients with >50% stenosis represents a considerable healthcare expense. Adoption of more strict velocity criteria can reduce the volume of patients entering annual surveillance with a cost and accessibility advantage.

5:27 – 5:39 pm	8	**Elevated Hba1c Levels Induced Coagulopathy Identified By Viscoelastic Testing**
		Ivy Lee, Shiv S Patel, Katherine Morrow, Fanah Hagos, Tasya Rakasiwi, Aniket Agrawal, Sasha Suarez, Ryan Hall, Nikolaos Zacharias, Anahita Dua *Massachusetts General Hospital, Boston, MA*

Introduction and Objectives: Increased hemoglobin A1c (HbA1c) is associated with vascular complications, specifically arterial thrombosis post-revascularization. However, the objective relationship between levels of HbA1c and coagulation profiles have not been established. This study aimed to determine the association between specific coagulation parameters and variations in HbA1c.

Methods: Patients with PAD undergoing revascularization were prospectively evaluated between December 2020 and July 2023. TEG-PM compared samples from patients categorized based on their HbA1c levels. The parameters included Maximum Amplitude (MA) with both adenosine diphosphate (ADP) and arachidonic acid (AA), as well as ADP and AA percent aggregation indicating clot strength. The study further assessed the differences in these parameters between groups with HbA1c levels below and above 6.

Results: Among 605 samples, those with HbA1c above 6 demonstrated a significant increase in ADP MA (48.1 vs. 42.2, $p<0.01$), AA MA (38.8 vs. 29.8, $p<0.01$), ADP % aggregation (71.4 vs. 61.4, $p<0.01$), and AA % aggregation (45.0 vs. 29.7, $p<0.01$) compared to those below 6. The trend analysis revealed a progressive increase in ADP MA values with rising HbA1c values, indicating a unit increase thrombotic response relationship. Regression analysis showed a positive relationship between HbA1c and both ADP MA (a 2.261 unit increase for each unit increase in HbA1c) and AA MA. The R-square values indicate that HbA1c only explains a small percentage of the variance in these parameters, suggesting the influence of other factors contributing to thrombosis.

Conclusion: Elevated HbA1c levels appear to be associated with pro-thrombotic changes in clot dynamics as measured by TEG-PM, particularly in parameters related to platelet function. HbA1c explains a limited proportion of the variability in these measures, emphasizing the need for a comprehensive approach in evaluating clotting profiles in patients. This study lays the groundwork for further investigation into personalized antithrombotic strategies for patients with varying HbA1c levels.

5:39 – 5:51 pm	9	**Post Thrombotic Syndrome Morbidity In Mechanical Thrombectomy Versus Catheter-directed Thrombolysis Of Iliofemoral Deep Venous Thrombosis**
		Jack K Donohue, Rachel Kann, Lena Vodovotz, Adham N Abou Ali, Rabih A Chaer, Natalie D Sridharan *University of Pittsburgh, Pittsburgh, PA*

Introduction: Iliofemoral deep venous thrombosis (IFDVT) is strongly associated with post thrombotic syndrome (PTS). Treatment options include catheter-directed thrombolysis (CDT) and, more recently, the rapid development of large bore devices for mechanical thrombectomy (MT). Both treatments have been shown to be effective; however, the rates of PTS after MT are poorly characterized.

Methods: We conducted a retrospective review of patients with acute IFDVT who underwent CDT or MT with iliac vein stenting. Patients were divided into treatment groups: Group 1 (primarily CDT without the use of large bore device adjuncts) and Group 2 (MT with large bore devices). Our primary endpoint was PTS (Villalta Score [VS]>4) and mod-severe PTS (VS>9). Secondary outcomes included stent patency and mortality. Predictors of PTS were analyzed using multivariable logistic regression.

Results: The median age of our cohort (n=188) was 48 (IQR:34-63) years, 59% were female. 150 (80%) patients were in Group 1. Group 2 had higher rates of coronary artery disease, hypercoagulability, smoking, antiplatelet-use, and anticoagulant-use. The overall rate of PTS was 23%. There were no differences in rates of PTS, mod-severe PTS, stent patency, or mortality between groups (Table 1). However, Group 2 had lower rates of PTS when compared to CDT alone (18% vs. 41%, p=0.05). Only discharge-antiplatelet reduced the risk of mod-severe PTS (aOR: 0.24 [95%CI:0.08-0.75]; p=0.01). MT treatment was not predictive of PTS (aOR: 0.62 [95%CI:0.23-1.65]; p=0.34) or mod-severe PTS (aOR: 0.29 [95%CI:0.06-1.36]; p=0.12).

Conclusions: Treatment with large bore MT was not a significant predictor for the development of PTS. MT appears safe, durable, and possibly associated with lower rates of PTS than CDT alone, which suggests that rapid thrombus removal may be of value.

Table I. Postoperative Outcomes. *Median (IQR) **Count (%)

Variable	Overall (n=188)	Group 1 (n=150)	Group 2 (n=38)	P-value
Primary Patency**	161 (87.50)	132 (89.80)	29 (78.38)	0.061
Primary-Assisted Patency**	164 (89.13)	134 (91.16)	30 (81.08)	0.078
Secondary Patency**	172 (93.48)	139 (94.56)	33 (89.19)	0.237
Mortality**	10 (5.32)	9 (6.00)	1 (2.63)	0.409
Villalta Score*	1 (0, 3)	1 (0,3)	1 (0,3)	0.398
Post Thrombotic Syndrome**	43 (22.87)	36 (24.00)	7 (18.42)	0.465
Mod-Severe Post Thrombotic Syndrome**	25 (13.30)	23 (15.33)	2 (5.26)	0.102

5:51 – 6:03 pm	10	**Carotid Endarterectomy Vs Transcarotid Stenting For Unstable Plaques**
		Samuel D Leonard[1], Nathaniel Debovever[1], Regina Husman[1], Kourosh Keyhani[1], Arash Keyhani[1], Raghu Motaganahalli[2], Andres Fajardo[2], Shihuan K Wang[1] *[1]UT Houston Medical School, Houston, TX; [2]Indiana University School of Medicine, Indianapolis, IN*

Introduction and Objectives: Previous studies have suggested similar outcomes between carotid endarterectomy(CEA) and trans-carotid artery revascularization(TCAR); however, less is known regarding outcome variability in symptomatic, unstable carotid lesions. We evaluated postoperative risk by carotid revascularization modality in patients presenting with an unstable carotid plaque.

Methods: A retrospective review capturing procedures between 2015-2023 at two academic institutions was completed. Patients presenting for surgery within 14 days of a stroke or transient ischemic attack ipsilateral to a hemodynamically significant lesion were identified as possessing "unstable" plaques. Relevant demographics, medical conditions, anatomical characteristics, perioperative course, and adverse events were captured for statistical analysis. Outcomes by treatment modality were compared in the 30-day perioperative period.

Results: We identified 419 patients who received surgical intervention for unstable symptomatic carotid artery plaque as defined by our criteria. Of these 45%(192/419) received TCAR and 54%(227/419) received CEA. Etiology of stroke based on MRI and adjudication by our neurology colleagues was not statistically significant between the two cohorts. Post-operative stroke in patients undergoing TCAR were all ischemic 100%(6/6), whereas CEA had 75%(6/8) ischemic and 25%(2/8) hemorrhagic transformations. No difference in risk of perioperative stroke (CEA3.5%, TCAR3.5%,p=.94),death (CEA1.8%, TCAR3.6%,p=.24), or a composite of stoke/death(CEA4.8%, TCAR6.8%,p=.40) was identified. Strokes following TCAR trended towards more severe deficits as measured by modified-Rankin score, no significant difference in stroke severity between the cohorts(p=.10).

Conclusions: We observed no variation in perioperative stroke incidence or survival in patients with unstable carotid plaques by revascularization modality. Further investigation is needed to objectively quantify the degree of plaque instability in a valid manner to better understand these effects. However, this study does have real world implications as a recent stroke within 14 days should not be a deterrence to TCAR.

	Whole Cohort		Open		TCAR		P- value
	n/median	%/IOR	n/median	%/IOR	n/median	%/IOR	
Sample Size	419	100%	227	54.2%	192	45.8%	
Age	72.5	65.2-78.7	70.8	64.2-76.7	73.6	66.6-81.3	0.003
Female Gender	161	38.4%	84	37.0%	77	40.1%	0.516
Smoker	104	24.8	55	24.2%	49	25.5%	0.761
BMI	27.8	24.2-31.6	28.1	24.4-31.7	27.4	24.0-31.1	0.400
CCI	5	1.2%	4	3-6	6	4-7	<0.001
CAD	176	42.0%	88	38.8%	88	45.8	0.145
MI	37	8.8%	17	7.5%	20	10.4%	0.293
Arrhythmia	61	14.6%	33	14.5	28	14.6%	0.989
EF<30	23	5.5%	8	3.5%	15	7.8%	0.055
HTN	391	93.3%	210	92.5%	181	94.3%	0.473
HLD	308	73.5%	152	67.0%	156	81.3%	<0.001
COPD	46	11.0%	17	7.5%	29	15.1%	0.013
DM	187	44.6%	89	39.2%	98	51.0%	0.015
HD	15	3.6%	5	2.2%	10	5.2%	0.099
Time To Revascularization (days)	5	1.2%	5	3-7	4.45	3.50-7.00	0.165
Thrombolytics	26	6.2%	26	11.5%	0	0.0%	0.258
High Lesion	27	6.4%	6	2.6%	21	10.9%	<0.001
Restenosis	15	3.6%	3	1.3%	12	6.3%	0.007
Previous Dissection	15	3.6	3	1.3%	12	6.3%	0.007
Neck Rads	2	0.5%	0	0.0%	2	1.0%	0.124
Spine Immob	4	1.0%	1	0.4%	3	1.6%	0.240
Contralat Sten	6	1.4%	3	1.3%	3	1.6%	0.831
Receipt of GETA	398	95.0%	218	96.0%	180	93.8%	0.286
Protamine	353	84.2%	186	81.9%	167	87.0%	0.198
EBL (cc)	50	10-100	50	20-100	30	10-81.3	0.004
Op Time (minutes)	77	57-101	97	79-121	58	47-77	<0.001
Aspirin	350	83.5%	177	78.0%	173	90.1%	<0.001
Cloppidogrel	272	64.9%	113	49.8%	159	82.8%	<0.001
Other Antiplat	9	2.1%	4	1.8%	5	2.6%	0.227
Anticoag	54	12.9%	33	14.5%	21	10.9%	0.274
Statin	391	93.3%	208	91.6%	183	95.3%	0.133
LOS (Days)	2	0.5%	2	1-4	2	1-4	0.497
Reintervention	9	2.1%	6	2.6%	3	1.6%	0.436

	Whole Cohort		Open		TCAR		P- value
	n/median	%/IOR	n/median	%/IOR	n/median	%/IOR	
Ipsi Stroke	15	3.6%	8	3.5%	7	3.6%	0.968
Stroke Types (when available)							0.202
Haemorrhagic (% of stroke)	2	13.3%	2	25.0%	0	0.0%	
Ischaemic (% of stroke)	8	53.3%	6	75.0%	6	85.7%	
Stroke Severity (Rankin)							0.109
2	2	0.5%	2	0.9%	0	0.0%	
3	1	0.2%	1	0.4%	0	0.0%	
4	3	0.7%	2	0.9%	1	0.5%	
5	3	0.7%	1	0.4%	2	1.0%	
6	5	1.2%	2	0.9%	3	1.6%	
Stroke Severity Rankin Score >3	11	2.6%	5	2.2%	6	3.1%	0.103
Stroke 30d	15	3.6%	8	3.5%	7	3.6%	0.947
MI 30d	2	0.5%	0	0.0%	2	1.0%	0.124
Death 30d	11	2.6%	4	1.8%	7	3.6%	0.23
Death or Stroke 30d	24	5.7%	11	4.8%	13	6.8%	0.399
Discharge Location							0.818
Follow Up (months)	4.68	0.23-23.6	12.6	0.27-51.3	2.12	0.2-11.4	<0.001

6:03 – 6:15 pm	11	**Polygenic Score Informed Models Can Improve Screening For Abdominal Aortic Aneurysms**
		David Jiang[1], Zhuqing Shi[2], Jun Wei[2], Huy Tran[2], Lilly S Zheng[2], Jianfeng Xu[2], Cheong J Lee[2] *[1]University of Chicago, Chicago, IL; [2]NorthShore University Health System, Evanston, IL*

Introduction and Objectives: Polygenic scores (PGS) based on disease-specific single nucleotide polymorphisms (SNPs) are tools for risk stratification of multiple diseases. AAA is a heritable polygenic disease which is the result of multiple genetic variations that are captured by PGS. This study applied known SNPs for AAA and CAD to improve AAA risk stratification for screening and prognostication.

Methods: The UK Biobank (UKBB) is a population-based repository of genetic and clinical data. An incident cohort was defined as participants without an existing diagnosis of AAA at time of genotyping. A separate cohort was defined using all subjects with sufficient data in the UKBB. PGS001784 for AAA based on 911,440 SNPs and PGS003356 for CAD were used.

Results: 481,105 subjects were included in the incident cohort. 2,668 subjects developed AAA during the follow-up period amongst whom, 879 developed severe AAA, defined as rupture or needing surgical intervention. Incidence of AAA increased with higher PGS-AAA score, from 0.3% in the lowest decile to 0.93% in the highest. A high risk PGS-AAA score was independently associated with incident AAA (HR 2.06, 1.70-2.48) when controlled for sex, age, hypertension, and other covariates. Combining PGS-AAA and PGS-CAD with clinical variables predicted AAA (AUC 0.84) with significantly improved performance compared to USPSTF guidelines only. This combinatory model identified an additional 2.2% of subjects not included for screening by current guidelines with an incidence of AAA similar to the guideline identified group.

Conclusions: High PGS-AAA is independently predictive of AAA and associated with AAA severity. We developed a model which incorporates PGS-AAA, PGS-CAD and clinical variables. The model was able to identify additional subjects at risk for AAA who would be missed by current screening guidelines, including female subjects. Vascular surgeons should consider integrating genetic data into management of AAA.

FRIDAY, JANUARY 19, 2024

6:00 – 7:00 am	**Continental Breakfast in the Exhibit Hall**
6:00 – 9:30 am	**Registration**

7:00 – 9:04 am	**SCIENTIFIC SESSION II** Moderators: Michael Soult & Bjoern Suckow

7:00 – 7:12 am	12	**Association Between Regional Market Competition And Early Femoropopliteal Interventions For Claudication**
		Chen Dun[1], Sanuja Bose[1], David P Stonko[1], Midori White[1], Katherine M McDermott[1], James H Black[1], Corey A Kalbaugh[2], M Libby Weaver[3], Martin Makary[1], Caitlin W Hicks[1] *[1]Johns Hopkins University, Baltimore, MD; [2]Indiana University School of Public Health- Bloomington, Bloomington, IN; [3]University of Virginia, Charlottesville, VA*

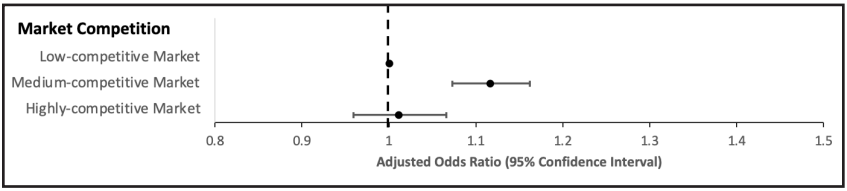
Objectives: Market competition has been shown to impact practice patterns in medicine. We aimed to investigate the association of regional market competition with the utilization of early peripheral vascular interventions(PVI) for the treatment of claudication, and the subsequent association with clinical outcomes.

Methods: We conducted a retrospective analysis of 100% Medicare fee-for-service claims data from 01/2019 to 12/2021 to identify patients with a new diagnosis of claudication. We calculated the Herfindahl-Hirschman Index for all sites of service performing PVI according to Health Service Area. Multivariable logistic regression and Cox proportional hazards models were used to assess the associations of market competition with early (<6 months) PVI for claudication and progression to chronic limb-threatening ischemia (CLTI), repeat PVI, and major amputation.

Results: We identified 300,492 patients with a new diagnosis of claudication (mean age 73.8 years, 51.6% male, 11.1% Black), of which 6.1% underwent an early PVI for claudication. The majority of patients (72.4%) were treated in low-competitive markets. After adjusting for patient characteristics, patients treated in medium-competitive markets had the highest odds of receiving an early PVI (Figure 1). Market competition was not associated with conversion to CLTI or repeat PVI (P>0.05), but patients treated in highly- (aHR 0.70, 95%CI 0.56-0.86) and medium- (aHR 0.82, 95%CI 0.69-0.92) competitive markets had lower hazards of major amputation compared to patients treated in low-competitive markets. Early PVI was significantly associated with worse clinical outcomes after adjusting for all factors including market competition (Figure 2).

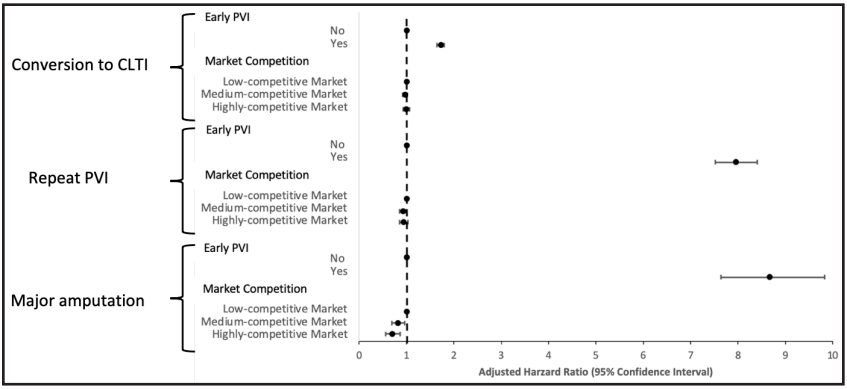
Conclusions: There is a complex interplay between market concentration, early PVI utilization, and subsequent clinical outcomes. Early PVI continues to demonstrate a strong association with unfavorable clinical outcomes even when accounting for market competition.

Figure 1. Forest plot depicting the adjusted* association (OR, 95% CI) of regional market competition with early PVI for claudication.



* Adjusting for patients age, sex, race, Area Deprivation Index, comorbidities (including end-stage kidney disease, diabetes, hypertension, smoking), population density of residence, census region of residence, and place of service.

Figure 2. Forest plots depicting the adjusted* hazard ratios of early PVI, regional market competition and place of service associated with conversion to chronic limb threatening ischemia (CLTI), repeat PVI, and major amputation.



7:12 – 7:24 am	13	**Early Opioid Use And Postoperative Delirium Following Open Abdominal Aortic Aneurysm Repair**
		Richard D Gutierrez, Lejla Pepic, Elizabeth Lancaster, Warren J Gasper, Jade S Hiramoto, Michael S Conte, Tasce Bongiovanni, James Iannuzzi *University of California, San Francisco, San Francisco, CA*

Introduction and Objectives: Postoperative delirium is a common complication following open abdominal aortic aneurysm repair (OAR). This study assessed the impact of early postoperative opioid analgesia on delirium incidence and time to onset. We hypothesized that higher early postoperative opioid utilization would be associated with increased delirium incidence.

Methods: This was a retrospective analysis of OAR cases at a single tertiary care center from 2012-2020. The primary exposure was oral morphine equivalents (OME) use, calculated for postoperative days 1-7. A cut point analysis using a receiver operator curve for delirium determined the threshold for high OME (OME>37). The primary outcome was delirium incidence identified via chart review. Multivariable logistic regression was performed for delirium and adjusted for covariates meeting $p<0.1$ on bivariate analysis.

Results: Among 198 OAR cases, 67 (34%) developed delirium with median time to onset of 3 days (IQR=2-6). Patients with high OME utilization on postoperative day (POD) 1 (55%) were younger (69 vs 74 years), less likely to have an epidural (59% vs 85%), more likely to have an urgent/emergent procedure (66% vs 38%) and more likely to develop delirium (41% vs 25%, all $p<0.05$). Overall, epidural use was associated with a decrease in OME utilization on POD 1 (33 vs 83, $p<0.01$). Delirium onset was later in those with high OME use on POD 1 (4 vs 2 days, $p=0.04$). On multivariable analysis, high OME was associated with postoperative delirium (Table 1).

Conclusions: High opioid utilization on postoperative day 1 is associated with increased postoperative delirium and epidural use reduced opioid utilization. Future study should examine the impact of opioid reduction strategies on outcomes after major vascular surgery.

Table 1. Logistic Regression Model for Postoperative Delirium.

Covariate	Odds Ratio	95% Confidence Interval	P-value
High OME POD1	2.4	1.2-4.8	0.018
60-69 years old (ref age <60)	2.9	0.7-12.0	0.134
70-79 years old	5.7	1.5-22.1	0.013
80+ years old	5.8	1.3-26.1	0.023
Preoperative ESRD	12.1	1.3-111.3	0.028
Symptomatic/ Ruptured AAA	2.1	1.1-4.1	0.033
Frail	2.7	1.3-5.5	0.006
c-statistic: 0.74			

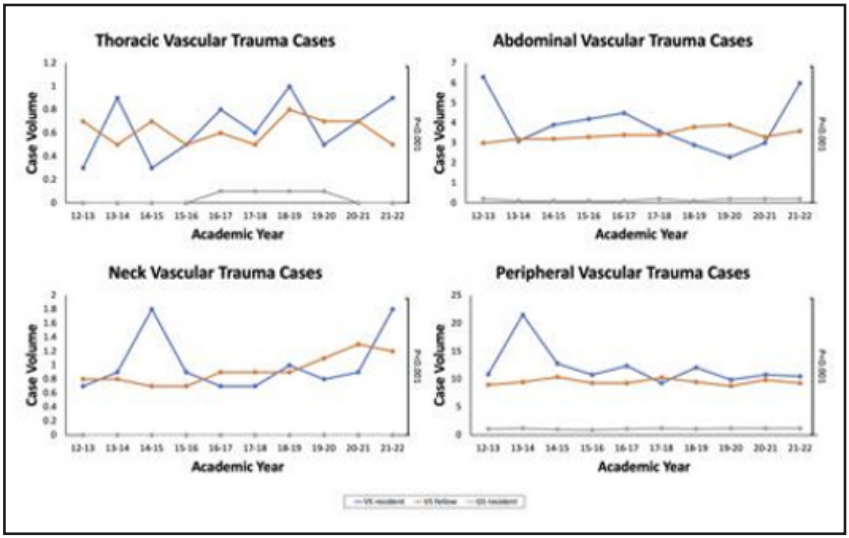
7:24 – 7:36 am	14	**The Future Of Traumatic Vascular Injury Management: Contemporary Operative Experiences In Vascular Trauma Among Surgical Trainees**
		Nicole Heidt, Christina Cui, Chandler Long, Dawn Coleman, Young Kim *Duke University Medical Center, Durham, NC*

Introduction: The management of vascular trauma requires specialized training and expertise. While traumatic vascular injury is currently treated by both vascular and trauma surgeons in modern practice, it remains unclear who will inherit the role of managing vascular trauma in the coming decades. In this study, we examined disparities in operative experience in vascular trauma among surgical trainees across different surgical specialties.

Methods: Accreditation Council for Graduate Medical Education national operative log reports were collected for graduating vascular surgery residents (VSR), vascular surgery fellows (VSF), and general surgery residents (GSR) from 2012 to 2022. Total operative volume for traumatic vascular injury was examined, as were the five major contributing operative domains (neck, thoracic, abdominal, peripheral, and fasciotomy).

Results: A total of 22,052 GSR, 334 VSR, and 1,672 VSF graduated over the ten-year study period. VSR had the highest vascular trauma case volume (24.9 ± 3.9 cases/five yrs), followed by VSR (22.1 ± 1.5 cases/two yrs) then GSR (2.4 ±0.3 cases/five yrs, $p<0.001$). Thoracic vessel exploration/repair (0.7 vs 0.6 vs 0.0 cases), abdominal vessel exploration/repair (1.0 vs 0.9 vs 0.0 cases), neck vessel exploration/repair (4.0 vs 3.4 vs 0.2 cases), peripheral vessel exploration/repair (12.1 vs 9.5 vs 1.1 cases), and lower extremity fasciotomy for trauma (7.2 vs 7.6 vs 1.1 cases) were most frequent amongst VSR and VSF groups ($p<0.001$ each). On linear regression analysis, both VSF (+0.5 cases/yr, $R2=0.81$, $p<0.001$) and GSR (+0.1 cases/yr, $R2=0.75$, $p=0.001$) groups experienced a growth in vascular trauma volume. Contrariwise, vascular trauma volume did not change among graduating VSR ($R2=0.13$, $p=0.31$).

Conclusions: Focused vascular surgical training provides the highest operative exposure to civilian vascular trauma in the United States.


Thoracic Vascular Trauma Cases
Abdominal Vascular Trauma Cases
Neck Vascular Trauma Cases
Peripheral Vascular Trauma Cases
Case Volume
Academic Year
12-13
13-14
14-15
15-16
16-17
17-18
18-19
19-20
20-21
21-22

7:36 – 7:48 am	15	**Physician Modified Endografts Achieve Equivalent Patient Survival And Target Visceral Vessel Related Outcomes To Custom Factory Made Fenestrated Endografts In Treating Complex Aortic Pathology**
		Michael C Soult, Nikita Ganeshan, Ruojia Li, Ashley Penton, Carlos F Bechara, Matthew Blecha *Loyola University Chicago, Maywood, IL*

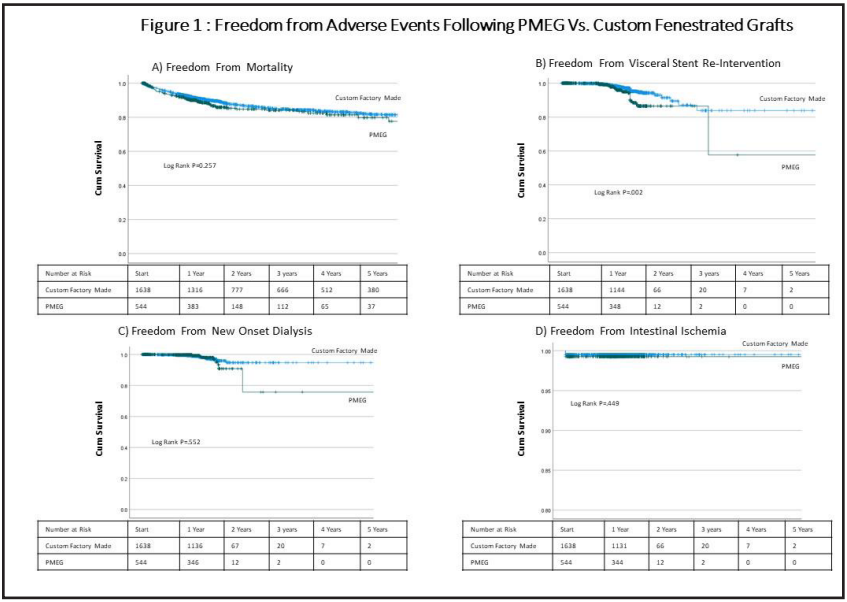
Introduction and Objectives: The purpose of this study was to conduct a real-world comparison of visceral stent branch related outcomes and survival in physician modified endografts (PMEG) versus custom factory made fenestrated endografts (CMFE).

Methods: After exclusions, 544 PMEG and 1638 CMFE were identified in the Vascular Quality Initiative between 2014 and 2022. The four primary outcomes were freedom from mortality, new onset dialysis, visceral ischemia, and visceral stent graft reintervention. Multivariable Cox Regression was also performed for visceral reintervention utilizing variables with a univariable P<0.10 for visceral reintervention.

Results: Mean follow up for survival was 1.9 years for PMEG and 3.0 years for CMFE. Mean follow up for visceral stent related data was 1.07 and 1.19 years for PMEG and CMFE respectively. Baseline differences between PMEG and CMFE are presented in Table I. Figure 1 displays univariable freedom from the primary adverse outcomes. Cox regression revealed that the number of visceral vessels stented was the only multivariable risk for visceral re-intervention (P<.001). The univariable association of PMEG with re-intervention was primarily accounted for by PMEG averaging 3.48 visceral vessels stented vs 3.01 in CMFE (P<.001).

Conclusions: PMEG patients are a higher risk population and have equivalent mid-term freedom from mortality, visceral stent graft reintervention, new onset dialysis, and intestinal ischemia relative to custom factory made fenestrated endografts.

Figure 1. Freedom from Adverse Events Following PMEG Vs. Custom Fenestrated Grafts.



Number at Risk	Start	1 Year	2 Years	3 years	4 Years	5 Years
Custom Factory Made	1638	1316	777	666	512	380
PMEG	544	383	148	112	65	37

Number at Risk	Start	1 Year	2 Years	3 years	4 Years	5 Years
Custom Factory Made	1638	1144	66	20	7	2
PMEG	544	348	12	2	0	0

Number at Risk	Start	1 Year	2 Years	3 years	4 Years	5 Years
Custom Factory Made	1638	1136	67	20	7	2
PMEG	544	346	12	2	0	0

Number at Risk	Start	1 Year	2 Years	3 years	4 Years	5 Years
Custom Factory Made	1638	1131	66	20	7	2
PMEG	544	344	12	2	0	0

Table 1. Comparison of Baseline Characteristics Between PMEG and Custom Made Fenestrated Devices.

Variable	PMEG (N=544)	Custom Made Device (N=1639)	P-value
Mean Age (years)	71.79 (SD 9.95)	73.42 (SD 8.10)	<0.001
Max AAA Diameter (mm)	61.4 (SD 12.3)	59.5 (SD 10.3)	<0.001
Number of Stented Visceral Vessels	3.48 (SD 1.14)	3.01 (SD 0.95)	<0.001
Gender			0.079
Male Gender	73.2% (n=398)	76.9% (n=1260)	
Female Gender	26.8% (n=148)	23.1% (n=379)	
Hypertension	92.1% (n=501)	88.2% (n=1446)	0.012
Coronary Artery Disease	27.8% (n=151)	31.2% (n=511)	0.133
Congestive Heart Failure	13.2% (n=72)	14.6% (n=239)	0.436
Hx of Coronary Revascularization	30.3% (n=165)	38.4% (n=629)	<0.001
Diabetes	18.0% (n=98)	18.2% (n=299)	0.905
Renal Insufficiency	28.1% (n=153)	24.8% (n=407)	0.128
Hemodialysis at Time of Repair	3.1% (n=17)	0.9% (n=14)	<0.001
Hx of CVA	12.1% (n=66)	9.4% (n=154)	0.066
Active Smoker	32.9% (n=179)	31.3% (n=513)	0.486
Never Smoker	86.6% (n=471)	89.0% (n=1459)	0.124
Hx of Prior PAD Intervention	13.2% (n=72)	8.2% (n=135)	<0.001
Hx of Major Amputation	0.9% (n=5)	0.5% (n=9)	0.349
Anemia	10.7% (n=58)	4.8% (n=79)	<0.001
BMI < 20 mg/kg^2	7.7% (n=42)	5.9% (n=96)	0.122
BMI > 30 mg/kg^2	31.6% (n=172)	28.4% (n=466)	0.157
Antiplatelet Therapy	68.2% (n=371)	72.9% (n=1195)	0.034
Statin Therapy	75.6% (n=411)	75.6% (n=1239)	0.984
Anticoagulation Therapy	15.6% (n=85)	12.9% (n=212)	0.113
Prior Open Aortic Surgery	12.7% (n=69)	5.9% (n=96)	<0.001

Variable	PMEG (N=544)	Custom Made Device (N=1639)	P-value
Primary Aortic Pathology			
Dissection	9.7% (n=53)	2.3% (n=38)	<0.001
Aneurysm	89.5% (n=487)	97.1% (n=1592)	<0.001
Arm Access at Time of Operation	34.0% (n=185)	15.7% (n=258)	<0.001
One of Visceral Target Vessels with >50% Stenosis Preoperatively	17.3% (n=94)	9.9% (n=162)	<0.001

Abbreviations: BMI = Body Mass Index; Hx = History; CVA = Cerebrovascular Accident; Hx = History of; PAD = Peripheral Artery Disease; PMEG = Physician Modified Endograft.

Table 11. Multivariable Cox Regression for Outcome of Visceral Stent Graft Re-intervention in Follow Up.

Variable		Percent Undergoing Re-Intervention (n)	Univariable P-Value	Multivariable Cox Regression Hazard Ratio (95% CI)	Multivariable P-Value
Number of Celiac Branch Stents at Operation	≥ 2 Stents	6.4% (7/109)	0.067	1.008 [0.398-2.551]	0.987
	1 Stent	3.2% (66/2074)			
Number of SMA Branch Stents at Operation	≥ 2 Stents	6.7% (13/194)	0.006	1.116 [0.518-2.403]	0.779
	1 Stent	3.0% (60/1989)			
Number of Right Renal Artery Stents at Operation	≥ 2 Stents	6.2% (16/258)	0.007	1.376 [0.712-2.658]	1.209
	1 Stent	3.0% (57/1925)			
Number of Left Renal Artery Stents at Operation	≥ 2 Stents	5.8% (17/291)	0.011	1.209 [0.631-2.318]	0.567
	1 Stent	3.0% (56/1892)			
Arm Access at Time of Operation	Yes Arm Access	5.2% (23/443)	0.015	1.060 [0.600-1.872]	0.841
	No Arm Access	2.9% (50/1740)			
PMEG vs Factory Made Fenestrated Graft	PMEG	5.0% (27/544)	0.015	1.249 [0.739-2.111]	0.406
	Factory Made EndoGraft	2.8% (46/1639)			
Celiac > 50% Stenosis Preoperatively	Yes > 50% Stenosis	8.9% (10/112)	<0.001	1.624 [0.712-3.704]	0.249
	No > 50% Stenosis	3.0% (63/2071)			
SMA >50% Stenosis Preoperatively	Yes > 50% Stenosis	8.2% (5/61)	0.032	1.083 [0.372-3.151]	0.884
	No > 50% Stenosis	3.2% (68/2122)			
Number of Visceral Vessels Stented at Operation	Yes Reintervention	Mean 3.63 (STD 0.656)	0.004	2.152 [1.410-3.285]	**<.001**
	No Reintervention	Mean 3.11 (STD 1.027)			

Variables not achieving univariable < 0.10 significance for visceral stent reintervention and therefore not included in the regression: Diameter of AAA; Age; Gender; BMI < 20, BMI > 30; Hx of CVA; Hx of CAD; Hx of CHF; Hx of DM; Hx of HD; Hx of HTN; Active Smoker; Never Smoker; Any previous CAD revascularization; Prior Hx of lower extremity PAD intervention; Hx of major amputation; Hx of anemia; Hx of chronic renal insufficiency; No ASA preoperatively; No antiplatelet preoperatively; No statin preoperatively; Yes anticoagulation preoperatively; Prior open aortic surgery; Prior endovascular aortic surgery; Pathology = Aortic dissection; Pathology = Aortic anuerysm + dissection; Pathology = Only aortic anuerysm; Pathology = Penetrating aortic ulcer; Any endoleak at completion of case; Right renal artery stenosis > 50%; Left renal artery stenosis > 50%; > 50% stenosis or occlusion of any visceral artery post-operatively; No DC antiplatelet; No DC statin; Yes DC anticoagulation; Yes LTFU smoking; No LTFU antiplatelet; Yes LTFU anticoagulation; No LTFU statin.

Abbreviations : BMI = Body Mass Index; CVA = Cerebrovascular accident ; CAD = Coronary Artery Disease; CHF = Congestive Heart Failure; DC = discharge; DM = Diabetes Mellitus; HD = hemodialysis; Hx = History; HTN = Hypertension; PAD = Peripheral Arterial Disease; LTFU = long-term follow up; AAA = Abdominal Aortic Aneurysm; PMEG = Physician Modified Endograft; SMA = Superior Mesenteric Artery; ASA = Aspirin.

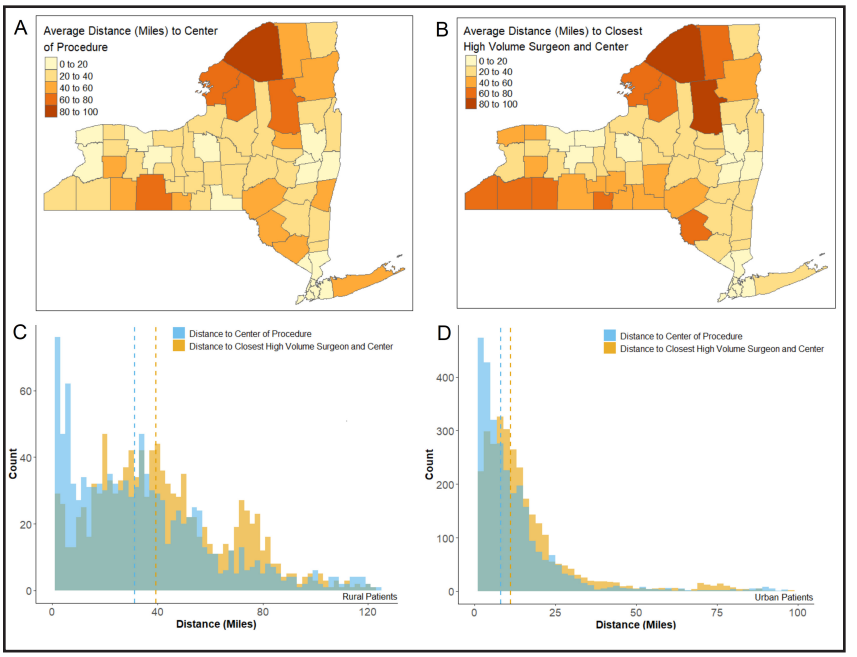
7:48 – 7:56 am	16 (RF)	**Impact Of Elective Open Abdominal Aortic Aneurysm Repair Volume Cutoffs On Patient Access To Surgical Care In New York State**
		Joshua Geiger, Baqir Kedwai, Daniel Lehane, Michael Stoner, Karina Newhall, Adam Doyle *University of Rochester School of Medicine and Dentistry, Rochester, NY*

Introduction and Objectives: Volume-outcome relationships have established improved outcomes for patients undergoing open AAA repair if performed by surgeons with a yearly volume of ≥7 open aortic procedures and at hospitals with a perioperative mortality rate of <5%. However, the impact of this recommendation on patients' driving distance and access to surgery is unknown. This study seeks to quantify the impact on patients' access to care in such high-volume centers.

Methods: Patients undergoing elective open AAA repair were identified using the New York SPARCS database from 2003 to 2014. An average of 7 open aortic repairs per year was considered high-volume. Travel distances to hospitals were obtained using patient addresses via Google Distance Matrix and compared before and after surgeon and hospital standards were implemented. Patient addresses were stratified as urban or rural based on USDA Rural-Urban Commuting Area cutoffs. Comparisons were performed using both geospatial data analysis by county and Mann-Whitney U-test.

Results: 6,337 patients who underwent open AAA had identifiable addresses for which distances to their surgical center could be obtained. Only 2,077(32.8%) patients were treated by surgeons and at centers that met previously proposed criteria. If recommended guidelines were implemented, the travel distances would change from 8.1(IQR:3.7-15.3) to 11.1(IQR:6.2-18.5) miles ($p<0.001$) for patients in urban locations (n=3024). For patients who live in rural locations (n=1236) the travel distances would change from 31.3(IQR:12.8-52.3) to 39.4(IQR:23.2-61.1) ($p<0.001$) (Figure 1).

Conclusions: These data suggest travel times would increase for open AAA patients should volume guidelines be implemented. Alternative solutions, such as allowing lower volume surgeons who operate at centers with high volume surgeons, should be considered to increase patient access to care.


A
Average Distance (Miles) to Center of Procedure
0 to 20
20 to 40
40 to 60
60 to 80
80 to 100
B
Average Distance (Miles) to Closest High Volume Surgeon and Center
0 to 20
20 to 40
40 to 60
60 to 80
80 to 100
C
Distance to Center of Procedure
Distance to Closest High Volume Surgeon and Center
Count
Rural Patients
Distance (Miles)
D
Distance to Center of Procedure
Distance to Closest High Volume Surgeon and Center
Count
Urban Patients
Distance (Miles)

7:56 – 8:04 am	17 (RF)	**Gender Disparities Of Thoracic Outlet Syndrome In The PAC-12 Athletic Conference**
		Stephanie Diane Talutis[1], Jesus G Ulloa[2], Sharon L Hame[2], Hugh A Gelabert[2] *[1]Tufts Medical Center, Boston, MA; [2]University of California Los Angeles, Los Angeles, CA*

Objectives: Compare the incidence of Thoracic Outlet Syndrome (TOS) of female and male athletes in a collegiate athletic conference.

Methods: Athletes with TOS were identified in the PAC-12 Health Analytics Program Database (2016-2022). Demographics, sports, treatments, and outcomes were compared between genders.

Results: The database included 6,874 females and 8,726 males playing 21 sports. Incidence of TOS was 0.5%(76), including 0.7%(46) female and 0.3%(30) male athletes. Athletic data are presented in Table 1, by the percent of PAC-12 athletes for each sport. Higher percentages of female athletes were affected by TOS in tennis (3.1% vs 2.1%), rowing (1.6% vs 0.5%), and baseball/softball (1.4% vs 0.7%), although less for volleyball (0.6% vs 1.3%)(p=0.006). Sports-related injuries were common (80.4% vs 73.3%, p=0.47). Chronic/overuse injuries were higher among females (58.7% vs 28.6%) and acute injuries higher among males (41.3% vs 71.4%) (p=0.012). Most (85%) were managed with a combination of physical therapy, testing and 15% required surgical intervention. There was no difference in treatment modality between genders. Females required more treatments on average (25.0 vs 12.6, p=0.049). This did not affect time to return to competition (92.3 vs 98.5 days, p=0.91). Overall, 65 (94.2%) were able to return to competition (76.1% vs 90.0%, p=0.13). Of those who returned to sport, players returned to pre-injury performance in 96.9% (97.5% vs 96.0%, p=0.77). Four athletes (5.5%) graduated, not returning to competition. Return to competition data was unavailable for 7.

Conclusions: The risk of TOS is not equally distributed among male and female collegiate sports. Tennis, rowing, and baseball/softball affect females at higher rates than males. Despite these differences, few require surgical intervention and the majority (94.2%) can return to competition.

	ALL ATHLETES			FEMALE ATHLETES			MALE ATHLETES		
	% with TOS	TOS N=76	All PAC-12 N= 15,600	% with TOS	TOS N=46	PAC-12 Females N= 6,874	% with TOS	TOS N=30	PAC-12 Males N= 8,726
Tennis	2.6%	12	463	3.1%	7	225	2.1%	5	238
Rowing	1.3%	18	1,435	1.6%	16	1,006	0.5%	2	426
Baseba11/ Softba11	0.9%	14	1,543	1.4%	6	441	0.7%	8	1,089
Swimming	0.8%	7	893	0.8%	4	493	0.8%	3	400
Volleyball	0.7%	6	867	0.6%	4	709	1.3%	2	158
Water Polo	0.7%	3	438	1.3%	3	229	0.0%	0	209
Gymnastics	0.5%	2	364	0.7%	2	298	0.0%	0	66
Wrestling	0.4%	1	232	0.0%	0	1	0.4%	1	231
Track and Field	0.2%	4	1,631	0.3%	3	949	0.1%	1	680
Basketball	0.2%	2	919	0.0%	0	384	0.4%	2	535
Football	0.2%	6	3,341	0.0%	0	0	0.2%	6	3,340
Unique Sports	0.1%	1	680	0.3%	1	311	0.0%	0	369
Cross Country	0.0%	0	443	0.0%	0	259	0.0%	0	184
Diving	0.0%	0	96	0.0%	0	62	0.0%	0	34
Field Hockey	0.0%	0	83	0.0%	0	82	0.0%	0	0
Golf	0.0%	0	461	0.0%	0	176	0.0%	0	285
Lacrosse	0.0%	0	414	0.0%	0	402	0.0%	0	12
Skiing	0.0%	0	198	0.0%	0	87	0.0%	0	111
Soccer	0.0%	0	1,108	0.0%	0	760	0.0%	0	347

Significant difference ($p=0.006$) observed in distribution of TOS in female and male athletes.
Significance defined as $p<0.05$.

8:04 – 8:12 am	18 (RF)	**Off-the-shelf Percutaneous Deep Vein Arterialization In No-option Critical Limb Ischemia Patients**
		Michael C Siah, Gerardo Gonzalez, Khalil Chamseddin, Lawrence Lavery, Michael Shih, Jordan Stern, Melissa Kirkwood *UT Southwestern, Dallas, TX*

Introduction and Objectives: To report our single-center experience of fully percutaneous deep vein arterialization (pDVA) using off the shelf tools for the treatment of Rutherford 6 patients with critical limb threatening ischemia (CLTI).

Methods: From 2022-2023, 15 consecutive patients were treated by creating an arteriovenous fistula (AVF) between a tibial artery and its corresponding tibial vein. All patients had previously undergone either an endovascular or open surgical procedure and were subsequently referred for evaluation given absence of distal targets for arterial bypass. Technical success was defined as successful AVF creation. Patient demographics, procedural details, morbidity/mortality as well as wound healing outcomes were assessed prospectively.

Results: All 15 patients (mean age 69.9 years) underwent successful pDVA. The average procedure time was 164 minutes. Average fluoroscopy time was 62 minutes with an average Cumulative Air Kerma of 132.2 mGy. One patient experienced early stent thrombosis requiring thrombectomy and stenting and two patients had access site complications requiring intervention within the first 30-days. Over the course of 6-month follow up, 4 patients (26%) underwent major amputation of the previously treated extremity. Mortality at 6 months was 26%. Eleven patients (74%) had clinical improvement observed by resolution of rest pain and wound healing, with 33% experiencing complete wound healing.

Conclusions: Our experience demonstrates that off the shelf pDVA is a feasible revascularization option in patients with Rutherford 6 disease with no-option CLTI.

8:12 – 8:24 am	19	**Outpatient Anticoagulation Is Associated With Improved Acute Limb Ischemia Outcomes Following The Advent Of Direct Oral Anticoagulation**
		Marissa Jarosinski, Jason Kennedy, Stuthi Iyer, Edith Tzeng, Natalie Sridharan, Katherine Reitz *University of Pittsburgh Medical Center, Pittsburgh, PA*

Introduction: Epidemiologic studies describing acute limb ischemia (ALI) are outdated and predate the introduction of direct oral anticoagulants (DOACs) in 2011. We therefore synergized the National Inpatient Sample (NIS) and United State (US) Census to delineate contemporary ALI trends in incidence, treatment, and outcomes.

Methods: We included emergent admissions of adults (18+ years) with primary diagnosis of lower extremity ALI, excluding concurrent trauma/dissection secondary diagnoses in survey weighted NIS data (2010-2020). Trend outcomes included ALI incidence in the US population, outpatient oral anticoagulation among all hospitalizations, and revascularization among ALI hospitalizations evaluated by Mann-Kendal testing. Among ALI admissions, the associations between relevant covariates and in-hospital amputation/death were quantified using multivariable logistic regression.

Results: Of 392,301,886 estimated US hospitalizations, 154,462 were for ALI (mean age 68+/-0.1 years, 48.6% female, 76.4% White). Among all US residents, ALI incidence peaked in 2014 (6.7 per 100,000 person-years) and has decreased since with a nadir in 2020 (4.2 per 100,000 person-years; ptrend=0.013; Figure1a). Among all hospitalizations, 5.7% (N=22,166,294) included outpatient anticoagulation and the incidence increased significantly from 3.6% to 8.6% (ptrend=0.0003; Figure1a). Among ALI hospitalizations, open revascularization decreased (36% to 32%, ptrend=0.0043) while endovascular revascularization increased (41.2% to 49.1%, ptrend=0.005, Figure 1b). Amputation rates decreased (6.9% to 5.5%, ptrend=0.0081; Figure 1c). Death rates were stable (Figure 1c). Outpatient anticoagulation was associated with reduction in amputation (aOR=0.78 [95%CI 0.67-0.90], p=0.001) and death (aOR=0.50 [95%CI 0.43-0.59], p<0.0001; Figure2a-b).

Conclusion: Contemporary ALI incidence is 4.2 per 100,000 person-years and has down-trended since the introduction of DOACs. Outpatient anticoagulant was associated with a decreased risk of amputation and death. Further research is needed to understand the relationship between outpatient medical therapy and inpatient outcomes.

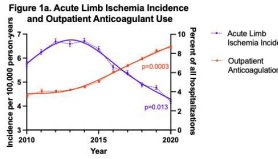


Figure 1a. Acute Limb Ischemia Incidence and Outpatient Anticoagulant Use
Incidence per 100,000 person-years
Percent of all hospitalizations
Year
Acute Limb Ischemia Incidence
Outpatient Anticoagulation
p=0.0003
p=0.013

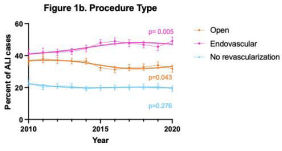


Figure 1b. Procedure Type
Percent of ALI cases
Year
Open
Endovascular
No revascularization
p= 0.005
p=0.043
p=0.276

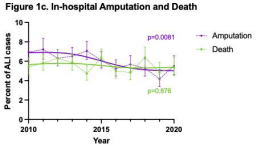


Figure 1c. In-hospital Amputation and Death
Percent of ALI cases
Year
Amputation
Death
p=0.0061
p=0.876

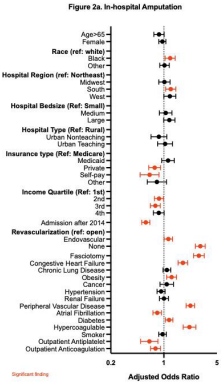


Figure 2a. In-hospital Amputation
Age>65
Female
Race (ref: white)
Black
Other
Hospital Region (ref: Northeast)
Midwest
South
West
Hospital Bedsize (Ref: Small)
Medium
Large
Hospital Type (Ref: Rural)
Urban Nonteaching
Urban Teaching
Insurance type (Ref: Medicare)
Medicaid
Private
Self-pay
Other
Income Quartile (Ref: 1st)
2nd
3rd
4th
Admission after 2014
Revascularization (ref: open)
Endovascular
None
Fasciotomy
Congestive Heart Failure
Chronic Lung Disease
Obesity
Cancer
Hypertension
Renal Failure
Peripheral Vascular Disease
Atrial Fibrillation
Diabetes
Hypercoagulable
Smoker
Outpatient Antiplatelet
Outpatient Anticoagulation
Significant finding
0.2
1
5
Adjusted Odds Ratio

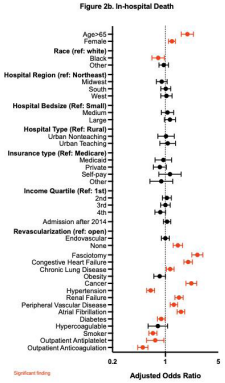


Figure 2b. In-hospital Death
Age>65
Female
Race (ref: white)
Black
Other
Hospital Region (ref: Northeast)
Midwest
South
West
Hospital Bedsize (Ref: Small)
Medium
Large
Hospital Type (Ref: Rural)
Urban Nonteaching
Urban Teaching
Insurance type (Ref: Medicare)
Medicaid
Private
Self-pay
Other
Income Quartile (Ref: 1st)
2nd
3rd
4th
Admission after 2014
Revascularization (ref: open)
Endovascular
None
Fasciotomy
Congestive Heart Failure
Chronic Lung Disease
Obesity
Cancer
Hypertension
Renal Failure
Peripheral Vascular Disease
Atrial Fibrillation
Diabetes
Hypercoagulable
Smoker
Outpatient Antiplatelet
Outpatient Anticoagulation
Significant finding
0.2
1
5
Adjusted Odds Ratio

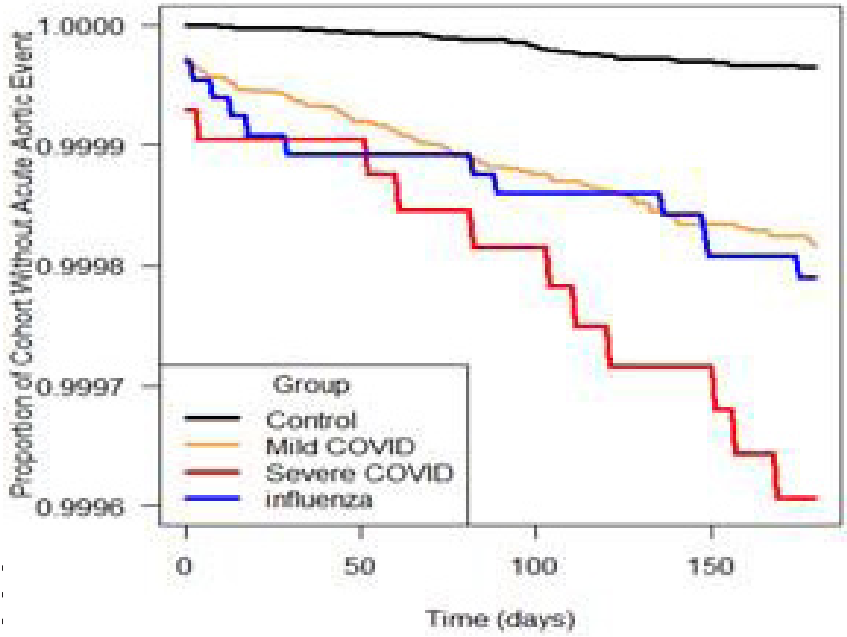
8:24 – 8:36 am	20	**Increased Risk Of Acute Aortic Syndromes Following Respiratory Viral Infections**
		Ethan S Rosenfeld, Cali E. Johnson, Claire L Griffin, Brigitte K Smith, Kaohinani J Longwolf, Mark R Sarfati, Larry W. Kraiss, Benjamin S Brooke *University of Utah, Salt Lake City, UT*

Introduction and Objectives: Respiratory viral infections are associated with increased incidence of adverse cardiovascular events. However, it is unclear whether viral infections are associated with increased risk of acute aortic syndromes (AAS). The study was designed to assess whether COVID-19 and influenza illnesses are associated with increased incidence of subsequent AAS in the US population.

Methods: We used the MarketScan database (2012-2021) to identify patients 18-99 years of age without prior diagnosis of aortic pathology diagnosed with COVID-19 or influenza. Identified patients were matched 1:1 by age and sex to control patients without COVID-19 or influenza. The primary outcome was incidence of AAS (dissection, intramural hematoma, penetrating aortic ulcer, or aneurysm rupture) within 180-days of a viral infection. The association between infection and risk of developing AAS was analyzed using multivariate Cox proportional hazards models.

Results: We identified 1,775,698 patients, including 779,229 (44%) with mild COVID-19, 42,141 (2%) with severe COVID-19, and 66,479 (4%) with influenza matched to 887,849 (50%) control patients without COVID-19 or influenza illnesses. A total of 164 patients experienced AAS within 6-months after diagnosis, which was highest after severe COVID-19 (Figure). The predicted incidence of AAS was significantly higher among patients after severe or mild COVID-19 (14.1 events/100,000 person-years) and influenza (13.3 events/100,000) when compared to control patients (2.6 events/100,000). In risk-adjusted Cox models, severe COVID-19 (HR:5.4, 95%CI:2.8-10.4; P<.01) and influenza (HR:5.1, 95%CI:2.6-9.7; P<.01) diagnoses were associated with increased risk of AAS within 180-days when compared to matched controls.

Conclusions: There is an increased risk of developing AAS in the months following cases of COVID-19 or influenza. These data highlight the need to closely monitor at-risk patients following viral respiratory infections.


Proportion of Cohort Without Acute Aortic Event
1.0000
0.9999
0.9998
0.9997
0.9996
Group
Control
Mild COVID
Severe COVID
influenza
0
50
100
150
Time (days)

8:36 – 8:48 am	21	**The Utility Of Small Artery Disease (SAD) And Medial Arterial Calcification (MAC) Scores In Chronic Wound And Amputation Healing: Can It Tell Us More?**
		Saranya Sundaram, Christian Barksdale, Stephanie Rodriguez, Mathew Wooster *Medical University of South Carolina, Charleston, SC*

Introduction and Objectives: In 2021, Ferraresi et al. proposed a scoring system (SAD/MAC) offering insight similar to WIfI (Wound-Ischemia-Infection) classification with minimal cost/expertise required. Given the sparse yet promising data on SAD/MAC, we investigated its utility in advanced diabetic/ischemic wound care.

Methods: We identified 117 patients (136 limbs) who underwent amputation for chronic podiatric wounds (2015-2020) and angiogram or foot x-ray<6months.SAD scores were calculated in 67 limbs;128 had MAC scores. Outcomes were related to wound healing and amputation. Statistical analysis include chi-square, ANOVA, correlation, and Kaplan-Meier analysis.

Results: Demographics were similar between cohorts (Table I). Higher SAD/MAC-scores had more below-ankle disease (p =.025/ p=.001) and lower toe pressures (p=.043/p<.001, Table-II). Interestingly, SAD-1 had more failed amputations (p=.048) and one-year MALE (p=.028,Fig-I). Though not significant, 1-year MALE was higher with revascularization<90days (SAD-0-2). Alternatively, MAC-2 had worse re-admission (p=.014), re-intervention<90days (p=.010), major amputation<90days (p=.028), and wound healing (p=.028,Fig-II). Kaplan-Meier analysis suggested revascularization<90days could improve healing in MAC-0 (p=.002) with less benefit in MAC-2 (p=.012). In our study population, MAC had a significant relationship with wound healing (p=<.001,Table II), major amputation (p=.001), loss of AFS (p<.001), and mortality (p<.001); in comparison, WIfI was only significantly correlated with wound healing (p=.011) and major amputation (p=.002). After adjusting to normal distribution, only relationships between MAC and wound healing (p=.021) or AFS (p=.029) remained significant. Additionally, MAC demonstrated stronger relationships with AFS (p=.029) and all-cause mortality(p=.006) compared to WIfI.

Conclusions: MAC scores can complement, if not improve upon, recommendations of conventional wound-healing predictors like WIfI, especially in long-term survival. Requiring only a foot x-ray, MAC-scores are easy to obtain and perform for any practitioner. Further investigation can delineate MAC's role as an adjunct to current practices.

Figure I. Kaplan Meier Analysis of the Effect of Revascularization on One-Year MALE and Wound Healing.

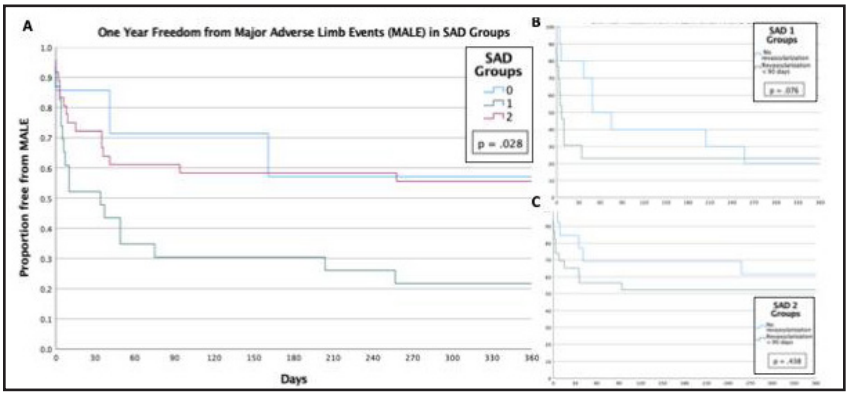


Figure A-C. Kaplan Meier analysis of one-year freedom from major adverse limb events amongst SAD groups (A). When SAD groups 1 (B) and 2 (C) were further analyzed, an increase in MALE over time was noted in those who received revascularization <90 days from index amputation, through neither of these differences were significant.

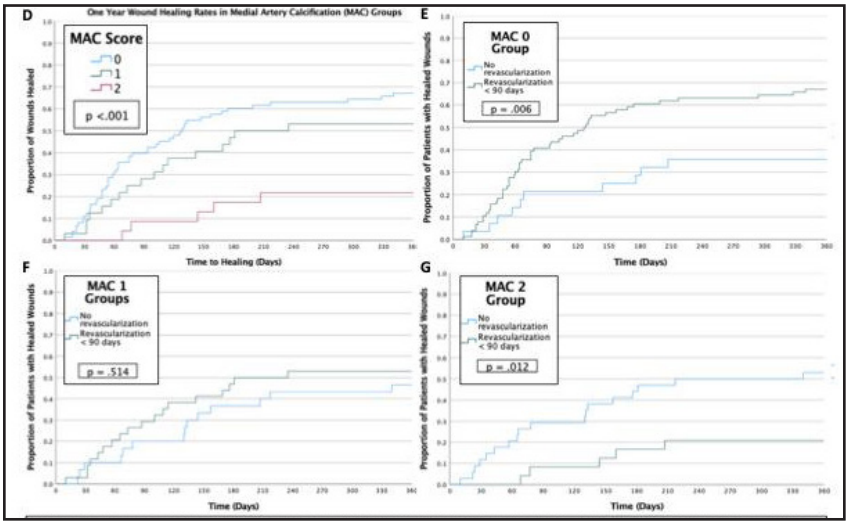


Figure D-G. Kaplan Meier analysis of wound healing at one-year amongst MAC groups (D). Additional sub-analysis of MAC groups revealed revascularization <90 days from index amputation was associated with significant increase in proportion of wounds healed in group 0 (E), similar wound healing in group 1 (F), and significantly worse wound healing in group 2 (G).

Table I. Patient characteristics of Small Artery Disease (SAD) and Medial Arterial Calcification (MAC) groups. Mean ± standard error (95% CI) or n (%of total n).

	LIMBS (N=67)				LIMBS (N=128)			
	SAD Group 0 (n=7)	SAD Group 1 (n=23)	SAD Group 2 (n=36)	P-value	MAC Group 0 (n=73)	MAC Group 1 (n=32)	MAC Group 2 (n=24)	P-value
Demographics								
Age, years	54.8±6.0	64.0±2.6	66.5±2.0	.378	62.7±1.6	64.2±2.2	60.7±2.8	.618
Male	71.4%	60.9%	75.0%	.512	72.6%	62.5%	91.3%	.056
Female	28.6%	39.1%	25.0%	.512	27.4%	37.5%	8.7%	.056
BMI, kg/m^2	30.3±4.2	29.4±1.1	28.7±1.0	.470	29.5±0.7	30.9±1.1	26.6±1.0	.034*
White Race	71.4%	26.1%	19.4%	.018*	50.7%	18.8%	17.4%	.002*
Black Race	28.6%	73.9%	80.6%	.018*	47.9%	75.0%	82.6%	.002*
Other	0.0%	0.0%	0.0%	.018*	1.4%	6.3%	0.0%	.002*
COPD	0%	21.7%	30.6%	.212	28.8%	12.5%	43.5%	.036*
Diabetes Mellitus	85.7%	70.0%	80.5%	.422	71.2%	78.1%	91.6%	.009*
Hypertension	100.0%	95.7%	91.7%	.639	82.2%	100.0%	100.0%	.004*
Hyperlipidemia	100.0%	95.7%	80.6%	.130	87.7%	84.4%	100.0%	.158
Heart Failure	14.3%	78.3%	47.2%	.005*	41.1%	65.5%	65.2%	.024*
CKD	57.1%	95.7%	75.0%	.040*	68.5%	90.6%	100.0%	<.001*
Medications								
Aspirin	71.4%	77.3%	88.6%	.523	71.2%	66.7%	82.6%	.420
Statin	42.9%	95.7%	83.3%	.005*	67.1%	93.8%	82.6%	.009*
Post-operative outcomes								
Ankle brachial index	1.02±0.11	1.4±0.06	0.99±0.07	.321	1.07±0.03	1.08±0.06	1.21±0.07	.154
Toe pressure, mmHg	62±18	42±11	26±4	.068	77±7	46±9	36±6	<.001*
Post-operative stay (days)	4.6±1.8	8.1±1.2	5.1±0.7	.036*	6.6±0.8	5.9±0.7	6.0±1.1	.853
Successful index amputation	85.7%	39.1%	63.9%	.048*	71.2%	65.6%	43.5%	.052
Re-admission (yes)	71.4%	78.3%	51.4%	.104	38.9%	46.9%	73.9%	.014*
Revascularization (<90 days)	42.9%	52.2%	58.3%	.724	19.2%	25.0%	30.4%	.018*
+Revascularization (<90 days)	0.0%	13.0%	19.4%	.397	4.1%	15.6%	4.3%	.004*
+Debridement (<90 days)	14.3%	56.5%	19.4%	.007*	27.4%	25.0%	20.8%	.432
Major amputation (<90 days)	*	13.9%	8.3%	.094	12.3%	37.5%	34.8%	.002*
Re-intervention (<90 days)	14.3%	65.2%	41.7%	.766	26.3%	43.8%	54.2%	.010*
Male (<90 days)	14.3%	69.6%	38.9%	.013*	28.8%	40.6%	47.8%	.188
Healed wound (last clinic visit)	85.7%	39.1%	36.1%	.062	69.9%	53.1%	30.4%	.003*
All-cause mortality (yes)	14.3%	39.1%	50.0%	.200	26.0%	40.6%	65.2%	.003*

* – significance of p < .05 (on one-way ANOVA or chi-square analysis).
COPD = chronic obstructive pulmonary disease; CAD = coronary artery disease; CKD = chronic kidney disease; successful amputation = freedom from additional amputation or revision > 90 days; major amputation = above the ankle; re-intervention = debridement, revascularization, or amputation; MALE = major adverse limb event; healed wound = free from all adjunctive therapies including chemical/mechanical debridement or negative pressure wound vac.

Table II. Relationship between Small Artery Disease (SAD), Mean Arterial Calcification (MAC), and Other Measures of Disease Severity.

		Number (n)	Kendall's tau b T_b [95% CI]	Significance (2-tailed)
SAD	MAC	61	0.222 [0.055, .378] ∆	.058
	Toe Pressure (TP)	66	-0.206 [-0.357, -0.044] ∆	.043*
	WIfI score	66	0.105 [-0.59, 0.264]	.367
MAC	Toe Pressure (TP)	128	-0.281 [-.385, -.171] ∆	<.001*
	WIfI score	128	0.178 [0.063, 0.287] ∆	.029*

Comparison of MAC and WIfI Score associations with 1-year adverse outcomes.

		Limbs (n)	Pearson's coefficient p or r [95% CI]	Significance robs vs rα=.05 (p<.05)	Fisher Z-score robs→ Zobs	Significance Z_{MAC} vs. ZWIfI (p<.05)	Critical Z-score Zα=.05	Significance Zobs vs Zα=.05 (p<.05)
MAC	Healed wounds (yes)	128	-0.33 [-0.48, -0.17]∆	<.001*	-0.34	.337	-1.91	.029*
	Major adverse limb event (yes)	128	0.08 [-0.09, 0.25]	.151	0.08	897	-1.02	.152
	Major amputation (yes)	128	0.28 [0.12, 0.44]∆	.001*	0.29	.889	1.30	.097
	Amputation free survival (no)	128	0.34 [0.17, 0.48]∆	<.001*	0.35	.029*	2.04	.021*
	All-cause mortality (yes)	128	0.30 [0.13, 0.45]∆	<.001*	0.31	.006*	1.54	.061
WIfI	Healed wounds (yes)	136	-0.22 [-0.37, -0.05]∆	.011*	-0.21	-	-0.60	.234
	Major adverse limb event (yes)	136	0.07 [-0.10, 0.23]	.429	0.07	-	-1.05	.146
	Major amputation (yes)	136	0.27 [0.11, 0.42]∆	.002*	0.28	-	1.33	.092
	Amputation free survival (no)	136	0.08 [-0.09, 0.24]	.378	0.08	-	-0.94	.174
	All-cause mortality (yes)	136	-0.04 [-0.21 0.13]	.659	-0.04	-	1.40	.081

* = statistical significance indicated by Kendall's tau b correlation coefficient corresponding top < .05 (significant association), Pearson's product-moment (i.e., biserial rank correlation) correlation analysis (differences from normal variation set at α = .05), or Fisher-Z scores with significant between-group differences (p < .05) or from group to normal variation (set at α = .05).

∆ = clinical significance indicated by 95% confidence interval (CI) that does not include 0 or 1/-1.

MAC = Medial Arterial Calcification; WIfI = Wound Ischemia and foot Infection score; Kendall's tau b = reports correlation coefficient between -1 and l with -1 = perfect negative relationship, 0 = no relationship, and 1 = perfect positive relationship Pearson's correlation coefficient= reports strength of between-variable association with scores between -1 and 1, with -1 indicating a total negative linear correlation, 0 being no correlation, and +1 indicating a total positive correlation; rα = .05 = ± 0.173 5 in MAC and ± 0.1685 in WIfI and |r α=.05| is compared to |robs| to determine significance from 0; Fisher's Z-statistics = correlation coefficient corrected to normal distribution; Critical Z-score = correlation representing no association within a normally distributed population of this size (α = .05); healed wound= free from all adjunctive therapies including chemical/mechanical debridement or negative pressure wound vac; MALE = major adverse limb event, unscheduled podiatric interventions + redo-revascularization; major amputation= above the ankle; amputation-free survival= living at one year without major amputation.

8:48 – 8:56 am	22 (RF)	**Validation Of The Rapid Estimate Of Adult Literacy In Vascular Surgery (real_vs) In A Veteran Patient Population**
		Tania Gupta, Kedar S Lavingia, Michael F Amendola, Kathryn Fong *Virginia Commonwealth University, Richmond, VA*

Introduction and Objectives: Supervised exercise therapy is effective in the treatment of claudication, however, access to programs is limited. The objective of this study was to determine if it was feasible for patients to use their smartphones to monitor walking distances and observe if quality of life improved in patients adherent to a walking program.

Methods: Patients seen in the vascular surgery office from 2018-August 2022 were presented with questionnaire regarding their smartphone usage and a quality-of-life questionnaire validated for patients with PAD (VascuQoL-6) at the initial visit. Baseline ABIs, demographics, comorbidities, Rutherford class, and any medical or surgical interventions were recorded. Baseline walking distances in average steps per day and miles per day were recorded. Patients followed up at 3 months with a questionnaire about their smartphone usage as well as with average steps and miles per day. Patients followed up again at 6 months with an additional questionnaire on smartphone usage, average steps and miles per day, and a VascuQoL-6 questionnaire. ABIs were obtained after 6 months from enrollment.

Results: 55 patients are enrolled with 32 patients having completed the study to date. 85.3% of patients found no difficulty in using a phone to track their steps. After 6 months, 66.7% of patients had an increase in their average number of steps per day with improved quality of life scores, with the median change in quality of life being 4 ($p=0.031$).

Conclusions: Use of personal smartphones is a feasible way for patients to track their steps and record their walking distances with minimal difficulty. Increased walking distances results in improved quality of life scores in relation to symptoms of claudication.

Figure I. Distribution of Health Literacy Scores. (A) Distribution of Rapid Estimate of Adult Literacy (REALM) scores out of 66; (B) Distribution of Rapid Estimate of Adult Literacy in Vascular Surgery scores out of 75.

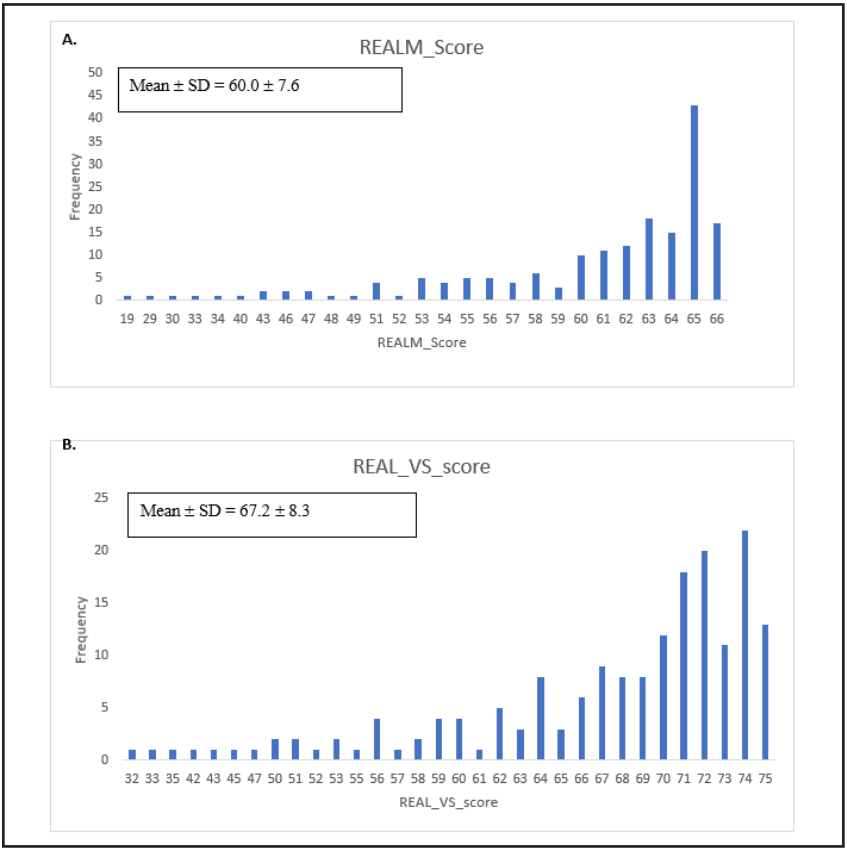


Table I. Frequency distribution of estimated literacy level according to REALM and REAL_ VS scores.

Estimated Literacy Level	REALM score	N(%)	REAL_VS score	N(%)
<4th grade	0-18	0 (0)	0-9	0 (0)
4th-6th grade	19-44	8 (4.5)	10-54	14 (7.9)
7th-8th grade	45-60	53 (30.0)	55-68	51 (28.8)
>9th grade	61-66	116 (65.6	69-75	112 (63.3)

8:56 – 9:04 am	23 (RF)	**Supervised Exercise Therapy With Smartphones In Patients With Claudication**
		John Swetenburg, Sagar Gandhi *Prisma Health-Upstate, Greenville, SC*

Introduction: Outpatient referral to the vascular clinic is the standard practice for an initial in-person consultation for dialysis access. Most factors predicting the complexity of first-time access surgery can be determined from history rather than physical exam. This study investigates the outcomes of patients undergoing first-time hemodialysis access placement screened with a standardized preoperative phone interview and no preoperative clinic visit versus those opting for a standard in-person clinic visit.

Methods: From 9/2021 to 8/2022, all patients scheduled in vascular clinic for first-time dialysis access were telephoned using a standardized history questionnaire. Those meeting criteria were scheduled for surgery without a preoperative visit (SPEEDY group). The comparison group was patients who desired to meet with the surgeon preoperatively but were otherwise study eligible.

Results: Of the 107 patients contacted, 43 (40%) were eligible. Of these eligible patients, 21 (49%) were scheduled for surgery without a preoperative visit and 19 (90%) underwent surgery. Compared to eligible controls, SPEEDY participants were significantly younger (48.5 years vs. 59.4, p=0.03) but there was no difference in gender, median duration of HD, or type of procedure performed between the groups. SPEEDY patients had a significant reduction in median time from initial referral to surgery (48 days vs. 82, p=0.01). Likelihood of complications did not differ between the groups. At a median follow up time of 12.9 months (IQR:11.9, 14.2) there was no difference in overall access patency between SPEEDY participants and eligible controls (p=0.83) (Figure 1).

Conclusion: A standardized telephone questionnaire can effectively be used to identify patients who can safely undergo first time dialysis access surgery without an in-person clinic visit, significantly reducing time from initial referral to surgery.

	Initial	6-months	P-value
N	44	32	NS
A81 Left	0.732	0.834	
ABI Right	0.809	0.826	
Vascuqol-6, Median (IQR)	12 (10, 15)	16 (12, 20)	
Steps, Mean ± SD	2957 ± 2826	3122 ± 2541	
N	32	32	
Vascuqol-6, Median (IQR)	13 (10, 18)	16 (12, 20)	0.028*
N	27	27	
Steps, Mean ± SD	2700± 2472	3077 ± 2601	0.109
Increased Steps	Yes	No	
N	18 (66%)	9	
Vascuqol-6 Difference, (Median IQR)	4 (-1, 10)	-1 (-2, 1)	0.031*

Follow up ankle brachial indices (ABI) compared to mean steps and vascuqol-6 survey. There is a statically significant increase in the Vascuqol-6 scores with increased steps (p=0.031).

9:15 – 10:15 am **CASE REPORT SESSION I**
Moderators: Dawn Coleman & Elina Quiroga

9:15 – 10:15 am	CR01	**Polymer Embolization After Fenestrated Aortic Repairs Mimicking Spinal Cord Ischemia**
		Amos Zimmermann[1], Pierce Massie[2], Hillary Elwood[2], Ross Clark[2], Muhammad Ali Rana[2] *[1]University of Virginia, Charlottesville, VA; [2]University of New Mexico, Albuquerque, NM*

Introduction and Objectives: To review two cases of lower extremity neurologic deficits due to hydrophilic polymer embolization (HPE) following complex aortic repair.

Methods: A single-institution retrospective review of 111 patients undergoing fenestrated/branched endovascular aortic repair (F/BEVAR) with Cook Zenith devices.

Results: Two patients (1.8%) developed acute neurological lower extremity deficits after F/BEVAR. Case 1 is a 73-year-old male with juxtarenal AAA who underwent 2-vessel FEVAR complicated by bilateral lower extremity weakness along with pruritic rash involving the entire body. Spinal MRI demonstrated signs of scattered microvascular thoracic spine infarctions. Biopsy of skin lesions noted serpiginous basophilic stippled material within the dermal capillaries, consistent with embolized polymer. A full neurologic recovery was achieved within 10 days while the rash resolved over 2 months. Case 2 is a 67-year-old male with juxtarenal AAA who underwent 3-vessel FEVAR complicated by a lower extremity rash with debilitating left lower extremity weakness and hyperalgesia. Radiographic investigations failed to reveal spinal cord pathology and lumbosacral plexus injury was clinically suspected. Skin biopsy (Fig1) was notable for occluded vessels within the mid-dermis containing blue grey serpiginous and stippled material compatible with polymer emboli. Interrogation with transmission electron microscopy was performed for further characterization (Fig2). Six weeks later, the patient has had minimal neurologic improvement while the rash largely resolved.

Conclusions: HPE is a rare, underrecognized phenomenon occurring after endovascular procedures and may mimic spinal cord ischemia after F/B/EVARs. Greater awareness of this complication is necessary to expediently diagnose HPE and investigate the precise mechanism by which it occurs.

Figure 1. Petechial rash with polymer emboli visible on dermal biopsy noting serpiginous basophilic stippled material within the dermal capillaries, consistent with embolized polymer.

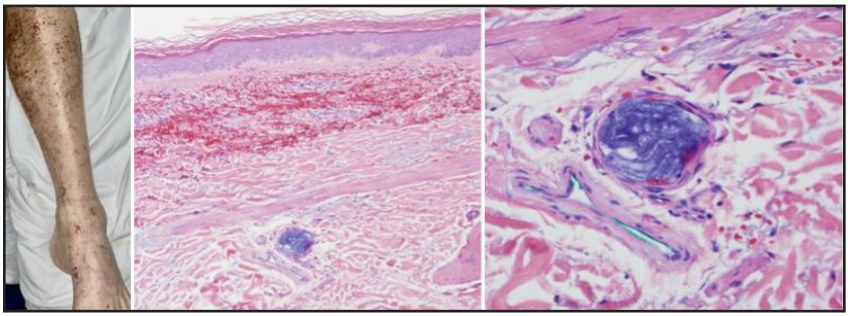
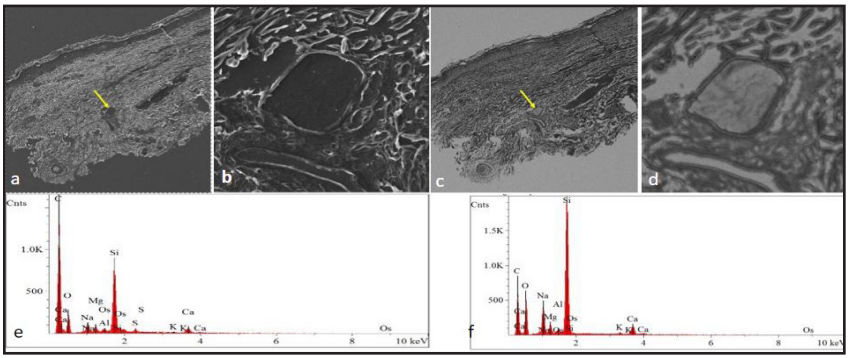


Figure 2. Electron microscopy and Energy Dispersive X-ray spectrometry (EDX) demonstrating the secondary electron (SE) imaging on low (a) and high (b) magnification, backscattered electron (BSE) imaging on low (c) and high (d) magnification, and the EDX spectrum of normal tissue (e) and foreign material (f).



	CR02	**Vascular Hydatidosis: A Case Report**
		Bhavna Girdhani, Yogesh Niwariya, Kishan Magatapalli, Surendra Yaav *AIIMS, Bhopal, India*

Introduction and Objectives: Hydatid disease is a parasitic infestation primarily affecting the liver and the lungs. Echinococcus granulosus is the most common causative agent of hydatid disease and is distributed worldwide, particularly in the Mediterranean and North African regions. Literature describing vascular hydatiosis and its complications is scarce. The authors describe a rare case of vascular hydatidosis and associated postoperative complication in the left lower extremity.

Methods: A 46-year-old female presented to the emergency room with complaints of pain in left lower limb and discoloration of the distal aspect of this limb for twelve hours. Examination revealed a cold left lower limb with absence of all peripheral pulses (popliteal artery, anterior tibial artery [ATA], posterior tibial artery [PTA], and dorsalis pedis artery [DPA]). Computed tomography (CT) angiography showed a hypodense filling defect in the popliteal artery, with no visualization of downstream ATA, proximal PTA, and peroneal artery. Subsequently, she underwent embolectomy, and the embolectomy material was removed through a Fogarty catheter introduced via left superficial femoral artery.

Results: The embolectomy material revealed a membranous jelly-like substance. In the postoperative period, peripheral pulses became palpable, and the discoloration of the foot gradually improved. The histopathology of the biopsy specimen confirmed vascular hydatidosis. Other sites of disease involvement were ruled out by computed tomography and echocardiography. On postoperative day 7, the patient experienced a sudden-onset severe pain in her lower limb with clinical features consistent with compartment syndrome. Repeat angiography revealed a pseudo-aneurysm in the PTA with contained leakage, for which she subsequently underwent a popliteo-tibial bypass procedure using the saphenous vein graft.

Conclusion: Vascular hydatidosis is rare and can manifest as acute limb ischemia and can lead to associated vascular complications. Histopathological examination and confirmation are essential in cases of intra-operative uncertainty or atypical gross appearance of the embolectomy material.

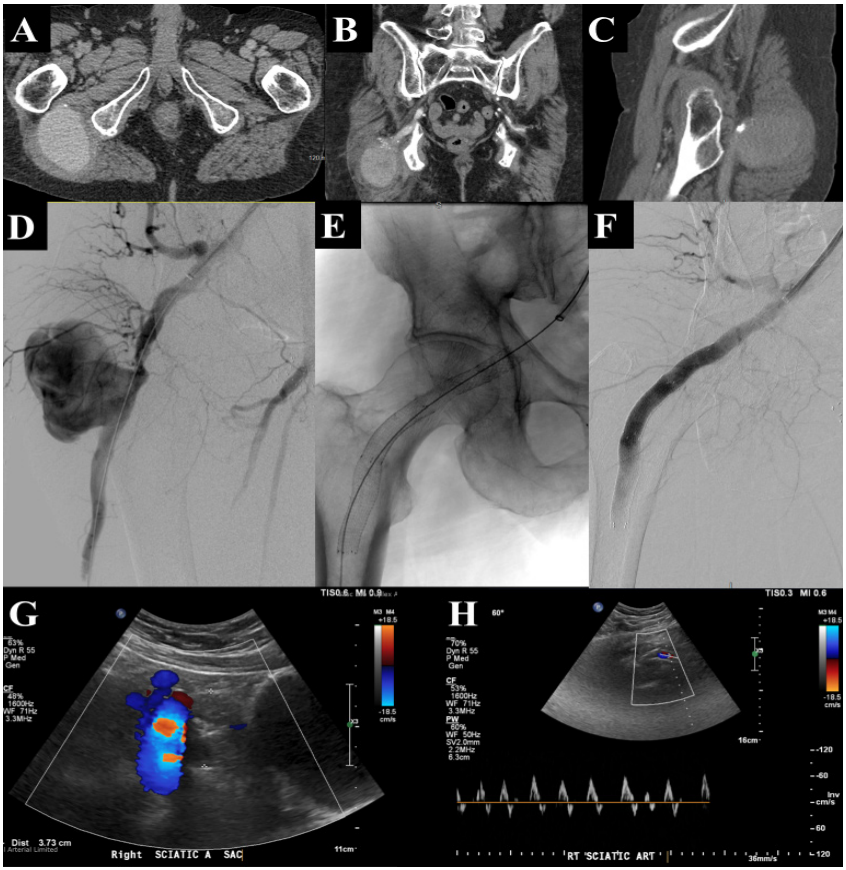
	CR03	**Persistent Sciatic Artery Presenting As Large Gluteal Aneurysm In An Octogenarian**
		S. Christopher Frontario, Emma Morel, Nakul Rao, Thomas Bernik *Englewood Health, Englewood, NJ*

Introduction and Objectives: Persistent sciatic artery (PSA) is a rare congenital anomaly and is susceptible to mechanical stress. PSA commonly presents with aneurysmal degeneration with clinical sequelae of painful mass, limb ischemia from embolization, compressive neuropathy, or rupture. Treatment often requires open surgical repair. In patients who are prohibitive open surgical candidates, endovascular stent graft repair and aneurysm exclusion is an alternative treatment.

Methods: An 82-year-old male with bladder and prostate cancer with pelvic radiation and atrial fibrillation on apixaban presented for right gluteal mass. Physical examination revealed diminished right femoral pulse compared to contralateral pulse, bounding popliteal pulse, and large painful pulsatile gluteal mass with intact neurological exam. CT Angiography demonstrated a 7.9cm gluteal aneurysm with aberrant vasculature (Figure 1: A-C). The patient underwent diagnostic angiography which revealed a complete PSA with aneurysm (Figure 1: D). Given the advanced age of the patient with underlying comorbidities and prior pelvic radiation, a minimally invasive procedure was chosen with the deployment of covered stents across the aneurysm to exclude from circulation (Figure 1: E, F).

Results: The patient recovered and returned to daily activity by postoperative day two resuming apixaban with clopidogrel. The patient was followed at 1-, 3-, 6-, and 12-month periods. Duplex throughout follow up demonstrated stent patency with preserved distal runoff and aneurysm thrombosis and regression (Figure 1: G, H).

Conclusions: PSA is a rare vascular anomaly and are subject to repeat trauma and undergo aneurysmal degeneration. Treatment is often necessary to prevent the development of limb ischemia from embolism or compressive neuropathy. In this patient an endovascular treatment with covered stents were used exclude the aneurysm, maintain vessel patency, and to minimize comorbidities.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	CR04	**Pediatric Midaortic Syndrome Associated With Ascending Aortic Aneurysm**
		Eden Singh, Chandler Long, Matthew McDaniel, Joseph Turek, Waleska Pabon-Ramos, Anna Williams, Dawn Coleman *Duke University School of Medicine, Durham, NC*

Introduction and Objectives: Midaortic syndrome is a rare condition defined by stenosis of the abdominal aorta, often with visceral branch involvement. We present the case of an 8-year-old female diagnosed with idiopathic MAS with associated ascending aortic dilation and resultant renovascular hypertension.

Case: The patient presented in extremis with hypertensive urgency requiring ICU admission and parenteral anti-hypertensive agents. Diagnostic work-up revealed left ventricular hypertrophy, severe dilation of the aortic root (28mm, Z-score 3.99) and ascending aorta (27mm, Z-score 4.72), tapering of the aortic arch and descending aorta, bilateral renal artery ostial stenosis with post-stenotic aneurysmal degeneration, celiac artery stenosis, and SMA occlusion (Figure). Despite a five medication anti-hypertensive regimen, she remained hypertensive with stage 2 CKD and experienced headaches, claudication, post-prandial pain, and fatigue. She was offered surgical revascularization 8 months post-diagnosis. Surgical reconstruction with a multi-disciplinary team included thoraco-abdominal aorto-aortic bypass with a PTFE graft, reimplantation of the left renal artery and syndactylization of the right renal artery with the SMA with reimplantation. The patient's postoperative course was uncomplicated, and she was discharged on POD #13 on three anti-hypertensive agents. Her medication requirements weaned at 6-month follow-up such that she requires a single agent (ARB). Postoperative imaging reveals a widely patent reconstruction and eGFR is normal. Clinically, her symptoms have resolved and interim post-operative echocardiogram is pending.

Conclusion: This is an exceedingly rare case of severe pediatric renovascular hypertension from arterial dysplasia with both negative inward and outward remodeling manifest as concurrent severe proximal aortic dilation and distal aortic stenosis. This case supports the role for individualized treatment, multidisciplinary care, and highlights critical gaps in our understanding of this pathology which requires urgent large-scale team-science to address.


1/24
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	CR05	**Unusual Case Of Symptomatic Internal Carotid Artery Compression With Rotation Of The Head Secondary To Lateral Thyrohyoid Ligament And Superior Cornu Of Thyroid Cartilage Impingement**
		Kaitlyn Dickinson, Brian Cervenka, Susan M Nikels, Tamas Seres, Ryan Gupta, Max V Wohlauer *University of Colorado Anschutz Medical Campus, Aurora, CO*

Introduction and Objectives: Carotid artery entrapment is a rare phenomenon often caused by anatomic abnormalities such as elongated styloid, fibrosis of muscles, and jugular impingement. We present one of the first cases with recurrent syncopal events without underlying prior history of CVA.

Methods: Patient presented with severe, presyncopal symptoms only when rotating head to the right. CT angiogram revealed a near-complete occlusion of the internal carotid artery with head rotated. She was counseled about risks, benefits, and alternatives to surgery and agreed to proceed.

Results: A longitudinal neck incision was made and a paralaryngeal exposure was performed. A dense elongated suspensory, calcified thyrohyoid ligament, and an elongated superior cornu were identified extending across the internal carotid artery. The thyrohyoid ligament and superior cornu and a small lateral aspect of the hyoid bone were resected. She was discharged one day postoperatively without complications. One month later she was seen again with full resolution of her symptoms. Compared to pre-operative CTA neck, post-operative CTA neck shows widely patent right internal carotid artery with neck turned toward the right (Figure 1).

Conclusions: Entrapment of the carotid artery is an unusual condition. To our knowledge, this is the first reported case of entrapment due to compression lateral thyrohyoid ligament and superior cornu impingement. Unlike other cases where hyoid bone elongation was described post trauma, repetitive movements, or only found due to ACVS workup, we describe presyncope as the presenting symptom due to calcified lateral thyrohyoid ligament, as well as an elongated superior cornu. Surgical resection was an effective treatment due to the mechanical nature of the compression.

Figure 1. Pre-operative (left) and post-operative (right) CT angiogram neck with contrast 1 month before and after surgery.

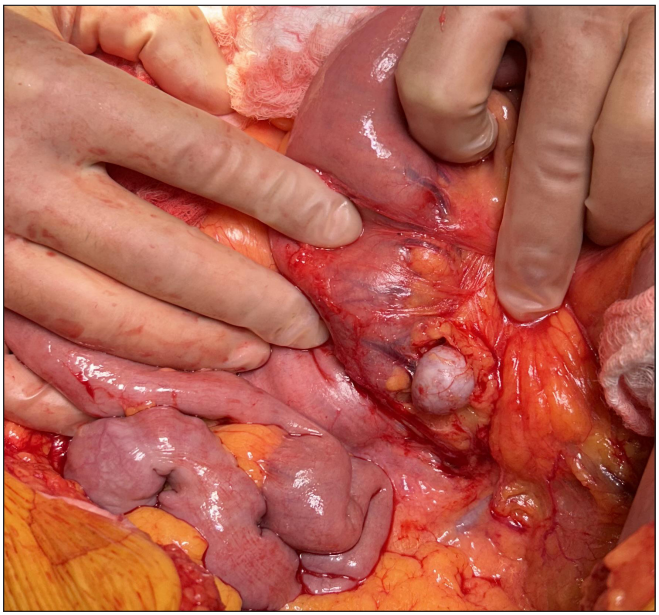
	CR06	**Gastroduodenal Artery Aneurysm In A Patient With Celiac Artery Atresia**
		John Earl Shaughnessy, Randall Bloch, Robert Cambria, Katie Shean, Scott Prushik, Mark Conrad *St Elizabeth's Medical Center, Brighton, MA*

Introduction and Objectives: Visceral artery aneurysms have an array of presentations and management strategies. Gastroduodenal artery aneurysms (GAA) are rare and necessitate treatment. We present a case of a GAA in a patient with a congenitally atretic celiac artery.

Methods: A 63 year old female presented with an incidental 3 x 2 cm proximal GAA. Significantly, her celiac trunk was atretic and all flow to hepatic, left and right gastric, and splenic arteries stemmed from the gastroduodenal artery (GDA). The GAA was located 1 cm from the GDA origin at the superior mesenteric artery (SMA) and was adhered to the fourth portion of the duodenum. Considering her anatomy, open repair with reconstruction of the gastroduodenal artery was pursued. Open reconstruction was initiated via midline laparotomy. The ligament of Treitz was lysed and aneurysm dissected free from the duodenum. Control of the SMA and GDA was obtained. The GAA was resected from its origin to healthy appearing artery distally. The GDA was transposed onto the SMA. There was excellent flow into the GDA and its emanating branches.

Results: The patient progressed well and discharged post-operative day four. Liver function tests were serially checked and peaked at ALT and AST of 175 and 155 POD1 respectively, and returned within normal limits by discharge. Follow up CT angiogram demonstrated preserved repair and adequate flow in the GDA and its branches.

Conclusions: In patients with GAA who require preserved GDA flow, aneurysm resection with GDA to SMA transposition serves as a safe option.



THURSDAY, JANUARY 18, 2024

3:00 – 4:00 pm **SPECIAL SESSION** –
Non-clinical Early Career Advice
Moderators: Olamide Alabi & Faisal Aziz

Journal Reviews and the Editorial Process
Ravi Rajani, MD

The Role of Advocacy in Your Practice
Yazan Duwayri, MD

Building Your Brand as a Young Surgeon
Alissa Hart, MD

Managing Your Social Media Presence
Laura Drudi, MD

3:00 pm **Registration Re-Opens**

3:00 – 4:00 pm **Coffee/Snacks – Visit Exhibitors**

4:00 – 6:00 pm **SCIENTIFIC SESSION III**
Moderators: Nathan Liang & Jordan Stern

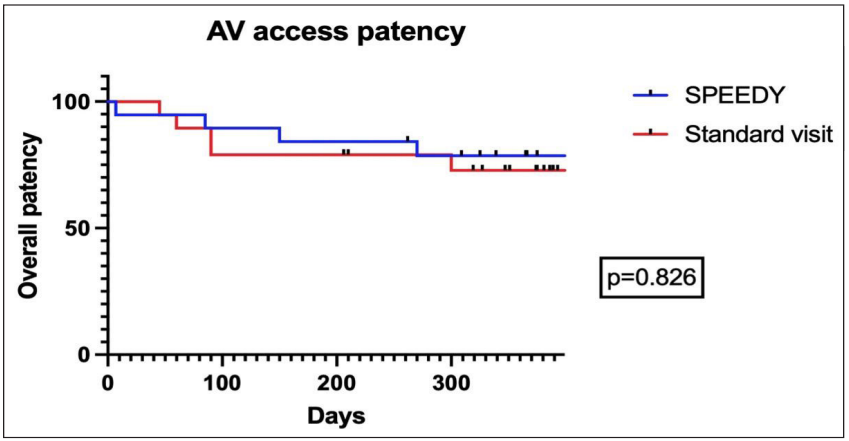
4:00 – 4:12 pm	24	**Streamlining Preoperative Evaluation For Dialysis (SPEEDY) Access: A Pilot Study**
		Shannon N Radomski[1], Rebecca Sorber[1], Christine E Haugen[2], Courtenay M Holscher[1], Jessica M Ruck[1], Avinash L Ganti[1], Thomas Reifsnyder[1] *[1]Johns Hopkins Medical Institutions, Baltimore, MD; [2]Columbia University, NY, NY*

Introduction: Outpatient referral to the vascular clinic is the standard practice for an initial in-person consultation for dialysis access. Most factors predicting the complexity of first-time access surgery can be determined from history rather than physical exam. This study investigates the outcomes of patients undergoing first-time hemodialysis access placement screened with a standardized preoperative phone interview and no preoperative clinic visit versus those opting for a standard in-person clinic visit.

Methods: From 9/2021 to 8/2022, all patients scheduled in vascular clinic for first-time dialysis access were telephoned using a standardized history questionnaire. Those meeting criteria were scheduled for surgery without a preoperative visit (SPEEDY group). The comparison group was patients who desired to meet with the surgeon preoperatively but were otherwise study eligible.

Results: Of the 107 patients contacted, 43 (40%) were eligible. Of these eligible patients, 21 (49%) were scheduled for surgery without a preoperative visit and 19 (90%) underwent surgery. Compared to eligible controls, SPEEDY participants were significantly younger (48.5 years vs. 59.4, p=0.03) but there was no difference in gender, median duration of HD, or type of procedure performed between the groups. SPEEDY patients had a significant reduction in median time from initial referral to surgery (48 days vs. 82, p=0.01). Likelihood of complications did not differ between the groups. At a median follow up time of 12.9 months (IQR:11.9, 14.2) there was no difference in overall access patency between SPEEDY participants and eligible controls (p=0.83) (Figure 1).

Conclusion: A standardized telephone questionnaire can effectively be used to identify patients who can safely undergo first time dialysis access surgery without an in-person clinic visit, significantly reducing time from initial referral to surgery.



4:12 – 4:24 pm	25	**The Value Of Restaging WIfI After Initial Vascular And Podiatric Intervention**
		Mark G Davies[1], Joseph P Hart[2] *[1]Ascension Health, Waco, TX; [2]Medical College of Wisconsin, Milwaukee, WI*

Introduction and Objectives: Wound, Ischemia, and foot Infection (WIfI) is an important staging system in patients with Chronic Limb Threatening Ischemia (CLTI). The aim of this study is to examine the value of restaging WIfI after initial vascular / podiatric interventions.

Methods: Patients undergoing vascular intervention treatment of the lower extremity for tissue loss between 2018 and 2022 was queried. Cases were staged by WIfI pre-operatively and then restaged after both primary vascular and podiatric interventions. In the setting of active infection, patients underwent drainage and/or open amputation followed by revascularization (endovascular or open intervention). Patients with no active infection underwent revascularization followed by podiatric intervention. Amputation-free survival (AFS) and freedom from major adverse limb events (MALE) were evaluated.

Results: 1404 patients (61% male, age 64±12years, mean±SD) presented with CLTI underwent initial vascular and podiatric interventions. Initially, 37% of the patients presented with WIfI stage 3, and 63% presented WIfI stage 4. 56% of the patients had a primary infection control procedure, and 78% had a vascular intervention (71% endovascular intervention and 29% open bypass). After completing the primary podiatric and vascular procedures and WIfI restaging, 48% of the patients were downstaged (improved), 20% were upstaged (worsened), and 32% had no change (stable). Addressing ischemia and controlling infection both improved staging. Unresolved infections drove upstaging;14% of patients required major amputation. The change in WIfI classification impacted 30-day outcomes and freedom from MALE and AFS at 5 years (Table 1).

Conclusions: Restaging WIfI after primary vascular / podiatric intervention results in significant downgrading of WIfI staging, with improved 30-day outcomes, freedom from MALE and AFS at 5yrs. Patients with upstaging of WIfI have much worse outcomes.

Table I. Outcomes

	WIfI Unchanged (Stable)	WIfI Downstaged (Improved)	WIfI Upstaged (Worsened)
Patients (n)	449	674	281
30-day MALE	9%	5%*	24%**
30-day Amputation	3%	2%	14%**
Ulcer Healing @3 months	61%	83%**	46%**
Freedom from MALE @5 years	38±5%	47±5%*	23±9%**
Amputation free Survival @5 years	33±5%	49±5%**	19±6%**
p<0.05, **p<0.01 compared to WIfI unchanged			

4:24 – 4:36 pm	26	**The Association Between Completion Of Supervised Exercise Therapy And Long-term Outcomes In Patients With Intermittent Claudication,concomitant Sarcopenia And Cardiometabolic Multimorbidity**
		Bharadhwaj Ravindhran, Chukwuemeka Igwe, Shahani Nazir, Arthur Lim, Daniel Carradice, Jonathon Prosser, George Smith, Ian Chetter, Sean Pymer *Hull York Medical School, Hull, United Kingdom*

Introduction and Objectives: Sarcopenia and Cardiometabolic Multimorbidity (CMM), in combination with peripheral artery disease (PAD) has been associated with adverse outcomes in). This study aimed to investigate the impact of completing SET on long-term outcomes in these patients.

Methods: This retrospective review included consecutive IC patients with concomitant CMM and sarcopenia who were referred for SET between 2014 to 2017. CMM was defined as two or more comorbidities (diabetes, heart disease, stroke, or chronic kidney disease). Sarcopenia was assessed using the L3-skeletal muscle index (L3SMI) from CT scans in the preceding 18 months. Outcomes of interest were progression to chronic limb-threatening ischemia (CLTI), major adverse cardiovascular events (MACE), and major adverse limb events (MALE). Survival and Cox regression analyses were performed.

Results: Eighty-two patients with a combination of IC, CMM and sarcopenia were included. Of these, 56 declined and 26 completed SET. Baseline characteristics and L3SMI did not significantly differ between groups. Completion of SET was associated with slower progression to CLTI (HR: 0.23; 95% CI: 0.07-0.69; p = 0.02) and a reduced risk of MALE (HR: 0.21; 95%CI: 0.057-0.775 ;p=0.02). However, there was no reduction in the risk of MACE (HR: 0.88; 95%CI: 0.423-1.629; p=0.73). Models demonstrated good predictive accuracy (Harrell's C-index>0.6). Cohen's kappa coefficient for L3SMI measurements between observers was 0.6.

Conclusion: Completion of SET was associated with significant improvements in adverse limb outcomes in patients with IC, concomitant sarcopenia and CMM.

4:36 – 4:48 pm	27	**Influence Of Closure On Groin Complications Among Obese Patients Undergoing Vascular Procedures**
		Randall A Bloch, Jacob L Neir, Elisa Caron, Katie E Shean, Scott G Prushik, Mark F Conrad *St. Elizabeth's Medical Center, Boston, MA*

Introduction and Objectives: Groin incision complications are common among vascular surgery patients. Obesity is a known risk factor, but there is no consensus on the best way to prevent wound breakdown in obese patients. The objective of this study is to identify risk factors for, and strategies to prevent, groin complications in obese patients after vascular procedures.

Methods: All patients who had longitudinal groin incisions at a single institution from 2021-2022 were identified. Patients were stratified into obese (BMI>30kg/m2) and non-obese cohorts. Medical records were reviewed, and all groin-related complications were identified. Major complications were those requiring re-operation or hospital re-admission.

Results: 238 groin incisions were included. There were 46(19.33%) obese and 192(80.77%) non-obese patients. 156(65.55%) were closed with nylon suture, 32(13.45%) with staples, and 50(21.01%) with subcuticular closure. There were 44(18.49%) complications; 14(5.88%) major and 30(12.61%) minor. Obesity was associated with a higher overall complication rate (39.13% vs 14.06%, p<0.001), which was driven by minor complications (32.61% vs 7.81%, p<0.001) rather than major complications (6.52% vs 5.73%, p=0.837). On multivariable regression, obesity remained a predictor for overall (OR 5.95, p<0.001) and minor complications (OR 10.10, p<0.001). Among obese patients, subcuticular closure was associated with higher rates of minor complications (OR 9.37, p=0.036). Obese patients with major complications were less likely to have close follow up including rehab disposition, discharge with visiting nurse, or frequent office wound checks than those with minor complications (33.33% vs 86.67%, p=0.043).

Conclusions: Although groin incisional complications are more common in obese patients, this is driven primarily by minor wounds. Avoiding a subcuticular closure in favor of nylon or staples may reduce the risk of minor complications in obese patients. In addition, close postoperative follow up using rehab, visiting nurse services, and frequent office wound checks may prevent minor complications from escalating to major complications.

4:48 – 4:56 pm	28 (RF)	**Missed Opportunities For Use Of Advanced Care Planning And Palliative Care In Open Aortic Surgery**
		Aaron Barrera-Alvarez, Mimmie Kwong *U.C. Davis, Sacramento, CA*

Introduction and Objectives: Open aortic surgery is associated with high mortality and morbidity rates. However, there is limited data on the prevalence of goals of care (GOC) conversations, advance care planning (ACP) documentation, and palliative care (PC) evaluations in this population.

Methods: A single center retrospective review of open aortic surgery patients from 2014-2023 was performed. Demographics, comorbidities, type and timing of ACP, PC evaluations, and perioperative outcomes were recorded. Cause and location of death and use of PC were noted for patients that died. Patients that received ACP or PC were compared with those that did not.

Results: The cohort included 217 patients (63 +/- 12.2 years; 73.7% male) that underwent open aortic surgery. Self-reported races included 65.4% White, 8.8% Black, and 8.8% Asian/Pacific Islander. At the index hospitalization, 16.3% (n=35) had ACP documents on file. Most of these patients (62.9%) had a durable power of attorney (DPOA), while a smaller percentage had provider notes (40%), physician orders for life sustaining treatment (POLST) (20%), or DNR/DNI (2.9%). Six percent (n=13) had a PC evaluation prior to their operation. During the study period, 26.7% (n=58) died at a mean of 161 days. Of these, 26.6% (n=16) received a PC evaluation prior to or during their terminal hospitalization. Patients with ACP or PC were older (p=0.016), more likely to have Medicare or Medicaid (p=0.026), a solid organ malignancies (p=0.042), and end stage renal disease (p=0.030). The median interval between surgery and PC evaluation was 20 (IQR 3-71) days. The median interval between PC and death was 5 (IQR 1.5-13.5) days.

Conclusions: Despite high mortality and complication rates, ACP documentation is poor for patients undergoing open aortic surgery. PC interventions tend to be performed closer to the end of life, suggesting a missed opportunity to define GOC.

4:56 – 5:04 pm	29 (RF)	**Predictive Factors Of Success For Endovascular And Surgical Management Of Neurogenic Thoracic Outlet Syndrome**
		Meghan He[1], Jenny Wang[2], Snehal Bindra[3], Sam Ahn[4] *[1]University of British Columbia Faculty of Medicine, Vancouver, BC, Canada [2]University of California, Irvine School of Medicine, Irvine, CA; [3]Vanderbilt School of Medicine, Nashville, TN; [4]Burnett School of Medicine at TCU, Fort Worth, TX*

Introduction and Objectives: To characterize predictive factors for individuals most likely to benefit from endovascular and open surgical management of Neurogenic Thoracic Outlet Syndrome (nTOS).

Methods: We retrospectively analyzed charts of 444 nTOS patients from 2010-2019 who failed physical therapy (PT) and underwent percutaneous transluminal angioplasty (PTA) of the subclavian and/or internal jugular veins to enlarge the thoracic outlet space. Those who failed to benefit from PTA were further treated with open surgical decompression. We evaluated pre-treatment differences between patients who attained symptom management and patients who failed to improve with PTA and open surgery.

Results: 873 endovascular procedures from 444 nTOS patients (75% women, median age 49 years, range 16-90 years) were identified. 276 (62%) patients achieved symptom management with PTA alone and did not require further treatment. 167 patients were further treated with open surgery, of which 115 (69%) responded positively, 41 (25%) failed to improve, and 11 (7%) were lost to follow up. The mean follow-up period was 22 +/- 23 months.

In comparison to patients who required open surgery, patients who achieved success with PTA alone were significantly older in average age (51 vs 46 years, $p<0.01$), but otherwise comparable ($p>.05$) in gender (73 vs 77%), incidence of previous trauma (13 vs 10%), and incidence of comorbidities such as diabetes (15 vs 13%) and hypertension (45 vs 39%). No significant differences were found in pre-treatment factors for patients who improved versus failed to improve with open surgical decompression. Overall, 88% (391/444) of nTOS patients were successfully managed with this treatment algorithm.

Conclusions: The combination of PT and PTA was effective in avoiding open surgery in the vast majority of patients. Further research is needed to identify specific predictive factors for individuals most likely to benefit from PTA and open surgery for nTOS.

5:04 – 5:12 pm	30 (RF)	**Volumetric Abdominal Aortic Aneurysm Analysis In Post EVAR Surveillance Settings**
		David Weiss[1], Mariam Aboian[1], MingDe Lin[2], Wolfgang Holler[3], Daniel Renninghoff[3], Sean Harris[1], Uwe Fischer[1], Cassius Iyad Ochoa Chaar[1], Cornelius Deuschl[4], Edouard Aboian[1] *[1]Yale University, New Haven, CT; [2]Visage Imaging, Inc., San Diego, CA; [3]Visage Imaging, GmbH, Berlin, Germany; [4]Essen University Hospital, Essen, Germany*

Introduction and Objectives: The utility of volumetric aneurysm sac evaluation following endovascular abdominal aortic aneurysm repair (EVAR) is not well defined. The established standard for postoperative abdominal aortic aneurysm (AAA) surveillance is maximum aortic diameter (DMAX). The aim of this study is to evaluate performance of volumetric AAA analysis in postoperative settings and compare it to current standard DMAX.

Methods: A retrospective analysis of patients who underwent EVAR for management of infrarenal AAA between January 2017 and December 2022 at our institution was performed. Patients with missing pre or post procedure computed tomography angiography (CTA) studies were excluded. The CTA studies were analyzed using Visage Imaging software to determine the volume of infrarenal sac (TAV) and DMAX. The sac volume measurements were performed from lowest renal artery to aortic bifurcation. All segmentations were evaluated by two observers for consistency. Baseline patient demographics were recorded.

Results: Total of 117 patients met our inclusion criteria with 89 (76%) males. The mean age was 75 years (range 46 to 100 years). Ninety-nine (84.6%) patients were current or prior smokers. The post-interventional changes in DMAX and TAV presented a moderate correlation (r=0.56, p<0,0001). The mean relative change of volume differed significantly from the mean relative change of DMAX (p<0,001). In a subgroup of 59 patients with available follow-up CTA (>231 days), significant aneurysm enlargement (>5%) based on DMAX was observed in 20.3%, whereas significant TAV enlargement was evident in 33.9%. Patients with TAV enlargement but not significant DMAX change had an endoleak in 54.5% of cases.

Conclusions: Aortic aneurysm volume is a more sensitive measure for identification of at-risk aortic aneurysms than DMAX. Refinement and standardization of measurement technique could allow for more generalized clinical acceptance. Further studies are needed to evaluate the impact of volumetric aneurysm analysis on aneurysm related mortality in post EVAR settings.

5:12 – 5:24 pm	31	**Co-existing Vascular Surgery Integrated Residencies Positively Impact General Surgery Resident Operative Competency And Autonomy In Vascular Cases**
		Gabrielle K Steinl[1], Ting Sun[2], W Darrin Clouse[1], Brigitte K Smith[2], M Libby Weaver[1] *[1]University of Virginia, Charlottesville, VA; [2]University of Utah, Salt Lake City, UT*

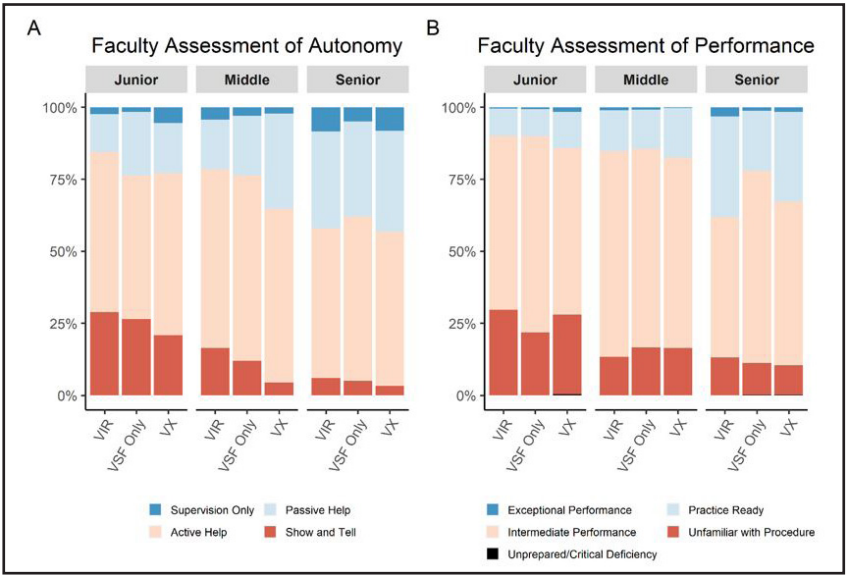
Introduction and Objectives: Integrated vascular surgery residency positions have doubled over the last decade. Studies have investigated the impact of co-existing subspecialty surgical training programs on case volume of general surgery residents (GSR). However, no studies have explored the impact of subspecialty training on GSR operative competency. The aim of this study is to understand the impact of integrated residencies on operative performance and autonomy of GSR performing vascular procedures.

Methods: Autonomy and performance ratings of GSR participating in vascular surgery cases were collected from all institutions participating in the Society for Improving Medical Professional Learning (SIMPL) application database from 2015-2023. Faculty and self-assessments of autonomy and performance on vascular cases performed by GSR at programs with co-existing vascular integrated residents (VIR), fellows (VSF), or no vascular trainees (VX) were compared using Fisher's exact tests with Bonferroni corrections across training levels and case complexity.

Results: 11,175 assessments (26% at institutions with VIR, 46% VSF, 28% VX) were submitted by 920 GSR and 343 faculty. Senior GSR at programs with VSF achieved lower autonomy than those with VIR ($p=0.049$) or VX ($p=0.042$) based on faculty assessment. GSR achieved a level of 'practice ready' at significantly higher rates when training at programs with VIR, and at the lowest rates with VSF ($p<0.001$) (Figure 1). However, self-perception of autonomy and performance was highest among GSR at programs with VX compared to VIR and VSF ($p<0.001$).

Conclusions: The presence of VIR was associated with higher achievement of 'practice ready' competency and higher levels of operative autonomy among senior GSR performing vascular procedures. Shared learning among peers and faculty expertise in teaching resident-level trainees may contribute to this finding.

Figure 1. Faculty Assessment of Autonomy and Performance at Programs with VIR, VSF and VX for Residents at Each Training Level.



Abbreviations: VIR = Vascular Integrated Residency, VSF = Vascular Surgery Fellowship, VX = No Subspecialty Vascular Training; Junior = Residents at PGY 1 and PGY 2, Middle = Residents at PGY3, Senior = Residents at PGY 4 and PGY5.

5:24 – 5:36 pm	32	**Allogenic Vertebral Body Adherent Mesenchymal Stromal Cells Promote Muscle Recovery In Diabetic Mouse Model Of Limb Ischemia**
		Mackenzie K Madison, Theresa Doiron, Jennifer Stashevsky, Hanaa Dakour Aridi, Nancy Zhang, Chang-Hyun Gil, Steven Miller, Michael Murphy *Indiana University School of Medicine, Indianapolis, IN*

Introduction and Objectives: Chronic limb threatening ischemia (CLTI) is a severe limitation in perfusion of the lower extremities. CLTI carries a significant risk for amputation especially in diabetic patients with poor options for revascularization. Phase I trials have demonstrated efficacy of allogeneic mesenchymal stromal cells (MSC) in treating diabetic CLTI. Vertebral body adherent mesenchymal stromal cells (vBA-MSC) are derived from vertebral bodies of deceased organ donors which offer the distinct advantage of providing a 1,000x greater yield compared to that of living donor bone aspiration. This study describes the effects of intramuscular injection of allogenic vBA-MSC in promoting limb perfusion and muscle recovery in a diabetic CLTI mouse model.

Methods: A CLTI mouse model was created through unilateral ligation of the femoral artery in male polygenic diabetic TallyHo mice. Treated mice were injected with vBA-MSC into the gracilis muscle of the ischemic limb 7 days post ligation. Gastrocnemius or tibialis muscle was assessed post-mortem for fibrosis by collagen staining, capillary density via immunohistochemistry and mRNA by quantitative real time PCR. Laser Doppler perfusion imaging and plantar flexion muscle testing were performed to quantify changes in limb perfusion and muscle function.

Results: Compared to vehicle control, treated mice demonstrated indicators of muscle recovery including decreased fibrosis, increased perfusion, muscle torque, and angiogenesis. PCR analysis of muscle obtained 7- and 30-days post vBA-MSC injection showed an upregulation in expression of MyoD1 and MyH3 mRNA representing muscle regeneration, VEGF-A signifying angiogenesis as well as IL-10, T regulatory cell marker Foxp3, and M2-biased macrophage marker Mrc1 (CD206). vBA-MSC treatment additionally decreased expression of NADPH oxidase subunit p47phox, suggesting decreased oxidative stress.

Conclusions: These findings indicate human allogeneic vBA-MSC ameliorate ischemic muscle damage and rescues muscle function. Thus, injection of allogeneic MSC may be a viable therapy to restore muscle function in diabetic CLTI patients.

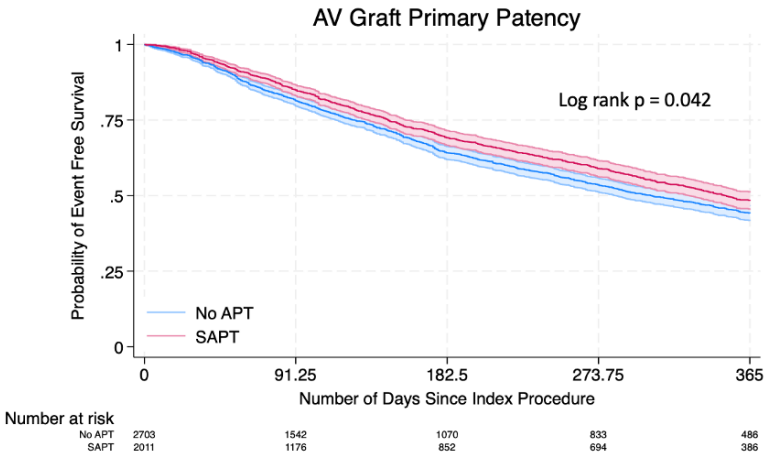
5:36 – 5:48 pm	33	**Single Or Dual Antiplatelet Therapy Improves One-year Arteriovenous Graft Patency And Overall Survival**
		David P Ebertz[1], Saideep Bose[2], Armando De Valle[2], Satinderjit Locham[3], Mahmoud B. Malas Malas[4], Matthew R Smeds[2] *[1]Case Western University Cleveland Medical Center, Cleveland, OH; [2]St Louis University, St Louis, MO; [3]University of Rochester, Rochester, NY; [4]UC San Diego Health Center, San Diego, CA*

Introduction: Following new dialysis access creation there is no consensus on the optimal anti-thrombotic therapy. Recent studies have shown that single antiplatelet therapy may improve hospital mortality and patency. The aim of this study was to assess the role of different anti-thrombotic therapies on outcomes following access creation.

Methods: A retrospective study was conducted utilizing the Vascular Quality Initiative studying AV fistula (AVF) and AV graft (AVG) creation from 2011-2023. Patients who were antiplatelet and anticoagulation naive were separated into four cohorts: no antiplatelet (No APT), single antiplatelet (SAPT), dual antiplatelet (DAPT), and aspirin with anticoagulation (ASA + AC). Univariate Kaplan-Meier (KM) and multivariable regression analyses were conducted for overall survival, primary patency, and secondary patency.

Results: 49,001 patients with AVF and 12,689 patients with AVG creation were identified. AVG patients had improved 1-year primary patency with SAPT compared to No APT (KM 48% vs 44%, p = 0.04). No difference on KM was observed for AVF. Regression analysis showed decreased risk of loss of primary patency for AVF (HR 0.90, CI 0.825-0.972, p = 0.009). AVG with SAPT showed decreased risk of mortality (HR 0.80, CI 0.646 - 1.00, p = 0.05) and risk of loss of primary patency (HR 0.79, CI 0.663-0.944, p = 0.009). DAPT also showed decreased risk of loss of primary patency for AVG (HR 0.65, CI 0.436-0.953, p = 0.028). Survival was worse for AVF and AVG with ASA + AC.

Conclusions: Single antiplatelet therapy improves primary patency and survival following creation of AVFs and AVGs. DAPT may further improve primary patency in those with AVGs. The use of anticoagulation shows no benefit, however likely reflects higher risk patients.


AV Graft Primary Patency
Probability of Event Free Survival
1
.75
.5
.25
0
Log rank p = 0.042
No APT
SAPT
0
91.25
182.5
273.75
365
Number of Days Since Index Procedure
Number at risk
No APT 2703 1542 1070 833 486
SAPT 2011 1176 852 694 386

5:48 – 6:00 pm	34	**Socioeconomic Status Based On Area Deprivation Index Does Not Affect Postoperative Outcomes In Patients Undergoing Endovascular Aortic Aneurysm Repair In The Va Healthcare System**
		Karishma Setia, Diana Otoya, Sally Boyd, Kathryn Fong, Michael F Amendola, Kedar S Lavingia *Virginia Commonwealth University, Richmond, VA*

Introduction and Objectives: Research has validated the Area Deprivation Index (ADI) as a measure of socioeconomic disadvantage with a higher score associated with lower socioeconomic status. ADI has been scaled relative to geographic region: local ADI (L-ADI; score 1 to 10) and national ADI (N-ADI; score 1 to 100). We set forth to identify possible associations ADI score and post-operative outcomes after endovascular aneurysm repair (EVAR) in a VHA hospital.

Methods: Retrospectively analysis of EVAR patients from January 2010 to 2022. L-ADI and N-ADI were calculated with further stratification into quintile groupings. Patients clinical course was confirmed to account for percentage of loss to follow-up, 30-day and 1-year mortality.

Results: 242 patients underwent EVAR over this period. 57.3% (n=138) and 47.3% (n= 114) of patients were in 4th of 5th L-ADI and N-ADI quintiles respectively. National ADI percentiles placed 47.3% (n= 114) in quintiles 4 and 5. Patient demographics, post operative complications, readmission rates and 1-year mortality did not statistically differ between local and national ADI scores nor among quintile groupings (Table 1). 30-day mortality was statistically higher within the highest quintile L-ADI group (p=0.03**) but not for the same quintile N-ADI group (p=0.31**). Binary Logistic Regression showed no difference between the groups (Table 2).

Conclusions: There was no difference between hospital readmission rates or worse outcomes across local and national ADI quintiles except at 30-day mortality. This suggests the VHA resources and multidisciplinary support may improve care across low ADI neighborhoods with a critical window within first 30 days after EVAR.

Table 1. Comparison of postoperative outcomes utilizing local (L-ADI) and national (N-ADI) area deprivation index scores as well as quintile groupings for the 241 patients undergoing EVAR. Fisher's Exact* and ANOVA** were utilized to statistically examine the groups.

Local Area Deprivation Index (L-ADI)						
	1st Quintile (n=7)	2nd Quintile (n=33)	3rd Quintile (n=63)	4th Quintile (n=70)	5th Quintile (n=68)	p
Length of stay	2.7+/-1.1	2.6+/-2.8	3.2+/-3.9	2.5+/-2.0	2.8+/-2.9	0.87**
Readmission	1 (14.3%)	6 (18.2%)	6 (9.5%)	7 (10%)	4 (5.9%)	0.49*
Wound Infection	1 (14.3%)	8 (24.24%)	6 (9.5%)	9 (12.9%)	9 (13.2%)	0.39*
Return to OR	0	2 (6.0%)	4 (6.3%)	2 (2.9%)	5 (7.4%)	0.75*
Re-Intervention (Open+/- Endo)	0	8 (25%)	9 (17.3%)	10 (16.7%)	18 (26.5%)	0.16*
1-year Mortality	0	0	3 (4.8%)	6 (8.6%)	5 (7.4%)	0.43*
Lost to Follow Up	2 (28.6%)	1 (3%)	8 (12.7%)	8 (11.4%)	9 (13.2%)	0.33*

National Area Deprivation Index (N-ADI)						
	1st Quintile (n=13)	2nd Quintile (n=47)	3rd Quintile (n=67)	4th Quintile (n=67)	5th Quintile (n=47)	p
Length of stay	2.4+/-1.1	3.6+/-4.4	2.5+/-2.0	2.8+/-3.0	2.45+/-2.3	0.90**
Readmission	3 (23.1%)	9 (19.2%)	5 (7.5%)	4 (6.0%)	3 (6.4%)	0.06*
Wound Infection	4 (30.8%)	5 (10.6%)	7 (10.4%)	9 (13.4%)	8 (17.0%)	0.33*
Return to OR	0	5 (10.6%)	2 (3%)	4 (6.0%)	2 (4.3%)	0.38*
Re-Intervention (Open+/- Endo)	0	12 (25.5%)	12 (17.9%)	10 (14.9%)	11 (23.4%)	0.19*
1-year Mortality	0	2 (4.2%)	5 (7.5%)	4 (6.0%)	3 (6.4%)	0.85*
Lost to Follow Up	3 (23.1%)	4 (8.5%)	5 (7.5%)	7 (10.4%)	9 (19.2%)	0.21*

Table 2. Binary Logistic Regression of hospital readmissions and the overall rate of post-operative complications across local (L-ADI) and national (N-ADI) area deprivation index quintile groupings for the 241 patients when compared to L-ADI and N-ADI first quintile as control.

Local Area Deprivation Index (L-ADI)					
	1st Quintile (n=7)	2nd Quintile (n=33)	3rd Quintile (n=63)	4th Quintile (n=70)	5th Quintile (n=68)
	OR (95th CI)	OR (95th CI)	OR (95th CI)	OR (95th CI)	OR (95th CI)
Readmission	Control	1.33 (0.13-13.23)	0.63 (0.07-6.62)	0.67 (0.007-6.37)	0.38 (0.04-3.92)
Any Complication	Control	5.65 (0.61-52.22)	2.22 (0.25-19.79)	2.4 (0.27-21.22)	2.5 (0.28-22.12)

National Area Deprivation Index (N-ADI)					
	1st Quintile (n=13)	2nd Quintile (n=47)	3rd Quintile (n=67)	4th Quintile (n=67)	5th Quintile (n=47)
	OR (95th CI)	OR (95th CI)	OR (95th CI)	OR (95th CI)	OR (95th CI)
Readmission	Control	0.79 (0.28-3.47)	0.27 (0.05-1.30)	0.21 (0.41-1.90)	0.23 (0.40-1.29)
Any Complication	Control	1.28 (0.34-4.77)	0.83 (0.23-3.02)	0.96 (0.26-3.47)	1.06 (0.28-3.98)

SATURDAY, JANUARY 20, 2024

6:00 – 7:00 am	**Continental Breakfast in the Exhibit Hall**
6:00 – 9:30 am	**Registration**
7:00 – 7:30 am	**AWARD SESSION** (5 min presentations) Moderators: Mark Conrad & Sam Tyagi

UPDATE FROM 2023 AWARD WINNERS

Travel Award:
Elizabeth Genovese, MD

Medtronic Resident Research Award:
Tyler Bauer, MD

Resident Research Award:
Calvin Chao, MD

BSCI Early Career Investigator Award:
Frank Davis, MD

2024 AWARD WINNERS ANNOUNCEMENT

Travel Award
Resident Research Award
Early Career Faculty Award

7:30 – 8:45 am **SCIENTIFIC SESSION IV**
Moderators: Lindsey Korepta & Karan Garg

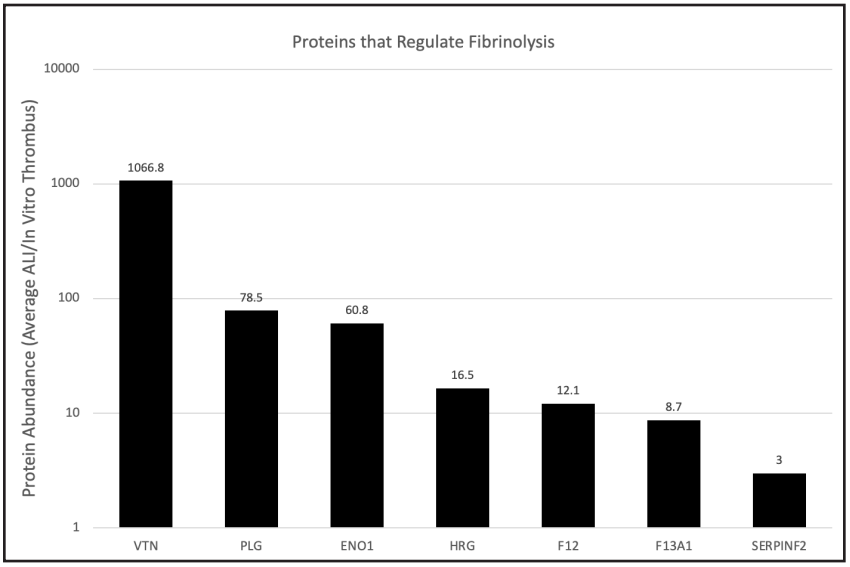
7:30 – 7:42 am	35	**Proteomics Of Acute Limb Ischemia**
		Robert Stegman[1], Max V Wohlauer[2] *[1]University of Colorado School of Medicine, Aurora, CO; [2]UCHealth Heart and Vascular Center - Anschutz Medical Campus, Aurora, CO*

Introduction and Objectives: Acute Limb Ischemia (ALI) is a sudden decrease in limb perfusion due to occlusion of a peripheral artery by thrombosis or embolism. This study aims to compare the proteomic composition of ALI clots to in vitro clots and understand the roles of target proteins in coagulation, fibrinolysis, red blood cell (RBC) degradation, and complement activation.

Methods: Arterial thromboemboli were collected after revascularization procedures, stored following an IRB approved protocol, and processed following previously published methods. Liquid chromatography mass spectrometry (LC-MS/MS) was used to determine protein composition in samples of ALI clots and in vitro clots from healthy donors. We performed a literature review of proteins with significantly increased or decreased abundance in ALI clots and categorized them based on their roles in coagulation, fibrinolysis, RBC degradation and complement.

Results: 141 proteins had a significantly increased abundance and 38 had a significantly decreased abundance in the ALI clots. 59 proteins played roles coagulation, 8 in regulation of fibrinolysis, 6 were related to RBC degradation, and 7 were involved in the complement system.

Conclusions: We found increased abundance of 2 pro-fibrinolytic proteins, 4 anti-fibrinolytic proteins, and 1 protein with both pro-fibrinolytic and pro-coagulation roles. Increased abundance of proteins that both inhibit and promote fibrinolysis demonstrates the highly dynamic process of thrombosis and the importance of regulating fibrin deposition/degradation. We also found a significant increase in hemopexin and haptoglobin which are released from RBC degradation. We found an increase in 7 complement proteins which play various roles in regulating coagulation, fibrinolysis, and platelet activation. Characterization of proteins that regulate fibrin deposition/degradation and coagulation will help to better understand the etiology of thrombosis and guide ALI management.


Proteins that Regulate Fibrinolysis
Protein Abundance (Average ALI/In Vitro Thrombus)
10000
1000
100
10
1
1066.8
78.5
60.8
16.5
12.1
8.7
3
VTN
PLG
ENO1
HRG
F12
F13A1
SERPINF2

7:42 – 7:54 am	36	**Trainee Perception Of Virtual Support, Interviews And Meetings On Vascular Surgery Culture And Community**
		Margaret A. Reilly[1], Christina L. Cui[2], Eric B. Pillado[1], Ruojia 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, III[10], Dawn M. Coleman[2] *[1]Northwestern University, Chicago, IL; [2]Duke University, Durham, NC; [3]Loyola University, Maywood, IL; [4]Indiana University, Indianapolis, IN; [5]University of Rochester, Rochester, NY; [6]University of California Davis, Sacramento, CA; [7]University of California San Francisco, San Francisco, CA; [8]Emory University, Atlanta, GA; [9]Upstate Medical University, Syracuse, NY; [10]Louisiana State University, New Orleans, LA*

Introduction and Objectives: Increased utilization of virtual communication and interviews has had widespread effects on surgical training. The purpose of this study is to evaluate trainee perceptions of these changes.

Methods: A confidential survey of residents and fellows in vascular surgery programs was administered following the 2023 Vascular Surgery In-Training Exam (VSITE). A 5-point Likert scale measured resident perceptions of virtual interviews and virtual meetings. Multivariable logistic regression modeling compared factors associated with preference of virtual interviews and virtual support methods.

Results: A total of 444 of 521 trainees (85.2%) had complete data for our variables of interest. 80.0% of residents would have preferred in-person interviews, including 73.1% of first and second year trainees who likely underwent virtual interviews. Trainees were more likely to prefer virtual interviews if they felt their program culture was accurately reflected (OR 7.82, p <0.000). 29.3% of trainees felt virtual peer support had helped them through training and 39.3% felt their vascular community was strengthened through virtual interactions. On adjusted analysis, trainees who reported positive feelings about virtual meetings and support were more likely to report a sense of belonging in their program. Trainees who felt their vascular community was strengthened by virtual communication were more likely to report satisfaction with their decision to be a surgeon (OR 2.07, p=0.039). There were no significant differences based on gender or ethnicity.

Conclusions: Most trainees do not feel that virtual communications and meetings have helped increase peer support, improve program culture, or strengthen the vascular community. The majority of trainees also prefer in-person interviews. Further work is needed to understand how virtual interactions can best augment the experience and wellbeing of trainees.

Factor	OR	95%CI	P-value
Preference of virtual interviews			
Post graduate year 1	Reference	Reference	Reference
Post graduate year 2	0.415	0.2-0.86	0.018
Post graduate year 3 or greater	0.301	0.16-0.57	<0.005
Virtual peer support has helped in training			
Thoughts of attrition	0.462	0.23-0.94	0.034
Feel a sense of belonging	2.83	1.40-5.73	0.004
Satisfaction with time for personal life	3.79	2.41-5.96	<0.000
Satisfaction with decision to become a surgeon	1.08	0.52-2.25	0.838
Program strengthened by virtual communications			
Thoughts of attrition	0.447	0.234-0.856	0.015
Feel a sense of belonging	4.19	2.08-8.44	<0.000
Satisfaction for time for personal life	2.92	1.92-4.42	<0.000
Satisfaction with decision to become a surgeon	1.75	1.01-4.43	0.0.046
Vascular community is strengthened by virtual communications			
Thoughts of attrition	0.483	0.260-0.897	0.021
Feel a sense of belonging	2.53	1.40-4.59	0.002
Satisfaction for time for personal life	2.41	1.60-3.62	<0.000
Satisfaction with decision to become a surgeon	2.07	1.04-4.11	0.039

7:54 – 8:06 am	37	**Sex Related Differences In Perioperative Outcomes After Complex Endovascular Aneurysm Repair**
		Claudia Trogolo Franco, Shernaz S Dossabhoy, Sabina M Sorondo, Kenneth Tran, Jordan R Stern, Jason T Lee *Stanford School of Medicine, Palo Alto, CA*

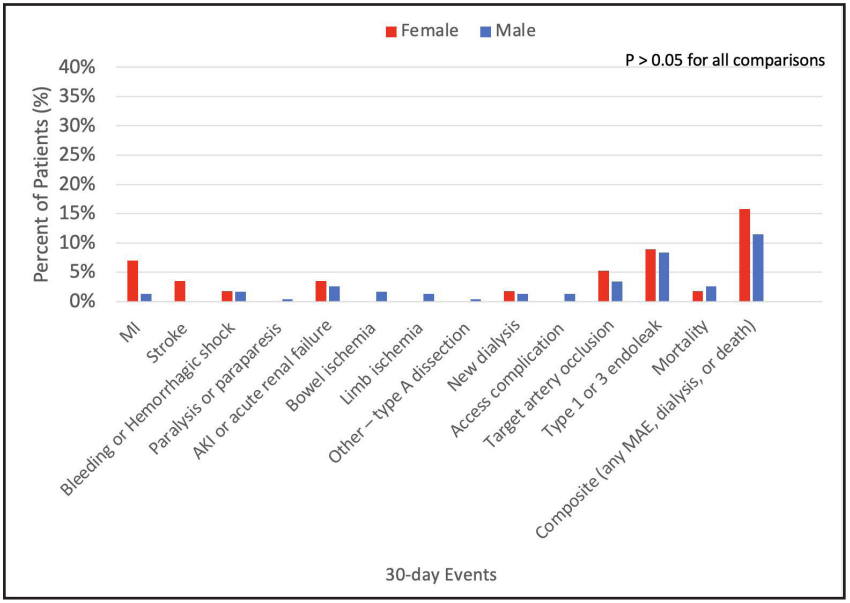
Introduction and Objectives: Studies suggest female sex is associated with worse outcomes after complex EVAR due to anatomic differences. Therefore, we aimed to compare 30-day perioperative outcomes after complex EVAR by sex.

Methods: A single-center retrospective review of consecutive elective/emergent complex EVAR with company-manufactured devices, laser fenestration, snorkel/periscope, or octopus technique was performed from 2012-2023. The primary outcome was a composite endpoint of any major adverse event (MAE), new-onset dialysis, or death within 30 days. Secondary 30-day technical outcomes were also assessed.

Results: 293 patients (57 females, 19%), mean age 74 years, underwent complex EVAR with commercially-available ZFEN (71%), p-Branch (2%), laser fenestration (8%), snorkel/periscope (16%), or octopus (2%) techniques. Females had significantly different aneurysm-related anatomic characteristics, including aneurysm diameters (58 vs 64 mm, P<0.01), aneurysm extent (22% vs 10% TAAAs, P=0.04), renal artery calcification (44% vs 27%, P=0.01), smaller iliac (7.6 vs 8.9 mm, P<0.01) and renal target artery diameters (5.5 vs 6.0 mm, P<0.01). Operative outcomes were similar; however, females had a greater need for adjunctive access conduits (21% vs 11%, P=0.04), lower intraoperative target vessel patency (91% vs 99%, P<0.01), and longer length of stay (4.4 vs 3.2 days, P<0.01). The composite 30-day outcome of any MAE, new dialysis, or death was not significantly different (16% females vs 11% males, P=0.37) (Fig). Technical endpoints including 30-day target artery occlusion and type 1 or 3 endoleak were also similar between groups.

Conclusions: Females undergoing complex EVAR had challenging anatomy with higher intraoperative target artery occlusion, conduit use, and longer length of stay. However, 30-day outcomes were similar, suggesting females can undergo complex EVAR with high technical success and comparable perioperative outcomes to males.

Figure. 30-day perioperative events after complex EVAR, stratified by sex.
MI, myocardial infarction; AKI, acute kidney injury; MAE, major adverse event.



8:06 – 8:18 am	38	**Moderate To Severe Preoperative Anemia Is Associated With Increased Postoperative Myocardial Infarction And Mortality In Patients Undergoing Transcarotid Artery Revascularization**
		Heepeel Chang[1], Frank Veith[2], Thomas S Maldonado[3], Igor Laskowski[1], Caron B Rockman[2], Muhammad Zeeshan[1], Glenn R Jacobowitz[2], Mikaiel Ebanks[1], Chirag Gandhi[1], Ji Chong[1], Romeo Mateo[1], Sateesh Babu[1], Karan Garg[2] *[1]Westchester Medical Center, New York Medical College, Valhalla, NY; [2]New York University Langone Medical Center, Valhalla, NY*

Introduction and Objectives: This study aims to assess the association between the severity of preoperative anemia and outcomes following transcarotid artery revascularization (TCAR).

Methods: A retrospective review of the Vascular Quality Initiative database from 2016 to 2021 was conducted to identify patients undergoing TCAR for carotid stenosis. Anemia was defined as a hemoglobin level<12 g/dL for females and <13 g/dL for males. Propensity score matching was performed to identify well-matched pairs of patients based on the presence of preoperative anemia. Outcome measures included in-hospital myocardial infarction (MI), in-hospital stroke, and 30-day mortality. The severity of anemia was categorized as mild (10-11.9g/dL [females] and 11-12.9g/dL [males]) and moderate to severe (<10 g/dL [females] and <11g/dL [males]).

Results: Among the 21,648 patients who underwent TCAR, propensity score-matching yielded 7,041 pairs of well-matched anemic versus non-anemic patients. Patients with moderate to severe preoperative anemia were associated with increased odds of in-hospital MI (odds ratio (OR), 2.70; 95% confidence interval [CI]: 1.63-4.49; p<.001) and 30-day mortality (OR, 2.42; 95% CI: 1.37-4.27; p=.002) but similar odds of in-hospital stroke compared to non-anemic patients. These trends persisted among symptomatic patients. Among patients with moderate to severe preoperative anemia, chronic obstructive pulmonary disease (OR, 3.43; 95% CI: 1.94-6.06; p<.001), congestive heart failure (OR, 2.42; 95% CI: 1.42-4.12; p=.001), and symptomatic carotid stenosis (OR, 2.07; 95% CI: 1.18-3.63; p=.012) were associated with increased odds of 30-day mortality.

Conclusions: In patients undergoing TCAR, moderate to severe preoperative anemia was associated with a more than two-fold increase in in-hospital MI and 30-day mortality compared to non-anemic patients. As such, moderate to severe preoperative anemia should be carefully considered in preoperative risk stratification. Moreover, careful perioperative cardiopulmonary optimization may be warranted to mitigate the risk of perioperative morbidity and mortality in patients with moderate to severe preoperative anemia undergoing TCAR.

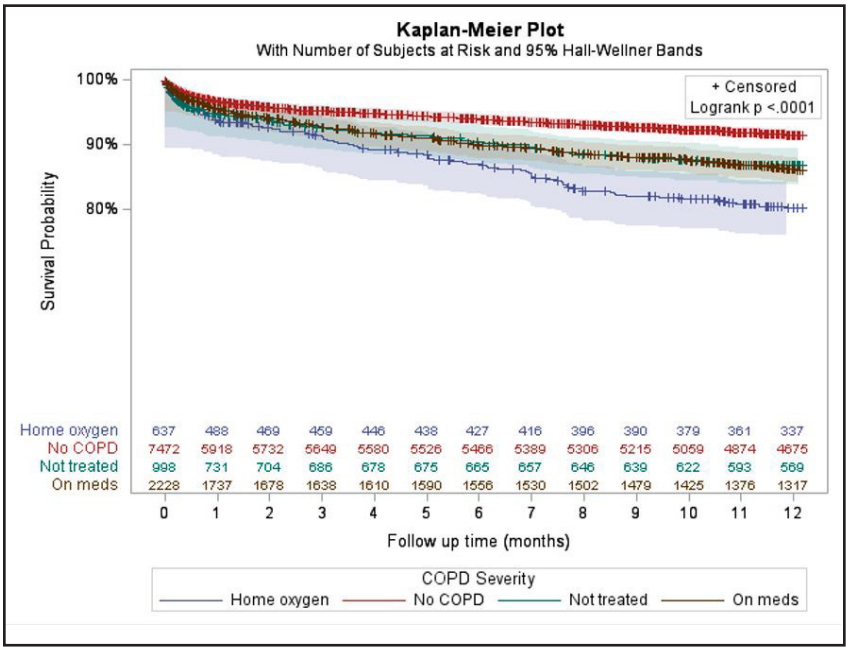
8:18 – 8:26 am	39 (RF)	**Effect Of Chronic Obstructive Pulmonary Disease On Mortality Following Thoracic And Complex Endovascular Aortic Repair**
		Alexander DiBartolomeo, Li Ding, Sukgu Han, Fred Weaver, Gregory Magee *University of Southern California, Los Angeles, CA*

Introduction and Objectives: Chronic obstructive pulmonary disease (COPD) is a risk factor for mortality after infrarenal endovascular aortic repair. The association with complex endovascular aortic repair (cEVAR) and thoracic endovascular aortic repair (TEVAR) has not been determined. This study aimed to assess the effect of COPD severity after TEVAR and cEVAR.

Methods: The SVS VQI was queried for elective TEVAR and cEVAR cases for aneurysm, dissection, or penetrating aortic ulcer with proximal landing zone &gt2 from 2013-2022. Patients were stratified by COPD severity. The primary outcome was in-hospital mortality. Secondary outcomes included respiratory complications, non-home discharge, and 1-year mortality. Multivariable logistic regression was used for in-hospital mortality and respiratory complications. Cox proportional hazards was used for 1-year mortality.

Results: Among 11,336 cases, 66% did not have COPD, 9% had COPD not requiring medications, 20% had COPD requiring medications, and 6% had COPD on home oxygen. In-hospital mortality was 2.3%, 3.7%, 3.2%, and 4.5% (P=.0004), respectively. COPD severity did not show increased odds of in-hospital mortality on multivariable analysis. Respiratory complications occurred in 4.3%, 4.5%, 6.4%, and 7.3% (P&lt.0001) and was associated with higher odds for the COPD requiring medications (OR 1.3, 95% CI [1.0-1.7]) and home oxygen groups (OR 1.7 [1.1-2.6]). Discharge to home occurred in 87%, 84%, 80%, and 78% of cases (P&lt.0001). 1-year survival (Figure 1) and associated with increased risk for each COPD group (HR 1.4 [1.1-1.8], HR 1.4 [1.2-1.7], HR 1.9 [1.5-2.4] respectively).

Conclusions: Patients with COPD have increased rates of in-hospital mortality, respiratory complications, non-home discharge, and 1-year mortality after TEVAR and cEVAR. These results suggest that patients with COPD should require a higher threshold for treatment with TEVAR and cEVAR.


Kaplan-Meier Plot
With Number of Subjects at Risk and 95% Hall-Wellner Bands
+ Censored
Logrank p <.0001
100%
90%
80%
Survival Probability
Home oxygen 637 488 469 459 446 438 427 416 396 390 379 361 337
No COPD 7472 5918 5732 5649 5580 5526 5466 5389 5306 5215 5059 4874 4675
Not treated 998 731 704 686 678 675 665 657 646 639 622 593 569
On meds 2228 1737 1678 1638 1610 1590 1556 1530 1502 1479 1425 1376 1317
0 1 2 3 4 5 6 7 8 9 10 11 12
Follow up time (months)
COPD Severity
Home oxygen
No COPD
Not treated
On meds

8:26 – 8:34 am	40 (RF)	**Patients Treated For Ruptured Abdominal Aortic Aneurysms Have Fewer Hospital-free Days When Undergoing Open Repair Or Treated At Low Volume Hospitals**
		Quang Le[1], Yekaterina Khamzina[2], Edith Tzeng[2], Katherine Reitz[2], Nathan Liang[2] *[1]University of Virginia School of Medicine, Charlottesville, VA; [2]University of Pittsburgh Medical Center, Pittsburgh, PA*

Introduction and Objectives: Patient-centric outcomes are poorly utilized for ruptured abdominal aortic aneurysm (RAAA) repair. Hospital-free days (HFD) describes the number of days alive outside a hospital or emergency department (ED) following repair and is an emerging surrogate marker for functional independence. We explored HFD as an outcome metric in patients with RAAA and determined factors associated with HFD.

Methods: We used the Healthcare Cost and Utilization Project's Florida State Inpatient and ED Databases, allowing longitudinal follow-up of hospitalization and ED visits. We included adults (>18y) hospitalized with a primary diagnosis of RAAA (2015-2018) who underwent repair. The primary outcome was 90-day HFD (90HFD). Secondary outcomes included in-hospital mortality and discharge to home.

Results: 503 patients with RAAA received endovascular (EVAR; n=327[65.0%]) or open (OAR; n=176[35.0%]) repair. The majority were male (n=403[79.5%]), with a mean age of 72.9±10 years. In-hospital mortality was 27.8% and was lower for EVAR than OAR (22.0%vs38.6%;p<0.001). The bottom quartile of repair volume performed one repair per year, compared to 2.75 in the top quartile. Among patients discharged alive, 39.1% were discharged home, higher following EVAR (45.5% vs 24.1%; p<0.001). The median overall 90HFD was 71.0 (IQR:0.0-83.0) days. In patients discharged alive (72.2%), the median 90HFD was 80.0 (IQR:64.0-86.0) days and differed by repair type: 82.0 days (IQR:71.0-87.0) for EVAR and 73.5 days (IQR:33.0-81.5) for OAR (p<0.001). Upon multivariate modeling, OAR (Coef:-1.46, 95%CI:[-1.82]-[-1.10]), increasing age (Coef:-0.039, 95%CI:[-0.055]-[0.023]), chronic kidney disease stage 3 or above (Coef:-0.77, 95%CI:[-1.18]-[-0.35]), and bottom quartile hospital volume (Coef:-0.55, 95%CI:[-1.01]-[-0.09]) were associated with lower 90HFD.

Conclusions: HFD is a viable outcome measure for RAAA that allows for more nuanced and patient-centered evaluations than mortality. 90HFD was worse in those with open repair, increased age, chronic renal insufficiency, or low hospital volume. This metric may help inform physician and patient decisions.

8:34 – 8:42 am	41 (RF)	**Robotic Assisted Laparoscopic Ivc Filter Removal: A Small Institutional Review**
		Paul Haddad, Alan Lumsden, Charudatta Bavare *Houston Methodist Hospital, Houston, TX*

Introduction and Objectives: Tertiary referral centers often encounter difficult inferior vena cava (IVC) filter retrievals and multiple endovascular techniques have been described to successfully remove them. Conventional alternative options include laparotomy with open cavotomy. Vascular robotic surgery, although previously described, is not widely available and an evolving field for most hospitals. Our institution offers robotic surgery as an alternative surgical intervention to remove difficult to retrieve filters after multiple unsuccessful endovascular attempts. We present our early experience in vascular robotic surgery with IVC filter removals.

Methods: We retrospectively reviewed 3 cases of IVC filters that required robotic surgical intervention between February and July of 2023. Data obtained included timing of placement, operation details, length of stay, and postoperative complications.

Results: All three patients had their filter placed between one and 5 years prior. They had all undergone multiple attempts at endovascular retrieval and failed. Our patients included one 50-year-old male, one 32-year-old female, and one 67-year-old female. Two patients had preoperative imaging revealing tines outside of the IVC and both were symptomatic with abdominal and back pain. The filter was successfully removed in all patients using robotic assisted laparoscopic technique. Blood loss ranged from 20 cc to 300 cc among our small cohort. All three patients had relief of their symptoms postoperatively and were discharged by postoperative day 2. No postoperative complications were encountered at one month follow up for all.

Conclusions: Robotic surgery is a growing field within vascular surgery and can provide alternative options for challenging IVC filter removals. At our institution, vascular robotic surgery is a relatively new option and use of this technology during IVC filter removal has thus far been a successful and safe option for patients who have failed endovascular therapy.

SATURDAY, JANUARY 20, 2024

8:45 am – 9:00 am **Introduction of the President**
Misty Humphries, MD

9:00 – 9:45 am **PRESIDENTIAL ADDRESS**
Mark Conrad, MD

10:00 – 11:00am **CASE REPORT SESSION 2**
Moderators: Gabriela Velazquez & Sam Tyagi

10:00 – 11:00am	CR07	**Robotic Nephrectomy And Ex-vivo Repair Of Renal Artery Aneurysm**
		Paola Batarseh, Danielle Haakinson, Cassius Iyad Ochoa Chaar, Jonathan A Cardella, David S Strosberg *Yale New Haven Health, New Haven, CT*

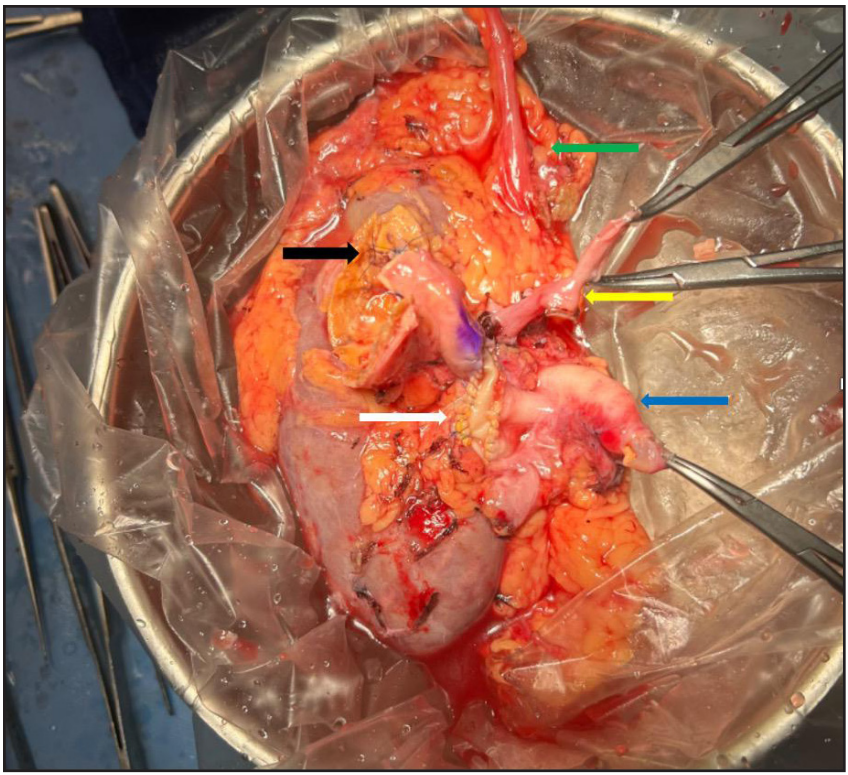
Introduction and Objectives: Renal artery aneurysms (RAAs) are rare lesions that are typically small and slow growing, although associated with high mortality in the event of rupture. Here we present a 47-year-old male with a 4cm RAA who failed prior endovascular repair with challenging anatomy for open in-situ repair. He was treated with a left robotic nephrectomy, ex-vivo aneusymorrhaphy and interposition vein bypass, and autotransplantation.

Methods: In coordination with the transplant nephrology team, a robotic nephrectomy and preservation fluid flush was performed. The renal artery had two aneurysmal portions, one involving the main renal artery and one extending into the hilum of the superior pole. The hilar aneurysm was resected flush with the kidney and a saphenous vein interposition graft was performed. Next, the anterior wall of the main RAA was resected, and patch angioplasty with bovine pericardium was performed. A lower midline incision was used for autotransplantation into the right iliac fossa.

Results: The patient tolerated the procedure well. Ultrasounds in the immediate post-operative period and at 4-month follow-up showed resolution of the aneurysm with patent graft and normal resistive indices, as well as return to baseline creatinine.

Discussion: This is a young patient with a large RAA who had failed coil embolization. As the aneurysmal artery perfused at least 50% of the renal parenchyma, there was concern that stent failure would have a potentially devastating effect on this patient's renal function. In-situ repair would prove challenging as the aneurysm extended into the renal hilum. For this challenging presentation, robotic-assisted repair provided a safe and effective alternative.

Figure: Interposition vein graft (black arrow), patch (white), ureter (green), renal vein (yellow, and renal artery (blue).



10:00 – 11:00am	CR08	**Contained Rupture Of Perivisceral Aspergillus Mycotic Aortic Aneurysm Treated With Open Repair With Visceral Perfusion**
		Vy T Ho, Venita Chandra *Stanford University, Palo Alto, CA*

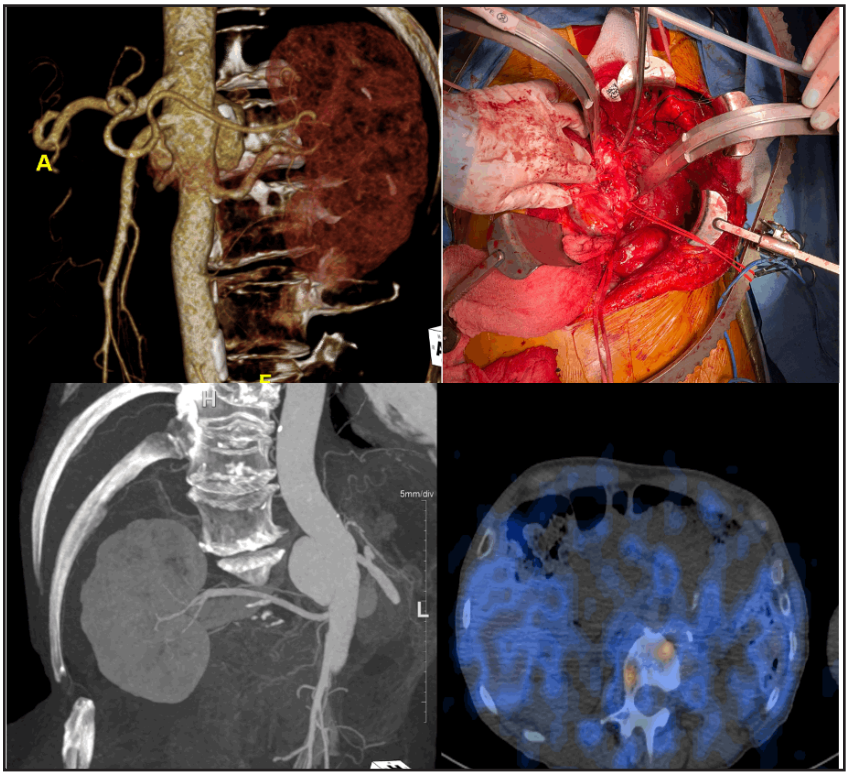
Demographics: 64 year-old female with a history of chronic lymphocytic leukemia in remission with a 7 year history of recurrent Aspergillus pneumonia presented to her pulmonologist for 5 days of abdominal pain.

History: A CT scan identified a perivisceral saccular aortic aneurysm with stranding concerning for contained rupture. On evaluation, she was afebrile, hemodynamically stable and denying active pain.

Plan: A tagged white blood cell scan was performed noting leukocyte uptake at the lateral aneurysm wall. Vancomycin, Zosyn, and Voriconazole therapy were initiated. For a durable result, the plan was to use cadaveric aortic homograft for open thoracoabdominal repair, with proximal clamp above the diaphragmatic hiatus. Cardiopulmonary bypass was planned for renal and superior mesenteric artery perfusion.

The patient underwent open repair via thoracoabdominal incision with preoperative lumbar drain placement. There were pleural adhesions requiring extensive lysis. An inflammatory rind surrounded the aneurysm without purulence. Before clamping, partial cardiopulmonary bypass was initiated, and bilateral renal and superior mesenteric arteries were perfused with warm blood. Aortic homograft interposition was performed with extended segment along the posterior aortic wall. The patient was weaned off bypass. On postoperative day 1 she was extubated and her lumbar drain was removed. She experienced return of bowel function on postoperative day four without growth from intraoperative aortic specimens. She was discharged on voriconazole therapy on postoperative day 7 and was seen in clinic 2 weeks later with well-healed incisions. She is awaiting follow-up axial imaging.

Discussion: Aspergillus-infected mycotic aortic aneurysms have been reported in immunosuppressed patients with durable results using both synthetic and cadaveric grafts. We achieved satisfactory perioperative outcomes using cadaveric aortic homograft and partial cardiopulmonary bypass for visceral perfusion.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10:00 – 11:00am	CR09	**Thoracic Aorta To Inferior Mesenteric Artery Bypass For Treatment Of Chronic Mesenteric Ischemia**
		Marjorie R. Liggett[1], Margaret A. Reilly[1], Nicholas S. Lysak[2], Neel A. Mansukhani[1] *[1]Northwestern University, Chicago, IL; [2]Advocate Health Care, Chicago, IL*

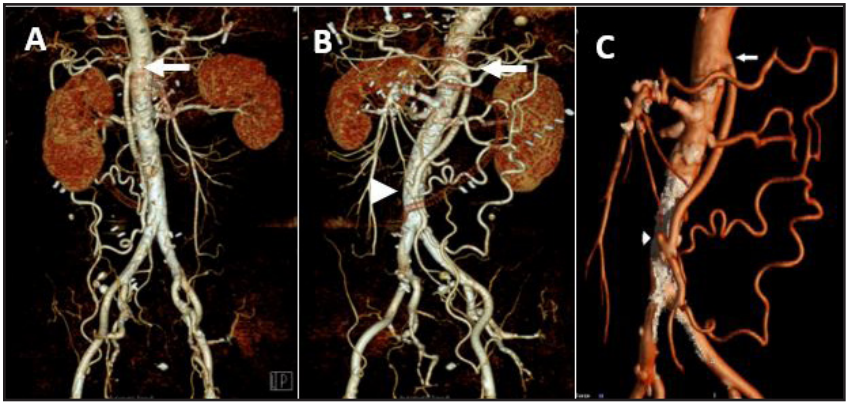
Introduction and Objectives: While roughly one-fifth of adults over 65 years old have imaging evidence of mesenteric atherosclerotic disease, symptomatic chronic mesenteric ischemia is a relatively uncommon diagnosis. Mesenteric revascularization accounts for less than 2% of revascularization procedures.

Methods: We describe the case of a 72-year-old male with recurrent chronic mesenteric ischemia who had undergone superior mesenteric artery (SMA) angioplasty and stenting followed by aortic to SMA bypass in 2016. We performed an external iliac to SMA bypass in January 2023 with initial improvement in his symptoms. However, at 1 month follow-up he endorsed return of his symptoms, including weight loss, postprandial pain, and food fear. Repeat imaging revealed occlusion of his bypass.

Results: Repeat surgical management was pursued with attempted endovascular treatment of the inferior mesenteric artery (IMA) with intravascular lithotripsy and balloon angioplasty, which was unsuccessful. We subsequently performed a supraceliac thoracic aorta to IMA bypass with polytetrafluoroethylene (PTFE) via a thoracoabdominal retroperitoneal approach. His post-operative course was uncomplicated and he was discharged on anticoagulation and antiplatelet therapy. On follow up, a CT scan revealed patent bypass and he had resolution of his symptoms with a 30 lb. weight gain.

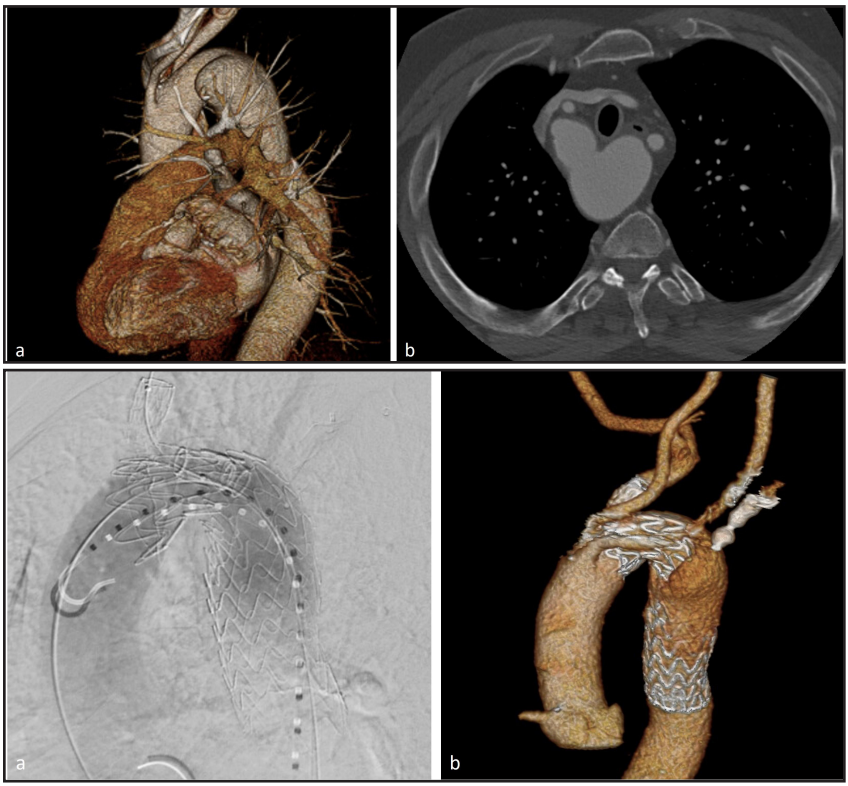
Conclusions: Chronic mesenteric ischemia is a debilitating vascular disease. We present a successful case of treatment with distal thoracic aorta to IMA bypass with PTFE. Review of the literature shows that intervention with this approach is incredibly rare. This case emphasizes the need for individualized evaluation of patients with complex mesenteric pathologies.

Figure I. Computed tomography angiography reconstruction with posterior (A), anterior (B), and focused (C) views of the bypass, marked proximally by an arrow and distally with an arrowhead.



10:00 – 11:00am	CR10	**Use Of A Thoracic Branch Endoprosthesis For Management Of A Right-sided Aortic Arch, Aberrant Left Subclavian Artery, And Kommerell Diverticulum**
		Justin R King, Mackenzie K Madison, Humraaz S Samra, Hanaa Dakour Aridi, Joel S Corvera, Raghu L Motaganahalli *Indiana University, Indianapolis, IN*

Developments in stent-graft technology have improved our ability to treat conditions previously unamenable to endovascular intervention. Thoracic endovascular aortic repair (TEVAR) has largely become the standard of care in the management of thoracic aortic pathology. For those not suitable for TEVAR, the TAG thoracic branch endoprostheses (TBE) may be an option. Previously described in the treatment of aneurysms, pseudoaneurysms, and dissections, we now report its use in the completely endovascular repair of a Kommerell diverticulum from an aberrant left subclavian artery off a right-sided aortic arch. This was identified in an asymptomatic 79-year-old male with dilatation to 5.1 cm (Figure 1). He was a poor open surgical candidate and lacked a 2-cm proximal landing zone. Coverage of the right subclavian artery was not indicated. He underwent placement of a 34-mm diameter TBE with a side branch component into the right subclavian artery and embolization of the left subclavian artery. Completion angiography demonstrates adequate seal proximally and distally without endoleak (Figure 2). The patient was discharged on postoperative day one. He was seen at one month for follow-up. Imaging demonstrated a type II endoleak with stable aneurysm size, thus we will continue surveillance. Right-sided aortic arch with Kommerell diverticulum is a rare but challenging problem for patients who are not candidates for open repair or do not have adequate landing zones. We report the first case managed with an entirely endovascular approach through placement of a TBE with left subclavian artery embolization and recommend this technique be considered in similar patients.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10:00 – 11:00am	CR11	**Open Thoracic Aortic Sac Decompression Following TEVAR For Large Ruptured Thoracic Aortic Aneurysm**
		Daniel Delgadillo, Tyler M Liang, Ali Mahtabifard, Nishant Sharma, Isabella J Kuo, Anthony H Chau, Nii-Kabu Kabutey, Roy M Fujitani, Samuel L Chen *University of California Irvine, Orange, CA*

Introduction and Objectives: Following successful thoracic aortic endografting, open aortic surgery for mass effect is rarely required. We present a case that necessitated thoracic aortic aneurysm decompression following TEVAR due to persistent symptomatic cardiopulmonary and esophageal compression.

Methods: A 54-year-old man with history of blunt thoracic aortic injury requiring thoracic endovascular aortic repair five years prior presented as a transfer to our institution with acute onset chest and back pain. In the previous month, he was also noted to have new onset dysphagia, acute kidney injury requiring dialysis, and atrial fibrillation. CT angiography demonstrated a 13cm contained rupture of the distal descending thoracic aorta. He was taken to the operating room for TEVAR, which successfully excluded the rupture. Completion angiography, intravascular ultrasound and post-operative CTA showed no endoleak, but persistently large aneurysmal sac.

Results: Following TEVAR, pain resolved but the patient had persistent dysphagia and rapid ventricular response when initiating hemodialysis via his transjugular catheter. Barium esophagram demonstrated an hour-glass compression of the mid-thoracic esophagus, and TTE demonstrated significant left and right atrial compression. He thus underwent a posterolateral thoracotomy through the 5th interspace to expose the proximal and mid-descending thoracic aorta. The aorta was opened with extraction of both fresh and laminated chronic thrombus, without any pulsatile bleeding. Intraoperative TEE demonstrated significant decompression of the mass effect on the left atrium and ventricle. Post-operatively, the patient had significant improvement in his dysphagia, normalization of renal function, and was discharged on room air, tolerating a regular diet.

Conclusions: Decompression of the excluded thoracic aortic aneurysm via open thoracotomy can be considered if needed to treat residual mass effect following TEVAR in isolated ruptured thoracic aortic aneurysms.


A
B
C

10:00 – 11:00am	CR12	**Stylocarotid Syndrome With Internal Carotid Artery Stenosis Treated With Transcarotid Artery Revascularization Case Report**
		K. Matter[1], G. Lenth1, S. Maximus[2], J. Crawford[1] *[1]Sutter Health Roseville Medical Center, Roseville, CA, [2]Unviersity of California, Davis, Sacramento, CA*

Introduction and Objectives: Eagle syndrome is a rare condition characterized by compression or disruption of neurovascular structures secondary to an elongated long styloid process, typically greater than four centimeters in length. This elongation can either be congenital or acquired through calcification of the stylohyoid ligament. While the literature commonly describes neurologic symptoms, vascular symptoms, although rarer, have also been reported and are referred to as vascular eagle syndrome, or stylocarotid syndrome. Vascular complications include ischemic stroke secondary to thromboembolism, aneurysm, stenosis, or dissection. The proposed pathophysiology for stenosis of the ICA is turbulent flow as the ICA courses around an elongated styloid process. In this case report, a 69 year old man with a complex medical history presented with unilateral internal carotid artery (ICA) stenosis and a five centimeter left styloid process.

Methods: The patient was successfully treated with transcarotid artery revascularization (TCAR) and post-operatively resumed medical therapy including statin, anti-hypertensive, anti-platelet, and diabetes medications.

Results: He remains neurologically intact without clinically significant carotid stenosis on duplex ultrasound at six weeks. We will continue to monitor him and will collect three month follow-up data including another duplex ultrasound.

Conclusions: With this case report, we hope to demonstrate the versatility of TCAR especially in patients with challenging anatomy or other comorbidities that preclude traditional carotid endarterectomy approach.

SATURDAY, JANUARY 20, 2024

3:00 – 4:00 pm **SPECIAL SESSION**
Hot Topics in Vascular Surgery
Moderators: Kristine Orion & Jeniann Yi

OBL - Rewards and risks to vascular surgery
Todd Berland, MD

Atherectomy - When is it best used
Lindsey Korepta, MD

CMS/carotid stenting - Why it matters and future implications
Malachi Sheahan, MD

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: Gegory Magee & Jean Marie Ruddy

4:00 – 4:12 pm	42	**Quality Of Life And Ambulation Outcomes In Acute Limb Ischemia Patients**
		Dhruva Kadiyala[1], Kaitlyn Dobesh[2], Seyed Pairawan[3], Alexander Shepard[3], Abdul K Natour[2], Timothy Nypaver[3], Loay S Kabbani[3] *[1]Wayne State University School of Medicine, Detroit, MI; [2]Henry Ford Health, Detroit, MI; [3]Henry Ford Health, Detroit, MI*

Introduction and Objectives: Quality of life (QoL) assessment is critical for shared decision making in patients with critical limb ischemia but has been poorly studied in acute limb ischemia (ALI). We sought to assess patient-centered outcomes in ALI using the European QoL 5D-5L and the VascuQoL-6 surveys.

Methods: A prospective database was created of patients presenting with ALI between May 2016 to July 2023. Variables collected included patient demographics, history, inpatient variables, outcomes, and ambulatory function at last follow-up. EQ-5D and VascuQoL-6 surveys were administered.

Results: Among 236 eligible patients, 47 (20%) completed the surveys with an average age of 58.3; the majority were black males. Limb salvage rates for respondents were 93.6% at thirty days and 85% at one year. Functional status at last follow-up included: 26 (55%) patients with unhindered ambulation; 13 (28%) with limited ambulation; 5 (11%) who were ambulatory with a prosthetic; 2 (4%) non-ambulatory after amputation and with 1 (2%) non-ambulatory without amputation.

VascuQoL-6 scores significantly correlated with age (p=0.002), and ambulatory status (p=0.03) but not limb salvage (p=0.36 at 30 days and p=0.89 at 1 year). Similar findings were observed with the EQ-5D survey (p=0.02 for both age and ambulatory status). (Table 1) No association was found between QoL and Rutherford classification, causative factors, procedure type, or length of stay.

Conclusion: This data suggests that younger patients have worse QoL on follow-up. Reduced ambulatory function was also associated with poorer QoL scores; however, this was not necessarily associated with limb salvage. Regaining ambulatory function without pain or neurologic deficits, even if this required amputation with prosthetic rehabilitation, had a greater positive impact on well-being than actual limb salvage.

Table I. Quality of Life Scores in ALI patients Related to Age, Treatment, and Outcomes.

	N(%)	Correlation/ Avg. VascuQoL-6 Score	P-value	Correlation/ Avg. EQ-5D Index score	P-value
Age	Range: 33-80 Mean: 58.3	Correlation = 0.44	0.002	Correlation = 0.34	0.02
Treatment Type					
Medical	3 (6.4%)	Correlation = -0.16	0.27	Correlation = -0.15	0.34
Endovascular	12 (25.5%)				
Open	28 (59.6%)				
Amputation	4 (8.5%)				
Limb Salvage					
30 Days	43 (93.6%)	Avg. VascuQoL-6 Score = 12.67	0.36	Avg. EQ-5D Score= 0.14	0.09
1 Year	36 (85%)	Avg. VascuQoL-6 Score = 14.83	0.89	Avg. EQ-5D Score = 0.40	0.47
Ambulatory Status					
Unhindered Ambulation	26 (55%)	Correlation = -0.33	0.03	Correlation = -0.35	0.02
Partial Ambulation	13 (28%)				
Prosthesis	5 {11%)				
Non-ambulatory	3 (6%)				

4:12 – 4:24 pm	43	**Sex-specific Risk Model For The Development Of Peripheral Arterial Disease With Immediate Integration Capabilities In Current Institutional Electronic Medical Records**
		Elizabeth Genovese[1], Kit Simpson[2], Ravi Veeraswamy[2] *[1]University of Pennsylvania, Philadelphia, PA; [2]Medical University of South Carolina, Charleston, SC*

Introduction and Objectives: We sought to develop a risk model to predict the development of PAD that can be incorporated into to the EMR. Given the differential impact of PAD risk factors on men vs women, we sought to develop separate models to increase the predictive rate of screening programs.

Methods: The risk factor model was developed utilizing South Carolina All-Payer and Medicare data in patients without PAD. Chi-squared analysis was performed to identify risk factors for the development of PAD in the subsequent year. Logistic regression identified variable weights of each risk factor separately for men and women. These models were validated with institutional data utilizing the existing Epic infrastructure with logistic regression and c-statistic.

Results: In the All-Payer/Medicare Database there were 326,022 patients without a diagnosis of PAD. The incidence of PAD development in the subsequent year was 2.78%(n=9,062). Variables found to be statistically significant predictors of PAD on the multivariable analysis included CKD, obesity, edema, prior amputation, smoking, diabetic neuropathy, diabetic complications, and older age. Multivariable models were performed separately in men and women (Table I). This demonstrated a greater influence of CKD, diabetic complications and smoking on women. Model validation was performed within our institution, where there were 45,740 and 41,378 patients without the diagnosis of PAD. The sex-specific models c- statistic were 0.629 for males and 0.644 for females.

Conclusions: This study, utilizing three large, contemporary databases, has demonstrated the differential impact of PAD risk factors on men compared to women. We have developed highly accurate, validated risk models that can be immediately implemented into the current electronic medical record to automatically screen patients for PAD, facilitating early detection and treatment programs.

Table I. Sex Specific Risk Factors for Development of PAD.

Risk Factors	Male Model Beta Weights	Female Model Beta Weights
Chronic Kidney Disease	8.7	11.2
Obesity	1.6	2.2
Lower Extremity Edema	4.4	5.4
Prior Amputation	14.6	10
Tobacco Use	2.7	3.7
Diabetic Neuropathy	11.1	11.4
Diabetic Complications	3.7	5.3
Age	0.8	0.9

4:24 – 4:36 pm	44	**Identifying Risk Factors For Poor Outcomes Following Popliteal Artery Injuries**
		Jack Layman[1], Dr. Jason Sciarretta[2], Dr. Ravi R Rajani[3], Vignesh J Muraldharan[4], Dr. Jaime Benarroch-Gampel[3], Dr. Manuel García-Toca[3], Dr. Chris Ramos[3] *[1]Augusta University/ University of Georgia Medical Partnership, Athens, GA; [2]Grady Memorial Hospital, Atlanta, GA; [3]Emory University School of Medicine, Atlanta, GA; [4]Emory University, Atlanta, GA*

Introduction and Objectives: Popliteal artery injuries may have amputation rates as high as 20%. This study focuses on identifying risk factors associated with major amputations following popliteal artery injuries in the largest single-center cohort to date. Additionally, we assess the impact of repairing or ligating concomitant popliteal vein injuries.

Methods: A retrospective chart review encompassing 2011 to 2023 was conducted at an urban level 1 trauma center. Patients with popliteal artery injuries were included. Demographics and clinical data were analyzed, and univariate and multivariate evaluations identified significant risk factors for amputation. In patients with concomitant popliteal vein injuries, we compared outcomes between those who underwent popliteal vein repair and ligation.

Results: 188 patients with popliteal artery injuries were identified, 10 underwent index amputation and were excluded. Table 1 summarizes demographics and clinical data. Univariate analysis (Table 2) followed by multivariate analysis revealed that obesity ($p=0.017$) and neurologic deficits on arrival ($p=0.035$) were associated with amputation. In the subgroup with popliteal vein injuries ($N=92$), there was no significant difference in amputation rates between those who had vein repair and those who underwent ligation ($p=0.38$). Likewise, popliteal vein ligation did not impact duration of fasciotomy closure ($p=0.41$) or skin graft area ($p=0.51$).

Conclusions: Major amputations following popliteal artery injuries are more likely in obese patients with neurologic deficits. Our data suggests that venous ligation in cases of concomitant popliteal vein injuries does not significantly elevate amputation risk. Further research is needed to determine the optimal approach for managing concomitant popliteal vein injuries.

Cohort Overview	
Total patients	178
Male	153 (86.0%)
Female	25 (14.0%)
Black/African American	141 (79.2%)
White	28 (15.7%)
Hispanic	3 (1.7%)
Other	6 (3.4%)
Patients with popliteal vein injuries	93 (52.2%)
Average ISS score	14.0
Average AIS score	2.9
Average time to revascularization	6.3 hours
Popliteal arterial repair	151 (84.8%)
Interposition with vein graft	92 (51.7%)
Interposition with synthetic	8 (4.5%)
Patch with vein graft	4 (2.2%)
Patch with synthetic	3 (1.7%)
Primary repair	29 (16.3%)
Bypass with vein graft	14 (7.9%)
Bypass with synthetic	1 (0.6%)
No popliteal artery repair	27 (15.2%)
Major amputation	19 (10.7%)
Fasciotomy	102 (57.3%)
Fasciotomy	102 (57.3%)

Univariate Logistic Linear Regression			
Variable	**P-value**	**Odds Ratio**	**Confidence Interval**
Obesity	0.003*	4.31	1.6-11.84
Time to revascularization	0.23	1.05	0.95-1.14
Popliteal vein injury	0.05*	2.83	1.03-9.11
Tibioperoneal trunk injury	0.056*	3.37	0.96-11.15
Posterior tibial artery	0.46	1.81	0.26-7.69
Peroneal artery	0.39	2.02	0.29-8.7
Anterior tibial artery	0.12	2.47	0.72-7.11
Neurological deficit	0.0004*	6.12	2.2-17.04
Tibial nerve injury	0.26	2.17	0.89-7.64
Femur fracture	0.261	0.36	0.109-1.14
Tibia fracture	0.0607*	2.35	0.89-6.27
Fibula fracture	0.049*	2.68	0.97-7.14
Ortho surgery at index	0.28	1.71	0.65-4.81
External fixation	0.27	1.71	0.65-4.63
Popliteal vein repair	0.028*	2.96	1.13-8.06
Fasciotomy at index procedure	0.226	1.87	0.7-5.54

4:36 – 4:48 pm	45	**Using Vascular Deserts As A Guide For Limb Preservation Outreach Programs Successfully Targets Underserved Populations**
		Kathryn L DiLosa[1], Misty Humphries[1], Vanessa Mora[2], Theresa Daniele[2], Leigh Ann O'Banion[2] *[1]UC Davis, Sacramento, CA; [2]UCSF Fresno, Fresno, CA*

Objectives: Vascular deserts, regions without vascular providers, previously described targets for limb salvage efforts. Using desert maps, CHAMPIONS programs (Comprehensive Heart and Multidisciplinary Limb Preservation Outreach Networks) targeted regions for outreach and evaluated the population.

Methods: At two events between 2022-2023, providers screened and educated participants on peripheral arterial and cardiovascular disease (PACD). Demographics and cardiovascular risk factors were collected. Vascular surgeons and VQI participating facilities were mapped with 30-mile buffer using ArcGIS. Participants were mapped with census data and Healthy Places Index overlayed for population and social determinants of health data analysis in Medical Service Study Areas (MSSA), a geographical analysis unit. (Figure 1) Results were compared to prior statewide deserts.

Results: Participants' mean age was 56 (range 6-88); 39% were male. 27% had no primary care provider. 30% had diabetes, 10% undiagnosed, 38% had hypertension, 40% undiagnosed, and 21% described intermittent claudication. 81% made <$30,000 annually and 28% reported no health insurance.

Patients were more frequently Hispanic (68% vs. 36%, p<.001). Compared to other desert regions, the target population was more disadvantaged in all HPI domains, including economic (38 vs. 18%, p<.001), education (38 vs. 21%, p<.001), and transportation (40 vs. 30%, p<.001). (Table 1) Worse education, financial, and transportation resources correspond to decreased care access due to poor literacy and travel burdens.

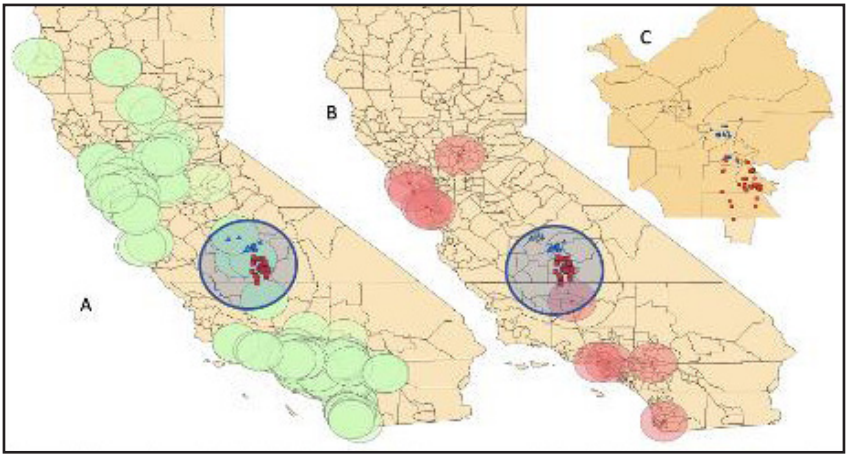
Conclusions: CHAMPIONS programs successfully targeted populations needing care based on desert maps, demonstrating at-risk populations can be successfully identified. Further efforts should address health literacy, transportation burdens, and financial resources through on-site screening for PACD.

Table I. Social factors and population composition of residents in deserts versus program-specific MSSAs.

	Non-Deserts (%)	Statewide Vascular Deserts (%)	Pilot Program MSSAs (%)	P-value
Population Data (Census Tract Data)				
White	55.0	75.6	27.88	p<.001
Asian	10.3	10.3	2.88	p<.001
Hispanic	37.1	36.0	67.85	p<.001
Black	13.4	7.4	0.84	p<.001
200% below poverty level	35.2	39.6	83.21	p<.001
Healthy Places Index Factor Data*				
Overall HPI Percentile	52.68	43.12	19.19	p<.001
Economic Percentile	52.31	38.35	18.27	p<.001
-Mean Income Percentile	51.67	40.62	19.19	p<.001
Education Percentile	52.10	38.46	21.41	p<.001
-Percentage >25 completed college	52.25	38.22	16.21	p<.001
Healthcare Access Percentile	49.86	46.00	25.04	p<.001
Transportation Percentile	51.65	39.92	30.43	p<.001

*The HPI is a percentile derived from a score composed of 25 individual factors in 8 domains related to social determinants of health: economy, education, healthcare access, housing, neighborhoods, clean environment, transportation, and social environment. A higher percentile corresponds to healthier community conditions.

Figure I. Maps demonstrating locations of patient program participants (blue triangles-first event, red squares-second event) compared to vascular surgeons (A, green circle) and VQI facilities (B, red circle). Specific MSSAs used for analysis were those included within buffer zones of vascular surgeons in the region and are those highlighted by the blue circles (C).



4:48 – 4:56 pm	46 (RF)	**Disease-specific Patient-reported Quality Of Life After Fenestrated/branched Endovascular Aortic Aneurysm Repair**
		Andrew Hoel[1], Tanvi Nayak[1], Aravind Ponukumati[2], Neel A Mansukhani[1], David H. Stone[2], David P. Kuwayama[3], Brian Nolan[4], Bjoern D. Suckow[2] *[1]Northwestern University Feinberg School of Medicine, Chicago, IL; [2]Dartmouth Hitchcock Medical Center, Lebanon, NH; [3]Yale Medical School, New Haven, CT; [4]Maine Medical Center, Portland, ME*

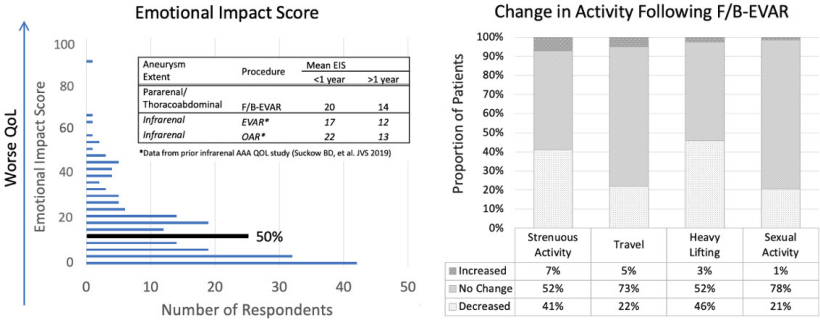
Introduction: Significant advances in technology and technique have facilitated minimally invasive repair of complex aortic aneurysms using fenestrated and branched endovascular devices (F/B-EVAR). We examined patient-reported quality of life (QoL) following F/B-EVAR using a survey validated for aortic aneurysm repair.

Methods: A prospectively maintained database was used to identify living patients that underwent F/B-EVAR for pararenal or thoracoabdominal aortic aneurysms at two institutions. Eligible patients (n=285) were sent a validated QoL survey to evaluate emotional impact score (EIS) and activity change. EIS (0-100) was derived from the survey with higher scores indicating more adverse emotional impact and worse QoL. Respondent activity change following F/B-EVAR was evaluated in four domains.

Results: A total of 234 patients (82%) completed surveys. Mean EIS was 16 (+/-16) with minimally better EIS in patients >1 year post-F/B-EVAR (20 vs 14). EIS was similar after F/B-EVAR compared to prior results after infrarenal OAR and EVAR. Within the EIS range (0-91) for this cohort, most respondents demonstrated limited adverse emotional impact after F/B-EVAR. However, the broad 4th quartile of EIS (22-91) indicates that a small portion of respondents had significantly worse QoL after F/B-EVAR (Figure 1A). While patients commonly reported no activity change, over 40% of patients reported decreases in strenuous activity and heavy lifting (Figure 1B).

Conclusions: Patients undergoing F/B-EVAR demonstrate similar emotional QoL compared to EVAR, and slightly better emotional QoL compared to OAR in the first year. Patients most commonly report unchanged or decreased activity after F/B-EVAR. With confirmed feasibility of this disease-specific QoL instrument, its use in prospective evaluation of patients with complex aortic disease may provide greater insights into the impact of F/B-EVAR on QoL.

Figure I. Emotional impact (left) and change in activity (right) following fenestrated-branched endovascular aortic repair (F/B-EVAR). Legend: QoL (quality of life), ETS (emotional impact score), OAR (open aortic repair), EVAR (endovascular aortic repair).



4:56 – 5:04 pm	47 (RF)	**Early Transplantation Or Conversion To Peritoneal Dialysis After First Time AV Access Creation**
		Max Zhu, Alik Farber, Elizabeth King, Andrea Alonso, Anna Kobzeva-Herzog, Jeffrey J. Siracuse *Boston University, Boston, MA*

Introduction: Hemodialysis (HD) is ideally a bridge to kidney transplantation; however, for many it is destiny therapy due to long transplant waiting times. A subset of patients will convert to peritoneal dialysis (PD). Our goal was to identify patient factors associated with early cessation of HD by either transplantation or conversion to PD.

Methods: We identified all first-time HD access creation patients in the Vascular Quality Initiative (2011-2022) with long-term follow-up. Zip codes were correlated with Area Deprivation Index (ADI) quintile (Q1-Q5, least to most disadvantaged). Demographics, comorbidities, functional status, and conversion to alternate therapy were assessed.

Results: There were 19,782 patients included. Average age was 62±15 years and 57% were male. Access type included 35% brachiocephalic, 29% radiocephalic, 17% brachiobasilic, and 14% prosthetic grafts. During the follow-up period of a median 306 (71-403) days, 1.3% underwent a kidney transplant and 2.3% underwent conversion to PD; mortality rate was 28% on Kaplan-Meier analysis at 10 years.

On multivariable analysis, independent ambulation was most strongly associated with undergoing kidney transplantation. Current smoking, Medicaid status, heart failure, Black race, Medicare status, body mass index, and older age were associated with decreased transplant rates. Conversion to PD was associated with independent ambulation and ADI Q5, Q4, and Q3. PD was less likely with Hispanic ethnicity, medication-controlled diabetes, Black race, former smoking, and older age (Table 1).

Conclusions: Impaired ambulatory status, Black race, and being underinsured were barriers to early kidney transplantation in new arteriovenous access patients. Socioeconomically disadvantaged neighborhoods did not affect one's chances for renal transplant, but it was associated with increased rates of PD conversion.

Table I. Multivariable analysis of factors associated with alternative renal replacement therapy.

	Transplant			Peritoneal Dialysis		
Covariate	**OR**	**95% CI**	**P**	**OR**	**95% CI**	**P**
Age	.96	[.95, .97]	**<.001**	.99	[.98,.99]	**<.001**
Female Sex	1	[.75, 1.4]	.829	.96	[.77, 1.2]	.756
Race (Ref. = White)						
Black	.55	[.38, .81]	**.003**	.61	[.47, .78]	**<.001**
Asian	1.4	[.75, 2.6]	.293	.65	[.3, 1.4]	.282
Other	.68	[.21, 2.2]	.514	.59	[.24, 1.4]	.248
Hispanic Ethnicity	1.1	[.61, 2]	.756	.44	[.23, .85]	**.014**
Insurance (Ref. = Commercial)						
Medicaid	.42	[.24, .73]	**.002**	1	[.72, 1.5]	.849
Medicare	.67	[.47, .95]	**.026**	1.2	[.9, 1.5]	.264
ADI Quintile (Ref. = Q1)						
Q2	1.1	[.67, 1.9]	.659	1.3	[.81, 2.2]	.254
Q3	1.3	[.77, 2.1]	.339	1.9	[1.2, 3]	**.01**
Q4	.92	[.54, 1.5]	.741	1.9	[1.2, 3]	**.007**
Q5	.69	[.38, 1.2]	.215	2.4	[1.5, 3.7]	**<.001**
BMI	.95	[.93, .98]	**.003**	1	[.99, 1]	.388
Ambulatory Status (Ref. = Non-ambulatory)						
Ambulatory with Assist	1.7	[.36, 8.1]	.499	1.5	[.64, 3.4]	.354
Ambulatory	4.4	[1.1, 17.8]	**.039**	2.9	[1.4, 6.3]	**.005**
Preoperative Smoking (Ref. = Never Smoker)						
Former Smoker	.91	[.64, 1.3]	.595	.7	[.54, .91]	**.007**
Current Smoker	.21	[.1, .45]	**<.001**	.85	[.62, 1.2]	.321
Diabetes (Ref. = None)						
Diet-controlled	.78	[.39, 1.6]	.481	1.2	[.83, 1.8]	.296
Medication-controlled	1	[.56, 1.8]	.977	.58	[.36, .94]	**.028**
Insulin-dependent	1.2	[.83, 1.7]	.351	1	[.77, 1.3]	.974
Hypertension	1.1	[.6, 2]	.761	1.24	[.74, 2.1]	.410
Heart Failure	.52	[.32, .84]	**.008**	.86	[.66, 1.1]	.297
COPD	1.2	[.76, 2]	.397	1.1	[.85, 1.6]	.377
CAD	.69	[.41, 1.2]	.17	.75	[.55, 1]	.085

5:04 – 5:12 pm	48 (RF)	**In-hospital Outcomes After Transcarotid Artery Revascularization And Timing Of Antiplatelet Administration**
		Hanaa Dakour Aridi[1], Mackenzie Madison[1], Shihuan K Wang[2], Andres Fajardo[1], Michael P. Murphy[1], Marc L. Schermerhorn[3], Grace Wang[4], Jens Eldrup-Jorgensen[5], Vikram Kashyap[6], Raghu L Motaganahalli[1] *[1]Indiana University, Indianapolis, IN; [2]University of Texas Health Science Center, Houston, TX; [3]Beth Israel Deaconess Medical Center, Boston, MA; [4]Hospital Of The University Of Pennsylvania, Philadelphia, PA; [5]Maine Medical Center, Portland, ME; [6]Frederik Meijer Heart And Vascular Institute, Grand Rapids, MI*

Introduction: Prior studies have emphasized the importance of compliance with preoperative dual antiplatelet therapy (DAPT) in patients undergoing Transcarotid artery revascularization (TCAR). This investigation examines perioperative outcomes following TCAR based on the timing of DAPT administration.

Methods: Patients undergoing TCAR in the VQI database (2016-2022) were divided into 3 groups: 1) those on preoperative DAPT taken >=36 hours of the procedure;2) those on at least 1 antiplatelet (aspirin or P2Y12 antagonist) who received a supplemental dose within 4 hours before the procedure;3) patients not on preoperative antiplatelet receiving only a loading dose on the day of surgery. Perioperative outcomes were compared between the 3 groups using univariable and multivariable analysis.

Results: Out of 36063 patients, 61.9% were on DAPT preoperatively (Group1),37.1% received a supplemental dose (Group2) and 1% received a loading dose on the day of the intervention (Group3). Patients in Group3 were older, more likely to be symptomatic and had lower cardiac comorbidities. On univariable analysis, there was no significant difference in perioperative outcomes between the 3 groups, except for an increase in in-hospital restenosis/occlusion in group3 (n=2, .6%) compared to group1 (n=23, 1.0%) and group2 (n=26, 0.2%) (P=.01). On multivariable analysis,no significant association was observed between the 3 groups and in-hospital stroke/death [Group2 vs.1: OR (95%CI:1.03 (0.85-1.26), P=.74; Group3 vs.1: 1.22 (0.61-2.45), P=.57) or bleeding complications [OR (95%CI): 1.07 (0.80-1.45) and 0.65 (0.25-1.70), respectively,P>.05].However, compared to patients on preoperative DAPT, patients in groups2 & 3 had higher odds of in-hospital restenosis/occlusion [Group2: 1.92 (1.08-3.4), P=.03; Group3: 5.5 (1.3-23.7), P= .02].No significant differences in 30-day adjusted outcomes were observed.

Conclusion: Around one-third of patients undergoing TCAR require supplemental or loading doses of antiplatelet on the day of surgery to rapidly achieve therapeutic levels. This study demonstrates that this practice is relatively safe without an increase in perioperative stroke, death or bleeding complications.

5:12 – 5:24 pm	49	**Long-term Outcomes Of Vein Adjuncts In Distal Infrainguinal Bypass**
		Stephanie L Rakestraw, Zdenek Novak, Michael Y Wang, Tarun Kore, Emily L Spangler, Adam W Beck, Danielle C Sutzko *University of Alabama at Birmingham, Birmingham, AL*

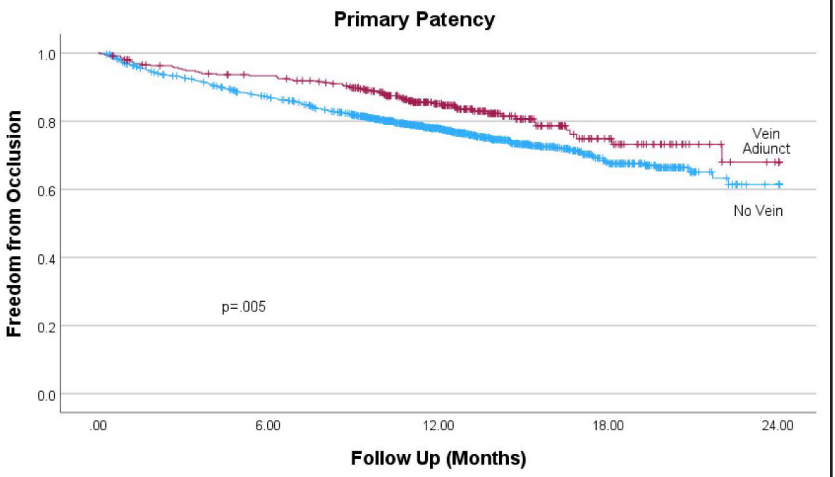
Introduction: Autologous vein is recommended for infrainguinal bypass due to improved primary patency compared to prosthetic graft. In patients without adequate vein, vein adjunct at the distal anastomosis has been suggested to improve patency in small studies. This study aimed to determine if performance of a distal vein adjunct was associated with improved primary patency in distal infrainguinal bypass.

Methods: A retrospective review of the Vascular Quality Initiative Infrainguinal Bypass database was conducted. Patients undergoing prosthetic-only and vein adjunct with prosthetic were compared. Inclusion criteria included age >18 years, and bypass to tibial or distal vessels. Exclusion criteria included autologous vein conduits and prior interventions.

Results: A cohort of 2,378 patients was identified, with 473 (19.9%) receiving vein adjunct. Groups were similar in age, BMI, race, comorbidities, and indications. Patients undergoing prosthetic-only bypass had a slightly longer total length of stay (8.0 [4.0-14.0] vs 7.0 [4.0-12.5] days, p=.02) and more renal complications (5.4 vs 3.2%, p=.044) than those undergoing bypass with vein cuff. Perioperative mortality and operative complications were similar. Primary patency at 2 years was higher with vein adjunct (Figure 1). Multivariable analysis indicated patients receiving a vein adjunct were less likely to have a bypass occlusion at two years (OR 0.630 [0.468-0.847], p=.002). Patients receiving vein adjuncts to their bypass and prosthetic-only bypasses had similar rates of anticoagulation prescribing on discharge (48.8 vs 51.5%, p=.315) and anticoagulation was associated with improved primary patency rate (OR 1.196 [0.955-1.498], p=.120).

Conclusion: Distal vein adjuncts may provide longer primary patency than prosthetic alone for distal infrainguinal bypass. Surgeons should consider utilizing distal vein adjuncts to improve primary patency in tibial bypass with prosthetic conduit.

Figure I. Kaplan-Meier of Primary Patency of Those Undergoing Infrainguinal Bypass to a Distal Target at 2 years.



5:24 – 5:36 pm	50	**Outcomes Of Percutaneous Aspiration Thrombectomy In Acute Thrombosis Of Arteriovenous Access**
		Sellers Colton Boudreau, Abindra C Sigdel *University of Louisville, Louisville, KY*

Introduction and Objectives: The objective of this study was to retrospectively review cases of percutaneous aspiration thrombectomies of acutely thrombosed arteriovenous dialysis access to evaluate post procedure outcomes.

Methods: A retrospective review of 78 unique patients undergoing a total of 146 percutaneous aspiration thrombectomies of arteriovenous dialysis access between 2016 to 2020 were reviewed to evaluate post procedure outcomes. The CAT-D Suction Thrombectomy Device (Penumbra; Alameda, CA) was the percutaneous aspiration thrombectomy device used to restore arteriovenous access patency in this study. Technical and clinical outcomes including rates of successful thrombectomy, primary patency rates, and cumulative patency rates were determined via chart review. Subsequent analysis was conducted to determine factors that may affect post procedure patency.

Results: In this series, a total of 78 patients undergoing a total of 146 percutaneous aspiration thrombectomies were studied. There was a technical success rate of 98.6% (144 of 146 thrombectomies) with 95.9% (140 of 146 thrombectomies) subsequently undergoing dialysis successfully. There were no procedural related deaths or clinically apparent pulmonary embolism. Primary patency at 30, 90, and 180 days was 58.2%, 35.6%, and 23.3% with an average primary patency of 104.5 days. Cumulative patency rates at 30, 90, and 180 days were 80.8%, 64.4%, and 54.8% with an average cumulative patency rate of 232.5 days.

Conclusions: The use of percutaneous aspiration thrombectomy in acutely thrombosed arteriovenous access is associated with high technical and clinical success rates while maintaining a low risk of complications. This study demonstrated a primary and cumulative patency rate that was lower than prior literature, but this may have been secondary to our study population consisting of greater numbers of patients with known risk factors for early access thrombosis.

5:36 – 5:48 pm	51	**Evaluating Receipt of Optimal Medical Therapy Among Disadvantaged Groups Undergoing Amputation**
		B. M. Mize[1], A. Saati[2], M. Wichhart Donzo[1], N. Forrester[1], A. Mustapha[1], C. C. Grant[3], A. Neill[1], Y. Duwayri[1], O. Alabi[1] *[1]Emory University School of Medicine, Atlanta, GA, [2]Atlanta VA Health Care System, Decatur, GA, [3]Department of Preventative Medicine, The University of Tennessee Health Science Center, Memphis, TN*

Introduction and Objectives: Optimal medical therapy (OMT) for peripheral artery disease (PAD) is associated with decreased major amputation and mortality. Studies suggest there are disparities in receipt of OMT among PAD patients, yet it is unknown if patients from disadvantaged neighborhoods, measured by the area deprivation index (ADI), are less likely to be on OMT.

Methods: We reviewed patients that underwent major amputation between 2015-2019 at two large healthcare systems. Primary exposure was high ADI (ADI over the 60th percentile). Secondary analysis was performed with exposure being Black race. For each analysis, primary outcome was receipt of OMT, defined here as at least one antiplatelet agent and a high-intensity statin. The exposure outcome relationship was assessed using logistic regression.

Results: Among 354 patients with median age of 66 (interquartile range [IQR] 58-74), 267 (75.4%) were male, 219 (61.9%) identified as Black and 116 (32.8%) as White. Overall, 91 (25.7%) patients were on OMT at the time of amputation despite 57.3% of the cohort being established with a vascular surgeon. Compared to low ADI, patients with high ADI had a higher proportion of Black patients (48.1% vs 70.3%, p= 0.001) and were more often hospitalized at University-affiliated facilities (47.4% vs 63.0%, p = 0.004). After adjustment for age, sex, and race, high ADI was not associated with receipt of OMT prior to major amputation (adjusted odds ratio [aOR] 0.72, 95% CI 0.42-1.24). Black race was also not associated with receipt of OMT before amputation.

Conclusions: In our cohort, a neighborhood's economic well-being had no impact on receipt of OMT prior to major amputation. While absence of socioeconomic disparities for this outcome is notable, the proportion of patients on OMT is abysmal. Process measures should be examined to improve the rate of receipt of OMT among our patients at risk for amputation.

5:48 – 5:56 pm	52 (RF)	**The Geographic Distribution Of Vascular Surgeons And Trainees By State In 2023**
		Nolan Henning, Wato Nsa, Joseph Edmonds, Anne Marie Nguyen, Arad Abadi, Peter Nelson, Juell Homco, Fernando Motta, William Jennings, Kimberly Zamor, Prashanth Iyer, Marshall Warren, Lucas Phi, Kelly Kempe *University of Oklahoma School of Community Medicine, Tulsa, OK*

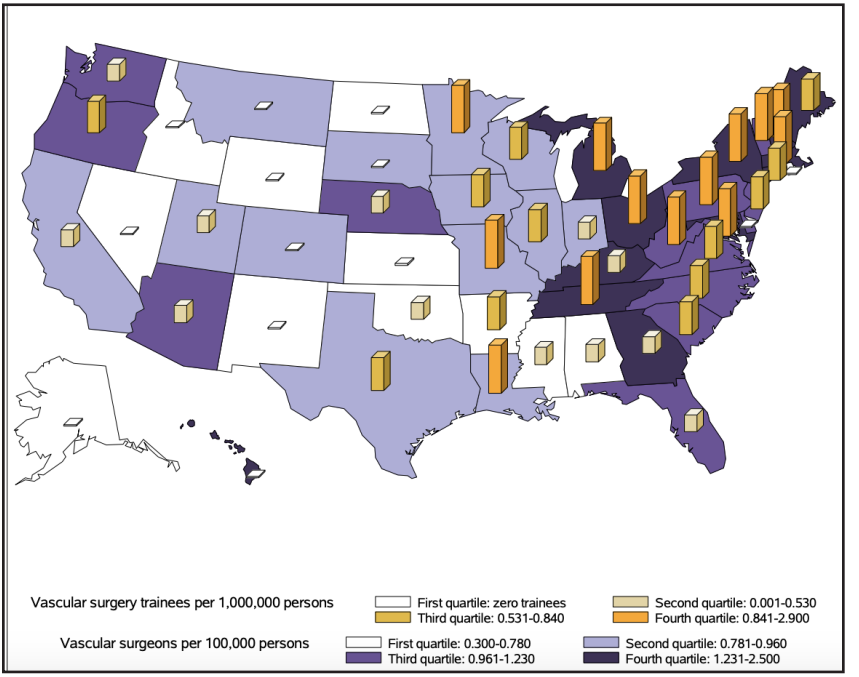
Introduction and Objectives: Approximately 1.4 vascular surgeons/100,000 persons are estimated to fulfill current patient needs in the United States (US), but an ongoing shortage exists. We examined each state's per capita rates of vascular surgeons and trainees to identify the need for additional recruitment efforts.

Methods: Vascular surgeons in the US were identified using the National Provider Identifier registry in 2023. Only board-certified and actively licensed vascular surgeons were included. To estimate the number of vascular surgery graduates per year in each state, integrated residency and fellowship matched positions (trainees) were ascertained from the 2023 National Resident Matching Program website. Surgeons and trainees were totaled by state, and rates were calculated using 2020 US Census Bureau state populations. These two cohorts were also examined together using a simple linear regression and geographic mapping.

Results: This study included 3399 board-certified vascular surgeons and 228 newly matched trainees. The average rates of vascular surgeons and trainees in the US are 1/100,000 persons and 0.6/1,000,000 persons, respectively. The five states with the lowest rates of vascular surgeons are AR, ND, NV, OK, and WY, averaging 0.4/100,000 persons. Eight states (AK, ID, KS, ND, NM, NV, RI, WY) had zero training programs offering positions in 2023 and ranked in the lowest quartile for the number of practicing vascular surgeons (Figure 1). Simple linear regression demonstrated a statistically significant correlation between state rates of vascular surgeons and trainees ($p < 0.001$).

Conclusions: States with zero training positions also have the fewest vascular surgeons per capita. Statewide attention to expanding vascular surgery training opportunities targeted in these areas could positively impact the current maldistribution and shortage of vascular surgeons.

Figure I. Vascular surgeons per 100,000 persons. Vascular surgery trainees per 1,000,000 persons.



5:56 – 6:04 pm	53 (RF)	**Limb Salvage Outcomes Worsened During The COVID-19 Public Health Emergency And Disproportionally Affected More Deprived Patients**
		Bowen Xie, Dana Semaan, Salim Habib, Lindsey Olivere, Michael Madigan, Ulka Sachdev, Mohammad Eslami, Karim Salem *UPMC, Pittsburgh, PA*

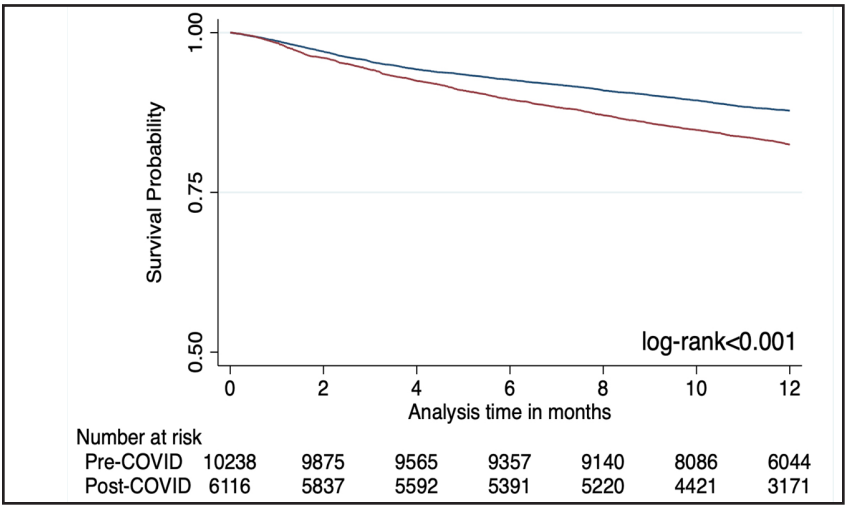
Introduction and Objectives: The variation of limb salvage rates by zip code indicates a risk for amputation in socioeconomically deprived patients. We compared limb salvage outcomes based on Area Deprivation Index (ADI) and hypothesized that "high-risk" ADI correlates with reduced limb salvage and was further exacerbated during the COVID-19 Public Health Emergency (PHE).

Methods: The Vascular Quality Initiative (VQI) database was queried for patients without prior major amputation who underwent lower extremity bypass or peripheral endovascular intervention between 2017 and 2022. Patients were grouped into ADI quartiles and 1:1 nearest neighbor propensity score matching was performed before and after the COVID-19 PHE (2017-2019 vs 2020-2022). Primary outcomes included 1-year follow-up and major amputation rates. Kaplan-Meier survival and Cox proportional hazard analysis were performed.

Results: After propensity score matching, 104,646 patients were included. A significantly higher proportion of total patients were treated for CLTI post-COVID (60.4% vs 55.2%, $p<0.001$) with fewer patients having 1-year follow-ups (31.2% vs. 34.5%, $p<0.001$). The most deprived quartile had a higher rate of major amputation at 1-year post-COVID (6.8% vs. 5.8%, $p=0.04$) compared to the least deprived (5.7% vs 5.2%, $p=0.18$), despite no difference in the overall rate of 1-year major amputation across all patients. There was also a greater decline in amputation-free survival within the most deprived group compared to the least (5.3% vs. 2.2%) (Figure 1). Finally, high deprivation was independently associated with an increased rate of 1-year major amputation (HR=1.12, $p=0.02$) on multivariate regression.

Conclusions: Patients in more deprived areas had a disproportionally higher rate of major amputations during the COVID-19 PHE highlighting the need to mitigate the ongoing disparities in limb salvage rates amongst disadvantaged socioeconomic groups.

A. 1-year Amputation-Free Survival for Most Deprived.



B. 1-year Amputation-Free Survival for Least Deprived.

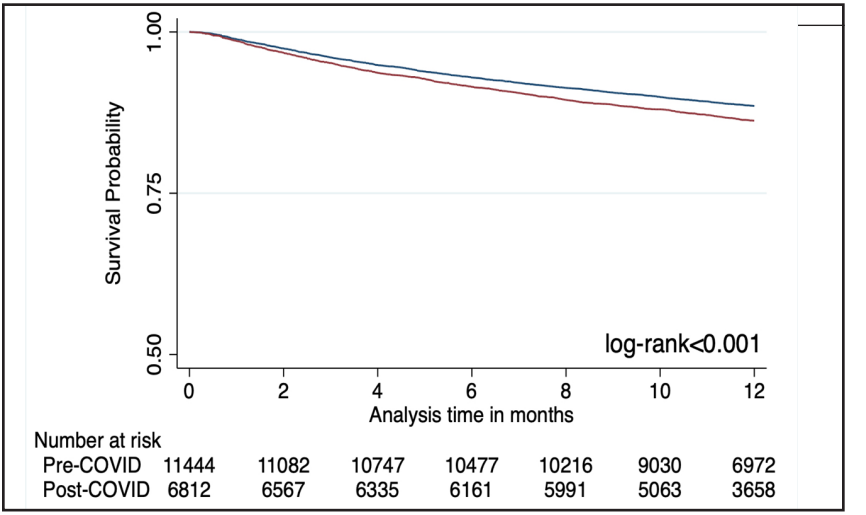


Figure A and B: TOP LINE. Pre-COVID; BOTTOM LINE. Post-COVID

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!