PROGRAM

Southern California Vascular Surgical Society

42nd Annual Meeting

April 19 – 21, 2024

The Seabird Resort

Oceanside, CA

ACKNOWLEDGMENT

Southern California Vascular Society is grateful for the educational grant support of the following companies:

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Southern California Vascular Surgical Society

42ND Annual Meeting
April 19 – 21, 2024
Seabird Resort
Oceanside, CA

History of the Southern California Vascular Surgical Society

On April 28, 1980, a group of well-known vascular surgeons representing various Southern California areas and local medical schools met for the purpose of forming a regional vascular surgical society. Max Gaspar initiated the first organizational meeting which was held at the Old Ranch Country Club in Long Beach on May 22, 1980. The founding members present were doctors John Ball, Max Gaspar, James McKittrick, Wesley Moore, Herbert Movius, Louis Smith and Richard Treiman. Doctors Wiley Barker, Eugene Bernstein, John Connolly and Peter Samuels were unable to attend.

The second organizational meeting was held at the Los Angeles County Medical Association building on April 12, 1981. A list of prospective members was reviewed and acted upon. Doctor Richard Treiman was selected as acting Secretary. A third organizational meeting was held at Yamamoto Restaurant in Los Angeles on May 13, 1981. The format of annual scientific meetings was discussed. Doctor Louis Smith offered to host the first Annual Meeting at Loma Linda University. The meeting was held at the Jerry L. Pettis Memorial Veterans Administration Hospital in Loma Linda on March 31, 1982. Seventy members and ten guests were in attendance. Doctor Richard Treiman was elected President and Doctor Louis Smith, Secretary.

Southern California Vascular Surgical Society

2024 Executive Council

Jessica O' Connell, MD	President
Kaushal (Kevin) Patel, MD	First President-Elect
Andrew Barleben	Second President-Elect
Scott Musicant, MD	Secretary/Treasurer (2023)
Afshin Michael Molkara, MD	Recorder
Theodore Teruya, MD	Past President
Jason T. Chiriano, DO	Past President
Wesley Lew, MD	Membership Committee Chair
Jesus Ulloa, MD	Program Chair
Ali Azizzadeh, MD	Councilor At-Large
Kelley Hodgkiss-Harlow, MD	Councilor At-Large
Sharon Kiang, MD	Councilor At-Large

SCVSS Meetings

Year	City	President
1982	Loma Linda	Richard L. Treiman
1983	Los Angeles	Treiman Moore
1984	Los Angeles	Wesley S. Moore
1985	Santa Barbara	James E. McKittrick
1986	Long Beach	Max R. Gaspar
1987	Lake Arrowhead	Louis L. Smith
1988	San Diego	Eugene F. Bernstein
1989	Santa Barbara	Richard A. Lim
1990	Newport Beach	P. Michael McCart
1991	Marina Del Rey	Albert E. Yellin
1992	Dana Point Rey	Wiley F. Barker
1993	Coronado	Robert S. Ozeran
1994	Coronado	Samuel E. Wilson
1995	La Jolla	Ralph B. Dilley
1996	Dana Point	Rodney A. White
1998	La Jolla	John J. Bergan
1999	Ojai	Fred A. Weaver
2000	Indian Wells	D. Preston Flanigan
2001	Santa Barbara	George Andros
2002	San Diego	J. Dennis Baker
2003	Carlsbad	William J. Quinones-Baldrich
2004	La Jolla	Robert J. Hye
2005	La Quinta	Steven G. Katz
2006	Temecula	Jeffrey L. Ballard
2007	Coronado	Willis H. Wagner
2008	Westlake Village	Samuel S. Ahn
2009	Dana Point	Peter F. Lawrence
2010	Carlsbad (North San Diego)	Hugh A. Gelabert
2011	Ranchos Palos Verdes	Roy M. Fujitani
2012	Ojai	Paul L. Cisek
2013	Rancho Mirage	Christian de Virgilio
2014	Carlsbad	Carlos E. Donayre
2015	San Diego	Ahmed M. Abou-Zamzam, Jr.
2016	La Jolla	Vincent J. Guzzetta
2017	Rancho Mirage	Vincent L. Rowe
2018	Laguna Beach	John S. Lane, III
2019	Rancho Mirage	David A. Rigberg
2020	Virtual	Juan Carlos Jimenez
2021	Ojai	Karen Woo
2022	Coronado Island	Theodore Teruya
2023	La Quinta, CA	Jason Chiriano
2024	Oceanside, CA	Jessica O'Connell

SCVSS Past Leadership

Secretary-Treasurers

Louis L. Smith	1982-1985
P. Michael McCart	1985-1988
Robert S. Ozeran	1988-1991
Rodney A. White	1991-1994
D. Preston Flanigan	1994-1998
William J. Quinones-Baldrich	1998-2001
Willis H. Wagner	2001-2004
Roy M. Fujitani	2004-2007
Christian de Virgilio	2007-2010
Niren Angle	2010-2013
Juan Carlos Jimenez	2013-2016
Jason T. Chiriano	2016-2019
Kevin Kaushal Patel	2019-2021
Scott Musicant	2022-2024

Recorders

Ahmed M. Abou-Zamzam, Jr.	2006-2009
Theodore H. Teruya	2009-2012
Vincent L. Rowe	2012-2015
Jessica Beth O'Connell	2015-2018
Andrew Barleben	2018-2022
Afshin Molkara	2022-2024

Councilors

John D. Ball	1982
Wesley S. Moore	1982-1983
James E. McKittrick	1982-1984
P. Michael McCart	1982-1985
Wiley F. Barker	1982-1990
Eugene F Bernstein	1983-1986
Robert S. Ozeran	1984-1987
Robert F. Foran	1985-1988
John S. Pierrandozzi	1986-1989
J. Paul Thomassen	1987-1990
Samuel E. Wilson	1988-1991

SCVSS Past Leadership (continued)

Councilors (continued)

Ralph B. Dilley	1989-1992
Robert W. Harris	1990-1992
John N. Goodwin	1991-1995
George Andros	1992-1995
Donald D. Bell	1992-1993
Robert J. Hye	1993-1995
Fred A. Weaver	1993-1996
Steven G. Katz	1995-1998
Jeffrey L. Ballard	1995-1999
Robert J. Hye	1996-2000
Roy M. Fujitani	1999-2001
Willis H. Wagner	2000-2001
Carlos E. Donayre	2001-2003
Steven Sparks	2002-2004
Alan Williamson	2001-2004
Samuel S. Ahn	2002-2005
Wayne S. Gradman	2004-2006
Hugh A. Gelabert	2004-2007
James T. Dunn	2005-2008
Stephen R. Lauterbach	2006-2009
Niren Angle	2007-2010
Vincent L. Rowe	2008-2011
Vincent J. Guzzetta	2009-2012
Ian L. Gordon	2010-2013
John S. Lane	2011-2014
David A. Rigberg	2012-2015
Karen Woo	2013-2016
Brian G. DeRubertis	2014-2017
Theodore J. Teruya	2015-2018
Kaushal (Kevin) Patel	2016-2019
Christian Ochoa	2017-2020
Scott Musicant	2018-2021
Nii - Kabu Kabutey	2019-2022
Jessica O'Connell	2020-2023
Ali Azizzadeh	2021-2024
Kelley Hodgkiss-Harlow	2021-2024
Sharon Kiang	2022-2025
Ali Azizzadeh	2023-2026

Invited Guest Speakers

1986	E. Stanley Crawford, MD
1987	John Porter, MD
1988	Larry Harker MD & Ronald Stoney, MD
1989	Larry Hollier, MD & Charles Peterson, MD
1990	Norman Hertzer, MD, Eugene Strandness, MD & Christopher Zarins, MD
1991	Allan Callow, MD, PhD & Richard Dean, MD
1992	Larry Hollier, MD & Ronald Stoney, MD
1993	Alexander Clowes, MD & Robert Hobson, MD
1994	Frank J. Veith, MD & Enrico Ascher, MD
1995	Kaj Johansen, MD, PhD & David Brewster, MD
1996	Keith Calligaro, MD & Thomas Fogarty, MD
1998	Peter Gloviczki, MD & William H. Pearce, MD
1999	Richard Cambria, MD & Kim Hodgson, MD
2000	Robert W. Hobson, II, MD & Donald Sliver, MD
2001	Peter Bell, MD, Keith Berwick, PhD & Richard M. Green, MD
2002	Thomas F. O'Donnell, Jr. MD & Gregorio A. Sicard, MD
2003	Enrico Ascher, MD & Anthony J. Comerota, MD
2004	K. Craig Kent, MD, Jon S. Matsumura, MD & Murray N. Ross, PhD
2005	Bruce A. Perler, MD, MBA
2006	Gregory L. Moneta, MD, Brenda K. Zierler, PhD & R. Eugene Zierler, MD
2007	Ronald L. Dalman, MD & Hazim J. Safi, MD
2008	Sean P. Roddy, MD & Blair Keagy, MD
2009	Anton N. Sidawy, MD & Michael S. Conte, MD
2010	Jack L. Cronenwett, MD & Roy K. Greenberg, MD
2011	R. James Valentine, MD & Daniel Clair, MD
2012	W. Darrin Clouse, MD FACS RPVI & Anthony J. Comerota, MD
2013	Alan B. Lumsden, MD & Jason T. Lee, MD
2014	Timothy A.M. Chuter, MD & Karl A. Illig, MD
2015	Elna M. Masuda, MD & David G. Armstrong, DPM, MD, PhD
2016	Julie A. Frieschlag, MD & Peter A. Schneider, MD
2017	Scott L. Stevens, MD
2018	Timothy A. M. Chuter, MD & Matt Thompson, MD
2019	Jeffrey Jim, MD, MPH & Malachi G. Sheahan III, MD
2020	John Ullmen, PhD & Benjamin W. Starnes, MD
2021	Melina Kibbe, MD & Gretchen Schwarze, MD
2022	Alik Farber, MD & Mark Nehler, MD
2023	Shipra Arya, MD & Frank R. Arko, III, MD
2024	John Eidt, MD and Elizabeth Bromley, MD

Robert J. Hye Best Trainee Awards

(BEST PAPER PRESENTATIONS)

2023 FIRST PLACE

30-Day Risk Score for Mortality and Stroke in Patients with Carotid Artery Stenosis Using Artificial Intelligence Based Carotid Plaque Morphology

Rohini J. Patel, MD, MPH, University of California San Diego

SECOND PLACE

Stepping up: The Impact of Competitive Level on Outcomes of TOS, a Comparison of High School and Collegiate Athletes

Stephanie D. Talutis, MD, MPH, University of California Los Angeles

THIRD PLACE

Post-Operative Survival and Outcomes Following Hemodialysis Vascular Access Creation

Karissa M Wang, University of California Los Angeles

2022 FIRST PLACE

Cyanoacrylate Embolization Versus Radiofrequency Ablation of the Greater Saphenous Vein: Clinical Outcomes Within a Health Management Organization

Caryssa Lim, MD, Kaiser Permanante, Fontana

SECOND PLACE

Single Stage and Two Stage Arteriovenous Fistulas Have Similar Outcomes

Rohini Patel, MD, University of California, San Diego

THIRD PLACE

Laser Fenestration in Complex Aortic Repair: Versatile Option in Difficult Anatomy, Emergencies and Bailouts

Peter Layman, DO, University of California, San Diego

2021 FIRST PLACE

The Order of Operative Repair Does Not Influence Outcomes in Patients with Concomitant Popliteal Artery and Orthopedic Injuries

Shauna Trinh, MD, Riverside University Health

Robert J. Hye Best Trainee Awards (continued)

(BEST PAPER PRESENTATIONS)

SECOND PLACE TIE
Opioid Prescription for Index Hemodialysis Access Creation
Timothy Copeland, MPP, University of California, Los Angeles

SECOND PLACE TIE
Balancing Outcomes, Costs and Quality of Life in the Treatment of Chronic Mesenteric Ischemia: A Cost-Effectiveness Analysis
Christina Cui, MAS, University of California, San Diego

SECOND PLACE TIE
Carotid Duplex is not Warranted Before Transcatheter Aortic Valve Replacement
Cameron St. Hilaire, MD, Santa Barbara Cottage Hospital

THIRD PLACE
Endovenous Microfoam Ablation of Truncal Veins with a Large Diameter Saphenofemoral and Saphenopopliteal Junction Results in Excellent Closure and Low Thrombotic Complication Rates
Amanda Chin, MD, University of California, Los Angeles

2020 **FIRST PLACE**
Anesthetic Choice During Transcarotid Artery Revascularization (Tcar) and Carotid Endarterectomy Impacts Risk of Myocardial Infarction (Mi)
RA Marmor MD MAS, University of California, San Diego

SECOND PLACE
Dual Antiplatelet Therapy Is Associated With Increased Risk of Bleeding and Decreased Risk of Stroke Following Carotid Endarterectomy
RA Marmor MD, University of California, San Diego

THIRD PLACE
Arteriovenous Fistula Maturation: Physical Exam vs Flow Study
BC Caputo MS3, Loma Linda University

Robert J. Hye Best Trainee Awards (continued)

(BEST PAPER PRESENTATIONS)

THIRD PLACE
The Influence of Ethnicity On Outcomes of Peripheral Artery Disease in Southern California
JA Gabel MD, Loma Linda University

THIRD PLACE
Cost-Effectiveness Analysis of Carotid Endarterectomy Versus Transcarotid Artery Stenting
CL Cui BS, University of California, San Diego

2019 **FIRST PLACE**
ACS-NSQIP Targeted Database Evaluation of Obesity as a Risk Factor for Endovascular Aortic Aneurysm Repair Outcomes
S Maithel, University of California Irvine, Irvine, CA
SECOND PLACE
Variations in Lower Extremity Use Endovascular Interventions and Atherectomy by Indication, Site of Service and Geographic Region
T Chiou, University of California Los Angeles, Los Angeles, CA

THIRD PLACE
Paneled Saphenous Vein Grafts Compared to Internal Jugular Vein Grafts in Venous Reconstruction After Pancreaticoduodenectomy
J Pantoja, University of California Los Angeles, Los Angeles, CA

2018 **FIRST PLACE**
Endovascular Reconstruction of the Subclavian Artery for Arterial Thoracic Outlet Syndrome
Meena M. Archie, MD
Ronald Reagan UCLA Medical Center, Los Angeles, CA

SECOND PLACE
Early Experience with Fenestrated and Branched Endografts for Endovascular Treatment of Complex Aortic Aneurysms
Antonio J. Covarrubias, MD
University of California, San Diego, La Jolla, CA

Robert J. Hye Best Trainee Awards (continued)
(BEST PAPER PRESENTATIONS)

THIRD PLACE
Debranching of Supra-aortic Vessels with Femoral Artery Inflow for Late Ascending Aortic Rupture
Joshua A. Gabel, MD
Loma Linda University Medical Center, Loma Linda, CA

2017 **FIRST PLACE**
Ultrasound Vein and Artery Mapping by General Surgery Residents During Initial Consult Can Decrease Time to Dialysis Access Creation
Kelsey Gray, MD
Harbor–University of California Medical Center, Torrance, CA

SECOND PLACE
Most Common Surgical Missteps in the Management of Venous Thoracic Outlet Syndrome Which Lead to Re-Operation
Mena Archie, MD
University of California, Los Angeles, Los Angeles, CA

THIRD PLACE
Pre-Operative Cardiac Stress Testing in the So Cal VOICe
Kaelan Chan, MD
University of California, Los Angeles, Los Angeles, CA

2016 **FIRST PLACE**
Dialysis Access Hemorrhage: Access Rescue from Surgical Emergency
Tazo Inui, MD
University of California, San Diego, La Jolla, CA

SECOND PLACE
Access to Post-Hospitalization Acute Care Facilities Depends on Payer Status for Open Abdominal Aortic Repair and Lower Extremity Bypass in the VQI
Jesus G. Ulloa, MD
University of California, Los Angeles, Los Angeles, CA

Robert J. Hye Best Trainee Awards (continued)

(BEST PAPER PRESENTATIONS)

THIRD PLACE
Significance of Blunted Venous Waveforms Seen on Upper Extremity Ultrasound
Xuan-Binh D. Pham
Harbor-UCLA Medical Center, Torrance, CA

2015 **FIRST PLACE**
The Addition of Ultrasound Arterial Examination to Preoperative Upper Extremity Vein Mapping
Jerry J. Kim, MD
Harbor-UCLA Medical Center, Torrance, CA

SECOND PLACE
Differential Endoleaks Rates After Endovascular Treatment of Infrarenal Abdominal Aortic Aneurysm Using Modular Bifurcated and Unibody Stent Grafts
Phong T. Dargon, MD
Loma Linda University Medical Center, Loma Linda, CA

THIRD PLACE
Vascular Access Complications Associated With Extracorporeal Membranous Oxygenation
Allan W. Tulloch, MD
University of California, Los Angeles, CA

2014 **FIRST PLACE**
Management of Spontaneous Isolated Visceral Artery Dissection: ARetrospective Review
Sae Hee Ko, MD
University of California at San Diego Medical Center, San Diego, CA

SECOND PLACE
Late Consequences of Type II Endoleak After EVAR
Vincent E. Kirkpatrick, MD
University California Irvine Medical Center, Orange, CA

Robert J. Hye Best Trainee Awards (continued)

(BEST PAPER PRESENTATIONS)

THIRD PLACE (TIE)
The Management of Thoracic Aortic Aneurysms In Patients With Rare Aortic Anomalies Using Endovascular Techniques: Case Report and Review of Literature
Ankur Gupta, MD
Harbor-UCLA Medical Center, Torrance, CA

THIRD PLACE (TIE)
A Rare Case of Acroangiodermatitis Associated With A Congenital Arteriovenous Malformation (Stewart-Bluefarb Syndrome) In A Young Veteran: Case Report and Review of the Literature
Mark Archie, MD
UCLA Medical Center, Gonda (Goldschmied) Vascular Ctr, Los Angeles, CA

2013 FIRST PLACE
Contemporary Medical Management of Asymptomatic Carotid Artery Stenosis In A Mixed Population
Jason Chang MD
Kaiser Permanente Southern California, Los Angeles, CA

SECOND PLACE
A Prospective Randomized Study Assessing Optimal Method ForTeaching Vascular Anastomoses Using A High Fidelity Model
Samuel Schwartz MD
Harbor-UCLA Medical Center, Torrance, CA

THIRD PLACE
Initial Experience With Off Label Use of Commercial Devices In Patients Unfit For Open Repair of Perivisceral Aortic Aneurysms
Andrew Barleben MD
UCLA Gonda Medical Center, Los Angeles, CA

Robert J. Hye Best Trainee Awards (continued)
(BEST PAPER PRESENTATIONS)

2012 **FIRST PLACE**
Is Heparin Reversal Required for Safe Performance of Percutaneous Endovascular Aortic Aneurysm Repair?
Sinan Jabori - Medical Student
UCLA, Gonda (Goldschmied) Vascular Center, Los Angeles, CA

SECOND PLACE
Evaluation of Superficial Femoral Artery Remote Endarterectomy For the Treatment of Critical Limb Ischemia In Patients With Limited Autogenous Conduit
Neha Sheng MD
Jerry L. Pettis VA Hospital, Loma Linda, CA

THIRD PLACE
Claudication In Young Patients: Uncommon Symptoms SuggestUncommon Pathology
Andrew Barleben MD MPH
UCLA Gonda (Goldschmied) Vascular Center, Los Angeles, CA

2011 **FIRST PLACE**
Impact of Sac Anchoring Prosthesis On Type II Endoleaks Following Endoluminal Exclusion of Abdominal Aortic Aneurysms
Houman Sahedi, MD
Harbor-UCLA Medical Center, Torrance, CA and Nellix International Investigators

SECOND PLACE
Outcomes of Retrieval Intent of Optional Inferior Vena Cava Filters: A Single Center Experience
Abid C. Mogannam
UC Irvine Medical Center, Irvine, CA

THIRD PLACE
Thoracic Outlet Syndrome In the Teenaged Athlete
Allan Tulloch, MD
UCLA Medical Center, Los Angeles, CA

Robert J. Hye Best Trainee Awards (continued)

(BEST PAPER PRESENTATIONS)

2010 **FIRST PLACE**

Smaller Common Femoral Artery Diameter In African Americans: Implications For Peripheral Arterial Disease

Amy M. Tolan, MD

Harbor-UCLA Medical Center, Torrance, CA

SECOND PLACE

CTA As the Primary Diagnostic Modality In Penetrating Lower Extremity Vascular Injuries

Dina Wallin, BA

Harbor-UCLA Medical Center, Torrance, CA

THIRD PLACE

Carotid Endarterectomy In Academic Versus Community Hospitals: The NSQIP Data

Joy Garg, MD

Scripps Clinic Torrey Pines, La Jolla, CA

2009 **FIRST PLACE**

Open Surgical Repair of Renal Artery Aneurysms In the Endovascular Era: A Safe, Effective Treatment For Both Aneurysm and Associated Hypertension

Ankur Chandra, MD

UCLA Gonda (Goldschmied) Vascular Center, Los Angeles, CA

SECOND PLACE

Will Carotid Endarterectomy For Asymptomatic Stenosis Match theResults of Best Medical Management?

Karen Woo MD

Scripps Green Hospital, La Jolla, CA

THIRD PLACE

Fasciotomy In Acute Limb Ischemia – Cui Bono?

Kelley D. Hodgkiss

UCSD Vascular & Endovascular Surgery, San Diego, CA

Robert J. Hye Best Trainee Awards (continued)

(BEST PAPER PRESENTATIONS)

2008 **Endovascular Management of Mycotic Aortic Aneurysms & Associated Aorto-Aerodigestive Fistulae**
Wesley K Lew MD
USC Vascular Surgery and Endovascular, Therapy, Los Angeles, CA

Regional Variations In the Utilization of Carotid Endarterectomy
David P Magner MD
Cedars-Sinai Medical Center, Los Angeles, CA

Traumatic Injuries of the Inferior Vena Cava: The 20-Year Experience of a Level I Trauma Center
Jessica Deree MD
UCSD Division of Trauma/Critical Care, San Diego, CA

2007 **Carotid Reconstruction In Nonagenarians: Is Surgery Still A Good Option?**
Kelly L. Killeen, MD
Cedars-Sinai Medical Center, Los Angeles, CA

2006 **Effect of Turbulence on Transit-Time Ultrasound Flow Waveform – Voltage/Frequency Analysis**
Scott Tobias, BS
University of California, Irvine, Medical Center, Orange, CA

2005 **Increased Incidence of Renal Cysts in Patients with Abdominal Aortic Aneurysms: A Common Pathogenesis?**
Arezou Yaghoubian, BS
Harbor-UCLA Medical Center, Torrance, CA

2004 **Endovascular Repair of A Thoracic Aorta Pseudoaneurysm Via the Axillary Artery**
Leoncio Kaw, Jr., MD
University of California, San Diego, Medical Center, San Diego, CA

2003 **Superiority of Autogenous Arteriovenous Hemodialysis Access: Maintenance of Function With Fewer Secondary Interventions**
Ganesha Perera, MD
University of California, Irvine, Medical Center, Orange, CA

Program Planning Committee

Jesus Ulloa, MD; Nina Bowens, MD; and Andrew Barleben, MD

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Course Objectives

Objectives - After Attending This Program You Should Be Able To

1. to improve the standard of care and practice of vascular surgery in the Southern California geographical area
2. to contribute to the active continuing education of its members
3. to advance the science and art of vascular surgery

Accreditation

Southern California Vascular Surgical Society
2024 SCVSS Annual Meeting | April 19 – 21, 2024
The Seabird Resort, Oceanside, CA

Acknowledgement of Financial Commercial Support

Cook Medical

Acknowledgement of In-Kind Commercial Support

No in-kind commercial support was received for this educational activity.

Satisfactory Completion

Learners must complete an evaluation form to receive a certificate of completion. If you need MOC credit, you also need to pass a posttest with a score of at least 80%. Your chosen sessions must be attended in their entirety. Partial credit of individual sessions is not available. If you are seeking continuing education credit for a specialty not listed below, it is your responsibility to contact your licensing/certification board to determine course eligibility for your licensing/certification requirement.

JOINTLY ACCREDITED PROVIDER™
INTERPROFESSIONAL CONTINUING EDUCATION

Joint Accreditation Statement

In support of improving patient care, this activity has been planned and implemented by Amedco LLC and Southern California Vascular Surgical 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 Provider Number: 4008163

Physicians

ACCME Credit Designation Statement | Amedco LLC designates this live activity for a maximum of 6.75 *AMA PRA Category 1 Credits™* for physicians. Physicians should claim only the credit commensurate with the extent of their participation in the activity.

Accreditation

Southern California Vascular Surgical Society

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Other Professions

Successful completion of this CME activity, which includes participation in the evaluation component, enables the learner to earn credit toward the CME and/or Self-Assessment requirements of the American Board of Surgery's Continuous Certification program. It is the CME activity provider's responsibility to submit learner completion information to ACCME for the purpose of granting ABS credit.

Disclosure of Conflict of Interest

The following table of disclosure information is provided to learners and contains the relevant financial relationships that each individual in a position to control the content disclosed to Amedco. All of these relationships were treated as a conflict of interest, and have been resolved. (C7 SCS 6.1-6.2, 6.5)

All individuals in a position to control the content of CE are listed below.

Name	Commercial Interest: Relationship
ANTHONY CHAU	INARI MEDICAL, MEDTRONIC :Research Grant Site Principal Investigator
	INARI MEDICAL, SILKROAD MEDICAL, ABBOTT:Public Stock Shareholder
	INARI MEDICAL:Consultant
	Research Resident - EBP is supported by a grant by the National Heart, Lung, and Blood Institute of the National Institutes of Health (T32HL094293)

CME Information

How to Get Your Certificate

1. Go to scvss.cmecertificateonline.com
2. Click on the 2024 SCVSS Annual Meeting link.
3. Evaluate the meeting.
4. Complete ABS MOC self-assessment, if applicable.
5. Print, download, or save your certificate(s) for your records.
6. If you lose your certificate, or need help, go to help.cmecertificateonline.com

Scientific Program

Indicates Hye Competition Eligible Paper & Presenter

FRIDAY APRIL 19, 2024

8:00 AM – 4:00 PM
Kaiser Endovascular Symposium

12:00 PM – 2:00 PM
SoCal VOICE Meeting

3:00 PM – 6:00 PM
Exhibit Setup

4:00 PM – 5:00 PM
SCVSS Executive Meeting

6:00 PM – 7:00 PM
Welcome Reception

7:00 PM – 8:00 PM
Past Presidents Dinner *(Invite Only)*

SATURDAY APRIL 20, 2024

7:00 AM – 9:00 AM
Breakfast with Sponsors

7:00 AM – 12:30 PM
Registration

7:00 AM – 1:30 PM
Exhibits

8:00 AM – 9:00 AM
General Session I
Moderators: Jessica O'Connell, MD & Jesus Ulloa, MD

8:00 AM – 8:10 AM
1. **RELATIONSHIP OF AREA DEPRIVATION INDEX TO PRESENTATIONS AND OUTCOMES AMONG CRITICAL LIMB THREATENING ISCHEMIA PATIENTS PRESENTING FOR MAJOR AMPUTATION – A VASCULAR QUALITY INITIATIVE**
Raquel Wolfe, MD, *Riverside University Health System*

8:10 AM – 8:20 AM
2. **IMPACT OF OBL ON RESIDENT AND FELLOW TRAINING AT A UNIVERSITY VASCULAR SURGERY PROGRAM**
William Duong, MD, *University of California, Los Angeles*

8:20 AM – 8:30 AM
3. **A NOVEL PREOPERATIVE RISK SCORE TO IDENTIFY PATIENTS AT HIGH RISK FOR NON-HOME DISCHARGE AFTER ELECTIVE OPEN ABDOMINAL AORTIC ANEURYSM REPAIR**
Joel L. Ramirez, MD, *University of California, San Francisco*

8:30 AM – 8:40 AM
4. **CHATGPT ABLE TO GENERATE ADEQUATE RESPONSES TO PATIENT FAQS IN VASCULAR SURGERY**
Sean Perez, MD, *University of California,San Diego*

8:35 AM – 8:40 AM
5. **EVALUATING THE PROGNOSTIC ACCURACY OF AMPREDICT IN PREDICTING ONE-YEAR MORTALITY FOLLOWING MAJOR LOWER LIMB AMPUTATION.**
Kristina Rudio, MD, *Greater Los Angeles Veterans Affairs*

8:40 AM – 8:45 AM
6. **READMISSIONS RATES AFTER INDEX VASCULAR PROCEDURES IN A QUATERNARY MEDICAL CENTER**
Eileen Lu, MD, *Cedars-Sinai Medical Center*

8:45 AM – 8:50 AM
7. **PEDIATRIC CONSULTS TO VASCULAR SURGERY: AN INFREQUENT OCCURRENCE**
Dakory Lee, MD *Loma Linda University Hospital*

8:50 AM– 8:55AM
8. **BENEFICIAL UTILITY OF AN ON-SITE TISSUE BANK CRYOPRESERVED HUMAN VASCULAR ALLOGRAFT CRYOFREEZER AT AN ACADEMIC MEDICAL CENTER**
Nishant Sharma, MD, U*niversity of California-Irvine Medical Center*

8:55 AM– 9:00 AM
9. **PREOPERATIVE CARDIAC STRESS TESTING AS A PREDICTOR OF OUTCOMES AFTER THORACIC ENDOVASCULAR AORTIC REPAIR**
Munir Paul Moacdieh, MD, *University of Califorina San Diego*

9:00 AM – 9:30 AM

Rapid Fire Session I

Moderators: Kelley Hodgkiss-Harlow, MD & Scott Musicant, MD

9:03 AM – 9:06 AM
10. **POPLITEAL ENTRAPMENT SYNDROME PRESENTING WITH POPLITEAL ARTERY ANEURYSM, A CASE SERIES**
Mitali Doshi, MD, *University of California, Los Angeles*

9:06 AM – 9:09 AM
11 . **ENDOVASCULAR EMBOLIZATION OF LARGE RENAL ARTERIOVENOUS MALFORMATION WITH ANEURYSMAL DEGENERATION OF THE RENAL ARTERY AND VEIN**
Jacob Ghahremani, BA, *Kaiser Permanente Downey Medical Center*

9:09 AM – 9:12 AM
12. **SINGLE SITE IPSILATERAL PRECANNULATED ILIAC BRANCH ENDOGRAFT TECHNIQUE**
Anastasia Plotkin, MD, University of Southern California

9:12 AM– 9:15 AM
13. **ENDOVASCULAR MANAGEMENT OF LEFT SUBCLAVIAN STEAL SYNDROME IN THE SETTING OF COMPLETE SITUS INVERSUS AND REVERSED AORTIC ARCH**
Tyler M. Liang, MD, *University of California, Irvine*

9:15 AM – 9:18 AM
14. **COMPLICATED IDIOPATHIC STENOSIS/OCCLUSION OF INTRAHEPATIC INFERIOR VENA CAVA TREATED WITH RECANALIZATION AND STENTING**
John Hallsten, MD, *Kaiser San Diego Medical Center*

9:18 AM – 9:21 AM
15. **PRESERVATION OF PELVIC CIRCULATION USING AXILLARY-FEMORAL BYPASS JUMP GRAFT TO INTERNAL ILIAC ARTERY FOR PREVENTION OF SPINAL CORD ISCHEMIA DURING COMPLEX ENDOVASCULAR AORTIC REPAIR**
Dorothy Han, MD, *University of Southern California*

9:21 AM – 9:24 AM
16. **ENDOVASCULAR TREATMENT OF MYCOTIC CELIAC ARTERY PSEUDOANEURYSM: A CASE REPORTT**
Nishant Sharma, MD, *University of California, Irvine*

9:24AM – 9:27 AM
17. **COMPLEX MANAGEMENT OF STENO-OCCLUSIVE DISEASE CAUSING EMBOLIC TRANSIENT ISCHEMIC ATTACK AND SUBCLAVIAN STEAL SYNDROME IN AN OCTOGENARIAN**
Daniel Delgadillo, MD, *University of California, Irvine*

9:30 AM – 10:10 AM
Coffee Break with Educational Exhibits

10:00 AM – 11:00 AM
General Session II
Moderators: Andrew Barleben, MD & Ali Azizzadeh, MD

10:10 AM – 10:20 AM
18. **THE IMPACT OF TIMING OF THORACIC ENDOVASCULAR AORTIC REPAIR ON THE POSTOPERATIVE OUTCOMES OF PATIENTS WITH UNCOMPLICATED TYPE B AORTIC DISSECTION**
Narek Veranyan, MD, *University of California, San Diego*

10:20 AM – 10:30 AM
19. **ALTERNATIVE ACCESS FOR TRANSCATHETER AORTIC VALVE REPLACEMENT (TAVR)**
Lili Sadri, MD, *Cedars-Sinai Medical Center*

10:30 AM – 10:35 AM
20. **THE IMPACT OF LOW BMI ON PERIOPERATIVE AND LONG-TERM OUTCOMES AFTER TEVAR**
Donna Bahroloomi, MD, *Cedars-Sinai Medical Center*

10:35 AM – 10:40 AM
21. **CLINICAL OUTCOMES OF CELIAC ARTERY COVERAGE VS PRESERVATION DURING THORACIC ENDOVASCULAR AORTIC REPAIR**
Narek Veranyan, MD, *University of California, San Diego*

10:40 AM – 10:45 AM
22. **THE IMPACT OF CONCOMITANT PROXIMAL CAROTID INTERVENTIONS ON RE-VASCULARIZATION AND OUTCOMES**
Chung-Fu Lin, MS, *Georgetown University School of Medicine*

10:45 AM – 10:50 AM
23. **THE RELATIONSHIP BETWEEN SMOKING CESSATION AND OUTCOMES OF THORACIC ENDOVASCULAR AORTIC REPAIR**
Marc Farah, BS, *University of California, San Diego*

10:50 AM – 10:55 AM
24. **THE FATE OF OCTAGENARIANS AFTER FOUR-VESSEL PHYSICIAN-MODIFIED ENDOGRAFTING**
Aldin Malkoc, MD, *Kaiser Permanente Bernard J. Tyson School of Medicine*

10:55 AM – 11:00 AM
25. **FENESTRATED/BRANCHED ENDOVASCULAR REPAIR OF THORACOABDOMINAL AORTIC ANEURYSMS: A CASE SERIES FROM A COMMUNITY HOSPITAL**
Agustin Sibona, MD, *Kaiser Permanente San Diego*

11:00 AM – 12:00 PM
26. **Dr. Dennis Baker Invited Guest Lecturer - Dr. Eidt**

6:30 PM – 8:30 PM
Presidential Banquet & (Concurrent) Kids Program

SUNDAY APRIL 21, 2024

6:15 AM – 7:15 AM
Yoga on the Mission Pacific Roof Top

7:00 AM – 11:00 AM
Sponsor Displays Open

7:00 AM – 8:00 AM
Breakfast Buffet

7:00 AM – 12:00 PM
Registration

8:00 AM – 8:50 AM
27. **Presidential Invited Guest Lecturer - Dr. Elizabeth Bromley**

8:50 AM – 10:00 AM

General Session III

Moderators: Afshin Molkara, MD & Anthony Chau, MD

8:50 AM – 9:00 AM
28. **MULTICENTER EXPERIENCE OF PHYSICIAN-MODIFIED FENESTRATED-BRANCHED ENDOVASCULAR AORTIC REPAIR FOR FAILED COMPLEX ENDOVASCULAR AORTIC ANEURYSM REPAIR**
Herbert James, III, MD, *University of Southern California*

9:00 AM – 9:10 AM
29. **TRANSCAROTID ARTERY REVASCULARIZATION VERSUS CAROTID ENDARTERECTOMY AMONG STANDARD RISK PATIENTS: MID AND LONG-TERM OUTCOMES**
Daniel Willie-Permor, MD, MPH, *University of California, San Diego*

9:10 AM – 9:20 AM
30. **EARLY GRAFT THROMBOSIS IN LOWER EXTREMITY ARTERIAL BYPASS: IDENTIFYING PROGNOSTIC FACTORS DURING INDEX ADMISSION**
Mokhshan Ramachandran, BSc, *University of California, San Diego*

9:20 AM – 9:30 AM
31. **PSOAS MUSCLE INDEX AS PREDICTOR OF WORSE OUTCOMES FOLLOWING MAJOR AMPUTATION FROM PERIPHERAL VASCULAR DISEASE**
Veena Mehta, MD, *Harbor UCLA Medical Center*

9:30 AM – 9:35 AM
32. **COMPARATIVE OUTCOMES OF REVASCULARIZATION MODALITIES IN CAROTID RESTENOSIS POST-CAROTID ARTERY STENTING**
Pooria Nakhaei, MD, MBA, *University of California, San Diego*

9:35 AM – 9:40 AM
33. **IMPACT OF ANEMIA AND TRANSFUSION ON PATIENTS UNDERGOING INFRAINGUINAL BYPASS**
Alexander D. DiBartolomeo, MD, *University of Southern California*

9:40 AM – 9:45 AM
34. **CAROTID DISEASE TREATMENT MODALITY AND ITS ASSOCIATION WITH POST-OPERATIVE VASOACTIVE MEDICATION UTILIZATION AND HOSPITAL LENGTH OF STAY**
Nicholas E Olin, MD, *Kaiser Permanente Riverside*

9:45 AM – 9:50 AM
35. **TRANSCAROTID ARTERY REVASCULARIZATION OUTPERFORMS TRANSFEMORAL CAROTID ARTERY STENTING ACROSS AORTIC ARCH TYPES AND DEGREES OF ATHEROSCLEROSIS**
Mohammed Hamouda, MD, *University of California, San Diego*

9:50 AM – 9:55 AM
36. **POSTOPERATIVE STROKE AND MYOCARDIAL INFARCTION IMPACT ON ONE-YEAR MORTALITY FOLLOWING CAROTID REVASCULARIZATION**
Ahmed Abdelkarim, MD, *University of California, San Diego*

9:55 AM – 10:00 AM
37. **EARLY EXPERIENCE OF PHYSICIAN MODIFIED ENDOGRAFTS FOR THE TOTAL AORTIC ARCH AND LESSONS LEARNED**
Rohini Patel, MD, *University of California, San Diego*

10:00 AM – 10:20 AM
Coffee Break with Educational Exhibits

10:20 AM – 11:00 AM
General Session IV
Moderators: Nina Bowens, MD & Michael Cheng, MD

10:20 AM – 10:25 AM
38. **COST OF LIMB SALVAGE FOR "NO OPTION" CHRONIC LIMB-THREATENING ISCHEMIA: HOW MUCH IS ONE LEG WORTH?**
Aldin Malkoc, MD, *Arrowhead Regional Medical Center*

10:25 AM – 10:30 AM
39. **IS AGE CORRELATIVE WITH SURGICAL HEMODIALYSIS ACCESS MATURATION OR FUNCTIONAL PATENCY?**
Claire Yang, MD, *Kaiser Permanente Los Angeles Medical Center*

10:40 AM – 10:45 AM
40. **DISPARITIES IN ACCESS TO REVASCULARIZATION PRIOR TO AMPUTATION AND THEIR IMPACT ON SURVIVAL**
Nadin Elsayed, MD, *University of California, San Diego*

10:45 AM – 10:50 AM
41. **INVESTIGATION OF THE OBESITY PARADOX WITH REGARDS TO PERIOPERATIVE COMPLICATIONS FOLLOWING LOWER EXTREMITY ARTERIAL BYPASS**
Mokhshan Ramachandran, BSc, *University of California, San Diego*

10:50 AM – 10:55 AM
42. **LONG-TERM FOLLOW-UP OF SAPHENOUS VEIN ARTERIALIZATION FOR LIMB SALVAGE IN UNRECONSTRUCTABLE PERIPHERAL ARTERIAL DISEASEE**
Hailey Shoemaker, MPH, *Kaiser Permanente Bernard J Tyson School of Medicine*

10:55 AM – 11:00 AM
43. **ANALYSIS OF TOURNIQUET APPLICATION IN THE SETTING OF PENETRATING VASCULAR INJURY**
Emelyn Magtanong, MD, *Loma Linda University Medical Center*

11:00 AM – 11:05 AM
44. **MORTALITY FOLLOWING INFRAINGUINAL BYPASS VERSUS ENDOVASCULAR TREATMENT OF PERIPHERAL ARTERY DISEASE BY BODY MASS INDEX**
Mikayla Kricfalusi, BA, *University of California, San Diego*

11:10 AM – 11:30 AM

Rapid Fire Session II

Moderators: Kristen Mannoia, MD & Ann Gaffey, MD

11:10 AM – 11:13 AM
45. **UTILIZATION OF GORE ILIAC BRANCHED ENDOPROSTHESIS TO PRESERVE CELIAC PERFUSION DURING ENDOVASCULAR REPAIR OF THORACIC AORTIC PSEUDOANEURYSM**
Michelle Manesh, MD, *University of Southern California*

11:13 AM – 11:16 AM
46. **LIFE THREATENING HEMORRHAGE: AN INFECTED DUAL ARTERY CARREL PATCH WITH CANDIDA GLABARATA**
Daniel Delgadillo, MD, *University of California, Irvine*

11:16 AM – 11:19 AM
47. **REDO LASER IN-SITU FENESTRATED/BRANCHED ENDOVASCULAR AORTIC REPAIR (F/BEVAR) COMPLETE GRAFT RELINING WITH BILATERAL HYPOGASTRIC PRESERVATION FOR TYPE 1 AND 3 ENDOLEAKS FOLLOWING 4D**
Agustin Sibona, MD, *University of California, San Diego*

11:19 AM – 11:22 AM
48. **LIMB SALVAGE IN A PATIENT WITH ACUTE COMPLICATED TYPE-B AORTIC DISSECTION AND ACUTE LIMB ISCHEMIA TIME OF 10 HOURS**
Mikayla Hurwitz, MD, *Harbor UCLA Medical Center*

11:22 AM – 11:25 AM
49. **TRUE ANEURYSM OF THE POSTERIOR TIBIAL ARTERY: DESCRIBING AND MANAGING THE UNKNOWN**
Ashley Stading, MD, *Kaiser Fontana*

11:25 AM – 11:28 AM
50. **VOCAL HOARSENESS AS A SIGN OF NEUROGENIC THORACIC OUTLET SYNDROME AFTER CERVICAL TRAUMA**
Emelyn Magtanong, MD, *Loma Linda University Medical Center*

11:30 AM – 11:45 AM
Dr. Robert Hye Memorial Awards and Adjournment

11:45 AM – 12:30 PM
SCVSS Business Meeting

Indicates the presenter is eligible for the Robert Hye “Best Trainee” Award

Scientific Session Abstracts

Indicates the presenter is eligible for the Robert Hye "Best Trainee" Award

1: RELATIONSHIP OF AREA DEPRIVATION INDEX TO PRESENTATIONS AND OUTCOMES AMONG CRITICAL LIMB THREATENING ISCHEMIA PATIENTS PRESENTING FOR MAJOR AMPUTATION – A VASCULAR QUALITY INITIATIVE

Raquel Wolfe, Alexander Schurman, Curti-Oborsky, Allison-Aipa, Jaclyn Corso, Kristyn Mannoia, Afshin Molkara, Paul Albini, Beatriz Leong
Riverside University Health System

Objectives: Social and environmental factors severely impact cardiovascular disease. Vascular surgeons aim to mitigate risk factors and offer revascularization to delay or prevent lower extremity amputation s, which also significantly impact a patient's longevity and quality of life. The facets of social determinants of health may be represented as social vulnerability, a calculated aggregate of public data based on income, education, employment, and housing quality. The area deprivation index (ADI) groups individuals to depict communities more accurately than prior measurements of social vulnerability. We aim to utilize ADI and measure its relationship to revascularization attempts as well as amputation levels among patients with critical limb threatening ischemia.

Methods: The Vascular Quality Initiative's (VQI) amputation database was queried from 2015 to 2019. Patients were grouped into quartiles by their ADI value to compare level of amputation and prior revascularization attempts via univariate analysis. Multivariate logistic regression models isolated the impact of ADI.

Results: The VQI amputation database yielded 22,435 entries. Patients who are more socially vulnerable (ADI's top quartile), were younger and more likely to present with severe ischemia (31.4% v 26.7%, p < 0.001). Patients in the top ADI quartile had a higher rate of above knee amputations compared to the lowest ADI quartile (45.4% v. 33%, p< 0.001). Compared to the lowest ADI quartile, a larger proportion of top quartile ADI patients were not revascularized prior to amputation (54.7 % v 52.3 %, p =0.028). Top quartile ADI patients had higher rates of multi-segment revascularization for aortoiliac disease than lowest quartile ADI patients (7.5% v. 3.4%, OR 2.28; p< 0.001). Aortoiliac peripheral vascular interventions were also more common in top quartile ADI patients (10.5% v. 6.9%, OR 1.69; p < 0.001). Infrainguinal bypass attempts did n ot differ between ADI quartiles (18.2% v. 18.1%) however infrainguinal peripheral vascular interventions were offered to high quartile ADI participants at a lower rate (27.7%) compared to those who were less socially vulnerable (35.5%, OR 0.71; p < 0.001).

Conclusions: The ADI is a significant predictor of severity and extent of ischemia at presentation, level of amputation, prior aortoiliac revascularization and infrainguinal endovascular interventions within VQI's amputation database. Many factors ultimately guide a patients' and providers' decision to attempt revascularization, as well as timing and level of amputation. Identifying patients who are high risk for major complications due to vascular disease is paramount to reducing morbidity and increasing quality of life for all members of our diverse community.

2: IMPACT OF OBL ON RESIDENT AND FELLOW TRAINING AT A UNIVERSITY VASCULAR SURGERY PROGRAM

William Duong, MD, Jesus Ulloa, MD, Nakeisha Favors, MPH,
Hugh Gelabert, MD
UCLA Division of Vascular Surgery

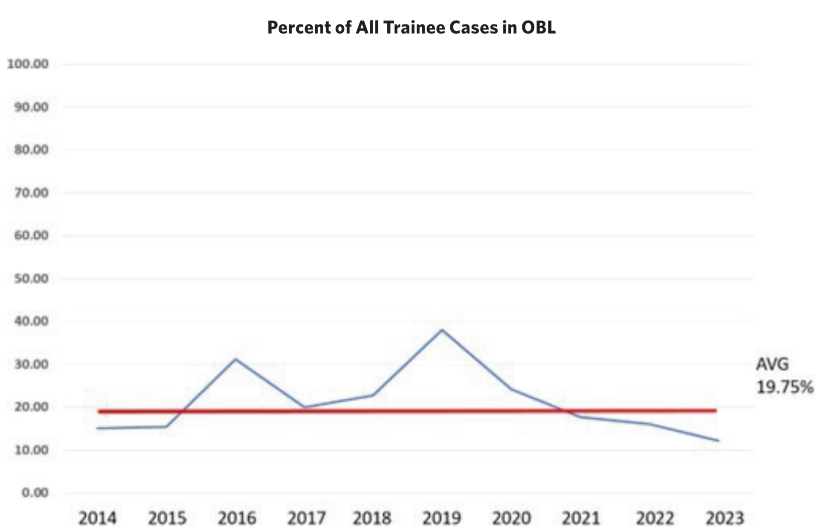
Background: The office-based interventional lab (OBL) has become well established in Vascular Surgical practice. Most Vascular Surgery training programs do not offer OBL experience as part of their curriculum. The objective of this report is to describe the impact of an OBL on a University Vascular Surgery Training program by comparing case volumes and trainee experience before and after the establishment of an OBL.

Methods: Resident and Fellow training logs were reviewed to assess case volumes and categories from 2004-2023. Two periods of time were compared: before (Period 1, 2004-2013) and after (Period 2, 2014-2023) our OBL was established. A registry of cases performed at our OBL was reviewed for number and types of cases. Resident training logs were compared to the OBL registry. Data is presented as mean and standard deviation and Student's T test was used to compare continuous variables. Significance was determined at P< 0.05.

Results: Over the entire study period (2004-2023), 27 Fellows and Residents graduated: 10 Fellows in P1 and 10 Fellows and 7 Residents in P2. Our Residency program was established in addition to our Fellowship, graduating the first Vascular Surgery Resident in 2017, increasing our annual graduates from 1 to 2. Over the entire study period, 41,700 Vascular (open and endovascular) cases were performed: 17,431 (P1) and 27,385 (P2) (p=0.007), representing a 57% increase of cases from P1 to P2. Over the study period, a total of 17,930 Endovascular cases were completed: 7,039 (P1) and 10,891 (P2) (p=0.031), a 54% increase in endovascular cases form P1 to P2 (Table 1). Over the entire study period, the average Vascular case volume per trainee was 1,659.80 ±538.81: 1,743.10 ±427.69 (P1) and 1,610.80 ±601.66 (P2), (p=0.274). The average number of Endovascular cases per trainee was 664.1 ±252.86: 703.9 ±210.75 (P1) and 640 ±278.12 (P2) (p=0.27). Overall Endovascular cases represented 40.01% of cases: 40.38% in P1 and 39.77 % in P2. For individual trainees, Endovascular cases accounted for 40.01% of cases overall: 40.38% in P1 and 39.73% in P2. OBL cases accounted for 30.2 ± 12.8%, (range 17.5 to 59.7) of all endovascular cases in P2. OBL endovascular cases accounted for 19.75 ± 7.1%, (range 11.1 to 33.1) of all cases done by our trainees (Figure 1).

Conclusion: The establishment of an OBL as part of our academic practice allowed for a 57% increase in overall case volume from P1 to P2. This increased case volume allowed expansion of our training program without compromising case volume. Endovascular cases overall represent 40% of trainee experience. Since initiating an OBL, approximately 20% of residents' cases are performed in OBL setting. Clinical experience in an OBL as part of Vascular Surgery Training offers experience which is absent from traditional educational paradigms and is directly applicable to modern Vascular Surgery practice.

CASE VOLUME					
		ALL	**P1**	**P2**	**P VALUE**
YEAR		**2004-2023**	**2004-2013**	**2014-2023**	
	All Cases	44,816	17,431	27,385	p<0.05
	Endo Cases	17,930	7,039	10,891	p<0.05
Avg No Cases Per Trainee					
	All Cases	1,689.80	1,713.10	1,610.80	p=n.s.
	Endo Cases	664.1	703.9	640	p=n.s.



3: A NOVEL PREOPERATIVE RISK SCORE TO IDENTIFY PATIENTS AT HIGH RISK FOR NON-HOME DISCHARGE AFTER ELECTIVE OPEN ABDOMINAL AORTIC ANEURYSM REPAIR

Joel L. Ramirez[1], Eric Sung[2], Warren J. Gasper[1], Michael S. Conte[1], Laura T, Boitano[3], Jesus G. Ulloa[4, 5], James C. Iannuzzi[1]

[1]Department of Surgery, Division of Vascular and Endovascular Surgery, University of California, San Francisco, San Francisco, CA, USA, [2]Department of Surgery, Division of Vascular and Endovascular Surgery, Boston Medical Center, Boston University Chobanian and Avedisian School of Medicine, Boston, MA, USA, [3]University of Massachusetts Chan School of Medicine, Worcester, MA, USA ,[4]David Geffen School of Medicine, University of California, Los Angeles, CA, USA.,5West Los Angeles Veterans Health Administration, Los Angeles, CA, USA.

Background: Non-home discharge (NHD) to a rehabilitation or skilled nursing facility after vascular surgery is poorly described despite its impact on patients. For home-dwelling patients undergoing elective surgery, the need for postoperative NHD can have meaningful implications on quality of life, long-term outcomes, and healthcare spending. Understanding post-surgical NHD risk is essential to preoperative counseling and shared decision making. This is particularly true for the treatment of abdominal aortic aneurysms as the postoperative course can vary between open and endovascular surgery. We aimed to identify independent predictors of NHD following elective open abdominal aortic aneurysm repair (OAR), and to create a clinically useful preoperative risk score.

Methods: Elective OAR cases were queried from the SVS Vascular Quality Initiative from 2013 to 2022. A risk score was created by splitting the data set into two-thirds for development and one-third for validation. A parsimonious stepwise hierarchical multivariable logistic regression controlling for hospital level variation was performed in the development dataset, and the beta-coefficients were used to assign points for a risk score. The score was then validated, and model performance assessed.

Results: Overall, 8,274 patients were included and 1,502 (18.2%) required NHD. At baseline, patients who required NHD were more likely to be ≥ 80 years old (23.6% vs. 6.5%), female (35.9% vs. 23.1%), not independently ambulatory (14.6% vs. 4.3%), anemic (24.4% vs. 13.9%), and have COPD (41.6% vs. 30.7%), American Society of Anesthesiologists (ASA) class ≥ 4 (41.0% vs. 32.5%), and a supraceliac proximal clamp (9.8% vs. 5.7%; all $P<0.05$). Multivariable analysis in the development group identified the following independent predictors of NHD: age ≥ 80 years, not independently ambulatory, proximal clamp location, hypogastric artery occlusion, anemia (Hb <12 g/dL), chronic obstructive pulmonary disease, female sex, hypertension, and ASA class ≥ 4. These were then used to create a 14-point risk score (Table). Patients were stratified into three groups based upon their risk score: low risk (0-4 points; n=4,966) with an NHD rate of 9.9%, moderate risk (5-6 points; n=2,442) with an NHD rate of 25.5%, and high risk (≥ 7 points; n=886) with an NHD rate of 44.6% (Figure). The risk score had good predictive ability with c-statistic=0.73 for model development and c-statistic=0.72 in the validation dataset.

Conclusions: This novel risk score can predict NHD following elective OAR using characteristics that can be identified preoperatively. Utilization of this score may allow for improved risk assessment, preoperative counseling, and shared decision making.

Figure. Patients were stratified into three groups based upon their risk score: low risk (0–4 points), moderate risk (5–6 points), and high risk (≥ 7 points).

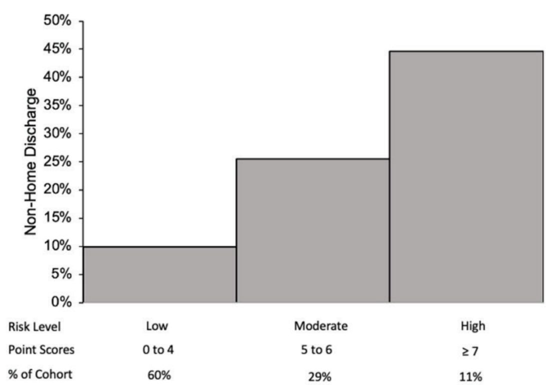


Table. Hierarchical Logistic Regression for Non-Home Discharge in the Model Development Group and Point Scores for Non-Home Discharge

	Odds Ratio	95% Confidence Interval	*P* Value[a]	Points to Add
Age: ref <60 years				
60-69 years	1.92	1.28-2.87	**0.002**	1
70-79 years	4.27	2.88-6.33	**<0.001**	2
≥ 80 years	10.9	6.79-17.6	**<0.001**	3
Not Independently Ambulatory	3.03	2.22-4.12	**<0.001**	3
Clamp: ref Infrarenal				
Suprarenal	1.25	1.03-1.52	**0.024**	1
Supraceliac	1.80	1.33-2.44	**<0.001**	2
Hypogastric Artery Occlusion	1.64	1.24-2.16	**<0.001**	1
Anemia (Hb <12 g/dL)	1.56	1.27-1.91	**<0.001**	1
COPD	1.52	1.32-1.75	**<0.001**	1
Female	1.45	1.24-1.71	**<0.001**	1
Hypertension	1.36	1.07-1.74	**0.013**	1
ASA Class ≥ 4	1.24	1.01-1.53	**<0.001**	1

ASA = American Society of Anesthesiologists; COPD = chronic obstructive pulmonary disease.
[a]Adjusted for Medicare/Medicaid insurance.

4: CHATGPT ABLE TO GENERATE ADEQUATE RESPONSES TO PATIENT FAQS IN VASCULAR SURGERY

Sean Perez MD, Elsie Ross MD, MS, RPVI, FAHA,
Mahmoud Malas MD, MHS, RPVI, FACS
Division of Vascular & Endovascular Surgery, Department of Surgery, University of California San Diego (UCSD), La Jolla, California

Background: Information on the internet regarding vascular surgery can be unreliable and/or difficult for patients to understand. Large language models (LLMs) have been popularized recently with widespread uptake and many use cases. ChatGPT, the most popular and readily available LLM currently, was trained on a large data set derived from the internet and uses it to respond to user-generated prompts, including medical questions, with easy-to-understand language. Given this unique ability, patients may use it as a resource to seek additional information on a particular diagnosis or surgical treatment within the field of vascular surgery. However, the adequacy of its responses regarding topics within vascular surgery is not well understood. The goal of this study was to assess the ability of ChatGPT to respond to patient frequently asked questions (FAQs) related to vascular surgery as judged by board-certified vascular surgeons.

Methods: Patient FAQs were gathered to use as ChatGPT prompts via internet search from vascular surgery societies, institution websites, Facebook patient support groups, and device manufacturer FAQ webpages. Prompts and their responses were randomly selected to compile a 10-question survey to be completed by board-certified vascular surgeons at a single academic institution. The 10 questions covered topics including peripheral arterial, carotid, aortic, and venous pathologies, endovascular principles, and dialysis access (Table I). ChatGPT responses were graded on a Likert-type scale as “4-Comprehensive”, “3-Accurate but inadequate”, “2-Correct but with some incorrect information”, and “1-Completely incorrect”. Scores were binarized as to redefine scores >2 as “Acceptable” and remaining scores as “unacceptable” for patient-facing responses uses.

Results: Survey completion was 100%. Only one response to a question regarding dialysis access by ChatGPT received a unanimously agreed upon “comprehensive” score by the reviewers. Most reviewers found all 10 ChatGPT generated responses to be acceptable (Table II). FAQs on the topics of dialysis access, PAD, and vein pathology were deemed to be the most comprehensive. One reviewer graded 7 out of the 10 responses as unacceptable (scores of 1 or 2).

Conclusion: ChatGPT is a useful tool for patients seeking basic information regarding vascular pathology or procedures on the internet. Utilizing ChatGPT prior to an initial consultation could serve as helpful primer for patients,

allowing them to ask more informed questions of their surgeon during a clinic visit. While most surveyed board-certified vascular surgeons in this study found the responses acceptable, variation in surgeon judgment of ChatGPT generated responses may limit its wide implementation.

Table I. ChatGPT prompts and corresponding categories.

Prompt	Category
Who is a candidate for EVAR?	Aorta
What is fenestrated endovascular aneurysm repair (FEVAR)?	Aorta
What is Transcarotid artery revascularization?	Carotid
Are [dialysis] catheters safe for long-term use?	Dialysis access
When should dialysis access surgery take place?	Dialysis access
What are the benefits of minimally invasive vascular surgery?	Endovascular
Do they use regular dye contrast in patients with kidney disease	
undergoing angiogram?	Endovascular
When is bypass required in peripheral artery disease?	PAD
What are my treatment options for PAD?	PAD
Are there any complications associated with varicose vein ablations?	Vein

Table II. Acceptability of responses as determined by five board-certified vascular surgeons.

ChatGPT Response	% Acceptable
Response 1	80%
Response 2	100%
Response 3	100%
Response 4	100%
Response 5	80%
Response 6	80%
Response 7	60%
Response 8	80%
Response 9	80%
Response 10	80%

5: EVALUATING THE PROGNOSTIC ACCURACY OF AMPREDICT IN PREDICTING ONE-YEAR MORTALITY FOLLOWING MAJOR LOWER LIMB AMPUTATION

Kristina Rudio, MD, Gabrielle Daso, MD, Hugh A. Gelabert, MD, David A. Rigberg, MD, Nina Bowens, MD, Mark Archie, MD, Jessica B. O'Connell, MD, Jesus G. Ulloa, MD
Harbor-UCLA Medical Center, Torrance, CA
Greater Los Angeles Veterans Affairs Healthcare System, Los Angeles, CA

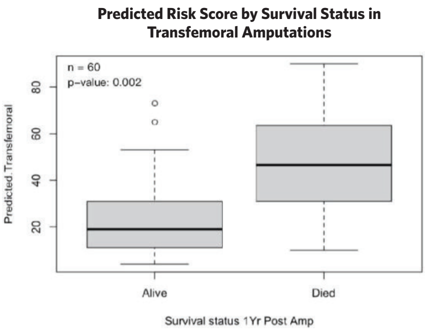
Background: Anticipating outcomes in patients undergoing major lower limb amputations is a critical aspect of preoperative planning and postoperative care. Accurately predicting postoperative outcomes is fundamental to informed clinical decision making, enhancing patient management, and aligning with patient, and family expectations. The AMPREDICT Decision Support Tool is a predictive tool designed to assess the probability of mortality one year after major and minor amputations. AMPREDICT may play a vital role in the collaborative decision- making process between physicians and patients; therefore, we aimed to evaluate its application in our particular patient population.

Methods: A retrospective review of lower extremity amputations completed at an academic affiliated, regional hospital from 2000 to 2020. Staged open amputations, and previous minor amputations were excluded. Using the AMPREDICT tool, we predicted the probability of mortality one year post-surgery for single stage transfemoral and transtibial amputations, then compared the results with actual patient outcomes. Descriptive statistics of our study cohort were calculated. The observed to predicted mortality was compared through boxplots, at one year after surgery, confidence intervals were calculated, and group means were compared using Students T-test. Significance was set at $p<0.05$.

Results: We identified 423 patients that underwent 650 lower extremity amputations during our study period. 267 patients that underwent single stage transfemoral or transtibial amputations comprised our study cohort. The average age at amputation was 66 years with an average age of death at 71 years (Table 1). Our analysis indicated that the AMPREDICT tool's prognostic capability varied across the two amputations studied. For single staged transfemoral amputations, (Figure 1) the prediction aligned closely with actual outcomes, as indicated by a significant p-value of 0.0002 (C.I. 12.73 - 36.37). The predictions for transfemoral amputation demonstrated a higher median predicted risk for patients who died within one year, which is supported by fewer outliers, indicating a more concentrated prediction range that closely aligned with actual mortality rates. For single stage transtibial amputations, the predictions were also significant, p-value 0.0017 (C.I. 5.25 - 21.20), though had a wider prediction range.

Conclusions: Our study confirms the reliability of the AMPREDICT tool in predicting one-year mortality for patients undergoing major lower limb

amputations. The predictive accuracy was found to be statistically significant for both single staged transfemoral and transtibial amputations. These findings suggest that AMPREDICT may be a valuable tool in the clinical setting for patients undergoing major lower limb amputation. The incorporation of AMPREDICT into clinical practice may improve prognostic conversations with patients and their family which aids in patient management post-amputation surgery.



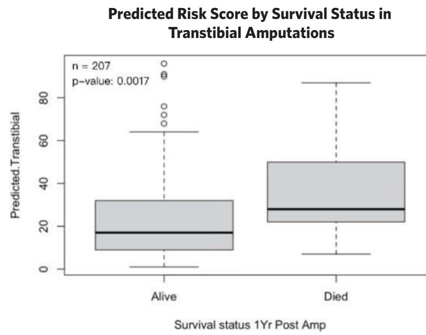


Table 1 Study Coho11		
Demographics		267
Operations, n (%)		
Above knee amputation	60	(22.47)
Below knee amputation	207	(77.53)
Patients, n (%)		
Age at amputation - years: average (S.D.)	66	(10.32)
Age at death - years: average (S.D.)	71	(10.38)
Gender, n (%)		
Females	3	(1.12)
Males	264	(98.88)
Race, n (%)		
White	141	(52.81)
Black/African American	115	(43.07)
Asian	4	(I .50)
American Indian/AlaskanNative	3	(1.12)
Native Hawaiian/Pacific Islander	I	(0.37)
Unknown/Other	3	(1.12)

Ethnicity, n (%)		
Hispanic/Latino	35	(13.11)
Non-Hispanic/Latino	232	(86.89)
Marital Status, n (%)		
Single	168	(62.92)
Married	99	(37.08)
Co-morbidities, n (%)		
Congestive Heart Failure	58	(21.72)
AKA	13	(22.41)
BKA	45	(77.59)
Chronic Kidney Disease	77	(28.84)
AKA	15	(19.48)
BKA	62	(80.52)
Chronic Obstructive Pulmonary Disease	35	(13.11)
AKA	9	(25.71)
BKA	26	(74.29)
Diabetes	196	(73.41)
AKA	27	(13.78)
BKA	169	(86.22)
Dialysis	16	(6.00)
AKA	5	(3125)
BKA	II	(68.75)
Mental Health Diagnosis	69	(25.84)
AKA	19	(27.54)
BKA	50	(72.46)

6: READMISSIONS RATES AFTER INDEX VASCULAR PROCEDURES IN A QUATERNARY MEDICAL CENTER

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Background: Vascular patients represent a comorbid population who are at high risk for readmissions due to their ongoing medical comorbidities. Readmissions correlate with poor patient outcomes and are associated with significant health care costs. The objective of this studywas to characterize readmissions after index vascular procedures to identify interventions to reduce preventable readmissions.

Method: We conducted a retrospective review of readmissions after index vascular procedures using Vizient data at a single quaternary medical center from 6/1/2020-6/30/2023. Diagnosis categories included peripheral arterial disease (PAD), end stage renal disease (ESRD), carotid, aortic, and venous disease.

Results: We identified 170 readmissions following index procedures by vascular surgery (106, 77%) interventional radiology (23, 17%), interventional cardiology (8, 6%) and general surgery (1, 1%). Among the readmissions, 32(19%) were misclassified: 13 (7%) did not undergo a vascular intervention and 19(11%) presented with planned readmissions for intervention. There were 57(41%) PAD, 43(13%) ESRD, 12(9%) carotid, 7(5%) venous, 10(7%) aortic and 9(7%) miscellaneous procedures that required readmission. Of the PAD readmissions, 49(86%) were after emergent index procedures with an average time to readmission of 12.4 days. Most readmissions were related to medical comorbidities 27(47%) followed by worsening foot wounds 15(26%) and surgical wound complications 7(12%). Among patients with ESRD, 37(86%) of the readmissions were after emergent index cases with an average time to readmission of 14.3 days. Unsurprisingly, most readmissions were related to medical comorbidities 23(54%) and access thrombosis 13(30%). Of the carotid readmissions, 5(42%) were after emergent index cases with an average time to readmission of 9.9 days. The cause of readmission was medical comorbidities 6(50%), other 5(42%), and surgical wound complications 2(17%). The majority, 5(71%) of venous readmissions were after emergent index cases with an average time to readmission of 12.6 days. Readmissions were related to medical comorbidities 4(57%), other 2(29%), and surgical wound complication 1(14%). Of the aortic readmissions, only 3(30%) were after emergent index procedures with an average time to readmission of 13.9 days. Most common cause of readmission was medical comorbidities 7(70%).

Conclusion: ESRD and PAD patients represent a high-risk population for readmission after emergent index procedures. Most readmissions were related to medical comorbidities or worsening wound complications. This underscores the importance of coordinating early follow-up with primary care providers, nephrologists, and podiatrists for prompt identification of preventable post- discharge complications. Efforts are needed to improve the accurate identification of planned readmissions and 'vascular' procedures to provide a precise assessment of readmissions following vascular interventions.

7: PEDIATRIC CONSULTS TO VASCULAR SURGERY: AN INFREQUENT OCCURRENCE

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Background: Pediatric vascular conditions are uncommon, and pediatric vascular exposure is sparse in Vascular Surgery training. This is heightened in programs without an adjacent children's hospital. We reviewed our experience in an institution with an adjacent, 364-bed, freestanding Children's Hospital to elucidate the frequency of pediatric consults that a busy vascular service may encounter.

Methods: A retrospective chart review was conducted to evaluate consults to Vascular Surgery originating from our Children's Hospital over a recent 4.5-year period. Data were then extracted to determine patient location (ICU, Ward, and Emergency Department) at the time of consultation. Moreover, we evaluated the ultimate treatment defined as medical/expectant management and surgical/endovascular intervention.

Results: During the study period, 100 consults to Vascular Surgery were completed. The patient's average age was 8 years old (range 1 day to 18 years). Consultations were made from the following locations; ICU (66%), ward (20%), and emergency department (14%). Additionally, 14 patients were admitted to the ICU. Of the 80 total ICU patients, 53 were ventilated and 33 required vasopressor support. Overall, 17% of patients underwent surgical/endovascular intervention via our Vascular Surgery team. Vascular Surgery offered medical co-management to 56% of patients. Medical co-management was most typically anticoagulation (64%) followed by anti-platelet recommendations (14%).

Conclusion: Inpatient consults to Vascular Surgery are infrequent at roughly 20 per year at a busy academic center with an adjacent children's hospital. Less than 20% of consultations resulted in surgical interventions. During a typical Vascular Surgery residency or fellowship, a trainee would be expected to manage 40-60 pediatric consultations. These data can serve as a benchmark for educational experience and help guide Vascular training and physician staffing.

8: BENEFICIAL UTILITY OF AN ON-SITE TISSUE BANK CRYOPRESERVED HUMAN VASCULAR ALLOGRAFT CRYOFREEZER AT AN ACADEMIC MEDICAL CENTER

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Objectives: Cryopreserved human vascular allografts (CHVA) may serve as alternative conduits when autogenous or in-situ/extra-anatomic prosthetic grafts are not readily available. Unscheduled urgent or emergent surgeries add challenges to immediate access to alternative allografts. This study reviewed the experience of on-site tissue bank freezer used to store CHVA (Artivion, Inc. Kennesaw, Ga) at an academic medical center to facilitate urgent or emergent vascular surgical treatments.

Methods: Single-center, retrospective review conducted on patients using CHVA during Jan 2016 - Dec 2022 for urgent/emergent surgery. Demographics, index procedural detail, perioperative & postoperative complications & CHVA patency analyzed. CHVA-related mortality & failure by reinfection, hemorrhage, aneurysmal degeneration, & thrombosis analyzed as primary endpoints.

Results: 68 pts (27 female & 41 male, mean age 62.9 yrs) had 73 CHVA vascular reconstructions using 2 aortoiliac arteries; 55 femoropopliteal arteries; 11 great saphenous veins; & 15 femoral veins. 48/73 (66%) were performed as unplanned, urgent/emergent surgeries in infected or contaminated fields. Surgical repairs included aortoiliac (n=7), iliofemoral (n=21), femoropopliteal-tibial (n=24), axillosubclavian or brachial (n=10), mesenteric (n=11) configurations. Ten surgeries used more than one CHVA. Mean follow-up was 8.93 mos. (range 0.07-43.3 mo.). 30-day mortality was 2.9%. ABO matching was not routinely performed. CHVA related complication including major amputations (n=3) and graft stenosis (n=6) & aneurysmal degeneration (n=1). There were no CHVA reinfections.

Conclusions: Immediate availability of CHVA with an on-site freezer bank at an academic medical center provided significant benefit in providing access to allograft conduits for unplanned, urgent/emergent surgical situations when autogenous or in-situ/extra-anatomic reconstructions in infected or contaminated fields are not readily available. CHVA provides immediate vascular reconstructions with acceptable resistance to graft failure, reinfection, and may provide acceptable interval patency for subsequent definitive repair.

9: PREOPERATIVE CARDIAC STRESS TESTING AS A PREDICTOR OF OUTCOMES AFTER THORACIC ENDOVASCULAR AORTIC REPAIR

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Background: Preoperative cardiac stress testing is a necessary component of thoracic endovascular aortic repair (TEVAR) since vascular patients typically have concomitant coronary artery disease. However, there is a lack of high-quality evidence comparing the effects of positive versus negative preoperative stress testing on TEVAR outcomes. Thus, the purpose of this study is to use a large, multi-center database to compare the predictive effects of preoperative cardiac stress testing on perioperative outcomes in patients undergoing TEVAR.

Method: Patients who had undergone TEVAR for any indication from 2011 till 2023 in the Vascular Quality Initiative (VQI) database were identified. A positive stress test was defined as a positive stress EKG, stress echocardiography or nuclear stress scan within 2 years of surgery. Patients with conversion to open repair, no history of cardiac stress testing or no new stress test after coronary intervention were excluded. Outcomes of interest were postoperative stroke, myocardial infarction (MI), spinal cord ischemia (SCI) and 30-day mortality. Mutivariable analysis was performed after adjusting for potential confounders, such as demographics, medical history, surgical history, preoperative medications and pathology, to compare the outcomes.

Results: A total of 7,150 patients met our inclusion criteria. There were 1,398 patients (20%) with a positive preoperative stress test. Baseline characteristics are summarized in Table I. Patients with a positive preoperative stress test were more likely to be older, male and have multiple comorbidities. They were also more likely to be on optimal medical management with preoperative dual antiplatelet therapy, statins, ACE inhibitors and beta blockers. After adjusting for potential confounders, positive preoperative stress test was associated with significant increases in the risk of stroke (OR, 1.48; 95% CI, 1.02-2.16; P = .039), MI (OR, 2.06; 95% CI, 1.59-2.67; P < .001) and 30-day mortality (OR, 1.44; 95% CI, 1.08-1.91; P = .012) when compared to a negative stress test (Table II). There were no statistically significant increases in SCI (OR, 1.07; 95% CI, 0.68-1.66; P = .778).

Conclusion: In this large database study, a positive preoperative cardiac stress test was associated with a significant increased risk of postoperative stroke, MI and 30-day mortality in TEVAR patients despite being on optimal medical management. Further studies are needed to identify modifiable risks that can reduce postoperative complications in patients with positive stress test needing TEVAR.

Table I. Baseline characteristics of TEVAR patients with negative preoperative stress test vs positive preoperative stress test.

	NegativeStress Test n = 5,752	Positive Stress Test n = 1,398	P Value
Age, mean ± SD	71.6 ± 9.9	72.8 ± 8.6	< 0.001
BMI, mean ± SD	27.9 ± 5.9	28.0 ± 5.9	0.64
Gender			< 0.01
Male	3697 (64.3%)	1101 (78.8%)	
Female	2055 (35.7%)	297 (21.2%)	
Race			0.24
White	4404 (76.6%)	1100 (78.7%)	
Black	782 (13.6%)	176 (12.6%)	
Others	563 (9.8%)	122 (8.7%)	
Insurance			0.26
Medicare	2932 (57.5%)	718 (59.9%)	
Medicaid	243 (4.8%)	49 (4.1%)	
Other	1922 (37.7%)	431 (36.0%)	
Preop Functional Status			0.007
Fully Functional	4426 (83.8%)	1037 (80.7%)	
Limited Functioning	853 (16.2%)	248 (19.3%)	
Anemia	2887 (50.5%)	761 (54.9%)	0.003
Active Smoker	1728 (30.1%)	446 (31.9%)	0.18
CKD	2140 (38.4%)	599 (44.6%)	< 0.001
Diabetes	1077 (18.7%)	328 (23.5%)	< 0.001
Preop Dialysis			0.37
None	5581 (97.0%)	1348 (96.4%)	
Functioning Transplant	20 (0.3%)	4 (0.3%)	
On Dialysis	151 (2.6%)	46 (3.3%)	
Hypertension	5167 (90.2%)	1294 (93.2%)	0.001
Prior CABG or PCI	1392 (24.5%)	723 (52.2%)	< 0.001
Prior CHF	771 (13.4%)	411 (29.4%)	< 0.001
Prior CEA and/or CAS	241 (4.2%)	76 (5.5%)	0.004
Prior Aneurysm Repair	1395 (24.3%)	340 (24.3%)	0.09
Prior PVI	376 (6.5%)	123 (8.8%)	0.003
Prior Major Amputation	25 (0.4%)	12 (0.9%)	0.047
Prior Open or Endo Aortic Surgery	1492 (26.0%)	349 (25.0%)	0.5

	NegativeStress Test n = 5,752	Positive Stress Test n = 1,398	P Value
Anesthesia			0.94
Local/Regional	5710 (99.3%)	1387 (99.3%)	
General	40 (0.7%)	10 (0.7%)	
Presentation			0.049
Asymptomatic	4206 (79.8%)	1051 (81.9%)	
Symptomatic	987 (18.7%)	207 (16.1%)	
Rupture	80 (1.5%)	26 (2.0%)	
Severe Leg Dysfunction or Paralysis	28 (0.5%)	4 (0.3%)	0.32
Preop ASA	3532 (61.4%)	1036 (74.1%)	< 0.001
Preop P2Y12 Antagonist	681 (11.9%)	284 (20.4%)	< 0.001
Preop Statin	4078 (70.9%)	1132 (81.0%)	< 0.001
Preop Beta Blocker	3861 (67.1%)	1092 (78.2%)	< 0.001
Preop Ace Inhibitor	2642 (46.5%)	728 (52.6%)	< 0.001
Preop Anticoagulation	823 (14.5%)	243 (17.6%)	0.004
Urgency			0.17
Elective	5222 (90.9%)	1286 (92.1%)	
Urgent or Emergent	523 (9.1%)	111 (7.9%)	
Pathology			< 0.001
Aneurysm	4537 (78.9%)	1182 (84.5%)	
Dissection	647 (11.2%)	96 (6.9%)	
Other	568 (9.9%)	120 (8.6%)	

Table II. Postoperative outcomes of stroke, myocardial infarction, / spinal cord ischemia and 30- day mortality in TEVAR patients, stratified by preoperative cardiac stress testing result

	Positive Preoperative Stress Test vs Negative Preoperative Stress Test	
Outcome	aOR (95% CI) (Reference = Negative Stress Test)	P value
Stroke	1.48 (1.02-2.16)	0.039
MI	2.06 (1.59-2.67)	< 0.001
SCI	1.07 (0.68-1.66)	0.778
30-day mortality	1.44 (1.08-1.91)	0.012

aOR, adjusted odds ratio; CI, confidence interval; AI, myocardial infarction; SCI, spinal cord ischemia

18: THE IMPACT OF TIMING OF THORACIC ENDOVASCULAR AORTIC REPAIR ON THE POSTOPERATIVE OUTCOMES OF PATIENTS WITH UNCOMPLICATED TYPE B AORTIC DISSECTION

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Background: Thoracic endovascular aortic repair (TEVAR) is used to induce a favorable aortic remodeling in select patients with uncomplicated type B aortic dissection (uTBAD) although the impact of timing of TEVAR on the postoperative outcomes is not completely understood. The purpose of this study is to investigate the impact of TEVAR timing on the 30-day postoperative clinical outcomes of patients with uTBAD using a multi-institutional database.

Methods: The Vascular Quality Initiative (VQI) database was studied for all patients who underwent TEVAR for uTBAD excluding cases of aortic rupture or malperfusion. The study cohort was divided into TEVAR timing groups: <14 days (acute), 14-30 days (subacute), and >30 days (chronic) since the onset of dissection. Demographic, clinical, perioperative characteristics, and postoperative complications including overall mortality, disease/treatment-related mortality, and Major Adverse Cardiovascular Events (death, myocardial infarction, stroke) were compared between groups. Univariable and multivariable regression analysis was conducted, and model performance was evaluated with discrimination analysis using the Receiver Operating Characteristic curve and Area Under the Curve (AUC).

Results: Out of 29,115 patients, 1,854 met the inclusion criteria, of which 1,304 (70.3%) underwent TEVAR in the acute, 188 (10.1%) in the subacute, and 362 (19.5%) in the chronic setting. Table 1 demonstrates the association of TEVAR timing with baseline characteristics. For all indications of TEVAR, except for aneurysmal degeneration, the odds of overall mortality (OR: 0.10, p=0.016), disease/treatment-related mortality (OR: 0.12, p=0.048) and MACE (OR: 0.08, p=0.007) significantly decrease for patients undergoing TEVAR in the chronic vs acute setting. Odds of overall mortality (OR: 0.16, p=0.050) and MACE (OR: 0.13, p=0.027) were also significantly lower in the chronic compared to the subacute setting (Table 2). Postoperative mortality of uTBAD patients undergoing TEVAR for aneurysmal degeneration does not change with TEVAR timing (OR: 0.43 95%CI [0.09-1.97], p=0.278). The AUC of the ROC curve for mortality is 82.21% (Figure 1).

Conclusions: The risks of postoperative mortality and MACE of patients undergoing TEVAR for uTBAD decrease when TEVAR is performed beyond 30 days from the onset of symptoms, except for patients with aneurysmal

degeneration. Therefore, delaying TEVAR may reduce periprocedural risks, except for patients with early aneurysmal degeneration. Further studies are needed to validate these findings and help guide clinical decision-making for the timing of TEVAR for uTBAD.

Table 1. Baseline characteristics per TEVAR timing

		TEVAR timing			
		< 14 days	14 - 30 days	> 30 days	
		N=1,304	N=188	N=362	p-value
Demographic Variables					
Age (years)		62.1 ± 13.7	60.5 ± 13.2	60.2 ± 12.1	0.027
Gender (male)		806 (61.8%)	126 (67.0%)	212 (58.6%)	0.152
BMI (kg/m2)		29.6 ± 7.1	29.5 ± 7.1	29.8 ± 6.7	0.914
Ethnicity (Hispanic or Latino)		94 (7.2%)	9 (4.8%)	27 (7.5%)	0.446
Race	White	691 (52.9%)	109 (57.9%)	201 (55.5%)	0.627
	Black	457 (35.1%)	57 (30.3%)	116 (32.0%)	
	Other	156 (11.9%)	22 (11.7%)	45 (12.4%)	
Medical History					
Smoking		799 (61.3%)	109 (57.9%)	240 (66.3%)	0.110
COPD		213 (16.3%)	30 (15.9%)	62 (17.1%)	0.920
DM		164 (12.6%)	25 (13.3%)	64 (17.7%)	0.043
HTN		1,158 (88.8%)	173 (92.0%)	350 (96.7%)	<0.001
HD		50 (3.8%)	6 (3.2%)	14 (3.9%)	0.906
Preoperative hemoglobin (g/dl)		11.5 ± 1.9	10.9 ± 1.9	11.6 ± 1.9	<0.001
Preoperative creatinine (mg/dl)		1.2 ± 0.8	1.2 ± 0.7	1.1 ± 0.6	0.069
CAD	None	1,148 (88.0%)	168 (89.4%)	323 (89.2%)	0.040
	History of MI	119 (9.1%)	10 (5.3%)	28 (7.7%)	
	Stable angina	23 (1.8%)	3 (1.6%)	8 (2.2%)	
	Unstable angina	14 (1.1%)	7 (3.7%)	3 (0.8%)	
CHF	None	1,187 (91.0%)	169 (89.9%)	321 (88.7%)	0.142
	Asymptomatic	78 (5.9%)	12 (6.4%)	20 (5.5%)	
	Mild	20 (1.5%)	4 (2.1%)	15 (4.1%)	
	Moderate or severe	19 (1.5%)	3 (1.6%)	6 (1.7%)	
CVD	None	1,189 (91.2%)	173 (92.0%)	334 (92.3%)	0.860
	Stroke without deficit	71 (5.4%)	10 (5.3%)	15 (4.1%)	
	Stroke with deficit	44 (3.4%)	5 (2.7%)	13 (3.6%)	

Cardiac Stress Test	Not done	1,209 (92.7%)	170 (90.4%)	295 (81.5%)	<0.001
	Normal	84 (6.4%)	16 (8.5%)	64 (17.7%)	
	Abnormal	11 (0.8%)	2 (1.1%)	3 (0.8%)	
Preoperative Functional Status	Full	987 (75.7%)	135 (71.8%)	245 (67.7%)	0.115
	Light work	181 (13.9%)	29 (15.4%)	68 (18.8%)	
	Self-care	112 (8.6%)	20 (10.6%)	39 (10.8%)	
	Assisted care or bedbound	24 (1.8%)	4 (2.1%)	10 (2.8%)	
EF	<30%	10 (0.8%)	4 (2.1%)	5 (1.4%)	<0.001
	30-50%	88 (6.8%)	13 (6.9%)	32 (8.8%)	
	>50%	750 (57.5%)	138 (73.4%)	254 (70.2%)	
	No EF record	456 (34.9%)	33 (17.6%)	71 (19.6%)	
Surgical History					
History of aortic aneurysm repair		57 (4.4%)	7 (3.7%)	20 (5.5%)	0.552
History of aortic surgery		52 (3.9%)	4 (2.1%)	19 (5.3%)	0.208
History of bypass surgery		32 (2.5%)	4 (2.1%)	27 (7.5%)	<0.001
History of CABG		28 (2.2%)	5 (2.7%)	10 (2.8%)	0.748
History of CEA or CAS		7 (0.5%)	0	1 (0.3%)	0.508
History of PCI		70 (5.4%)	8 (4.3%)	21 (5.8%)	0.744
History of PVI		21 (1.6%)	2 (1.1%)	10 (2.8%)	0.251
Medication History					
ACE inhibitors		486 (37.3%)	81 (43.1%)	192 (53.0%)	<0.001
Anticoagulants		128 (9.8%)	14 (7.5%)	35 (9.7%)	0.584
Aspirin		461 (35.4%)	81 (43.1%)	178 (49.2%)	<0.001
Beta blockers		951 (72.9%)	156 (82.9%)	309 (85.4%)	<0.001
P2Y12 inhibitors		49 (3.8%)	6 (3.2%)	11 (3.0%)	0.775
Statins		493 (37.8%)	77 (40.9%)	203 (56.1%)	<0.001

		TEVAR timing			
		< 14 days	14 - 30 days	> 30 days	
		N=1,304	N=188	N=362	p-value
Operative Characteristics					
Anesthesia (general)		1,276 (97.9%)	183 (97.3%)	355 (98.1%)	0.856
ASA class	≤ 2	13 (1.0%)	6 (3.2%)	5 (1.4%)	<0.001
	3	341 (26.2%)	59 (31.4%)	159 (43.9%)	
	4	877 (67.3%)	122 (64.9%)	195 (53.9%)	
	5	73 (5.6%)	1 (0.5%)	3 (0.8%)	
IVUS		982 (75.3%)	152 (80.9%)	262 (72.4%)	0.092
Maximal aortic diameter (mm)		42.5 ± 12.4	43.9 ± 10.4	47.4 ± 12.5	<0.001
Urgency	Elective	475 (36.4%)	111 (59.0%)	283 (78.2%)	<0.001
	Urgent	586 (44.9%)	71 (37.8%)	67 (18.5%)	
	Emergent	243 (18.6%)	6 (3.2%)	12 (3.3%)	
Indication of TEVAR	Aneurysmal degeneration	108 (8.3%)	25 (13.3%)	103 (28.5%)	<0.001
	Progression of Dissection	94 (7.2%)	24 (12.8%)	72 (19.9%)	<0.001
	Persistent Hypertension	319 (24.5%)	43 (22.9%)	48 (13.3%)	<0.001
	Persistent pain	1,226 (94.0%)	172 (91.5%)	296 (81.8%)	<0.001

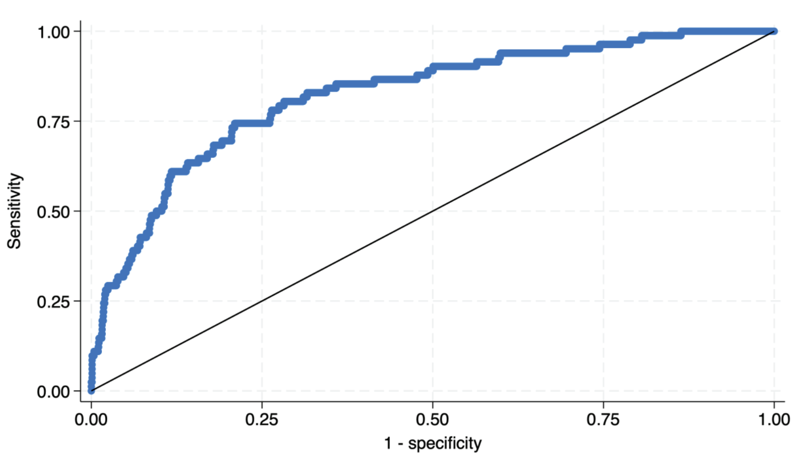
Discrete variables presented as case numbers (%), continuous variables presented as mean ± standard deviation. BMI, body mass index; COPD, chronic obstructive pulmonary disease; DM, diabetes melitus; HTN, hypertension; CAD, coronary artery disease; CHF, congestive heart failure; CVD, cerebrovascular disease; EF, ejection fraction; CABG, coronary artery bypass grafting; CEA, carotid endarterectomy; CAS, carotid artery stenting; PCI, percutaneous coronary intervention; PVI, peripheral vascular intervention; ACE, Angiotensin converting enzyme; ASA, American Society of Anesthesiologists; IVUS, intravascular ultrasound.

Table 2. Multivariable prediction models for outcome variables with Odds Ratios per TEVAR timing

	TEVAR timing					
	14-30 days vs < 14 days		> 30 days vs < 14 days		> 30 days vs 14-30 days	
	OR [95%CI]	p-value	OR [95%CI]	p-value	OR [95%CI]	p-value
Overall mortality	0.62 [0.22-1.71]	0.357	0.10 [0.01-0.65]	0.016	0.16 [0.03-0.99]	0.050
Disease/ treatment-related mortality	0.66 [0.21-2.10]	0.487	0.12 [0.01-0.98]	0.048	0.18 [0.02-1.37]	0.097
MACE	0.61 [0.24-1.54]	0.293	0.08 [0.01-0.51]	0.007	0.13 [0.02-0.79]	0.027
MI	0.37 [0.46-2.96]	0.349	0.01 [0.01- 0.86]	0.043	0.03 [0.01-0.64]	0.024
Stroke	0.45 [0.14-1.40]	0.168	0.21 [0.05-0.99]	0.048	0.47 [0.09-2.49]	0.378
Respiratory complications	0.41 [0.13-1.27]	0.124	0.22 [0.03-1.53]	0.126	0.53 [0.14-1.98]	0.346
Overall complications	0.44 [0.22-0.86]	0.016	0.27 [0.09-0.81]	0.019	0.63 [0.29-1.32]	0.216
Reinterventions	0.29 [0.08-1.11]	0.070	0.12 [0.10-1.41]	0.093	0.42 [0.09-1.98]	0.249
Aortic reinterventions	0.67 [0.28-1.58]	0.363	0.30 [0.10-0.91]	0.032	0.46 [0.14-1.48]	0.193

Logistic regression models adjusted for patient age, gender, ethnicity, race, ASA class, BMI, CAD, CHF, cardiac stress test result, CVD, COPD, HD, preoperative hemoglobin, creatinine, Beta-blockers, Statins, EF, preoperative functional status, maximal aortic diameter, urgency, indication for TEVAR (aneurysmal degeneration, progression of dissection, uncontrolled HTN, uncontrolled pain, TEVAR timing (acute, subacute, chronic), Interaction terms (timing-aneurysmal degeneration, timing-progression of dissection, timing-uncontrolled HTN). OR, Odds Ratio; MACE, Major adverse cardiovascular events; MI, myocardial infarction; ASA, American Society of Anesthesiologists; BMI, body mass index; CAD, coronary artery disease; CHF, congestive heart failure; CVD, cerebrovascular disease; COPD, chronic obstructive pulmonary disease; HD, hemodialysis; EF, ejection fraction; HTN, hypertension.

Figure 1. ROC curve of the logistic regression model for overall mortality with AUC



19: ALTERNATIVE ACCESS FOR TRANSCATHETER AORTIC VALVE REPLACEMENT (TAVR)

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Objectives: As an alternative to open aortic valve replacement, transcatheter aortic valve replacement (TAVR) is noninferior in outcomes. TAVR is mostly done via percutaneous transfemoral approach (TF). Alternative access (AA) via open carotid and axillary/subclavian, or transaortic, transapical, and transseptal via mini-sternotomy is considered in those with significant peripheral arterial disease or complex aortic anatomy. This study aims to compare baseline characteristics and outcomes in patients undergoing TF or AA TAVR.

Methods: A retrospective review of TAVR patients between 2013 and 2021 was performed. Patients were divided into TF or AA TAVR groups and demographics, anatomy, and outcomes were compared. Subgroup analysis was performed for patients with elective vs. urgent TAVR procedures in both TF and AA groups. All AA patients were treated by either vascular or cardiac surgeons. Data was analyzed using SPSS 27.

Results: Between 2013 and 2021, 3421 patients underwent TAVR (3278= TF, 163= AA). AA patients were treated via axillary/subclavian (99), carotid (17), transaortic (31), transapical (9), and transseptal (2), respectively. AA patients were more likely to be male smokers with hypertension, diabetes, chronic kidney disease, ESRD, lung disease, coronary artery disease, and peripheral arterial disease (table 1). AA patients had higher stroke rates and 30-day mortality. When contemporary TAVR devices (2017-2021) were compared, however, there was no mortality difference between groups (table 2). Subgroup analysis of urgent TAVR procedures revealed that AA patients had significantly lower rates of major bleeding complications.

Conclusion: AA allows for safe, minimally invasive aortic valve replacement. With appropriate patient selection and meticulous perioperative planning and surgical technique, AA is a safe, acceptable approach for TAVR delivery with similar periprocedural and overall outcomes.

Table 1. Demographics among all-comer TF and AA TAVR patients				
	All patients	Transfemoral TAVR	Alternative TAVR	p-Value
	(N=3441)	(N=3278)	(N=l63)	
Age	81.0 (13)	81.0 (13)	82.0 (12)	.117
Sex Male	2096 (60.9)	2014 (61.5)	84 (49.7)	.003
Smoker	299 (8.7)	274 (8.4)	25 (15.2)	.004
Hypertension	2845 (82.7)	2700 (82.4)	145 (89.0)	.033
Hyperlipidemia	1841(53.5)	1747 (53.3)	94 (57.3)	.296
Diabetes	1165(33.9)	1094 (33.4)	71 (43.6)	.008
CKD 2::111	536 (15.6)	490 (15.0)	46 (28.0)	<.0001
Dialysis	182 (5.3)	167 (5.1)	15(9.1)	.030
Chronic lung diseases	535 (15.6)	488 (14.9)	47(28.9)	.001
Coronary artery disease	1359 (39.5)	1269 (38.7)	91 (55.2)	<.0001
CABG	465 (13.5)	444 (13.5)	21 (12.8)	.907
Peripheral artery disease	485 (14.1)	386 (11.8)	99 (60.7)	<.0001

CKD, chronic kidney disease; CABG, coronary artery bypass graft; Data are presented as the nunber of patients (column %). P-value is calculated with the Kruskal-Walis test for continuous variables and chi- square or Fisher's exact test for categorical variables as appropriate. Continuous variable presented as median and IQR while categorial variable as numbers and%.

Table 2: Procedural and short-term outcomes among TF-TAVR and AA patients				
	All patients	Transfemoral TAVR	Alternative TAVR	p-Value
	(N=3441)	(N=3278)	(N=l63)	
Any complication	513 (14.9)	495 (15.1)	18 (11.0)	.177
CVAor TIA	59 (1.7)	52 (1.6)	7 (4.3)	.020
Cerebral protection device use	248 (7.2)	243(7.4)	5 (3.0)	.001
Permanent pacemaker implantation	52 (1.5)	51 (1.6)	1 (0.6)	.516
Coronary obstruction	15 (0.4)	13 (0.4)	2 (1.2)	.158
Valve embolization	4 (0.1)	4 (0.1)	0 (0)	.822
Aortic dissection	15 (0.4)	15 (0.5)	0 (0)	.480
Major vascular complication	81 (2.4)	79 (2.4)	2 (1.2)	.436
Minor vascular complications	87 (2.5)	83 (2.5)	4 (2.4)	.599
Life threatening bleeding	15 (0.4)	14 (0.4)	1 (0.6)	.520
Major bleeding	78 (2.3)	77 (2.3)	1 (0.6)	.182
Minor bleeding	104 (3.0)	97 (3.0)	7 (4.3)	.344
Acute renal failure	263 (7.6)	244 (7.4)	19 (11.6)	.068
New onset Dialysis	4 (0.1)	4 (0.1)	0 (0)	.822
30-day death (total)	31 (0.9)	25 (0.8)	6 (3.7)	.013
30-day death (2017-2021)	13 (0.4)	12 (0.4)	1(0.6)	.412

CVA, cerebrovascular accident; TIA,transient ischemic attack.
Data are presented as the number of patients (column%). P-value is calculated with the Kruskal-Wallis test for continuous variables and chi-square or Fisher's exact test for categorical variables as appropriate.
Continuous variable presented as median and IQR while categorial variable as numbers and %.

20: THE IMPACT OF LOW BMI ON PERIOPERATIVE AND LONG-TERM OUTCOMES AFTER TEVAR

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Background: While several studies have evaluated the impact of elevated body mass index (BMI) on outcomes after endovascular abdominal aortic aneurysm repair (EVAR), the relationship between underweight and long-term outcomes after thoracic endovascular aortic aneurysm repair (TEVAR) remains poorly understood. We investigated the role of low BMI on clinical and technical outcomes in patients who underwent TEVAR.

METHODS: The Global Registry for Endovascular Aortic Treatment (GREAT) Registry is an ongoing multicenter, multi-national, observational cohort study between August 2010-September 2016. All patients treated with Conformable GORE® TAG® Thoracic Endoprosthesis devices were included. Patients were considered underweight with BMI <23 kg/m2 according to National Institute of Health guidelines for patients ≥65 years. Normal BMI was defined by BMI ≥23-25 kg/m2. Long-term patient follow-up was assessed annually, up to 7 years post- intervention. Primary outcomes were technical surgical complications, including rates ofendoleak, rupture, and migration. Secondary outcomes included postoperative complications.

RESULTS: Out of 884 patients undergoing TEVAR, 161 (18%) were defined as underweight. 129(15%) were considered normal-weight, and 594 (67%) had BMI>25. One year postoperatively, there was no statistically significant difference in rates of endoleak (5.0% vs 6.2%, p=0.3) (Table 1). Underweight patients developed significantly higher rates of aortic rupture than normal weight patients at 1 year (3.1% vs 1.6%, p=0.02). After 2-3 years postoperatively, underweight patients had significantly higher rates of Type 1B endoleak when compared to normal weight patients (5.2% vs 1.3%, p=0.01). No difference in endoleak, migration, or rupture rates existed between underweight groups after 4-7 yrs postoperatively. No significant difference in reintervention rates was identified throughout all follow-up intervals. Interestingly, the rate of all-cause mortality was significantly higher in the normal weight patients than underweight patients at the 1-year (17.4% vs 15.5%, p=0.03) and 2-3 year (11.1% vs 20.0%, p=.0006) intervals postoperatively. No significant difference in mortality was determined between the groups after 4-7 years postoperatively (Table 1).

CONCLUSIONS: Patients with low BMI undergoing TEVAR experience higher rates of aortic rupture and Type 1B endoleak, with no significant difference in postoperative reintervention rates. These findings should be considered in risk reduction and preoperative optimization of patients considered for TEVAR.

Table 1: Postoperative Complications

Characteristic	Underweight BMI<23	Normal Weight BMI 23-25	Overweight BMI 25-30	Obese BMI 30-35	Morbid Obesity BMI>35	p-value
	N=161	N=129	N=369	N=155	N=70	
Baseline Charecteristics						
Gender						
Male	95 (59.0%)	74 (57.4%)	272 (73.7%)	106 (68.4%)	41 (58.6%)	
Female	66 (41.0%)	55 (42.6%)	97 (26.3%)	49 (31.6%)	29 (41.4%)	
Age (Years)						
n	161	129	369	155	70	
Mean (Std Dev)	65.6 (16.8)	67.3 (12.9)	65.4 (13.5)	62.8 (14.5)	59.3 (12.3)	
Weight (kg)						
n	161	129	369	155	70	
Mean (Std Dev)	60.7 (10.4)	69.2 (9.0)	81.5 (10.0)	93.7 (12.5)	118.6 (18.7)	
Postoperative Details						
1 year						
Any Endoleak	8 (5.0%)	8 (6.2%)	31 (8.4%)	7 (4.5%)	2 (2.9%)	0.3
Type IA Endoleak	4 (2.5%)	3 (2.3%)	6 (1.6%)	2 (1.3%)	0 (0.0%)	0.8
Type IB Endoleak	1 (0.6%)	4 (3.1%)	13 (3.5%)	1 (0.6%)	0 (0.0%)	0.076
Type II Endoleak	2 (1.2%)	2 (1.6%)	8 (2.2%)	3 (1.9%)	2 (2.9%)	>0.9
Type III Endoleak	0 (0.0%)	1 (0.8%)	3 (0.8%)	0 (0.0%)	0 (0.0%)	0.7
Type IV Endoleak	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Migration	0 (0.0%)	0 (0.0%)	2 (0.5%)	0 (0.0%)	0 (0.0%)	>0.9
Fracture	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Aortic Rupture	5 (3.1%)	2 (1.6%)	1 (0.3%)	0 (0.0%)	1 (1.4%)	**0.017**
All reinterventions	21 (13.0%)	20 (15.5%)	66 (17.9%)	21 (13.5%)	8 (11.4%)	**0.4**
All cause mortality	28 (17.4%)	20 (15.5%)	44 (11.9%)	10 (6.5%)	6 (8.6%)	**0.026**
2-3 years						
	N = 132	N = 108	N = 312	N = 140	N = 63	
Number of Subjects With Imaging and/or Event	77	80	202	95	43	
Any Endoleak	6 (7.8%)	2 (2.5%)	7 (3.5%)	4 (4.2%)	3 (7.0%)	0.4
Type IA Endoleak	1 (1.3%)	1 (1.3%)	1 (0.5%)	3 (3.2%)	1 (2.3%)	0.3
Type IB Endoleak	4 (5.2%)	1 (1.3%)	0 (0.0%)	1 (1.1%)	0 (0.0%)	**0.012**
Type II Endoleak	0 (0.0%)	0 (0.0%)	4 (2.0%)	0 (0.0%)	0 (0.0%)	0.5
Type III Endoleak	1 (1.3%)	0 (0.0%)	1 (0.5%)	0 (0.0%)	0 (0.0%)	0.5
Type IV Endoleak	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Migration	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Fracture	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Aortic Rupture	0 (0.0%)	1 (1.0%)	1 (0.3%)	0 (0.0%)	0 (0.0%)	0.5
All reinterventions	8 (6.3%)	5 (4.8%)	13 (4.5%)	6 (4.7%)	4 (6.9%)	**0.9**
All cause mortality	14 (11.1%)	21 (20.0%)	35 (12.0%)	7 (5.5%)	3 (5.2%)	**0.0006**
4-7 years						
	N = 109	N = 82	N = 265	N = 127	N = 56	
Number of Subjects With Imaging and/or Event	50	50	136	70	33	
Any Endoleak	2 (4.0%)	2 (4.0%)	7 (5.1%)	4 (5.7%)	2 (6.1%)	>0.9
Type IA Endoleak	0 (0.0%)	1 (2.0%)	3 (2.2%)	0 (0.0%)	0 (0.0%)	0.7
Type IB Endoleak	2 (4.0%)	1 (2.0%)	0 (0.0%)	1 (1.4%)	1 (3.0%)	0.089
Type II Endoleak	0 (0.0%)	0 (0.0%)	1 (0.7%)	2 (2.9%)	1 (3.0%)	0.3
Type III Endoleak	0 (0.0%)	0 (0.0%)	1 (0.7%)	0 (0.0%)	0 (0.0%)	>0.9
Type IV Endoleak	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Migration	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Fracture	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	0 (0.0%)	
Aortic Rupture	1 (1.1%)	1 (1.4%)	3 (1.3%)	1 (0.9%)	0 (0.0%)	>0.9
All reinterventions	4 (4.3%)	3 (4.1%)	10 (4.4%)	6 (5.7%)	3 (6.4%)	**0.9**
All cause mortality	24 (26.1%)	16 (21.9%)	38 (16.9%)	23 (21.7%)	14 (29.8%)	**0.2**

21: CLINICAL OUTCOMES OF CELIAC ARTERY COVERAGE VS PRESERVATION DURING THORACIC ENDOVASCULAR AORTIC REPAIR

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Background: Adequate proximal and distal seal zones are necessary for successful Thoracic Endovascular Aortic Repair (TEVAR). Often, the achievement of an adequate distal seal zone requires celiac artery (CA) coverage by endograft with or without preservation of CA blood flow. The outcomes of CA coverage without its flow preservation were studied only in small case series. Our study aims to determine the difference in outcomes between CA coverage with vs without preservation of CA blood flow during TEVAR using a multi-institutional national database.

Methods: Vascular Quality Initiative (VQI) was reviewed for all TEVAR patients distally landing in Zone 6. The cohort was divided into CA coverage with preservation of CA blood flow or CA coverage without flow preservation. Demographic, clinical, and perioperative characteristics, as well as post-operative mortality, morbidities, Major Adverse Cardiovascular Events (MACE, defined as new postoperative myocardial infarction (MI), dysrhythmia, stroke, or congestive heart failure (CHF)), and complications, were compared between the groups. Univariate and multivariate regression analyses were performed.

Results: Out of 25,550 reviewed patients, 772 had a distal landing in zone 6, 212 of which (27.5%) had TEVAR without CA flow preservation, whereas 560 (72.5%) underwent TEVAR with CA flow preservation. Indications for TEVAR were: aneurysm in 431 (55.8%), dissection in 247 (32.0%), or other in 94 (12.2%) cases. Table 1 demonstrates the differences in baseline characteristics. There was a trend of increased intestinal ischemia requiring intervention in the non-preserved group (1.9% vs 0.5%, p=0.077). After adjusting for potential confounders, CA coverage without flow preservation was associated with more than a two-fold increase in the overall 30-day mortality (OR: 2.70, 95%CI: 1.12-6.46, p=0.026), about a three-fold increase in disease/treatment-related mortality (OR: 3.21, 95%CI: 1.02-10.13, p=0.047) in the overall sample (Table 2), a 2.95-fold increase in the 30-day mortality (p=0.044) and a 2.77-fold increased rate of disease/treatment-related mortality in the subgroup with aneurysm (p=0.036), whereas there was no significant association between CA flow preservation status and the endpoints in the dissection subgroup in both univariable and multivariable analyses (Table 3).

Conclusions: CA coverage during TEVAR without preservation of its blood flow is associated with significantly higher mortality. Preservation of CA blood flow should be performed when possible, especially in patients with aortic aneurysms. Prospective studies should be done to confirm our findings and compare the open vs endovascular revascularization techniques on outcomes.

Table 1

		CA FLOW STATUS		
		Not preserved N=212	Preserved N=560	P-value
Demographic Variables				
Age, years		72.72 ± 9.94	67.72 ± 13.20	<0.001
Gender, male		110 (51.9%)	246 (43.9%)	0.048
Ethnicity, Hispanic or Latino		8 (3.8%)	36 (6.4%)	0.156
Race	White	21 (9.9%)	62 (11.1%)	
	Black	31 (14.6%)	111 (19.8%)	0.189
	other	160 (75.5%)	387 (69.1%)	
Weight, kg		76.37 ± 18.77	80.17 ± 22.50	0.018
Height, cm		168.97 ± 11.21	170.52 ± 13.16	0.129
Medical History				
Transferred from another hospital		66 (31.1%)	168 (30.0%)	0.760
Decreased preoperative functional status		97 (45.8%)	213 (38.0%)	0.051
CVD		27 (12.7%)	74 (13.2%)	0.860
CAD		36 (17.0%)	92 (16.4%)	0.854
CHF		26 (12.3%)	73 (13.0%)	0.775
COPD		80 (37.7%)	182 (32.5%)	0.170
DM		38 (17.9%)	87 (15.5%)	0.421
HD		4 (1.9%)	17 (3.0%)	0.381
HTN		186 (87.7%)	497 (88.8%)	0.694
Smoking		158 (74.5%)	432 (77.1%)	0.445
Preoperative hemoglobin, g/dl		12.05 ± 2.06	11.83 ± 2.11	0.188
Preoperative creatinine, mg/dl		1.03 ± 0.44	1.13 ± 0.51	0.017
Preoperative maximal aortic diameter, mm		58.87 ± 15.19	56.04 ± 15.82	0.025
Presentation, ruptured or symptomatic not ruptured		106 (50.0%)	290 (51.8%)	0.658
Urgency, urgent or emergent		73 (34.4%)	180 (32.1%)	0.545
Aortic pathology	Aneurysm	138 (65.1%)	293 (52.3%)	
	Dissection	43 (20.3%)	204 (36.4%)	<0.001
	Other	31 (14.6%)	63 (11.3%)	

Medication history				
Aspirin		112 (52.8%)	272 (48.6%)	0.291
P2Y12 inhibitors		20 (9.4%)	38 (6.8%)	0.213
Statins		122 (57.5%)	303 (54.1%)	0.391
Beta blockers		141 (66.5%)	401 (71.6%)	0.167
ACE inhibitors		95 (44.8%)	204 (36.4%)	0.033
Anticoagulants		36 (17.0%)	81 (14.5%)	0.384
Surgical History				
CABG		23 (10.8%)	52 (9.3%)	0.513
PCI		27 (12.7%)	68 (12.1%)	0.823
CEA or CAS		9 (4.2%)	17 (3.0%)	0.406
Aortic aneurysm repair		51 (24.1%)	167 (29.8%)	0.112
Bypass surgery		15 (7.1%)	50 (8.9%)	0.408
PVI		9 (4.2%)	39 (7.0%)	0.163
Aortic surgery, open or endovascular		62 (29.2%)	205 (36.6%)	0.055
Intraoperative characteristics				
Anesthesia, general		199 (93.9%)	547 (97.7%)	0.009
ASA Class	Class 1	0	1 (0.2%)	
	Class 2	3 (1.4%)	9 (1.6%)	
	Class 3	70 (33.0%)	198 (35.4%)	0.925
	Class 4	127 (59.9%)	324 (57.9%)	
	Class 5	12 (5.7%)	28 (5.0%)	
Contrast, ml		136.02 ± 76.66	132.59 ± 97.10	0.644
Crystalloids, ml		1797.62 ± 1135.84	1641.82 ± 1041.48	0.071
EBL, ml		249.79 ± 603.99	293.16 ± 678.07	0.414
Fluoroscopy time, min		31.40 ± 26.38	36.71± 32.27	0.020
Total PRBC, units		3.01 ± 9.57	2.17 ± 5.74	0.230
Total procedure time, min		149.15 ± 87.07	155.66 ± 95.00	0.385
Number of aortic devices		2.25 ± 1.00	2.12 ± 0.89	0.080

Discrete variables presented as numbers (%); continuous variables presented as mean ± standard deviation; CVD, cerebrovascular disease; CAD, coronary artery disease; CHF, congestive heart failure, COPD, chronic obstructive pulmonary disease; DM, diabetes mellitus; HD, hemodialysis; HTN, hypertension; ACE, angiotensin-converting enzyme; CABG, coronary artery bypass graft; PCI, percutaneous coronary intervention; CEA, carotid endarterectomy; CAS, carotid artery stenting; PVI, peripheral vascular intervention; ASA, American Society of Anesthesiologists; EBL, estimated blood loss; PRBC, packed red blood cells; min, minute; ml, milliliter

Table 2. Univariate and multivariate association of the CA flow status with outcome variables				
	Univariate		Multivariate	
	OR	p-value	aOR	p-value
Overall 30-day mortality	2.04 [1.17; 3.54]	0.011	2.70 [1.12; 6.46]	0.026
Disease/treatment-related mortality	1.95 [1.02; 3.70]	0.042	3.21 [1.02; 10.13]	0.047
Postoperative SCI	1.12 [0.55; 2.32]	0.751	0.97 [0.43; 2.19]	0.944
Postoperative intestinal ischemia	1.91[0.59; 6.08]	0.274	1.03 [0.76; 10.68]	0.122
Postoperative intestinal ischemia requiring intervention	3.57 [0.79; 16.09]	0.098	3.82 [0.66; 22.29]	0.136
MACE	1.59 [1.01; 2.49]	0.043	1.37 [0.83; 2.27]	0.218
Postoperative Complications	1.42 [1.00; 2.00]	0.049	1.19 [0.79; 1.79]	0.417
Completion endoleak	2.15 [1.22; 3.79]	0.008	1.50 [0.79; 2.83]	0.215
Completion Type 1b EL	2.26 [0.96; 5.31]	0.061	1.63 [0.59; 4.50]	0.348
Completion Type 2 EL	3.62 [1.24; 10.56]	0.018	4.77 [1.11; 20.43]	0.035
Aortic reinterventions	1.22 [0.59; 2.54]	0.591	1.16 [0.51; 2.63]	0.731
ICU Stay, days§	0.92 [-0.04; 1.87]	0.060	0.56 [-0.28; 1.40]	0.193
Total length of stay, days§	3.32 [-3.76; 10.39]	0.358	4.32 [-2.93; 11.57]	0.242

OR, odds ratio; aOR, adjusted odds ration; MACE, major adverse cardiovascular events; SCI, spinal cord ischemia, EL, endoleak ; § , slope coefficient of the univariable (B1) and adjusted slope coefficient (aB1) of multivariable linear regression model for continuous outcome variables. Multivariable regression models are adjusted for baseline demographic characteristics (age, sex, ethnicity, race, BMI), medic al history (CAD, CHF, COPD, DM, HD, smoking status, decreased preoperative functional status), surgical history (prior aortic repair, CABG, CEA or CAS), medication history (Aspirin, P2Y12 inhibitors, ACE inhibitors, Betta blockers, Statis), Presentation, Urgency, Aortic Diameter, Preoperative creatinine, Preoperative hemoglobin, Anesthesia, ASA class, Number of stent-grafts

Table 3. Univariate and multivariate association of the CA flow status with outcome variables in aneurysm and dissection subgroups

	Aneurysm				Dissection			
	Univariate		Multivariate		Univariate		Multivariate	
	OR	p-value	aOR	p-value	OR	p-value	aOR	p-value
Overall 30-day mortality	2.30 [1.18; 4.51]	0.015	2.95 [1.03; 8.42]	0.044	1.63 [0.42; 6.27]	0.481	1.26 [0.23; 6.99]	0.990
Disease/treatment-related mortality	2.25 [1.04; 4.86]	0.039	2.77 [1.07; 7.22]	0.036	1.20 [0.25; 5.84]	0.826	1.19 [0.14; 9.83]	0.871
Postoperative SCI	1.83 [0.77; 4.34]	0.171	1.58 [0.62; 4.06]	0.338	0.46 [0.06; 3.71]	0.467	0.47 [0.05; 4.47]	0.515
Postoperative intestinal ischemia	8.72 [0.97; 78.73]	0.054	5.72 [0.52; 63.17]	0.155	0.79 [0.09; 6.70]	0.825	0.55 [0.04; 8.49]	0.668
Postoperative intestinal ischemia requiring intervention	6.49 [0.67; 62.96]	0.107	5.79 [0.44; 76.32]	0.182	2.41 [0.21; 27.14]	0.478	3.09 [0.25; 38.88]	0.383
MACE	1.99 [1.11; 3.59]	0.022	2.06 [1.00;4.24]	0.050	1.06 [0.41; 2.76]	0.900	0.90 [0.31; 2.56]	0.837
Postoperative Complications	1.68 [1.08; 2.61]	0.022	1.84 [1.04; 3.24]	0.036	1.15 [0.56; 2.35]	0.712	0.81 [0.34; 1.94]	0.638
Completion Type EL	1.87 [1.02; 3.42]	0.042	1.58 [0.82; 3.06]	0.172	1.59 [0.16; 15.71]	0.689	1.51 [0.14; 16.55]	0.738
Completion Type 1 EL	1.97 [0.78; 4.98]	0.149	1.44 [0.48; 4.34]	0.516	2.41 [0.21; 27.14]	0.478	I.78 [0.12; 25.48]	0.672
Completion Type 2 EL	2.94 [1.00; 8.66]	0.050	4.48 [1.03; 19.47]	0.046	-	-	-	-
Aortic Reinterventions	2.51 [0.89; 7.08]	0.081	2.28 [0.69; 7.57]	0.178	0.26 [0.03; 2.02]	0.199	0.28 [0.03; 2.36]	0.240
ICU Stay [days]$	1.44 [0.18; 2.67]	0.025	0.84 [-0.27; I.95]	0.137	I.04 [-0.66; 2.74]	0.231	0.86 [-0.72; 2.41]	0.287
Total Length of Stay {days} $	8.24 [-0.72; 17.20]	0.071	7.94 [-1.16; 17.04]	0.087	-5.56 [-22.86; 11.75]	0.525	-4.44 [-22.19; 13.31]	0.623

Or, odds ratio; aOr adjusted odds ratio; MACE, major adverse cardiovascular events; SCI, spinal cord ischemia, EL, endoleak*, slope coefficient of the univariable (B1] and adjusted slope coefficient (aB1] of multivariable linear regression model for continuous outcome variables.
Multivariable regression models are adjusted for baseline demographic characteristics (age, sex, ethnicity, BMI], medical history (CAD, CHF, COPD, DM, HD, smoking status, decreased preoperative functional status], surgical history (prior aortic repair, CABG, CEA or AS], medication history (Aspirin, P2Y12 inhibitors, ACE inhibitors, Beta blockers, Statins], Presentation, Urgency, Aortic Diameter, Preoperative creatinine, Preoperative hemoglobin, Anesthesia, ASA Class,Number of stent-grafts.

22: THE IMPACT OF CONCOMITANT PROXIMAL CAROTID INTERVENTIONS ON RE-VASCULARIZATION AND OUTCOMES

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Objective: Atherosclerotic stenosis at the carotid bifurcation and ipsilateral proximal common carotid artery (CCA) is an uncommon cerebrovascular condition. There has not been a standard approach for this multilevel condition. We aim to examine the postoperative outcome following ipsilateral proximal endovascular intervention with carotid endarterectomy (CEA+IPE), transfemoral carotid artery stenting (TFCAS+IPE), and transcarotid artery revascularization (TCAR+IPE).

Methods: A retrospective review of patients undergoing concomitant proximal lesion intervention with CEA+IPE, TFCAS+IPE, and TCAR+IPE in the Vascular Quality Initiative database between 2016 and 2023 was performed. The primary outcome was in-hospital major adverse cardiac events (MACEs), including stroke, death, and MI. Secondary outcome was extended length of stay (eLOS). Logistic regression models were used for multivariate analyses, adjusting for potential confounders. Variable selected using stepwise regression and clinically relevant variables were in the final models.

Results: Our study included 843 (61.6%) CEA+IPE, 297 (21.7%) TFCAS+IPE, and 228 (16.7%) TCAR+IPE. TCAR patients were more likely to have history of stroke, greater than 80% ipsilateral carotid stenosis, diabetes, CAD, and CKD compared to CEA+IPE and TFCAS+IPE. When compared to CEA+IPE, both TCAR+IPE and TFCAS+IPE exhibited no difference in combined stroke/death/MI (aOR=0.48, [95% CI:0.20-1.10], P=0.08), (aOR=1.08, [95% CI: 0.58-1.98], P=0.81), in stroke (aOR=1.07, [95% CI:0.42-2.72], P=0.9), (aOR=1.36, [95% CI:0.59-3.16], P=0.473), or in death (aOR=0.49, [95% CI:0.11,2.22], P=0.35), (aOR=0.78, [95% CI:0.25-2.43], P=0.67), respectively. However, there was a significant decrease eLOS (aOR=0.59, [95% CI: 0.43-0.82], P=0.002), (aOR=0.42, [95% CI: 0.31-0.59], P<0.001) in TCAR+IPE and TFCAS+IPE compared to CEA+IPE. Furthermore, TCAR+IPE and TFCAS+IPE had similar combined stroke/death/MI (aOR=0.43, [95% CI: 0.17-1.10], P=0.078) and risk of eLOS (aOR=1.4, [95% CI: 0.91-2.19], P=0.12) (Table I).

Conclusion: There is no significant difference observed in the risk of MACEs in CEA+IPE, TFCAS+IPE, and TCAR+IPE. However, endovascular techniques were associated with shorter hospital stay. Notably, a trend towards reduction in MACEs was observed in TCAR+IPE compared to CEA+IPE and TFCAS+IPE, suggesting a promising minimally invasive approach. Further research is needed to establish standard approach to this multilevel condition.

Table 1: Multivariate outcomes for CEA+IPE, TFCAS+JPE, and TCAR+IPE. aOR=adjusted In-Hospital						
	TFCAS vs CEA+IPE		TCAR vs CEA+IPE		TCAR vs TFCAS	
	aOR (95% CI)	p-value	aOR (95% CI)	p-value	aOR (95% CI)	p-value
Stroke/Death/MI	1.08 (0.58-1.98)	0.814	0.48 (0.20-1.10)	0.083	0.43 (0.17-1.10)	0.078
Stroke/Death	1.15 (0.56-2.38)	0.703	0.72 (0.30-1.70)	0.447	0.68 (0.25-1.84)	0.452
Stroke	1.36 (0.59-3.16)	0.473	1.07 (0.42-2.72)	0.9	0.85 (0.29-2.51)	0.764
Death	0.78 (0.25-2.43)	0.667	0.49 (0.11-2.22)	0.354	0.64 (0.12-3.57)	0.612
MI	0.73 (0.27-1.99)	0.538	0.15 (0.02-1.11)	0.064	0.17 (0.02-1.46)	0.105
eLOS	0.42 (0.31-0.59)	<0.001	0.59 (0.43-0.82)	0.002	1.4 (0.91-2.19)	0.12

aOR=adjusted odds ratio, CI=confidence interval, MI=myocardial infarction, eLOS=extended length of stay.

23: THE RELATIONSHIP BETWEEN SMOKING CESSATION AND OUTCOMES OF THORACIC ENDOVASCULAR AORTIC REPAIR

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Background: Smoking is known to be a strong predictive factor for deleterious outcomes after surgical procedures; however, there is limited research that has focused on the effect of smoking cessation on the outcomes of Thoracic Endovascular Aortic Repair (TEVAR). Using a multi-institutional database, we aimed to determine if smoking cessation was associated with improved outcomes following TEVAR.

Methods: Patients undergoing TEVAR in VQI from 2003 to 2023 were categorized into 3 groups: never smokers (NS), those who quit smoking >1 month prior (QS), or current smokers/quit < 30 days prior (CS). Primary outcomes include perioperative death, stroke, MI, and spinal cord ischemia (SCI). Secondary outcomes include cardiac and pulmonary complications, prolonged length of stay (>2 days), leg and bowel ischemia. A multivariate logistic regression analysis was conducted, controlling for confounding variables. A subanalysis was performed to determine the impact of smoking cessation by TEVAR indication: Thoracic Aortic Aneurysm (TAA) and Type B Aortic Dissection (TBAD). Long term outcomes were also analyzed using Kaplan-Meier and Cox regression models.

Results: We studied 1,435 (30.4%) NS, 1,867 (39.6%) QS, and 1,412 (30.0%) CS. Patients who quit more than 1 month prior were older and had the highest rate of comorbidities including diabetes, MI, and CHF. The multivariate analysis showed that current smokers had no significant difference in odds of perioperative death (aOR=1.40;[95% CI: 0.86-2.25];p=0.2), stroke (aOR=1.19;[95% CI: 0.71-1.99];p=0.5), MI (aOR=1.54;[95% CI: 0.74-3.17];p=0.2), and SCI (aOR=1.52;[95% CI: 0.95-2.45];p=0.083), compared to QS patients [Table I]. However, CS had increased odds of postoperative leg ischemia (aOR=3.75;[95%CI:1.79-8.25];p<0.001) and 1-year mortality (aOR=1.34;[95%CI:1.01-1.79] p=0.042) compared to QS patients [Table I]. When stratified by indication, CS TAA patients were not associated with a significant increase in primary postoperative outcomes; however, they had higher rates of leg ischemia (aOR=3.46;[95%CI:1.28-10.1];p=0.017) and 3-year mortality (aOR=1.44;[95%CI:1.02-2.03];p=0.036), when compared to QS TAA patients [Table II]. In TBAD patients, CS had no significant difference in postoperative outcomes, but showed increased odds of 1-year mortality (aOR=2.51;[95%CI:1.17-5.54];p=0.02) compared to QS [Table II].

Conclusion: Current smokers had similar risk of death, stroke, MI, and SCI when compared to patients who quit at least 1 month prior to TEVAR, regardless of their indication. However, there was a significant increased risk of 1-year mortality in current smokers in all patients, with persistent increase in mortality at 3 years amongst patients with TAA. These results suggest that in the elective situation, smoking cessation counseling should be undertaken to improve long term outcomes.

Table I: Multivariate analysis of smoking status in TEVAR patients (never smoked = reference)

	Quit > 1 mo. vs Never Smoked		Current Smoker vs Never Smoked		Current Smoker vs Quit > 1 mo.	
	OR [CI]	p-value	OR [CI]	p-value	OR [CI]	p-value
Perioperative Death	0.66 [0.42-1.04]	0.069	1.09 [0.68-1.77]	0.7	1.40 [0.86-2.25]	0.2
Stroke	0.94 [0.57-1.55]	0.8	1.19 [0.70-2.03]	0.5	1.19 [0.71-1.99]	0.5
MI	1.24 [0.58-2.78]	0.6	1.88 [0.86-4.27]	0.12	1.54 [0.74-3.17]	0.2
Pulmonary Complications	0.86 [0.61-1.22]	0.4	1.06 [0.75-1.51]	0.7	1.13 [0.79-	0.5
Pneumonia	0.76 [0.46-1.25]	0.3	1.14 [0.72-1.81]	0.6	1.62]1.32 [0.79-2.21]	0.3
Cardiac Complication	1.11 [0.59-2.16]	0.8	1.77 [0.90-3.55]	0.10	1.63 [0.88-2.99]	0.12
CHF	1.02 [0.35-3.39]	>0.9	2.69 [0.86-9.45]	0.10	2.64 [0.98-7.17]	0.054
Spinal Cord Ischemia	1.14 [0.68-1.98]	0.6	1.93 [1.14-3.36]	0.017	1.52 [0.95-2.45]	0.083
Leg Ischemia	0.55 [0.25-1.20]	0.14	1.81 [0.93-3.66]	0.087	3.75 [1.79-8.25]	<.001
AKI	1.10 [0.80-1.52]	0.6	1.21 [0.87-1.70]	0.3	1.11 [0.80-1.55]	0.5
Dialysis	1.02 [0.43-2.42]	>0.9	1.61 [0.74-3.58]	0.2	1.59 [0.72-3.59]	0.3
Bowel Ischemia	0.52 [0.20-1.39]	0.2	0.61 [0.23-1.57]	0.3	0.81 [0.29-2.20]	0.7
Length of stay >2	0.97 [0.78-1.22]	0.8	0.98 [0.77-1.25]	0.9	0.95 [0.75-1.20]	0.7
1 year death	0.95 [0.72-1.27]	0.7	1.35 [0.99-1.86]	0.059	1.34 [1.01-1.79]	0.042
3 year death	0.99 [0.77-1.28]	>0.9	1.32 [1.00-1.75]	<.001	1.27 [0.98-1.63]	0.067

*Adjusting for the following confounders: age, sex, race, BMI, diabetes, prior myocardial infarction, prior CHF, prior COPD, renal dysfunction, anemia, aspirin, statin, ACE/ARB

Table II: Multivariate analysis of smoking status in TEVAR TAA patients and TBAD patients (never smoked = reference)

	TAA				TBAD			
	Current Smoker vs Never Smoked		Current Smoker vs Quit > 1 mo.		Current Smoker vs Never Smoked		Current Smoker vs Quit > 1 mo.	
	OR [CI]	p-value	OR [CI]	p-value	OR [CI]	p-value	OR [CI]	p-value
Perioperative Death	1.17 [0.51-2.78]	0.7	1.84 [0.90-3.75]	0.093	1.62 [0.64-4.11]	0.0.3	1.74 [0.63- 4.95]	0.3
Stroke	0.98 [0.39-2.45]	>0.9	1.10 [0.48-2.44]	0.8	1.90 [0.59-6.58]	0.3	0.98 [0.25-3.86]	>0.9
MI	1.13 [0.35-3.80]	0.8	1.15 [0.40-3.12]	0.8	1.45 [0.63-3.39]	0.4	0.39 [0.01-9.42]	0.6
Pulmonary Complications	1.13 [0.56-2.33]	0.7	1.02 [0.57-1.78]	>0.9	1.45 [0.63-3.39]	0.4	1.66 [0.65-4.36]	0.3
Pneumonia	1.42 [0.46-4.92]	0.6	1.28 [0.52-3.03]	0.6	8.34 [1.38-72.2]	0.031	-	-
Cardiac Complication	1.02 [0.38-2.76]	>0.9	1.12 [0.47-2.56]	0.8	2.32 [0.41-14.4]	0.3	3.62 [0.45-35.5]	0.2
CHF	1.29 [0.25-7.41]	0.8	1.38 [0.32-5.33]	0.6	-	-	-	-
Spinal Cord Ischemia	2.15 [0.89-5.79]	0.10	1.42 [0.72-2.80]	0.3	2.64 [0.86-9.19]	0.10	1.11 [0.38-3.32]	0.9
Leg Ischemia	2.05 [0.73-6.42]	0.2	3.46 [1.28-10.1]	0.017	0.97 [0.16-5.63]	>0.9	-	-
AKI	1.03 [0.54-2.00]	>0.9	0.72 [0.42-1.21]	0.2	1.04 [0.51-2.10]	>0.9	1.50 [0.66-3.50]	0.3
Dialysis	-	-	0.76 [0.21-2.55]	0.7	1.21 [0.23-6.33]	0.8	8.28 [0.92-126]	0.082
Bowel Ischemia	1.31 [0.24-10.3]	0.8	2.35 [0.54- 11.5]	0.3	0.47 [0.01-8.23]	0.6	-	-
Length of stay >2	0.91 [0.63-1.31]	0.6	0.83 [0.61-1.14]	0.3	0.89 [0.45-1.77]	0.7	0.42 [0.18-0.94]	0.038
1 year death	1.66 [1.01-2.77]	0.049	1.48 [0.99-2.19]	0.052	2.02 [0.98-4.22]	0.058	2.51 [1.17-5.54]	0.020
3 year death	1.74 [1.12-2.73]	0.014	1.44 [1.02- 2.03]	0.036	1.60 [0.85-3.02]	0.15	1.84 [0.94-3.64]	0.078

*Adjusting for the following confounders: age, sex, race, BMI, diabetes, prior myocardial infarction, prior CHF, prior COPD, renal dysfunction, anemia, aspirin, statin, ACE/AR

24: THE FATE OF OCTAGENARIANS AFTER FOUR-VESSEL PHYSICIAN-MODIFIED ENDOGRAFTING

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Background: With the global availability of endovascular repairs for abdominal aortic aneurysms, the overall prevalence of elective repairs for simple and complex endovascular aneurysm repairs (EVAR) has increased. With an increasing aging population attention regarding surgical fitness must be considered. As endovascular aneurysm repairs (EVAR) is increasingly performed in patients in their 80s and 90s, our study investigates outcomes in Octogenarians requiring complex abdominal and thoracoabdominal aortic aneurysms utilizing physician-modified endovascular grafts (PMEGs).

Methods: Retrospective review of all patients undergoing an abdominal or thoracoabdominal four vessel fenestrated PMEG repair at a single quaternary vascular center from 2019-2023 was collected. Two groups were considered: 1. octogenarians or 2. non-octogenarians. Demographic data included length of stay (LOS), CYDAR 3D overlays for surgical guidance, contrast volume (ml), fluoroscopy time (min), procedure length (mins), mortality, blood loss (ml), pre-operative and post operative renal function, 30-day readmission, and post-op delirium. Univariate analyses were performed and a p-value less than 0.05 was considered statistically significant.

Results: A total of 21 PMEG patients were analyzed: 7 in the octogenarian group and 14 in the non- octogenarian group. In the univariate analysis there was no statistical difference in the non- octogenarian and octogenarian aortic aneurysm size (6.20.7 vs. 6.7 ? 1.5, p=0.471). In the non-octogenarian group measured creatine function increased by 54% as compared to 4.5% in the octogenarian group. There was no statistical difference in the contrast volume in mL (105.9 ? 57.5 vs. 90.3 ? 53.5, p=0.682), fluoroscopy time in mins (98.1 63.7 vs. 66.6 ? 63.3, p=0.494), radiation exposure in mGy (2,437 ? 1,433 vs. 3,405 ? 4,218, p=0.494). While there was no statistical difference in the average length of stay (2.3 days ? 3.5 vs. 6.8 ? 8.5, p = 0.263) or intensive care unit length of stay (4.8 days ? 5.1 vs. ? 8.5 ? 8.6, p = 0.369) the octogenarian group spent more time in the hospital on average. There was no statistical increase in post operative delirium (p=0.147), 30-day mortality (p=0.599), and 30-day readmission (p=0.568).

Conclusions: Octogenarians in our limited cohort had similar intra-operative and post-operative outcomes as non-octagenarians. While no statistical difference was seen between the two groups, we did note decreased kidney function in all post-operative PMEGs. No statistically significant differences in delirium, 30 day readmission or 30 day mortality was seen between the two groups. The octogenarian group did have clinically longer hospital and ICU length of stay. Our data shows that PMEG is safe in carefully-selected octogenarian patients with acceptable clinical outcomes. Patients' comorbidities and graft model may influence EVAR long-term results.

25: FENESTRATED/BRANCHED ENDOVASCULAR REPAIR OF THORACOABDOMINAL AORTIC ANEURYSMS: A CASE SERIES FROM A COMMUNITY HOSPITAL

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Introduction: Fenestrated/Branched Endovascular Aneurysm Repair (F/BEVAR) has established itself as a prominent therapy for managing complex thoracoabdominal aortic aneurysms (TAAA). However, the application of these techniques in a community hospital setting presents distinctive challenges. This study aims to articulate our experiences, shedding light on outcomes, technical nuances, and the routine incorporation of spinal drainage due to the unavailability of emergent rescue drainage.

Cases Presentation: We present a case series featuring three patients with thoracoabdominal aortic aneurysms (TAAA). All patients underwent staged endovascular repair using Cook Endografts, with the routine placement of a spinal drain prior to the second stage, demonstrating no complications from the drains. The first stage involved repairing the thoracic portion of the aneurysm and coil embolization of visceral branches as needed, in preparation for the second stage F/BEVAR. Fenestrated/Branched devices were all physician-modified endografts (PMEGs) with Cook Endografts. The series encompasses detailed clinical profiles, procedural specifics, and postoperative outcomes.

Discussion: Endovascular repair of TAAA in a community hospital setting is feasible with a well-established safety protocol addressing limitations. Our success in managing complex thoracoabdominal aortic aneurysms hinges on a safety protocol tailored to our resources. Despite the lack of evidence supporting the routine use of spinal drains, our decision to incorporate them stems from the unavailability of rescue drainage. This adaptive approach serves as a pragmatic solution in our setting, underscoring the importance of resource-conscious safety measures to optimize outcomes in these intricate interventions.

Conclusion: Our study provides valuable insights into the management of TAAA in a community hospital. The shared outcomes and experiences contribute to the evolving knowledge base, guiding the optimization of procedural protocols and reaffirming the feasibility of these techniques in resource-constrained healthcare environments.

28: MULTICENTER EXPERIENCE OF PHYSICIAN-MODIFIED FENESTRATED-BRANCHED ENDOVASCULAR AORTIC REPAIR FOR FAILED COMPLEX ENDOVASCULAR AORTIC ANEURYSM REPAIR

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Objectives: Type 1A endoleak after complex endovascular aortic aneurysm repairs (CEVAR) can be challenging to fix. We report a multicenter experience of physician-modified fenestrated- branched endovascular aortic repair (PM-FBEVAR) to rescue failed previous CEVAR.

Methods: A retrospective review of consecutive patients who underwent PM-FBEVAR for failed CEVAR at two high-volume aortic centers from 2018 to 2022 was performed. Patient characteristics, operative metrics, and outcomes were evaluated.

Results: Among 469 patients who underwent PM-FBEVAR during the study period, 10 were included in the study. Previous CEVAR included Zenith Fenestrated Commercial Endograft (ZFEN) (4), parallel grafting (3), and PM-FBEVAR (3). Median interval between the initial CEVAR and rescue PM-FBEVAR was 8.5 months (3-48 months). Type 1A endoleak was identified shortly after the initial CEVAR due to gutter leak (2) and infolding of ZFEN (1), and delayed after the initial CEVAR due to caudal migration (3) and seal zone dilation (4). CEVAR targeted a median of 3 vessels per patient, while rescue PM-FBEVAR targeted all available renal mesenteric vessels (median=4). Mean operative time was 261 min, fluoroscopy time was 67 min, and contrast use was 107 ml. Technical success was achieved in 80% of patients. There were no perioperative mortalities. The only perioperative major adverse event was acute kidney injury seen in 1 patient. Mean follow- up was 18 months, during which 5 patients (50%) underwent reinterventions for endoleak (3) and branch stenosis/thrombosis (2) (Table I). All-cause mortality was 20% due to non-aortic causes.

Conclusions: The relatively short interval between initial CEVAR and subsequent PM-FBEVAR in our study suggests that CEVAR techniques that incorporate <4 target vessels may be susceptible for early failure. PM-FBEVAR is a feasible option to repair failed CEVAR, albeit with a high rate of reintervention during follow-up.

Table I. Patient characteristics, operative metrics, and outcomes from PM-FBEVAR in CEVAR

	Outcome
Total patients	10
Male sex	8 (80%)
Age (years)	74.6 ± 8.5
Aneurysm diameter at PM-FBEVAR (mm)	71.8 ± 12.8
Indication for FB-EVAR in FEVAR	
Failed ZFEN	4 (40%)
Failed parallel grafting/snorkel	3 (30%)
Failed PM-FBEVAR	3 (30%)
Target vessels on redo PM-FBEVAR [median, IQR]	4 [0]
Procedure time (min)	261 ± 61.3
Contrast (cc)	107 ± 31.9
Fluoroscopy time (min)	67.2 ± 19
Technical success	8 (80%)
Celiac fenestration misalignment	1
Renal fenestration used for aberrant common	
hepatic artery	1
30-day mortality	0 (0%)
Major adverse events	
AKI	1 (10%)
Cardiac event	0 (0%)
Respiratory failure	0 (0%)
Bowel ischemia	0 (0%)
Stroke	0 (0%)
Spinal cord ischemia	0 (0%)
Follow-up (months)	18.2 ± 12.3
Reinterventions	
Endoleak reintervention	3 (30%)
Target vessel stenosis/thrombosis reintervention	2 (20%)
All-cause mortality	2 (20%)

29: TRANSCAROTID ARTERY REVASCULARIZATION VERSUS CAROTID ENDARTERECTOMY AMONG STANDARD RISK PATIENTS : MID AND LONG-TERM OUTCOMES

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Objectives: Transcarotid artery revascularization (TCAR) is widely accepted as minimally invasive procedure for carotid revascularization in surgically high-risk patients. The Centers for Medicare and Medicaid Services (CMS) recently approved TCAR in standard-risk (SR) patients. Prior studies in high-risk (HR) patients, showed comparable stroke or death rates between TCAR vs CEA and lower stroke rates compared to transfemoral carotid artery stenting (TFCAS). However, data regarding the mid-term outcomes of TCAR among SR patients is lacking. The aim of this study was to evaluate mid-term outcomes of TCAR vs CEA in SR patients using an updated real-world analysis.

Methods: We included 65,009 standard risk patients, 94.75% of whom underwent CEA and 5.25% of whom underwent TCAR between using the VQI-VISION data. Standard Risk was defined using the CMS anatomical and clinical criteria. The primary outcomes were 3-year survival post- procedure, assessed using Kaplan-Meier survival analysis and 3-year Hazard of mortality. Secondary outcomes included 30-day mortality, post-op stroke , and post-op myocardial infarction (MI).Kaplan-Meier survival curves were constructed to estimate survival probabilities , and the log-rank test was used to compare survival between the TCAR and CEA cohorts. Hazard ratios (HRs) and 95% confidence intervals (CIs) for 3-year mortality were estimated using a multivariable Cox proportional hazards model, adjusting for confounders, including those identified in the literature as affecting survival outcomes. The Cox model was verified for proportional hazards assumptions, and Schoenfeld residuals were used to test for violations.

Results: Crude 30 day mortality rate was 0.47% in the CEA group vs 0.41% in the TCAR group(p=0.63). 30-day mortality/stroke rate was 1.86% in CEA vs 1.96% in TCAR(p=0.68). TCAR was associated with lower risk of MI (OR=0.46,95%CI:0.23-0.9,P=0.002). (Fig 1). There was no difference in 1- year survival(97.5% vs 97.1%, log-rank p=0.21) and 3-year survival(94.7% vs 94.5%, log-rank p=0.24) in KM survival analysis.(Fig 2). After adjusting for relevant confounders, the 1-year,2- year and 3-year risks of mortality were not different between both groups(aHR 1.18, p=0.20; aHR 1.22, p=0.08 and aHR 1.15,p=0.2; aHR, respectively).

Conclusion: Using a large multi-institutional data in standard risk patients, we found lower risk of postoperative MI but no differences in mortality, mortality/stroke and 1-, 2- and 3-year survival. TCAR can be used safely in standard risk patients with comparable short and mid-term compared to CEA.

Figure 1. Adjusted Postop Outcomes: TCAR vs CEA in Standard Risk Patients

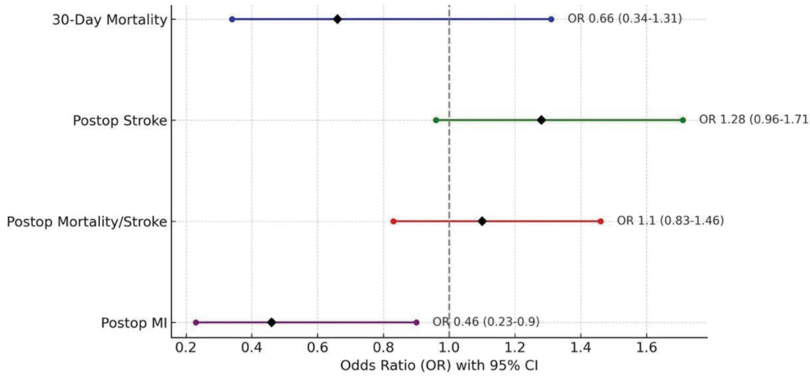
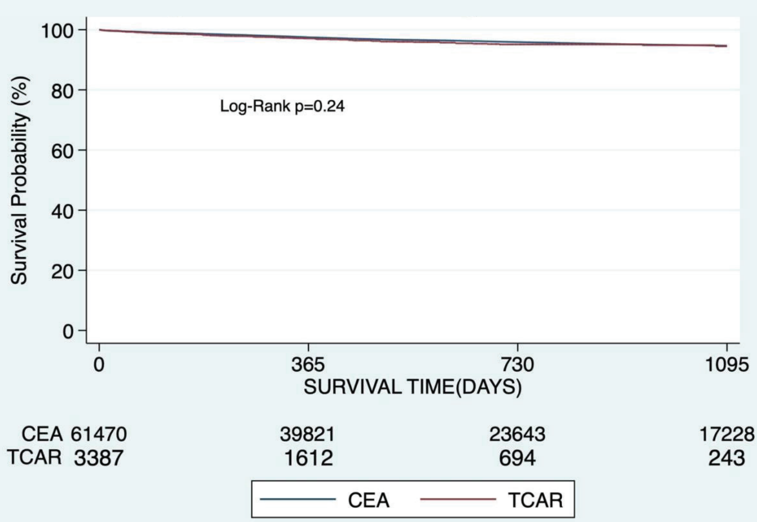


Figure 2. KM Curves Showing 3-Year Survival



30: EARLY GRAFT THROMBOSIS IN LOWER EXTREMITY ARTERIAL BYPASS: IDENTIFYING PROGNOSTIC FACTORS DURING INDEX ADMISSION

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Background: Early graft thrombosis following lower extremity bypass (LEB) has long served as a quality indicator of surgical management. A granular understanding of the risk factors for graft thrombosis could mitigate the potentially avoidable sequelae of this complication. Our study utilized Vascular Quality Initiative (VQI) data to identify predictor variables associated with graft thrombosis during index admission following LEB.

Methods: We queried the VQI database for patients receiving unilateral infrainguinal LEB between 2003- 2022 and excluded patients undergoing concomitant PVI or suprainguinal bypass. We formed 6 procedural groups: femoral-above knee popliteal bypass, femoral-below knee popliteal bypass, femoral-tibial bypass, femoral-ankle bypass, popliteal-tibial bypass, and popliteal-ankle bypass. Among these 6 groups, we utilized multivariable logistic regression to identify technical and perioperative characteristics that predicted early graft thrombosis.

Results: Of the 54,504 LEB procedures that met inclusion criteria, 11,906 (21.8%) underwent femoral-above knee popliteal, 17,541 (32.2%) femoral-below knee popliteal, 19,224 (35.3%) femoral-tibial, 1,414 (2.6%) femoral-ankle, 2,661 (4.9%) popliteal-tibial and 1,758 (3.2%) popliteal-ankle bypass procedures. At time of discharge, 1,012 (1.9%) required intervention for a thrombotic intervention and 814 (1.5%) were occluded. After adjusting for patient characteristics and comorbidities, we identified the following independent predictors for early graft thrombosis: female gender, distal target, symptomatic indication (rest pain and tissue loss), urgent/emergent presentation, and certain anticoagulation therapy. Conversely, use of preoperative statin, aspirin and clopidogrel were protective against early graft thrombosis (Table I). We found that 9.5% of the population were not receiving one or several of the protective medications identified (25.9% not receiving statins, 69.1% not receiving clopidogrel and 27.6% not receiving aspirin). Additionally, native vein conduits demonstrated lowest odds of graft thrombosis (Table I, Figure 1).

Conclusion: In this large national study of LEB, we identified several factors including distal target, urgent/emergent presentation, preoperative warfarin or rivaroxaban therapy and use of non-autologous conduits as independent predictors of graft thrombosis. Conversely, preoperative statin, antiplatelet

therapy and the use of native vein were protective against graft thrombosis. Despite their beneficial effect, we identified that 9.5% of the LEB population are not receiving statin and/or antiplatelet therapies, which serves as a potential quality improvement initiative. Our findings suggest that utilization of native vein conduit when possible, and promoting aggressive preoperative medical optimization including statin, aspirin and P2Y12 inhibitors may help avoid early graft occlusion in patients requiring lower extremity revascularization.

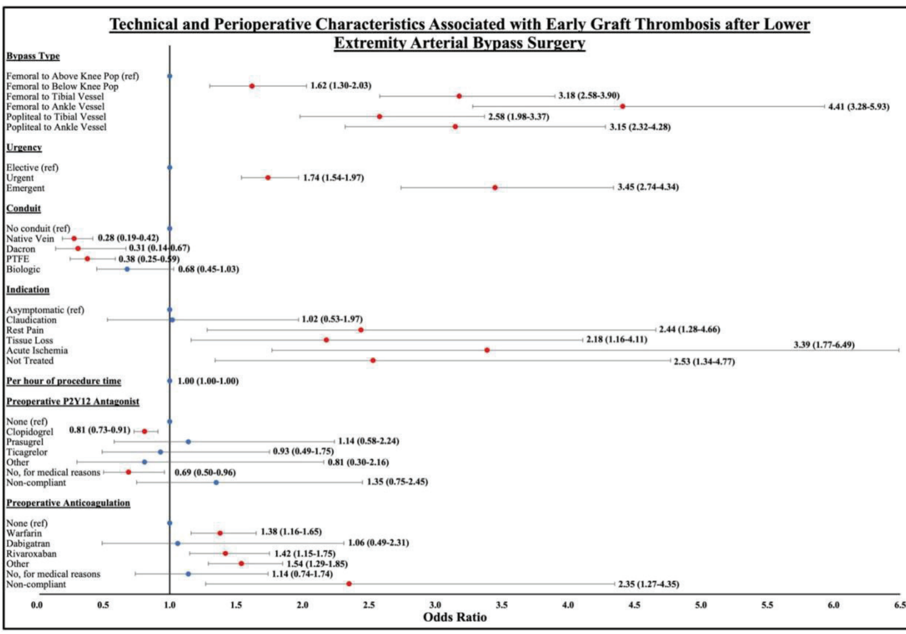

Table I. Multivariable Logistic Regression Model indicating Technical and Perioperative Characteristics Associated with Early Graft Thrombosis after Lower Extremity Arterial Bypass Surgery.

Perioperative Characteristic	OR (95% CI)	P-Value
Age	**0.99 (0.98-0.99)**	**<0.001**
Female Gender	**1.32 (1.20-1.45)**	**<0.001**
White Race	1.10 (1.00-1.22)	0.059
Diabetes	**0.83 (0.75-0.92)**	**<0.001**
Dialysis	1.02 (0.93-1.13)	0.638
CHF	1.03 (0.89-1.18)	0.731
Prior CABG	**0.87 (0.79-0.96)**	**0.008**
COPD	0.94 (0.83-1.05)	0.266
Smoking	**0.82 (0.73-0.93)**	**0.002**
Aspirin	**0.73 (0.66-0.81)**	**<0.001**
Statin	**0.85 (0.77-0.95)**	**0.003**
Baseline Hemoglobin	**0.92 (0.90-0.95)**	**<0.001**
BMI	1.00 (0.99-1.01)	0.835
Bypass Type		
Femoral to Above Knee Popliteal	1 (reference)	-
Femoral to Below Knee Popliteal	**1.62 (1.30-2.03)**	**<0.001**
Femoral to Tibial Vessel	**3.18 (2.58-3.90)**	**<0.001**
Femoral to Ankle Vessel	**4.41 (3.28-5.93)**	**<0.001**
Popliteal to Tibial Vessel	**2.58 (1.98-3.37)**	**<0.001**
Popliteal to Ankle Vessel	**3.15 (2.32-4.28)**	**<0.001**
Urgency		
Elective	1 (reference)	-
Urgent	**1.74 (1.54-1.97)**	**<0.001**
Emergent	**3.45 (2.75-4.34)**	**<0.001**
Conduit		
Native Vein	1 (reference)	-
Dacron	1.09 (0.56-2.11)	0.810
PTFE	**1.36 (1.20-1.55)**	**<0.001**
Non-autologous Biologic	**2.41 (1.95-2.97)**	**<0.001**

Indication	**OR (95% CI)**	**P-Value**
Asymptomatic	1 (reference)	-
Claudication	1.02 (0.53-1.97)	0.953
Rest Pain	**2.44 (1.28-4.66)**	**0.007**
Tissue Loss	**2.18 (1.16-4.11)**	**0.016**
Acute Ischemia	**3.39 (1.77-6.49)**	**<0.001**
Not Treated	**2.53 (1.34-4.77)**	**0.004**
Per hour procedure time	**1.00 (1.00-1.00)**	**<0.001**
Preoperative P2Y12 Antagonist Therapy		
None	1 (reference)	-
Clopidogrel	**0.81 (0.73-0.91)**	**<0.001**
Prasugrel	1.14 (0.58-2.24)	0.697
Ticagrelor	0.93 (0.49-1.75)	0.818
Other	0.81 (0.30-2.16)	0.668
No, for medical reasons	**0.69 (0.50-0.96)**	**0.027**
Non-compliant	1.35 (0.75-2.45)	0.314
Pre-operative Anticoagulation Therapy		
None	1 (reference)	-
Warfarin	**1.38 (1.16-1.65)**	**<0.001**
Dabigatran	1.06 (0.49-2.31)	0.874
Rivaroxaban	**1.42 (1.15-1.75)**	**0.001**
Other	**1.54 (1.29-1.85)**	**<0.001**
No, for medical reasons	1.14 (0.74-1.74)	0.548
Non-compliant	**2.35 (1.27-4.35)**	**0.007**

* Presented are odds ratios (95% confidence interval) from a multivariable model adjusting for age, sex, race, diabetes, dialysis, CHF, prior CABG, COPD, smoking, use of aspirin, statin, anticoagulation, BMI, urgency, indication and total procedural time.

31: PSOAS MUSCLE INDEX AS PREDICTOR OF WORSE OUTCOMES FOLLOWING MAJOR AMPUTATION FROM PERIPHERAL VASCULAR DISEASE

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Background: Frailty has been reported as a predictor of adverse outcomes after various surgical procedures. There are several models for defining frailty, including 5-factor modified frailty index, clinical frailty scale, and psoas muscle index. Psoas muscle index has been associated with higher postoperative mortality and complications after cardiac surgery, including aortic valve replacement and CABG, as well as after lower extremity revascularization (Juszczac 2018 et al, Kondo et al 2022). Our objective was to assess psoas muscle index as a predictor of outcomes after major amputation in patients with peripheral vascular disease.

Methods: We performed retrospective evaluation of patients undergoing major amputation (below-knee amputation, above-knee amputation) at a safety-net hospital from 2016-2022. Patients were evaluated based on CT scans within 6 months of amputation. Outcomes included post-operative 30-day mortality, wound complication, pneumonia, MI and 1 year mortality. Psoas muscle index was calculated using psoas muscle area measured from CT scans at the level of the L4 divided by the body surface area. We analyzed these using univariate and multivariate analysis comparing postoperative outcomes by gender and by psoas muscle index.

Results: A total of 106 patients were analyzed (68 males, 38 females). Females were more likely to have an AKA at first operation (55% vs 27%, p=0.005) or require AKA within 30 days after BKA (25% vs 6%, 0.01). We defined low psoas muscle index as the lower 40th percentile of all patients. The mean psoas index for males was 1088, whereas the mean psoas index for females was 787. Patients with low psoas muscle index were significantly more likely to have an AKA rather than a BKA at the first operation (61% vs 31%, p=0.01), as well as require AKA within 30 days after BKA (20% vs 10%, p=0.02). When we stratified by sex, females with low psoas muscle index were more likely to have wound complications within 30 days of surgery (21% vs 60%, p=0.01).

Conclusions: Our results found that low psoas muscle index is associated worse outcomes after major amputation, particularly in female patients. This data may be helpful for preoperative risk assessment and decision making regarding amputation level.

Table 1: Demographics by sex										
	AGE (MEAN)	LATERALITY (%LEFT)	ESRD (%)	DM (%)	HTN (%)	SMOKER CURRENT (%)	SMOKER FORMER (%)	CAD (%)	CHF (%)	HGB AIC (MEAN)
ALL	63.6	50.9	28.3	78.3	78.3	19.8	30.2	33.0	21.7	8.2
MALE	63.7	52.9	29.4	79.4	79.4	20.6	29.4	26.4	16.2	7.9
FEMALE	63.5	47.4	26.3	76.3	76.3	18.4	31.6	44.7	31.6	8.6

32: COMPARATIVE OUTCOMES OF REVASCULARIZATION MODALITIES IN CAROTID RESTENOSIS POST- CAROTID ARTERY STENTING

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Objective: Restenosis following Carotid Artery Stenting (CAS) is a complicated clinical scenario where data is notably sparse. The study's principal aim is to compare the current perioperative outcomes of Transfemoral carotid artery stenting (TFCAS), Transcarotid Carotid artery Stenting (TCAR), and Carotid endarterectomy (CEA) in patients with prior stenting, thereby filling this gap in existing research.

Methods: A retrospective analysis of the Vascular Quality Initiative (VQI) database spanning 2016 to 2023 was conducted on patients who had previously undergone CAS and subsequently received CEA, TFCAS, or TCAR due to restenosis. To account for potential confounders and baseline differences among the cohorts, multivariable logistic regression was employed. Main outcomes of the study included: The composition of Stroke/Death, Stroke/Death/Myocardial Infarction (MI), mortality rates at 30 days and one year, as well as the length of hospital stay (LOS) and cranial nerve injury (CNI).

Results: The study encompassed 2,394 patients with a prior ipsilateral CAS, among which 508 (21.2%) underwent CEA, 1109 (46.3%) received TFCAS, and 777 (32.4%) were treated with TCAR (Table I). In the comparison of TCAR vs. CEA, multivariate logistic regression revealed significantly lower rates of Stroke/Death (OR 0.43,95%CI:0.20,0.92,P=0.031), Stroke/Death/MI (OR 0.45, 95% CI:0.21, 0.97,P=0.041), and CNI (OR 0.09, 95% CI:0.03, 0.30,P<0.001) in the TCAR group. LOS was significantly shorter in TCAR and TFCAS compared to CEA (OR 0.48 & 0.50, 95%CI:0.36-0.64&0.35-0.73, respectively, P<0.001 for both). In comparing TCAR with TFCAS, TCAR was associated with significantly reduced incidences of Stroke/Death (OR2.45,95%CI:1.14,5.30,P=0.022) and Stroke/Death/MI(OR2.08,95%CI:1.02,4.25,P=0.042). In contrast, TFCAS demonstrated shorter LOS (OR0.72,95%CI:0.56,0.94,P=0.014) as shown in Table II.

Conclusion: Within this study, TCAR outperformed both TFCAS and CEA in terms of Stroke/Death and Stroke/Death/MI outcomes. TCAR had a reduced LOS compared to CEA, whereas patients undergoing TFCAS experienced shorter LOS than those treated with TCAR. Notably, the incidence of CNI was substantially lower in the TCAR cohort, exceeding a tenfold increase in frequency with CEA. The 30-day and one-year survival rates did not significantly diverge

across the evaluated modalities, which may be attributed to the constraints of the study's sample size. Despite the inherent limitations of a retrospective design precluding direct implications on current clinical guidelines, the salient trends observed here suggest a potential reevaluation of clinical approaches in such cases.

Table I: Univariate analysis of Postoperative Outcomes in Patients with Prior Carotid Stenting Undergoing CEA, TFCAS, or TCAR. Outcomes include Stroke/Death, Stroke/Death/MI, LOS, and 30-day & 1-year Mortality. Data on Cranial Nerve Injury (exclusive to CEA and TCAR) is also presented.

	TCAR	CEA	P	TFCAS	TCAR	P	TFCAS	CEA	P
N (%)	777 (60.47%)	508 (39.53%)		1109 (58.80%)	777 (41.20%)		1109 (68.58%)	508 (31.42%)	
Stroke/ Death	9 (1.16%)	15 (2.95%)	0.020	28 (2.52%)	9 (1.16%)	0.035	28 (2.52%)	15 (2.95%)	0.620
Stroke/ Death/ MI	11 (1.42%)	18 (3.54%)	0.012	30 (2.71%)	11 (1.42%)	0.059	30 (2.71%)	18 (3.54%)	0.357
30-day Mortality	9 (1.16%)	11 (2.17%)	0.154	21 (1.89%)	9 (1.16%)	0.209	21 (1.89%)	11 (2.17%)	0.716
1-year Mortality	32 (4.12%)	28 (5.51%)	0.247	61 (5.5%)	32 (4.12%)	0.172	61 (5.5%)	28 (5.51%)	0.993
LOS	203 (26.13%)	232	<0.001	233 (21.01%)	203 (26.13%)	0.009	233 (21.01%)	232 (45.67%)	<0.001
CNI	3 (0.48%)	(45.67%)	<0.001						

Table II: Adjusted Hazard Ratio (HR) For One-Year Mortality following CEA vs. TCAR vs. TFCAS. Adjusted Odds Ratio (OR) for post-operative outcomes of Stroke/Death, Stroke/Death/MI, 30-day mortality, LOS, and CNI.

	TCAR VS. CEA		TFCAS VS. TCAR		TFCAS VS. CEA	
	OR/HR	P-value	OR/HR	P-value	OR/HR	P-value
Stroke/Death	0.43 [0.20, 0.92]	0.031	2.45 [1.14, 5.30]	0.022	1.11 [0.58, 2.15]	0.750
Stroke/Death/MI	0.45 [0.21, 0.97]	0.041	2.08 [1.02, 4.25]	0.042	1.72 [0.82, 3.63]	0.153
30-day Mortality	0.51 [0.21, 1.25]	0.140	1.60 [0.72, 3.53]	0.245	0.90 [0.43, 1.89]	0.779
1-year Mortality	0.97 [0.55, 1.70]	0.919	1.10 [0.71, 1.71]	0.662	1.36 [0.84, 2.20]	0.210
LOS	0.48 [0.36, 0.64]	<0.001	0.72 [0.56, 0.94	0.014	0.50 [0.35, 0.73]	<0.001
CNI	0.095 [0.03, 0.30]	<0.001				

33: IMPACT OF ANEMIA AND TRANSFUSION ON PATIENTS UNDERGOING INFRAINGUINAL BYPASS

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Objectives: Liberal use of red blood cell (RBC) transfusion has been proposed to reduce major adverse events associated with preoperative anemia in patients undergoing vascular procedures. However, the benefits and optimal transfusion threshold have not been well defined in patients with peripheral vascular disease. This study evaluates the impact of preoperative anemia and transfusion on major adverse cardiac events (MACE), major adverse limb events (MALE) and mortality in patients undergoing infrainguinal bypass.

Methods: The Society for Vascular Surgeons Vascular Quality Initiative registry was queried for patients who underwent infrainguinal bypass. Emergent cases and patients with hemoglobin (Hgb) <7 were excluded. Patients were grouped by preoperative Hgb level (7-10 vs 10-12 vs >12 g/dL) then stratified by RBC transfusion status. The primary outcome was MACE and secondary outcomes were MALE, in-hospital mortality and 1-year survival. Multivariable analysis was performed for MACE and MALE.

Results: In total, 55,884 patients were analyzed of which 16% had Hgb 7-10, 26% had Hgb 10-12, and 58% had Hgb>12. On univariate analysis MACE, MALE, in-hospital mortality and 1-year survival were worse in the most anemic group. However, after stratification, patients who received transfusion had a significantly higher rate of MACE, MALE, and in-hospital mortality for each Hgb group. Multivariable analysis showed patients who received transfusion compared to those that did not had increased risk of MACE and MALE for all preoperative Hgb levels (MACE: OR 2-4, P<.0001; 2.8, P<.0001; 4.5, P<.0001, respectively and MALE: OR 2.1, P<.0001; 1.8, P<.0001;2.6, P<.0001, respectively). Transfusion had a larger negative impact on mortality than anemia or blood loss.

Conclusions: Preoperative anemia in patients undergoing infrainguinal bypass is associated with increased risk of MACE and MALE. However the risk of MACE, MALE, and in-hospital mortality was 2-3 fold higher for transfusion than anemia or blood loss at all Hgb levels >7 g/dL. These data suggest that rather than attenuating the risks of anemia, transfusion is an independent risk factor. A randomized trial is warranted to determine the optimal transfusion threshold for these patients.

34: CAROTID DISEASE TREATMENT MODALITY AND ITS ASSOCIATION WITH POST-OPERATIVE VASOACTIVE MEDICATION UTILIZATION AND HOSPITAL LENGTH OF STAY

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Background: Carotid artery disease is a major cause of stroke and the standard treatment has traditionally been a combination of medical management and intervention, including both carotid endarterectomy (CEA) and transfemoral carotid artery stenting (TF-CAS). In recent years, transcarotid artery revascularization (TCAR) has been adopted as a promising treatment as well following FDA approval in 2015. In terms of stroke reduction, TCAR has been found to have equivalent outcomes with CEA with shorter operative times. A known side effect of TCAR is the stimulation of baroreceptors in the carotid bulb resulting in bradycardia and blood pressure variability that may require vasopressor support. This has the potential to lengthen both ICU and entire hospital stay. The goal of this retrospective cohort study was to determine whether there is a difference in post-operative vasopressor or vasodilator treatment between traditional CEA, TF-CAS or TCAR and whether it affects ICU and/or overall hospital lengths of stay.

Method: The Kaiser Permanente Southern California regional database was queried from January 2018 to December 2022 for all patients who underwent CEA, TF-CAS or TCAR at any Southern California Permanente Hospital. Chi-Square and Kruskal-Wallis tests were used to analyze patient characteristics and compare medication use and ICU and post-intervention length of stay in each intervention modality.

Results: The regional database query yielded 2487 patients who had undergone CEA, TF-CAS or TCAR. The post-operative inpatient length of stay for TCAR patients (2.4 days) was shorter than CEA (3.6) and TF-CAS (5.4) ($p < 0.0001$). The ICU length of stay was lower for TCAR (1.4 days) than both CEA (1.7) and TF-CAS (1.5) ($p < 0.0041$). TCAR patients were more likely to have any IV vasoactive medication (19.3%) compared to CEA (6%) and TF-CAS (7.8%) ($p < 0.0001$). Also, TCAR patients were more likely to have midodrine prescribed at any point in their hospitalization (9%) compared to CEA (0.3%) and TF-CAS (1.2%) ($p < 0.001$).

Conclusion: TCAR patients were more likely to require IV vasoactive medication post-operatively compared to CEA and TF-CAS. This is likely secondary to baroreceptor stimulation by the stent deployment. Further investigation to analyze why this is not as frequently seen with TF-CAS would be beneficial. Despite this, TCAR had reduced ICU and hospital lengths of stay. Combining these findings with already reported benefits makes TCAR an attractive option in the operative treatment of carotid artery stenosis.

35: TRANSCAROTID ARTERY REVASCULARIZATION OUTPERFORMS TRANSFEMORAL CAROTID ARTERY STENTING ACROSS AORTIC ARCH TYPES AND DEGREES OF ATHEROSCLEROSIS

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Background: Transfemoral Carotid Artery Stenting (TFCAS) was currently approved for reimbursement by the Centers for Medicare and Medicaid Services (CMS) for treatment of standard risk patients. TFCAS in patients with complex aortic arch anatomy is known to be challenging with worse outcomes, and Transcarotid Artery Revascularization (TCAR) could be a preferable alternative in patients with complex arch anatomy. We aim to compare outcomes of TCAR versus TFCAS across all aortic arch types and degrees of arch atherosclerosis.

Method: All patients undergoing carotid artery stenting between September 2016 and October 2023 were identified in the VQ) database. Patients were stratified into four groups: Group-A (Mild Atherosclerosis and Type I/II Arch), Group-B (Mild Atherosclerosis and Type III Arch), Group-C (Moderate/Severe Atherosclerosis and Type I/II Arch), Group-D (Moderate/Severe Atherosclerosis and Type III Arch). The primary outcome was in-hospital composite stroke or death. ANOVA and $\chi2$ tests analyzed differences for baseline characteristics. Logistic regression models were adjusted for potential confounders, and backward stepwise selection was implemented to identify significant variables for inclusion in the final models.

Results: A total of 20,114 patients were included [Group-A:12,980 (64.53%); Group-B: 1,175 (5.84%); Group-C: 5,124 (25.47%); Group-D: 835 (4.15%)] (Table I). TCAR was more commonly performed across the four groups (72.21%, 67.06%, 74.94% 69.22%; p<0.001). Compared to patients with mild arch atherosclerosis, patients with advanced arch atherosclerosis in Group-C and Group-D were more likely to be female, hypertensive, smokers, and have CKD. Patients with Type-III arch in Group-B and Group-D were more likely to present with stroke preoperatively. On multivariable analysis, TCAR had less than half the risk of stroke/death and one-year mortality compared to TFCAS in the patients with the mildest atherosclerosis and simple arch anatomy (group A) (OR=0.43,95%CI:0.31-0.61,p<0.001; HR=0.42,95%CI:0.32-0.57,p<0.001) (Table II). Group-B patients with similar atherosclerosis but more complex arch anatomy had 70% lower odds of stroke/death with TCAR compared to TFCAS (OR=0.30,95%CI:0.12-0.75,p=0.01). Similar findings were also evident in patients with more severe atherosclerosis and simple arch anatomy (OR=0.66,95%CI:0.44-0.97,p=0.037). Patients with advanced arch atherosclerosis and complex arch (Group-D) showed the same outcome, but it was not statistically significant (OR=0.91,95%CI:0.39-2.16,p=0.834).

Conclusion: TCAR is safer than TFCAS not only in patients with advanced arch disease and complex anatomy, but also in patients with mild arch disease and simple arch configuration. Current CMS decision will likely increase stroke and death outcomes of carotid stenting nationally.

Table I: Baseline characteristics of patients undergoing carotid artery stenting stratified by arch type and degree of arch atherosclerosis

	Group A Mild Atherosclerosis and Type I-II Arch	Group B Mild Moderate - Severe Atherosclerosis	Group C Moderate - Severe Atherosclerosis and Type I-II	Group D Moderate - Severe Atherosclerosis	P-value
	12, 980 (64.53)	**1,175 (5.84)**	**5,124 (25.47)**	**835 (4.15)**	
Age [mean (SD)]	71.77 (9.10)	75.00 (8.41)	73.85 (8.49)	76.33 (8.27)	<0.001
Obesity (BMI>30)	4,634 (35.75)	293 (24.96)	1,699 (33.24)	193 (23.42)	<0.001
Sex (Female)	4,474 (34.47)	452 (38.47)	2,072 (40.44)	374 (44.79)	<0.001
Race (Non-white)	1,192 (9.19)	97 (8.26)	520 (10.15)	64 (7.66)	0.033
Ethnicity					
(Hispanic or	585 (4.52)	37 (3.15)	195 (3.81)	47 (5.63)	0.008
Insurance	8,770 (67.61)	903 (76.85)	3,681 (71.91)	658 (78.90)	<0.001
Symptomatic Status					
Amaurosis fugax	687 (5.29)	61 (5.19)	236 (4.61)	36 (4.31)	0.198
TIA	1,550 (11.94)	124 (10.55)	573 (11.18)	101 (12.10)	0.299
Stroke	2,874 (22.14)	277 (23.57)	1,041 (20.32)	211 (25.27)	0.001
Comorbidities					
Diabetes	4,957 (38.19)	347 (29.53)	2,068 (40.38)	265 (31.74)	<0.001
HTN	11,654 (89.78)	1,059 (90.13)	4,741 (92.60)	775 (93.04)	<0.001
CHF	2,090 (16.10)	176 (14.98)	1,003 (19.59)	166 (19.88)	<0.001
COPD	2,998 (23.10)	315 (26.83)	1,588 (31.02)	263 (31.50)	<0.001
CKD	4,337 (33.88)	391 (33.62)	1,957 (39.29)	306 (38.25)	<0.001
Dialysis	140 (1.08)	9 (0.77)	93 (1.82)	16 (1.92)	<0.001
ASA class IV-V	3,093 (24.21)	300 (26.11)	1,468 (29.14)	240 (29.02)	<0.001
Prior Procedures					
Prior CABG/PCI	4,880 (37.60)	399 (33.96)	2,128 (41.54)	303 (36.29)	<0.001
Prior Major	265 (2.04)	15 (1.28)	113 (2.21)	16 (1.92)	0.241
Prior Ipsilateral	1,977 (15.24)	139 (11.83)	751 (14.66)	115 (13.77)	0.012
Prior Contralateral CEA/CAS	1,902 (14.66)	166 (14.13)	903 (17.63)	147 (17.60)	<0.001

	Group A Mild Atherosclerosis and Type I-II Arch	Group B Mild Moderate - Severe Atherosclerosis	Group C Moderate - Severe Atherosclerosis and Type I-II	Group D Moderate - Severe Atherosclerosis	P-value
Ipsilateral	5,016 (48.18)	396 (45.67)	1,953 (47.88)	304 (50.00)	0.390
Contralateral	1,039 (9.34)	73 (7.90)	532 (12.21)	74 (11.23)	<0.001
Bovine Arch	1,369 (10.58)	121 (10.34)	527 (10.33)	81 (9.72)	0.104
Elective	10,797 (83.19)	986 (83.91)	4,373 (85.34)	674 (80.72)	<0.001
Smoking History					
Prior Smoker	6,129 (47.24)	552 (47.02)	2,690 (52.55)	428 (51.26)	<0.001
Current Smoker	2,949 (22.73)	267 (22.74)	1,322 (25.83)	200 (23.95)	<0.001
General	8,492 (65.44)	646 (55.03)	3,408 (66.51)	457 (54.73)	<0.001
Pre-operative Medication					
P2Y Inhibitor	11,461 (88.31)	1,033 (87.91)	4,528 (88.42)	745 (89.33)	0.793
Statin	11,645 (89.73)	1,047 (89.18)	4,610 (90.04)	755 (90.42)	0.746
Aspirin	11,789 (90.82)	1,066 (90.72)	4,601 (89.83)	746 (89.34)	0.130
Beta-blocker	6,934 (53.44)	600 (51.15)	2,926 (57.13)	472 (56.53)	<0.001
RAAS inhibitor	6,917 (53.30)	590 (50.21)	2,793 (54.53)	440 (52.69)	0.054
Anticoagulant	1,801 (13.88)	169 (14.38)	829 (16.19)	130 (15.57)	0.001

CHF: Congestive Heart Failure; COPD: Chronic Obstructive Pulmonary Disease; CKD: Chronic Kidney Disease; ASA: American Society of Anesthesiology; TIA: Transient Ischemic Attack; CEA: Carotid Endarterectomy; CAS: Carotid Artery Stenting; CABG: Coronary Artery Bypass Graft; PCI: Percutaneous Coronary Intervention

Table I: Outcomes of TCAR vs TFCAS Stratified to Aortic ARch Type and Degree of Atherosclerosis

	Group A TCAR vs TFCAS		Group B TCAR vs TFCAS		Group C TCAR vs TFCAS		Group D TCAR vs TFCAS	
	OR/HR (95% CI)	P-value	OR/HR (95% CI)	P-value	OR/HR (95% CI)	P-value	OR/HR (95% CI)	P-value
In-hospital outcomes								
Stroke/TIA	0.59 (0.46, 0.77)	**<0.001**	0.44 (0.18, 1.06)	0.066	0.69 (0.45, 1.04)	0.074	1.07 (0.45, 2.55)	0.872
Stroke/Death	0.43 (0.31, 0.61)	**<0.001**	0.30 (0.12, 0.75)	**0.010**	0.66 (0.44, 0.97)	**0.037**	0.91 (0.39, 2.16)	0.834
Stroke/Death/MI	0.52 (0.38, 0.72)	**<0.001**	0.38 (0.17, 0.85)	**0.018**	0.71 (0.49, 1.02)	0.064	0.75 (0.36, 1.58)	0.451
Length of stay (> 1 Day)	0.71 (0.60, 0.83)	**<0.001**	0.80 (0.58, 1.10)	0.175	0.89 (0.70, 1.13)	0.323	0.43 (0.23, 0.79)	**0.006**
Follow up								
One-year Mortality	0.42 (0.32, 0.57)	**<0.001**	1.06 (0.49, 2.30)	0.876	0.85 (0.61, 1.19)	0.340	1.22 (0.64, 2.32)	0.546

OR: Odds Ratio; HR: Hazard Ratio; CI: Confidence Interval; TIA: Transient Ischemic Attack; MI: Myocardial Infarction

36: POSTOPERATIVE STROKE AND MYOCARDIAL INFARCTION IMPACT ON ONE-YEAR MORTALITY FOLLOWING CAROTID REVASCULARIZATION

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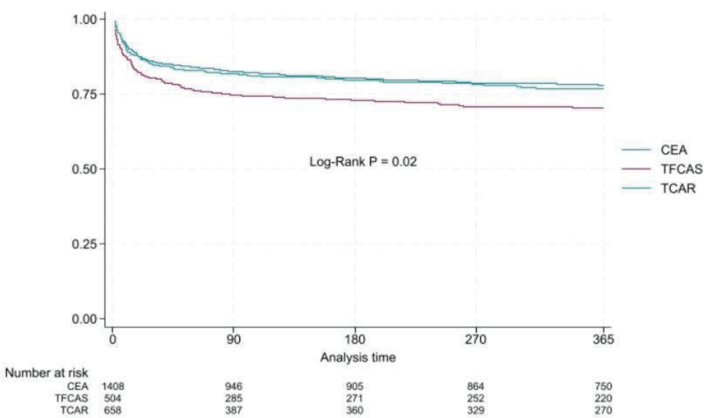
Objective: Postoperative stroke and MI are associated with devastating postoperative morbidity and mortality, therefore limiting the protective effect of carotid revascularization procedures. Moreover, there seems to be a relation between the severity of stroke and MI and the type of carotid revascularization technique. We aim to investigate the impact of in-hospital stroke or MI on one-year mortality following Carotid Endarterectomy (CEA), Transfemoral Carotid Artery Stenting (TFCAS), and Transcarotid Artery Revascularization (TCAR).

Methods: This is a retrospective analysis of patients undergoing CEA, TFCAS, and TCAR in the VQI database (2016–2023). Our primary outcome is one-year mortality in patients who developed in-hospital stroke or MI following carotid revascularization. Kaplan-Meier survival estimate, and Multivariable Cox regression analysis were applied to calculate Hazard ratios (HR) after adjusting for potential confounders.

Results: Our study included 125,657(62%) CEA, 25,529(12.6%) TFCAS, and 51,567(25.4%) TCAR. The hazards of 1-year mortality after in-hospital stroke were higher following CEA (aHR = 5.9[95%CI:5.1-6.8] P<0.001), TFCAS (aHR=4.2[95%CI:3.7-5.3] P<0.001), and TCAR (aHR=5.2[95%CI:4.1-6.5] P<0.001). The hazards of 1-year mortality after in-hospital MI were also higher following CEA (aHR=3.8[95%CI:3.1-4.6] P<0.001), TFCAS (aHR=3.5[95%CI:2.3-5.5] P<0.001), and TCAR (aHR=5.1[95%CI:3.6-7.2] P<0.001)(Table). This trend persisted in sub-analysis based on symptomatic status. At 1-year, TFCAS showed the lowest survival following in- hospital stroke or MI. Among patients who developed in-hospital stroke, there was no significant difference in one-year mortality between TCAR and CEA (aHR=0.93[95%CI:0.73-1.2] P=0.55). On the other hand, TFCAS was associated with a 50% higher hazard than CEA (aHR=1.5[95%CI:1.1-2.1] P=0.003). TCAR was associated with 30% reduction in this hazard compared to TFCAS (aHR=0.7[95%CI:0.55-0.94] P=0.015) (Table). Among patients who developed in-hospital MI, no significant difference was found between TCAR and CEA. However, TFCAS was associated with more than double the hazard of 1-year mortality compared to CEA (aHR=2.3[95%CI:1.2-4.2] P=0.007).

Conclusion: This multicenter study reveals critical insights into the impact of in-hospital major adverse events on one-year survival following carotid revascularization. The analysis indicates a significant increase in the hazards of one-year mortality following in-hospital stroke and MI. In patients who developed in-hospital stroke or MI, there was no significant difference in one-year survival between TCAR and CEA. On the contrary, TFCAS was associated with significant higher mortality compared to CEA indicating worse stroke or MI initially. On the other hand, TCAR was associated with better survival compared to TFCAS. The study highlights the importance of appropriate revascularization method selection to improve one-year survival.

Kaplain-Meier survival estimates following in-hospital stroke



Kaplain-Meier survival estimates following in-hospital MI

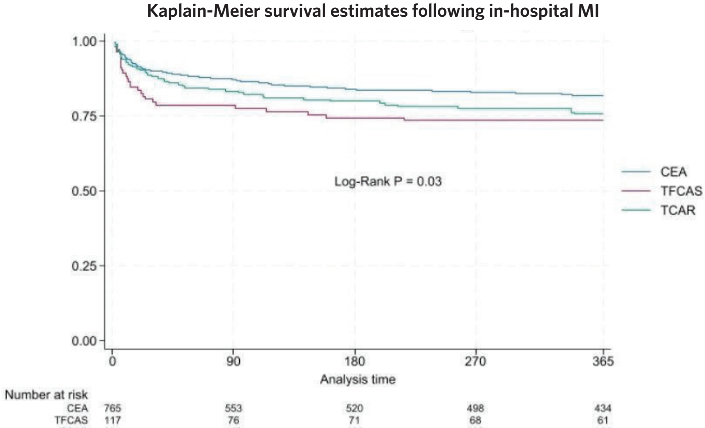


Table: Adjusted Hazard Ratios (aHRs) For One-Year Mortality after in-hospital stroke or in-hospital

	CEA		TFCAS		TCAR	
	Stroke vs. No Stroke		Stroke vs. No Stroke		Stroke vs. No Stroke	
	aHR (95% CI)	p-value	aHR (95% CI)	p-value	aHR (95% CI)	p-value
All patients	5.9 (5.1-6.8)	<0.001	4.2 (3.7-5.3)	<0.001	5.2 (4.1-6.5)	<0.001
Symptomatic	4.9 (3.9-6)	<0.001	4.3 (3.1-5.7)	<0.001	4 (2.9-5.6)	<0.001
Asymptomatic	7.1 (5.8-8.8)	<0.001	4 (2.7-5.8)	<0.001	6.8 (5-9.1)	<0.001
	MI vs. No MI		MI vs. No MI		MI vs. No MI	
	aHR (95% CI)	p-value	aHR (95% CI)	p-value	aHR (95% CI)	p-value
All patients	3.8 (3.1-4.6)	<0.001	3.5 (2.3-5.5)	<0.001	5.1 (3.6-7.2)	<0.001
Symptomatic	3 (2.2-4.1)	<0.001	4.2 (2.6-6.7)	<0.001	4.9 (3-8.1)	<0.001
Asymptomatic	4.5 (3.5-5.6)	<0.001	2.4 (0.9-6.5)	0.098	5.1 (3.3-8.1)	<0.001
After in-hospital *Stroke*	TCAR vs. CEA (CEA is ref.)		TCAR vs. CEA (CEA is ref.)		TCAR vs. CEA (CEA is ref.)	
	aHR (95% CI)	p-value	aHR (95% CI)	p-value	aHR (95% CI)	p-value
All patients	0.93(0.73-1.2)	0.55	1.5(1.1-2.1)	0.003	0.7(0.55-0.94)	0.015
Symptomatic	1.1(0.7-1.5)	0.81	1.7(1.1-2.5)	0.013	0.6(0.34-0.85)	0.004
Asymptomatic	0.8(0.6-1.3)	0.3	1.3(0.8-2)	0.3	0.95(0.6-1.5)	0.82
After in-hospital *MI*	aHR (95% CI)	p-value	aHR (95% CI)	p-value	aHR (95% CI)	p-value
All patients	1.4 (0.9-2.3)	0.1	2.3 (1.2-4.2)	0.007	0.7 (0.36-1.5)	0.3
Symptomatic	1.6 (0.93-3.5)	0.2	3.9 (1.8-8.3)	<0.001	0.6 (0.2-0.9)	0.116
Asymptomatic	1 (0.6-1.8)	0.9	0.95 (0.3-2.7)	0.9	1.6 (0.5-4)	0.3

* Adjusting for the following confounders: age, gender, race, ethnicity, obesity, dialysis, diabetes, hypertension, smoking, CAD, prior CHF, COPD, CABG/PCI, prior contralateral CEA/CAS, ipsilateral occlusion, prior ipsilateral CEA/CAS, procedure urgency, anesthesia, ASA class, preoperative medications, insurance

37: EARLY EXPERIENCE OF PHYSICIAN MODIFIED ENDOGRAFTS FOR THE TOTAL AORTIC ARCH AND LESSONS LEARNED

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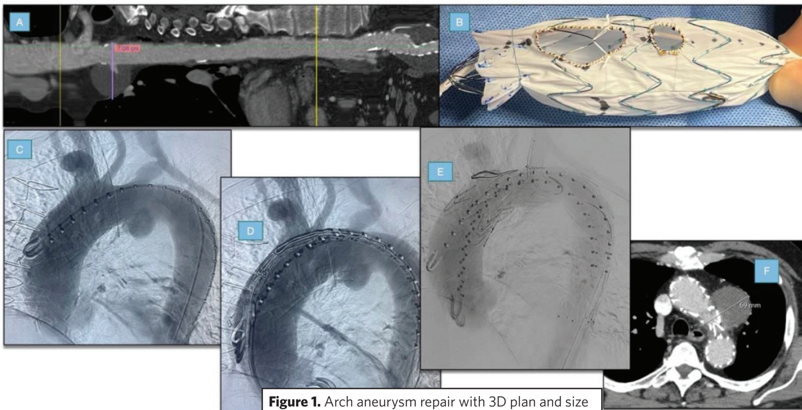
Objective: The purpose of this study is to describe the early results of physician modified endografts (PMEG) for varying aortic arch pathologies. These results will be submitted to the FDA for an arch specific PS-IDE. We evaluated the use of three different graft manufacturer types and multiple vessel perfusion strategies including internal branches, external branches, unstented fenestrations, stented fenestrations and stented in-situ fenestrations.

Methods: We retrospectively reviewed nine patients with the intent to treat aortic arch pathologies landing proximally in Zone 0 and distally in Zone 4 or more caudal. Procedures occurred at a single institution between 12/2020 and 1/2024. Patient demographics, peri- operative and mid-term results were collected from a prospective database and analyzed. All patients were evaluated preoperatively by our multidisciplinary aortic group including CT surgery, cardiology and vascular surgery and deemed prohibitively high risk for open surgery.

Results: A total of nine patients underwent PMEG arch stenting with proximal landing in Zone 0 and distal landing in Zone 4 (66%), Zone 5 (22%), Zone 10 and 11 (11% each). Average patient age was 73 (57 – 90) and the majority were male (77%). The majority were symptomatic or ruptured (66%). Pathologies treated included aneurysm with dissection (44%), de novo arch aneurysms (44%) and a bleeding pseudoaneurysm (11%). The average maximum aneurysm diameter was 76 mm (61 – 105 mm). Technical success, defined as delivery of all planned stents, branch vessel patency, and angiographic absence of type 1 or 3 EL, occurred in eight of nine patients (88%). One patient had inability to deliver main device across the valve and the case was aborted. All patients had a normal neurologic exam immediately post-operatively, however, 30-day mortality was not insignificant due to one patient having subsequent stroke and death (technical failure patient), a second patient after access site complication, bowel resection and sepsis and a third patient from hospital acquired pneumonia and sepsis. Reinterventions occurred in 2 patients (22%) with one delayed Type 1A endoleak and a delayed access site complication during follow-up (Avg. 6 mo, 1 – 37 months). Example cases are shown in Figures 1 and 2.

Conclusions: Treatment of the aortic arch with PMEGs with versatile reconstruction strategies in patients with prohibitive risk for open surgery can have an acceptable rate of technical success and low stroke rates. This series includes highly comorbid patients with most having symptomatic or ruptured presentations and no open surgical options per a multidisciplinary team. Patient selection continues to be difficult to achieve low rates of morbidity despite relative technical success.



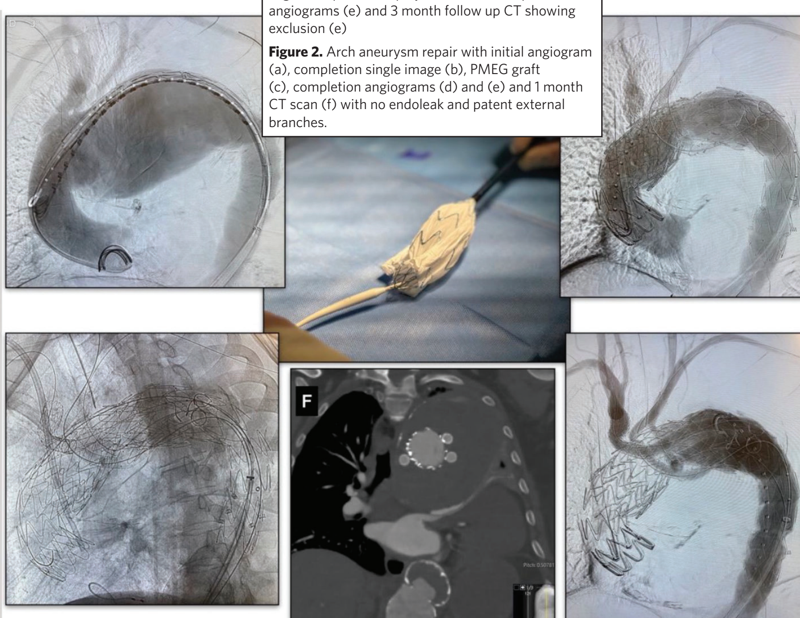


Figure 1. Arch aneurysm repair with 3D plan and size (a) PMEG device (b), initial angiograms and device alignment prior to deployment (c, d), completion angiograms (e) and 3 month follow up CT showing exclusion (e)

Figure 2. Arch aneurysm repair with initial angiogram (a), completion single image (b), PMEG graft (c), completion angiograms (d) and (e) and 1 month CT scan (f) with no endoleak and patent external branches.

38: COST OF LIMB SALVAGE FOR "NO OPTION" CHRONIC LIMB-THREATENING ISCHEMIA: HOW MUCH IS ONE LEG WORTH?

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Background: 20% of patients with chronic limb-threatening ischemia (CLTI) are classified as having "No Option" anatomy due to the presence of severe tibial and pedal disease not permitting conventional open surgical bypass or endovascular therapies. For this group of patients, superficial and deep venous arterialization (VA) has been shown to improve blood flow and increase limb salvageability. Our study objective is to estimate the long-term cost of successful VA coupled with adjunct therapy (wound care, hyperbaric oxygen) in a quaternary vascular center.

Methods: Retrospective review of all patients undergoing VA with chronic limb ischemia at a single quaternary vascular center from 2022-2023 was collected. Patients identified with Rutherford stage 5 and 6 and no conventional endovascular/open options were considered for VA. Patients with long-term (> 6 months) of limb salvage status post VA were included. Demographic data including length of stay (LOS), phase of care, repeat hospitalizations, VA index procedure cost, cost subsequent procedures (angiography, debridement, etc) and wound care/adjuncts. Cost data was obtained from Medicare claims and published sources.

Results: Three patients undergoing VA were identified for review; these patients all had limb salvage 180 days post VA. The average age of the patients was 72 years of age. All patients were male. Patients had undergone a combination of transcatheter venous arterialization and hybrid VA.
Over the course of twelve months, patient one had a total hospital stay of 132 days with 10 repeat procedures. Patient two had a total hospital stay of 206 days with 11 procedures required over one year. Patient three had a total hospital stay of 124 days with 7 procedures required over one year. The average procedure cost was $320,850. The average hospital cost (hospitalization and wound care adjuncts) was $895,546. The overall total cost average was $1,216,396. There were no immediate procedural complications.

Conclusion: Venous arterialization and an associated multi-disciplinary wound care approach for "No Option" CLTI does not appear to be a cost-effective strategy with a total cost average of over a million dollars per patient. Future research should aim to protocol a treatment pathway for these frail patients that results in shorter hospital stays and fewer secondary procedures.

39: IS AGE CORRELATIVE WITH SURGICAL HEMODIALYSIS ACCESS MATURATION OR FUNCTIONAL PATENCY?

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Introduction: While there are no clear age-related guidelines on optimal initial surgical hemodialysis (HD) access, recent studies suggest that older age may be associated with decreased access maturation and patency. We look to see if within our institution there is any difference in access maturation, primary functional patency (PFP), or assisted primary functional patency (APFP) at 12 months between age groups.

Methods: All adult patients with CKD or ESRD undergoing first time surgical HD access creation in either arm at our institution in 2022 were included. The 5 age groups were <50 years, 50-60 years, 60- 70 years, 70-80 years, and >80 years. Failure to mature was defined as access necessitating intervention within 3 months of creation to obtain maturity, while delayed maturation was longer than 3 months without intervention. PFP was the length of time between first successful HD access to the first intervention to maintain patency and APFP defined as time to access thrombosis including intervening interventions. Statistical analysis was performed with Kruskal- Wallis, Pearson's Chi-squared, one-way ANOVA, and two-tailed z-tests.

Results: Almost all initial HD access creations were fistulas (n=62) vs grafts (n=1). More men were represented in the <70 groups (p<0.01), the <50 group had fewer smokers (p=0.03), and the 60- 70 group had more smokers (p<0.01). None of the other measured comorbidities or the average number of comorbidities differed between groups (p=0.11). The <50 group was more like to be on HD already at time of access creation (p=0.03), while the 60-70 group was less likely (p=0.01). There was no significant difference between groups for type of access creation (p=0.99), with 50.00-68.75% radiocephalic, 18.75-40.00% brachiocephalic, 0.00-15.00% brachiobasilic, and 0.00-12.50% graft. There was no significant difference between groups with regards to failure to mature (0.00-30.00%) or delayed maturation (12.50-31.25%) (p=0.71, p=0.77). The majority that failed to mature were radiocephalic (84.62%), but this was not found to be an independent determinant of risk of failure (p=0.11). The 60-70 and 70-80 groups had longer times to fistula maturation than the others (p=0.02). There was no significant difference across groups with regards to PFP (44.44-100.00%) or APFP (50.00-100.00%) at 12 months (p=0.70, p=0.81). The average number of interventions in 12 months to maintain functional patency was 0.40 for <50, 0.50 for 50-60, 0.50 for 60-70, 1.00 for 70-80, and 0.00 for >80; the 70-80 group reached statistical significance (p=0.05).

Conclusion: At our institution, we do not see a difference in rates of failure of HD access maturation or delayed maturation between age groups, though the 60-70 and 70-80 groups did have prolonged time to access maturation. Additionally, while the 70-80 group had on average more interventions at 12 months to maintain functional patency, there was no difference in the 12- month PFP or APFP between groups.

40: DISPARITIES IN ACCESS TO REVASCULARIZATION PRIOR TO AMPUTATION AND THEIR IMPACT ON SURVIVAL

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Background: Discrepancies persist regarding the prevalence, treatment, and outcomes in managing peripheral arterial disease (PAD). Patients presenting with critical limb-threatening ischemia (CLTI) are at high risk for amputation. Hence, a prompt revascularization attempt is indicated for limb salvage. We aim to determine if a disparity exists in access to revascularization before major amputation.

Methods: We performed a retrospective analysis of all CLTI patients who underwent major amputation in the VQI Database from 2012-2023. Multivariable logistic regression was used to select variables predicting disparities. Hosmer-Lemeshow goodness of fit (GOF) testing was used to assess model fit. The Area under ROC curve (AUC) was used to evaluate model accuracy.

Results: 11,025 patients were included, 4,636 (42.05%) had no prior revascularization attempts. Patients undergoing primary amputation were more likely to be non-white (49.31% vs 43.05%, P<0.001), to have diabetes, CKD, or dialysis, and less likely to be on preoperative medications. Factors associated with lower odds of prior revascularization included high volume surgeon (OR: 0.77, 95%CI(0.68-0.87), P<0.001), CHF (OR: 0.84, 95%CI(0.74-0.94), P=0.002), diabetes (OR:0.84, 95%CI (0.76-0.93), P=0.001), CKD (OR: 0.87, 95%CI(0.79-0.97), P=0.012), ASA class IV-V (OR: 0.86, 95%CI(0.78-0.95), P=0.003), presenting with tissue loss (OR: 0.42, 95%CI(0.36-0.50), P<0.001), and living in a socially disadvantaged area with ADI of 4 or higher. Factors associated with higher odds of prior revascularization included female gender (OR: 1.29, 95%CI(1.17-1.43), P<0.001), prior ipsilateral amputation (OR: 1.14, 95%CI(1.10-1.19), P<0.001), hypertension (OR: 1.25, 95%CI(1.07-1.46), P=0.005), being on preoperative aspirin, statin (OR: 1.40, 95%CI(1.25-1.56), P<0.001), P2Y12 inhibitor (OR: 2.64, 95%CI(2.37-2.96), P<0.001), and anticoagulants, being a current or former smoker, and having Medicare Advantage vs Medicaid insurance(Figure 1). The AUC for the model was 0.7273 and the GOF was 0.3421 indicating good model accuracy and fitness. Patients with prior revascularization attempts had lower 5-year mortality (40.67% vs 47.04%, P<0.001)(aHR: 0.86, 95%CI(0.79-0.94), P=0.001)(Figure 2).

Conclusions: This analysis highlights significant disparities in the management of CLTI patients. A substantial proportion of patients underwent primary amputation without an attempt for revascularization, emphasizing potential gaps in the timely initiation of limb salvage interventions. Living in a socially disadvantaged area had lower odds of revascularization attempts. Importantly, patients who underwent prior revascularization demonstrated lower 5- year mortality rates, emphasizing the survival benefits of a proactive approach to limb salvage.

Additional research is required to enhance our comprehension of the elements contributing to these disparities, aiming to pinpoint the aspects that can be targeted for quality improvement.

Figure 1: Predictors of Revascularization Attempts Before Amputation

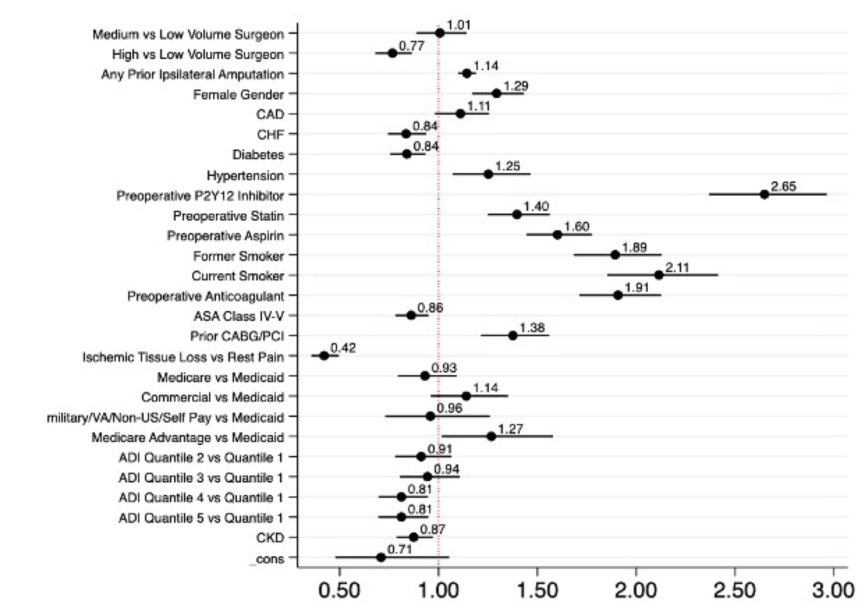
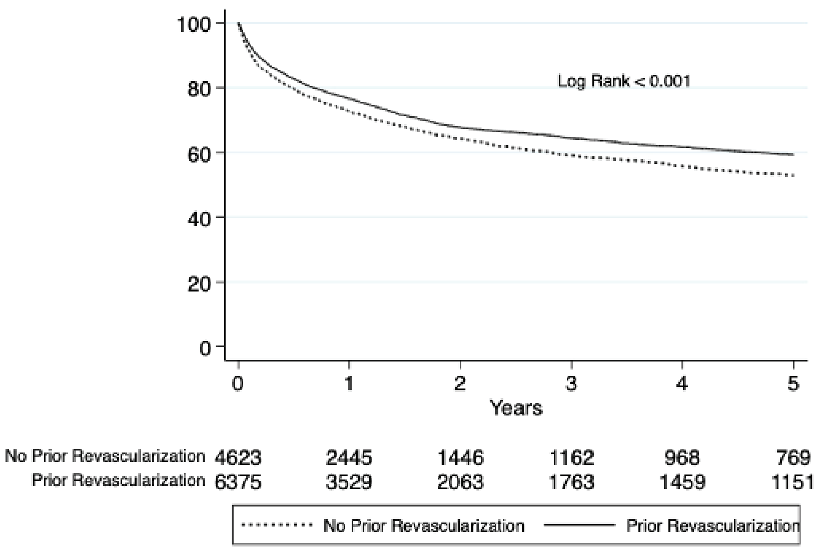


Figure 2: Freedome from Mortality



41: INVESTIGATION OF THE OBESITY PARADOX WITH REGARDS TO PERIOPERATIVE COMPLICATIONS FOLLOWING LOWER EXTREMITY ARTERIAL BYPASS

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Background: The obesity paradox refers to a phenomenon by which obese individuals experience lower risk of mortality and even protective associations from chronic disease sequelae when compared to the non-obese and underweight population. Prior studies have demonstrated an obesity paradox after cardiac and other surgical procedures. However, the relationship between body mass index (BMI) and perioperative complications for patients undergoing infrainguinal bypass (IIB) remains unclear. Our study aimed to investigate if the obesity paradox exists for patients undergoing IIB with regards to 30-day mortality, surgical site infections (SSI) and adverse cardiovascular events.

Methods: We queried the VQI for individuals undergoing IIB between 2003 and 2020. Chi- square and multivariable logistic regression analyzed the relationship of BMI categories [underweight (<18.5), non-obese (18.5-24.9), Overweight (25-29.9), Class 1 obesity (30-34.9), Class 2 obesity (35-39.9) and Class 3 obesity (>40)] with 30-day mortality, surgical site infection (SSI) and adverse cardiovascular events. To control for potential confounders, the logistic regression models were adjusted for patient demographics, comorbidities, ASA classification, preoperative medication use and technical aspects such as procedural length, preoperative hemoglobin, and estimated blood loss. Backward stepwise selection was implemented to identify significant variables for inclusion in the final model.

Results: Our study included 60,588 IIB patients. Compared to non-obese and underweight individuals, obese patients were more likely to be male of white race, suffer from stable angina and diabetes, were on preoperative aspirin, ACE-inhibitor, beta blocker or statin therapy, and have a history of prior CABG (Table I). Upon multivariable logistic regression with the non-obese category as reference group, the odds of 30-day mortality were significantly decreased among the overweight/obese patients and increased in the underweight patient group [OR: 1.58, (95% CI: 1.16-2.13)] (Table II). Furthermore, a BMI-dependent positive association was present with SSI outcomes where patients in the Class 3 obesity category suffered the highest odds [OR: 2.10, (95% CI: 1.60-2.76)]. Finally, among the adverse cardiovascular event outcomes assessed, only MI demonstrated decreased odds among obese and overweight patient populations. (Table II).

Conclusions: The obesity paradox is evident in patients undergoing lower extremity bypass procedures, particularly with reduction in 30-day mortality and MI. Our findings suggest that having higher BMI should not be interpreted as a contraindication for IIB. However, these patients should be under vigilant surveillance for SSI and preventative measures should be implemented. Finally, patients that are underweight have a significantly increased odds of 30- day mortality and may be more suitable candidates for endovascular therapy.

Table I: Demographic characteristics by BMI class of 60,588 patients undergoing lower extremity arterial bypass surgery (2003-2020).

Demographics	BMI < 18.5 (Underweight)	18.5 ≤ BMI < 24.9 (Non-obese)	BMI ≥ 25 (Overweight/ Obese)	p-value
Population size (%)	2540 (4.2)	19118 (31.6)	38930 (64.2)	-
Age, median (SD)	68.9 (11.1)	68.7 (11.2)	65.8 (10.8)	<0.01
Sex (Female)	1160 (45.7)	6079 (31.8)	11437 (29.4)	<0.01
Race				<0.01
White	1918 (75.5)	15118 (79.1)	31700 (81.4)	
Black	519 (20.4)	3013 (15.8)	5604 (14.4)	
Asian	22 (0.9)	167 (0.9)	166 (0.4)	
American Indian	2 (0.1)	52 (0.3)	115 (0.3)	
Pacific Islander	0 (0.0)	26 (0.1)	38 (0.1)	
More than 1 race	3 (0.1)	37 (0.2)	71 (0.2)	
Other	75 (3.0)	700 (3.7)	1228 (3.2)	
Hypertension				<0.01
No	409 (16.1)	2784 (14.6)	3957 (10.2)	
Yes	1934 (76.3)	14946 (78.3)	32073 (82.6)	
Yes, Controlled	142 (5.6)	1038 (5.4)	2189 (5.6)	
Yes, Uncontrolled	50 (2.0)	315 (1.7)	609 (1.6)	
CAD				<0.01
None	1910 (75.3)	13531 (70.9)	26079 (67.1)	
Stable Angina	147 (5.8)	1196 (6.3)	2788 (7.2)	
Unstable Angina	9 (0.4)	80 (0.4)	223 (0.6)	
MI within last 6 months	34 (1.3)	229 (1.2)	397 (1.0)	

CHF				<0.01
None	2146 (84.6)	15908 (83.3)	31908 (82.1)	
Mild	79 (3.1)	654 (3.4)	1485 (3.8)	
Moderate	54 (2.1)	356 (1.9)	732 (1.9)	
Severe	10 (0.4)	130 (0.7)	227 (0.6)	
COPD				<0.01
None	1525 (60.1)	13560 (71.0)	28963 (74.5)	
On medication	592 (23.3)	3088 (16.2)	5959 (15.3)	
On home oxygen	80 (3.2)	458 (2.4)	905 (2.3)	
Dialysis				0.03
No	2386 (94.0)	17777 (93.1)	36441 (93.7)	
Functioning Transplant	18 (0.7)	150 (0.8)	300 (0.8)	
Dialysis-dependent	134 (5.3)	1174 (6.1)	2145 (5.5)	
Diabetes				<0.01
None	1893 (74.6)	11795 (61.8)	17068 (43.9)	
Diabetic Diet	92 (3.6)	850 (4.5)	1882 (4.8)	
Non-insulin medications	224 (8.8)	2697 (14.1)	7693 (19.8)	
Insulin- dependent	328 (12.9)	3757 (19.7)	12240 (31.5)	
Preoperative aspirin				<0.01
No	737 (29.0)	4950 (25.9)	9133 (23.5)	
Yes	1707 (67.3%)	13419 (70.3%)	28392 (73.0%)	
Non-compliant	15 (0.6%)	101 (0.5%)	1866 (0.5%)	
Preoperative ACE-inhibitor				<0.01
No	1281 (59.2)	8580 (51.8)	14761 (43.2)	
Yes	825 (38.1)	7528 (45.5)	18549 (54.3)	
Non-compliant	8 (0.4)	48 (0.3)	82 (0.2)	
Preoperative Statin				<0.01
No	953 (37.5)	5790 (30.3)	9597 (24.7)	
Yes	1585 (62.%)	13305 (69.7)	29269 (75.3)	
Preoperative Beta Blocker				<0.01
No	1212 (47.8)	8333 (43.6)	15199 (39.1)	
Yes, <30 days from index procedure	1323 (52.2)	10758 (56.4)	23651 (60.9)	

Demographics	BMI < 18.5 (Underweight)	18.5 ≤ BMI < 24.9 (Non-obese)	BMI ≥ 25 (Overweight/ Obese)	p-value
Preoperative Smoking				<0.01
Never	274 (10.8)	2779 (14.5)	6479 (16.7)	
Prior	834 (32.9)	7531 (39.4)	18402 (47.3)	
Current	1430 (56.3)	8793 (46.0)	13994 (36.0)	
Prior CABG				<0.01
None	1907 (88.0)	13522 (81.6)	26472 (77.4)	
< 5 years from index procedure	88 (4.1)	1013 (6.1)	2600 (7.6)	
> 5 years from index procedure	172 (7.9)	2031 (12.3)	5123 (15.0)	
Prior lower extremity revascularization (Bypass/PVI)	858 (33.8)	6120 (32.0)	11829 (30.4)	<0.01
ASA Classification				<0.01
ASA Class IV	575 (24.4)	4284 (23.5)	8239 (22.0)	
ASA Class V	4 (0.2)	20 (0.1)	35 (0.1)	
Mean Procedure Time (SD) - mins	221.9 (106.1)	231.1 (110.2)	248.4 (116.4)	<0.01
Mean Preoperative Hemoglobin (SD)	11.8 (2.2)	12.2 (10.6)	12.5 (7.6)	<0.01
Mean Estimated Blood Loss (SD) – mL	262.9 (301.3)	282.6 (347.3)	313.3 (400.7)	<0.01

Table II: Associations of Patient BMI Categories with Short-Term Complications and Mortality After Open Lower Extremity Arterial Bypass Surgery: The Vascular Quality Initiative (2003- 2020)

	Patient BMI Categories					
	Underweight (n=2540)	**Non-obese (n=19,118**	**Overweight (n=20,680**	**Class 1 Obese (n=11,893)**	**Class 2 Obese (n=4,451**	**Class 3 Obese (n=1,906)**
Outcome:						
30-day Mortality	1.58 (1.16-2.13)	1 (ref)	0.64 (0.53-0.78)	0.65 (0.52-0.81)	0.66 (0.48-0.90)	0.61 (0.39-0.97)
P-value	0.003	-	<0.001	<0.001	0.010	0.035
Surgical Site Infection	0.97 (0.70-1.34)	1 (ref)	1.25 (1.08-1.46)	1.37 (1.15-1.62)	1.71 (1.38-2.12)	2.10 (1.60-2.76)
P-value	0.858	-	0.004	<0.001	<0.001	<0.001
Cardiovascular Event						
Heart Failure	1.17 (0.80-1.70)	1 (ref)	0.87 (0.72-1.05)	0.80 (0.64-1.00)	0.80 (0.59-1.09)	1.01 (0.68-1.48)
P-value	0.419	-	0.143	0.055	0.154	0.971
Postoperative Stroke	1.02 (0.54-1.92)	1 (ref)	1.10 (0.83-1.46)	0.79 (0.55-1.12)	0.81 (0.50-1.32)	0.78 (0.39-1.57)
P-value	0.951	-	0.502	0.187	0.394	0.491
Myocardi al Infarction	1.02 (0.72-1.44)	1 (ref)	0.82 (0.71-0.96)	0.78 (0.65-0.93)	0.66 (0.51-0.86)	0.74 (0.52-1.06)
P-value	0.930	-	0.014	0.006	0.002	0.102
Dysrhythmia	1.01 (0.78-1.32)	1 (ref)	0.93 (0.82-1.06)	0.91 (0.78-1.06)	0.86 (0.69-1.06)	0.85 (0.63-1.16)
P-value	0.937	-	0.291	0.219	0.161	0.299

*Reported are odds ratios (95% confidence interval) from regression models adjusting for age, sex, race, , procedure length, estimated blood loss, functional status, diabetes, dialysis, heart failure, prior CABG, smoking, prior peripheral stenting/bypass, preoperative use of aspirin, statin, and preoperative hemoglobin. **Bold indicates p < 0.05.**

42: LONG-TERM FOLLOW-UP OF SAPHENOUS VEIN ARTERIALIZATION FOR LIMB SALVAGE IN UNRECONSTRUCTABLE PERIPHERAL ARTERIAL DISEASE

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Background: Chronic limb-threatening ischemia (CLTI) including ischemic rest pain, non-healing ulcers, or gangrene, is associated with significant morbidity and mortality and remains a challenge in vascular surgery. Up to 40% of patients with CLTI have severe unreconstructable disease with no endovascular option and no distal target for surgical bypass, often requiring major amputation. Great saphenous vein arterialization (GSVA) is a promising technique to improve distal perfusion and avoid otherwise inevitable amputation in these patients. Small case series in the literature are promising, but 12-month outcomes are largely unavailable. In this case series, we contribute 12-month outcomes for patients with CTLI treated with GSVA since 2019.

Methods: From October 2019 – March 2023, 10 patients with unreconstructable CLTI were treated with GSVA. The GSV was anastomosed in-situ to the most distal patent artery. The vein was exposed at the ankle, valvulotomy was performed proximally, and pedal venous valvuloclasty performed distally using a long flushing olive tip catheter. Venous branches along the GSV were ligated. Limb pain, wound healing, and subsequent amputations were evaluated through chart review through January 2024. Primary endpoints include relief of rest pain, wound healing, and amputation-free survival time.

Results: GSVA procedures were performed for tissue loss on 13 limbs in 10 patients (80% male) with an average age of 62.9 years. All were technically successful with no major operative complications and restoration of pedal Doppler signals. The proximal anastomosis was the below-knee popliteal artery in 9 limbs and the proximal superficial femoral artery in 4 limbs. Comorbidities such as diabetes (92%), hypertension (92%), hyperlipidemia (85%), and smoking history (69%) were common. 9/10 patients (12/13 limbs) had greater than 12 months of follow-up. Below-knee amputation (BKA)-free survival at 12 months for the 12 limbs with at least 12 months of follow up was
58.3%. 12-month survival to any amputation including toe, transmetatarsal, or BKA was 23.1%. Average follow-up was 17.2 months (0.2 - 49.2 months) for all patients from date of surgery to their last clinic appointment, BKA, or death. Wound healing and improvement in pain was reported for 8 (62%) and 7 limbs (54%) respectively, though 9 limbs (69%) were still painful at the end of the follow up period. All BKAs took place within 1.5 months of the GSVA. Average amputation-free follow-up time in 8 limbs not requiring a BKA was 27.4 (range: 5.4-49.2) months.

Conclusion: GSVA with pedal venous valvuloclasty is a promising option for limb salvage in patients with CLTI otherwise facing major amputation. The procedure successfully prevented amputation, promoted wound healing, and reduced rest pain at over one year of follow-up in over half of patients who would otherwise have required BKA.

Table 1: Demographics, Risk Factors, and Operation-Specific Factors for Patients Receiving GSVA

Demographics, Risk Factors			
	All limbs (n=13) No.,%	No BKA(n=8) No.,%	BKA(n=5) No.,%
Age (Average, a)	62.8 (5.5)	64 (6.2)	61 (4.4)
Male Gender	9 (69%)	5 (63%)	4 (80%)
Diabetes	12 (92%)	7(88%)	5 (100%)
Transplant History	3 (23%)	3 (38%)	0 (0%)
Smoking History	9 (69%)	6 (75%)	3 (60%)
CAD	4 (31%)	3 (38%)	1 (20%)
HTN	12 (92%)	7 (88%)	5 (100%)
HLD	11 (85%)	7 (88%)	4 (80%)
Average Amputation-Free Survival and Follow-Up Time, Months			
	All legs (n=13)	No BKA(n=8)	BKA(n=5)
Any Amputation (toe, 1MA, BKA), death, or last follow-up, mean months (range)	7.1 (0.1-28.0)	11.2 (0.7-28.0)	0.5 (0.1-0.8)
Amputation-free survival time to BKA, death, or last follow-up, mean months (range)	17.2 (0.2-49.2)	27.4 (5.4-49.2)	1.0 (0.2-1.4)
Operation-Specific Factors			
	All legs (n=13) No.,%	NoBKA(n=8) No.,%	BKA(n=5) No.,%
Indication			
Gangrene	6	3	3
Toe Ulcers	6	5	1
Both	1	0	1
Anastomosed Artery			
Proximal SFA	4	3	1
Popliteal	9	5	4
Pain and Wound Healing			
	All legs (n=13) No.%	No BKA(n=8) No.%	BKA(n=5) No.%
Improved pain	7 (54%)	6 (75%)	1 (20%)
Still painful	9 (69%)	6 (75%)	3 (60%)
Wound Improvement	8 (62%)	7 (88%)	1 (20%)
Subsequent I&D	2 (15%)	2 (25%)	0 (0%)
Subsequent Gangrene	9 (69%)	4 (50%)	5 (100%)

Appendix: 12-Month Survival to BKA or Any Amputation Calculations							
Limb #	Patient #	GSVA Date	12-months post-GS VA	Date of any amputation (BKA, toe, transmetatarsal)	Any Amputation within 12 months?	Date ofBKA	BKA within 12 months?
1		10/319	10/2/20	4/27/20	Yes	NIA	No
2	1	10/24/19	10/23/20	4/27/20	Yes	NIA	No
3	2	12/19/19	12/18/20	9/2/20	Yes	NIA	No
4	3	1/9/20	1/8/21	NIA	No	NIA	No
6	4	3/26/20	3/26/21	4/16/20	Yes	NIA	No
9	5	12/3/21	12/3/22	NIA	No	NIA	No
10	6	9116121	9116122	NIA	No	NIA	No
8	8	3/25/21	3/25/22	5/24/21	Yes	N/A; last follow-up was <12 months post-BKA	No
5	7	1/23/20	1/22/21	1/28/20	Yes	2/20/20	Yes
7	4	4/12/22	4/12/23	4/30/22	Yes	5/26/22	Yes
11	6	3/21/23	3/20/24	4/13/23	Yes	4/19/23	Yes
12	9	9/20/22	9/20/23	10/14/22	Yes	11/2/22	Yes
13	10	3/4/22	3/4/23	3/8/22	Yes	3/11/22	Yes
				Total "Yes"	10	Total "Yes"	5
			Percent of all limbs with amputation with 12 months (= Total "Yes"/13)		76.9 %	Percent of all limbs with BKA withing 12 months (= Total "Yes"/12)	41.7%
			Amputation-free survival, any amputation (= Total "Yes"/13)		**23.1%**	**Amputation-free survival, BKA (100% - (Total amputations/12))**	**58.3%**
						Patient #8 was not included in this calculation as they did not have a BKA but did not have 12 months of follow-up	

43: ANALYSIS OF TOURNIQUET APPLICATION IN THE SETTING OF PENETRATING VASCULAR INJURY

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Introduction: Tourniquets have become increasingly utilized in civilian trauma over the last decade, though with limited data describing their clinical implementation or outcomes. EAST guidelines currently recommend the use of tourniquets in penetrating extremity injuries prior to hospital arrival for management of hemorrhage in which manual compression or compression dressings are unsuccessful or inadequate.

Objective: Our goal was to assess rates of tourniquet use in penetrating extremity vascular injuries as well as differences in demographics, management, and outcomes in patients with and without tourniquets at our institution.

Methods: A retrospective review of a prospectively maintained database was performed at a single level 1 trauma center. All adult patients presenting with penetrating extremity vascular injuries between January 2014 and December 2019 were identified. Prehospital tourniquet use and tourniquet application within the ED were analyzed. Patient demographics, Injury Severity Scores, Mangled Extremity Severity Scores, mechanisms of injury, presenting vitals and laboratory markers, time from injury to OR, surgical management, as well as limb-related outcomes were also noted and compared.

Results: A total of 49 penetrating extremity vascular injuries were identified. There were 25 (51%) upper extremity (axillobrachial) and 24 (48%) lower extremity (femoropopliteal) injuries. Sixteen patients (33%) received tourniquets – 11 (22%) had prehospital placement and 5 (10%) received tourniquet application upon arrival to the ED. Gunshot wounds were the presenting mechanism in 90% of patients (n=43). There was no difference in utilization between the upper (n=8; 16%) and lower (n=8; 16%) extremity groups. Patients with tourniquet received surgical care significantly faster than those without (64.7 vs 150.5 min, p=0.007). Patients without tourniquet placement tended to have higher Injury Severity Scores (12.1 vs 15.3; p=0.410) though Mangled Extremity Severity Scores were not significantly different (3.69 vs 3.66; p=0.765). There was no difference in total blood product use over the first 24 hours between patients with and without tourniquet (16.4 vs 6.7; p=0.100), however, lower extremity injuries with tourniquets required significantly more blood products over the first 24 hours compared to lower extremity injuries without tourniquet (20.6 vs 7.1; p=0.031).

Conclusions: Overall, there were no major differences in injury severity, blood product use, or limb outcomes between patients with and without tourniquet after penetrating extremity injury. Patients with lower extremity tourniquets, however, required more blood products over the 1st 24 hours compared to those without, despite similar injury severity scores. Future multicenter study will be needed to better assess efficacy of tourniquet use in limb salvage.

44: MORTALITY FOLLOWING INFRAINGUINAL BYPASS VERSUS ENDOVASCULAR TREATMENT OF PERIPHERAL ARTERY DISEASE BY BODY MASS INDEX

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Background: Obese patients have higher rates of cardiovascular disease and associated risk factors, but lower rates of peripheral artery disease (PAD) and better outcomes following revascularization. This results in an obesity paradox, where obese patients have the lowest risk of adverse outcomes following treatment, while underweight and morbidly obese patients are at the highest risk. No previous studies have compared outcomes of endovascular vs open bypass within each body mass index (BMI) group. Our study aims to help stratify the risk of interventions [Peripheral Vascular Intervention (PVI) or infrainguinal bypass (IIB)] for patients depending on BMI.

Methods: The Vascular Quality Initiative database was queried for patients presenting with Claudication or Critical Limb Ischemia undergoing PVI or IIB (using great saphenous vein) from 2012 to 2023. Patients were stratified into five groups based on BMI: underweight (BMI ≤ 18.5 kg/m2), normal weight (BMI 18.5-24.9 kg/m2), overweight (BMI 25-29.9 kg/m2), obese (BMI 30-39.9 kg/m2), and morbidly obese (BMI 40-49.9 kg/m2). Multivariable logistic regression analysis compared in-hospital and 30-day mortality for IIB vs PVI within each BMI group. Cox regression and Log Rank test analyzed 1-year mortality.

Results: 117,588 patients met the study criteria, including 4,485 underweight (3.8%), 35,407 normal weight (30.1%), 38,870 overweight (33.1%), 34,381 obese (29.2%), and 5,244 morbidly obese (4.5%) patients. There was no difference in mortality between PVI and IIB among underweight patients, however IIB was associated with 40% increase in-hospital mortality (OR 1.4, 95% CI (1.02,1.91) p=0.036), in normal weight patients and double the odds of in-hospital mortality (OR 1.97, 95% CI (1.44,2.70) p< 0.001) in obese and morbidly obese patients (OR 2.21, 95% CI (1.05,4.65) p=0.037), compared to PVI (Table I). Bypass was associated with lower risk of 1-year mortality among the normal weight (HR 0.80, 95% CI (0.72,0.87) p< 0.001), overweight (HR 0.87, 95% CI (0.80,0.97) p=0.010), and obese patients (HR 0.85, 95% CI (0.75,0.96) p=0.008), compared to PVI. Among morbidly obese patients, there was no significant difference in 1-year survival (Table II).

Conclusion: zThis large national study shows significant differences in postoperative and 1-year mortality between PVI and IIB depending on patient BMI. For normal weight and obese patients, PVI was associated with decreased in-hospital mortality, however, IIB patients had better 1-year survival for all BMI groups but the underweight and morbidly obese. This suggests a long-term survival benefit following IIB compared to PVI, except for patients otherwise at a higher risk of mortality regardless of procedure choice.

Table I. In-hospital and 30-day mortality following IIB vs PVI by body mass index.

	Univariable			Multivariable	
Underweight (BMI <18.5 kg/m2)					
	IIB N (%) 542 (11.6%)	**PVI N (%) 3,961 (88.3%)**	**p value**	**IIB vs PVI OR (95% CI)**	**p value**
In-hospital Death	7 (1.3%)	67 (1.7 %)	0.548	1.04 (0.44,2.47)	0.923
Death in 30 days	18 (3.4%)	174 (4.4%)	0.309	1.00 (0.55,1.83)	1.000
Normal Weight (BMI 18.5-24.9 kg/m2)					
	Univariable			**Multivariable**	
	IIB N (%) 4,559 (12.9%)	**PVI N (%) 30,848 (87.1%)**	**p value**	**IIB vs PVI OR (95% CI)**	**p value**
In-hospital Death	51 (1.1%)	361 (1.2%)	0.762	1.40 (1.02,1.91)	0.036
Death in 30 days	87 (1.9%)	879 (2.9%)	<0.001	0.98 (0.78,1.23)	0.870
Overweight (BMI 25-29.9 kg/m2)					
	Univariable			**Multivariable**	
	IIB N (%) 4,684 (12.1%)	**PVI N (%) 34,186 (87.9%)**	**p value**	**IIB vs PVI OR (95% CI)**	**p value**
In-hospital Death	46 (0.9%)	346 (1.0%)	0.847	1.35 (0.95,1.90)	0.093
Death in 30 days	91 (1.9%)	790 (2.3%)	0.112	1.23 (0.94,1.61)	1.137
Obese (BMI 30-39.9 kg/m2)					
	Univariable			**Multivariable**	
	IIB N (%) 3,721 (10.8%)	**PVI N (%) 30,660 (89.2%)**	**p value**	**IIB vs PVI OR (95% CI)**	**p value**
In-hospital Death	47 (1.26%)	297 (0.97%)	0.088	1.97 (1.44,2.70)	<0.001
Death in 30 days	60 (1.6%)	610 (2.0%)	0.116	0.68 (0.47,0.99)	0.046
Morbidly Obese (BMI 40-49.9 kg/m2)					
	Univariable			**Multivariable**	
	IIB N (%) 436 (8.3%)	**PVI N (%) 4,808 (91.7%)**	**p value**	**IIB vs PVI OR (95% CI)**	**p value**
In-hospital Death	6 (1.4%)	39 (0.8%)	0.221	2.47 (0.92,6.67)	0.074
Death in 30 days	11 (2.5%)	85 (1.8%)	0.260	2.21 (1.05,4.65)	0.037

Outcomes are adjusted for patient demographics, comorbidities, medications, and prior procedures. OR, Odds ratio, IIB, Infrainguinal Bypass, PVI, peripheral vascular intervention, BMI, body mass index. Reference=PVI. Significance level 0.05.

Table II. One-year mortality following IIB vs PVI by body mass index.

	Univariable			Multivariable	
Underweight (BMI <18.5 kg/m2)	**IIB N (%) 542 (11.6%)**	**PVI N (%) 3,961 (88.3%)**	**p value**	**IIB vs PVI HR (95% CI)**	**p value**
	84 (16.0%)	817 (20.6%)	0.014	0.83 (0.63,1.09)	0.171
Normal Weight (BMI 18.5-24.9 kg/m2)	**IIB N (%) 4,559 (12.9%)**	**PVI N (%) 30,848 (87.1%)**	**p value**	**IIB vs PVI HR (95% CI)**	**p value**
	503 (11.0%)	5,002 (15.2%)	<0.001	0.80 (0.72,0.87)	<0.001
Overweight (BMI 25-29.9 kg/m2)	**IIB N (%) 4,684 (12.1%)**	**PVI N (%) 34,186 (87.9%)**	**p value**	**IIB vs PVI HR (95% CI)**	**p value**
	453 (9.7%)	4,567 (13.4%)	<0.001	0.87 (0.80,0.97)	0.010
Obese (BMI 30-39.9	**IIB N (%) 3,721 (10.8%)**	**PVI N (%) 30,660 (89.2%)**	**p value**	**IIB vs PVI HR (95% CI)**	**p value**
	314 (8.4%)	3,703 (12.1%)	<0.001	0.85 (0.75,0.96)	0.008
Morbidly Obese (BMI 40- 49.9 kg/m2)	**IIB N (%) 436 (8.3%)**	**PVI N (%) 4,808 (91.7%)**	**p value**	**IIB vs PVI HR (95% CI)**	**p value**
	44 (10.1%)	613 (12.8%)	0.108	0.94 (0.65,1.35)	0.736

Outcomes are adjusted for patient demographics, comorbidities, medications, and prior procedures. OR, Odds ratio, IIB, Infrainguinal Bypass, PVI, peripheral vascular intervention, BMI, body mass index. R eference=PVI. Significant

Bylaws

Organization Bylaws

SOUTHERN CALIFORNIA VASCULAR SURGICAL SOCIETY CONSTITUTION

ARTICLE I – ORGANIZATION NAME

The name of this organization shall be the SOUTHERN CALIFORNIA VASCULAR SURGICAL SOCIETY and shall be referred to as "The Society" from here on.

ARTICLE II – OBJECTIVES

1. The objectives of The Society shall be (1) to improve the standard of care and practice of vascular surgery in the Southern California geographical area; (2) to contribute to the active continuing education of its members; and (3) to advance the science and art of vascular surgery.
2. The Southern California Vascular Surgical Society is committed to increasing diversity in the practice of vascular surgery, eradicating disparity, and creating an equitable environment where surgeons and trainees of all backgrounds are valued and welcomed.
3. Notwithstanding or foregoing, (1) no part of The Society's net earnings or assets shall inure to the benefit of any member, officer, or other person, except that the organization shall be authorized and empowered to pay reasonable compensation for services rendered and to make other payments and distributions in furtherance of the purposes set forth above, and (2) The Society shall not carry on any activity not permitted to an organization exempt from Federal income tax under section 501(c) (6) of the Internal Revenue Code of 1954, as amended (the "Code") or the corresponding provision of any further United States revenue statute.

ARTICLE III – MEMBERSHIP

The Society shall have five classes of membership: Active, Senior, Retired, Honorary, and Non-Resident members.

1. Active members shall consist of the founding members of The Society and subsequent individuals recommended by the Membership Committee, approved by the Executive Council and elected by ballot at the annual business meeting.
2. Senior members shall consist of Active members who have reached the age of sixty (60) years; or who have been Active members for twenty (20) years; or who for reasons of health or other just causes, the Executive Council recommends for classification in this category.
3. Retired members must be retired from practice of surgery and have been active in The Society for five years or more.
4. Honorary members shall be nominated by the Executive Council and elected by ballot at the annual business meeting.
5. Non-Resident members shall be members under the age of sixty who no longer reside in the Southern California geographic area.

Organization Bylaws

ARTICLE IV – MEETINGS

The Society will sponsor at least one annual assembly, consisting of a business meeting and scientific meeting, which will be held at a time and place to be determined by the Executive Council.

ARTICLE V – OFFICERS, EXECUTIVE COUNCIL

1. The officers of The Society shall be a President, a first President-Elect, a second President-Elect, a Secretary-Treasurer, and three councilors-at-large, all to be elected as provided in the By-Laws.
2. The Executive Council of The Society shall be composed of the officers, the immediate past President, the Recorder, and three Councilors-at-large.

ARTICLE VI – AMENDMENTS

The Society may alter or repeal any article of this constitution by a two-thirds affirmative vote of members present and voting at the annual Business Meeting or through electronic voting, provided a copy of the proposed change has been delivered to each voting member thirty days in advance of the meeting.

BYLAWS

ARTICLE I – OFFICERS, COUNCILORS

1. The President, first President-Elect, and second President-Elect shall be elected for terms of one year each. The Secretary-Treasurer shall be elected for a three- year term. Officers may not serve more than one term.
2. The Councilors-at-large shall be elected for three-year terms, with the election of one Councilor occurring annually so as to provide overlapping terms. A Councilor shall serve for one term only.
3. A Nominating Committee consisting of the three most recent available past Presidents shall be appointed by the President. Officers of The Society shall be nominated by the Nominating Committee, which shall present the slate to the members at the annual business meeting each year. The election shall take place at the business meeting. Election shall be by a majority of the votes cast.
4. The President shall preside at Executive Council meetings and the annual assembly, to include the business meeting and scientific meeting. The President shall appoint members to those committees whose membership is independent of the Council.
5. The President shall appoint a Membership Chairperson (three-year term), a Program Chairperson (one-year term), and a Recorder (three-year term). Successors to vacated offices of The Society shall be appointed by the President until the position is filled at the next annual assembly.
6. The first President-Elect, in the absence or incapacity of the President, shall perform the duties of the President's office. In the absence or incapacity of both the President and first President-Elect, the second President-Elect will perform the duties of the President's office. In the absence or incapacity of the President, the first President-Elect and the second President-Elect, the

duties of the President's office will be assumed by a President pro-term, elected by such members of the Council as are present.

7. The Secretary-Treasurer shall keep the minutes of the meeting of The Society and Executive Council, receive and care for all records belonging to The Society, and conduct correspondence of The Society. This office shall issue to all members a written report of the preceding year's transactions to be read to the Executive Council and membership at the annual assembly. The office shall also receive all funds belonging to The Society, pay all bills, render bills for dues and assessments and report to the Executive Council at each annual meeting the names of all members in arrears as to dues. The Secretary-Treasurer shall also prepare an annual report for audit.
8. The Recorder shall serve as The Society Associate Editor for the Annals of Vascular Surgery and carry out the duties of the Associate Editor as designated by the Annals of Vascular Surgery. The Recorder shall encourage authors who presented at the annual meeting to submit a manuscript of the Annals of Vascular Surgery within the designated time-period and provide a report to The Society at the annual business meeting of those who submitted manuscripts, the accepted manuscripts and the rejected manuscripts.

ARTICLE II – COMMITTEES

1. The standing committees of The Society shall consist of the Executive Council, the Membership Committee (composed of the Membership Chairperson and Officers), the Nominating Committee (composed of the three most recent available past Presidents), the Audit Committee (composed of the three Councilors-at-large), and the Program Committee (composed of the Program Chairperson, their selected assistant, the President and the second President-Elect.)
2. The Audit Committee consists of the three Councilors-at-large. This committee will review the account books of the Secretary-Treasurer.
3. Other committees may be designated by the President with advice of the Executive Council.
4. All committees shall be chaired by a member appointed by the President.

ARTICLE III – ELECTION OF MEMBERS

1. Membership in The Society shall be limited to surgeons of good professional standing, who have a major interest in and devote the majority of their practice to vascular surgery.
2. Applicants must be certified in Vascular Surgery by the American Board of Surgery (ABS). In select cases, equivalent training and certification from other boards or foreign training programs may be substituted for certification by the ABS.
3. Since a major function of this Society will be continuing education and

since it is recognized that active participation is a better educational tool than passive attendance, candidates for membership will be carefully screened as to their willingness to perform scientific investigation, prepare presentations, and participate in panel discussions.

4. Membership will be limited to those surgeons practicing vascular surgery in the geographic area of Southern California as defined by those counties included in the Southern California and San Diego Chapters of the American College of Surgeons.
5. A candidate will have been in active practice for at least one year following training before becoming eligible for membership.
6. Prospective members must have successfully completed a Vascular Residency Fellowship as a prerequisite for membership.
7. Application forms for active membership shall be provided by the Secretary. Completed application forms shall be delivered to the Secretary. An applicant for membership must be sponsored by an Active, Senior or Retired member of The Society and endorsed by two other Active, Senior or Retired members.
8. Completed applications shall be reviewed by the Membership Committee on a periodic basis throughout the calendar year. The Membership committee has the right to accept or reject any application for membership to the Society. Names and candidates approved for membership by the Committee shall be submitted to the membership at the annual business meeting.
9. An applicant may then become a member of The Society after approval of the Membership Committee and having been approved by the membership vote at the annual business meeting or through electronic voting.
10. A candidate who fails to gain approval may be reconsidered up to two additional times. If an election fails a third time, the candidate's application may be resubmitted after a two-year interval.
11. A non-resident member may vote at such a meeting as the member attends and enjoy all the privileges of The Society except that the member may not hold office or membership on standing committees. The non-resident member shall pay annual dues. A request for non-resident status may be submitted in writing to the Secretary and shall be granted only by the Executive Council. Upon written request the Executive Council may restore a Non-Resident member to active status. At its discretion, the Executive Council may restore a Non-Resident member to active status. At its discretion, the Executive Council may terminate membership as a Non-Resident member. A Non- Resident member shall automatically become a Senior member at age sixty.
12. Senior members shall pay annual dues.
13. Honorary members of The Society shall be individuals who have made outstanding contributions in the field of vascular surgery. They shall not be required to pay dues nor be bound by the requirements for attendance at

meetings. They shall enjoy all the privileges of other members except those of voting and holding office. Any Active or Senior member may propose an individual for Honorary membership.

14. The name and a brief description of the accomplishments of the individual must be submitted to the Secretary-Treasurer at least six months prior to the annual assembly for circulation to the Executive Council.
15. Following its deliberation, the Executive Council may recommend that the candidate's name be submitted to the membership for approval. Election to membership shall be by voting at the annual Business Meeting or through electronic voting.
16. Retired members are not required to pay dues.

ARTICLE IV – MEETINGS

1. The annual assembly of The Society shall be held at a time and place to be determined by the Executive Council.
2. The vote of a majority of voting members present at a duly called meeting at which a quorum is present shall be necessary for the adoption of any matter voted upon by the members, unless a greater proportion is required by the applicable statute, the Constitution or the Bylaws. Voting can be done via electronic means.
3. During the annual meeting there will be a Business Meeting of the membership. Business of The Society shall be conducted at this time.
4. The report of the Nominating Committee shall be presented to the membership during the Business Meeting. Additional nominations may be made from the floor. Officers of The Society shall be elected by a majority vote of the Active, Senior and Non-Resident membership present during the Business Meeting. The report of the Membership Committee will also be presented, and election of new members will take place under the terms described in Article III.
5. Any member of The Society may invite one or more guests to attend the annual meeting. A formal request must be made at least thirty (30) days in advance to the Secretary-Treasurer to send a written invitation to the individual identified by the member. The member will be financially responsible for registration fees and all expenses incurred by the invited guest. No guest will be admitted to the scientific sessions and/or social events without a formal invitation and active registration. All invited guests shall be given the privilege of the floor but shall not be present at the Executive Session.
6. Additional meetings may be hold during the year upon the initiation and recommendation of the Executive Council.

Organization Bylaws

ARTICLE V – FEES AND DUES

1. Initiation fees, dues and assessment shall be levied by the Executive Council and approved by the membership at the annual Executive Session.
2. Fees, dues, and assessments shall be used to cover the expenses of The Society.
3. Any member whose dues remain unpaid by the time of Spring Meeting shall be notified of that fact by the Secretary-Treasurer. If the dues are not paid within one month of this notification, the member will have his membership terminated. The Executive Council may reinstate the delinquent member upon payment of the dues in arrears. Because of hardship, members may petition the Executive Council to have dues waived.

ARTICLE VI – RESIGNATIONS AND DISCIPLINE

1. Resignations of members otherwise in good standing shall be accepted by a majority vote of the Executive Council.
2. Charges of unprofessional or unethical conduct may be brought against any member of The Society by a written complaint signed by two (2) members of The Society and delivered to the Secretary-Treasurer. The Executive Council's concurrence or disallowance of the charges shall be presented to the membership at the annual Business Meeting. A three-fourths (75%) affirmative vote of the members present, and voting shall be required for expulsion.

ARTICLE VII – QUORUM

1. Twenty (20) voting members present in person shall constitute a quorum at the annual assembly to effect changes in the Constitution and Bylaws of The Society, to make assessments, to authorize appropriations or expenditures of funds other than those required in the routine business of The Society, to elect officers and members, and to expel members.
2. For the transaction of other business, the voting members present at any annual meeting shall constitute a quorum.

ARTICLE VIII – PROCEDURE

The proceedings of The Society shall be conducted under Robert's Rules of Order Newly Revised.

ARTICLE IX – CERTIFICATE OF MEMBERSHIP

Every elected member of The Society shall be entitled to a certificate of membership signed by the President and Secretary-Treasurer.

Organization Bylaws

ARTICLE X – AMENDMENT
The Society may alter or repeal any article of those Bylaws by a two-thirds affirmative vote of members present and voting at the annual assembly, provided a copy of the proposed change has been delivered to each voting member thirty days in advance of the annual meeting.

Amended March 2021
Amended September 2023

Membership Directory

Membership Directory

Ahmed M. Abou-Zamzam, MD
Loma Linda University Medical Center
Active

Riad Adoumie, MD
South Bay Surgeons
Active

Samuel S. Ahn, MD
University Vascular Associates
Senior

George M. Ajalat, MD
Retired

Omar Al-Nouri DO
UC San DIego Health
Active

Iden D. Andacheh, MD
Kaiser Permanente Fontana
Medical Center
Active

George Andros, MD
Retired

Cassra N Arbabi, MD
Cedars-Sinai Medical Center
Active

Ali Azizzadeh, MD
Cedars Sinai Smidt Heart Institute
Active

Joseph J. Bahuth, MD
Retired

Joshua Bardin, MD
Retired

Donald Baril, MD
Cedars-Sinai Medical Center
Active

Andrew Barleben, MD
UCSD
Active

A. James Behrend, MD
Retired

Jason D. Behseresht, MD
Kaiser Permanente
Active

Christian Bianchi, MD
Jerry L. Pettis VAMC
Active

Michael B. Brewer, MD
Kaiser Permanente Downey
Medical Center
Active

Luis C Cajas-Monson, MD
UCSD
Active

Brian S. Campbell, MD
Southern California Permanente
Medical Group
Active

Kevin M. Casey, MD, FACS
Santa Barbara Cottage Hospital
Active

Ankur Chandra, MD
Scripps Clinic/Scripps Green Hospital
Active

Anthony H. Chau, MD
University of California,
Irvine Medical Center
Active

Samuel L Chen, MD
UC Irvine Health
Active

Michael Cheng Dr.
Kaiser Permanente Woodland Hills
Medical Center
Active

Membership Directory

Jason T. Chiriano, MD
Loma Linda VA Hospital
Active

Elizabeth Chou, MD
Cedars-Sinai
Active

Warren Chow Dr
UCLA
Active

Linda J. Chun, MD
Kaiser Permanente Los Angeles Medical Center
Active

William B. Cohen, MD
Retired

C. William Cole, MD
Retired

Patrick R. Cook, MD
Vascular Associates of San Diego
Active

Edward A. Dainko, MD
Retired

Andrew R. Deemer, MD
General & Vascular Surgery
Active

Brian G. DeRubertis, MD
Weill Cornell Medicine
Non-Resident

Christian deVirgilio, MD
Harbor-UCLA Medical Center
Active

Ralph B. Dilley, MD
Retired

Richard B. Doering, MD
Retired

Carlos E. Donayre, MD
Harbor-UCLA Medical Center
Senior

Leopoldo B. Dulawa, MD
Retired

Sammy D.D. Eghbalieh, MD, RPVI
So. California Vein & Artery Speciallists, Inc.
Active

Darwin Eton, MD
University of Chicago
Non-Resident

Falk Ezzet, MD
Retired

Steven M. Farley, MD
UCLA, Division of Vascular & Endovascular Surgery
Active

D. Preston Flanigan, MD
Retired

Robert F. Foran, MD
Retired

David A. Frankel, MD
Scripps Clinic and Green Hospital
Active

Roy M. Fujitani, MD
Div. Vasc & Endovasc Surg, Univ of California, Irvine
Active

Wesley L. Fung, MD, RPVI
North LA Vascular & Endovascular
Active

Ann Gaffey, MD
University of California- San Diego
Active

Membership Directory

Justin Galovich, MD
UCLA
Non-Resident

Donald J. Gaspard, MD
Retired

Anna Gasparyan, MD
Desert Regional Medical Center
Active

Hugh A. Gelabert, MD
UCLA Gonda Vascular Center
Active

Bruce L. Gewertz, MD
Cedars Sinai Medical Center
Retired

Benjamin F. Gibbs, MD
Retired

Sidney M. Glazer, MD
Kaiser Permanente, Antelope Valley
Retired

Wayne S. Gradman, MD
Retired

Seymour M. Greenstone, MD
Retired

Richard A. Guest, MD
Northridge Hospital Medical Center
Active

Vincent J. Guzzetta, MD
Vascular Associates of San Diego
Retired

Sung W. Ham, MD
Kaiser Permanente
Active

Sukgu Han, MD
Keck Medical Center, University of Southern California
Active

Robert W. Harris, MD
Retired

Kelley D. Hodgkiss-Harlow, MD
Kaiser Foundation Hospital, San Diego
Active

Stuart Hodosh, MD
Retired

W. James Hopewell, III, MD
Retired

Jeffrey H. Hsu, MD
Kaiser Permanente
Active

Ahmad Hussain, MD
Inter-community Hospital/Covina, CA
Active

Adel F. Jabour, MD
Retired

Juan Carlos Jimenez, MD
UCLA Gonda Vascular Center
Active

Nii-Kabu Kabutey, MD
University of California, Irvine
Active

Nikhil Kansal, MD
Harbor - UCLA
Active

Amit Karmur D.O.
Murrieta Valley Surgery Associates
Active

Steven G. Katz, MD
Retired

Edwin N. Kendrick, MD
SANO Vein & Vascular
Active

Membership Directory

Sharon C. Kiang, MD
Loma Linda University Medical Center
Active

Stanley R. Klein, MD
Harbor/UCLA Medical Center
Retired

Roy D. Kohl, MD
Retired

Jeffrey W. Kronson, MD, FACS
Vascular & Endovascular Surgery
Active

Stephen M. Kubaska, III, MD
Southern California Vascular Associates, Inc.
Active

Isabella J. Kuo, MD
University of California, Irvine
Active

John S. Lane, III, MD, FACS
UC San Diego, Sulpizio Cardiovascular Center
Active

Peter F. Lawrence, MD
Retired

Stephen E. Lee, MD
Active

William M. Lee, MD
Keck Medical Center,
University of Southern California
Active

Jenny J. Lee, MD
University Vascular Associates
Active

Mary Lee DO
VA Loma Linda
Active

William W. Lee, MD
Retired

Beatriz V Leong, MD
Loma Linda
Active

Edward F. Levine, MD
Retired

Wesley Kwan Lew, MD
Kaiser Sunset
Active

Richard A. Lim, MD
Retired

Peter H. Lin, MD
University Vascular Associates
Active

Herbert I. Machleder, MD
UCLA Center for the Health Sciences
Retired

Gregory A. Magee, MD, MSC
USC Vascular Surgery
Active

Kevin M. Major, MD
Coastal Vascular Center
Active

George Makkar, MD
Arrowhead Regional Medical Center/Colton
Active

Mahmoud B. Malas, MD
UC San Diego
Active

Kristyn Mannoia, MD
Loma Linda University
Active

Miguel Manzur Doctor
Keck Medicine of USC
Active

Membership Directory

John C. McCallum, MD
Harbor-UCLA/Torrance
Active

P. Michael McCart, MD
Retired

Alan C. Mintz, MD
Retired

A. R. Mohan, MD
Active

Afshin M. Molkara, MD
Riverside County Regional
Medical Center
Active

Allen Murga, MD
Loma Linda
Active

Scott E. Musicant, MD
Vascular Associates of San Diego
Active

Zahi E. Nassoura, MD
San Fernardo Valley Vascular Group
Active

Gary M. Nemhauser, MD
Retired

Tina T. Ng, MD
PIH Health
Active

Gary P. Nishanian, MD, RVT, RPVI
Active

Jessica Beth O'Connell, MD
UCLA-Gonda Vascular Center
Active

Christian J. Ochoa, MD
University of Southern California
Active

Erik L. Owens, MD
VA San Diego Healthcare System
Active

Anthony D. Panasci, MD
Retired

Pouria Parsa, MD
KP San Diego
Active

Kaushal (Kevin) R. Patel, MD
Kaiser Permanente
Active

John S. Pfeifer, MD
Retired

William J. Quinones-Baldrich, MD
UCLA Center for the Health Sciences
Retired

Karen Quirk, MD
Coastal Vascular Center
Active

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San Fernando Valley Vascular Group
Retired

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Active

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Retired

Sunil Rayan, MD
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Active

David A. Rigberg, MD
UCLA Gonda (Goldschmied) Vas
Active

Membership Directory

Vincent L. Rowe, MD
UCLA School of Medicine
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Shawki D. Saad, MD
Shawki D Saad, MD
Active

Marius Saines, MD
University Vascular Associates
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Carl E. Schwab, MD
Retired

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Arrowhead Regional Medical Center
Active

Marc M. Sedwitz, MD
Pacific Coast Vascular & General Surgery Inc
Retired

Mark A. Smith, MD
Div. Vasc & Endovasc Surg.,
Univ of California, Irvine
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Andrew Son, MD
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Active

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Retired

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Torrance Memorial Specialty Center
Active

Majid Tayyarah, MD
Southern California Permanente Medical Group
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Retired

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Active

Joseph L. Vanderlinden, MD
Preferred Surgeons of San Bernardino
Active

Claudiu A. Vlada, MD
Cedars-Sinai Medical Center
Active

Trung D. Vo, MD
Southern California Permanente Medical Group
Active

Robert Wagmeister, MD
Antelope Valley Medical Center
Active

Willis H. Wagner, MD
Cedars-Sinai Medical Center
Senior

William Campbell Wallace, MD
South Orange County Surgical Medical Group
Active

Ziqing V. Wang, MD
Kaiser Permanente Harbor City
Active

Fred A. Weaver, MD
Division Vascular Surgery & Endovascular Therapy
Retired

Membership Directory

Rodney A. White, MD
Retired

Russell A. Williams, MD
UCI Medical Center
Non-Resident

Alan E. Williamson, MD
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Samuel Eric Wilson, MD
UCI Medical Center
Retired

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Jerry D. Wu, MD
Retired

Jane K. Yang, MD
UCLA School of Medicine
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Son Ha Yu, MD
Desert Vein and Vascular Institute
Active

Devin Zarkowsky, MD
Scripps Clinic
Active

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SCS
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