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Introducing The Center for Association Resources

AVF/AVFF is pleased to announce that The Center for Association Resources has been retained to manage AVF/AVFF on a daily basis. Under the senior management of Robert Patterson who serves as The Center’s CEO/Principal and AVF/AVFF Executive Vice-President, The Center has extensive experience in guiding and growing membership organizations, including medical societies and in working with leadership to customize innovative services to meet the needs of clients. Jerry Stoeckigt currently serves as AVF/AVFF’s executive director and main contact.

The Center for Association Resources is a full-service association management company serving organizations of all sizes from our headquarters in suburban Chicago and our offices in Washington, DC. The Center is a nationally recognized Association Management Companies Institute (AMCI) accredited association management firm that provides comprehensive leadership and management services to trade associations, professional societies, and philanthropic organizations. Our national client base includes health care, legal, engineering, insurance, scientific and other industries.

“We are looking forward to a long, mutually rewarding relationship with The Center”, commented Lowell Kabnick, MD. Many of The Center staff will be at the upcoming Annual Meeting in New Orleans and would enjoy the opportunity to say “hello”.

Jerry Stoeckigt
Executive Director, American Venous Forum
jerry@veinforum.org
The Annoying Art of Excessive Consumption

Just because you can do something doesn't mean you should. Dogs can do some things we can't. Maybe they do some things that we wish we could do. Maybe not. Who am I to judge? There are some things we do as humans and some things we do as vein specialists that we perhaps shouldn't do even though we can. Ablation of a 3.5 mm GSV with 1 second of reflux for spider veins? Angioplasty and stenting a left common iliac vein for a 55% area reduction in a morbidly obese individual for bilateral leg swelling? Buying an apartment in NYC for $24 million dollars? Using your mobile phone to abuse colleagues? Etc.

I can usually not succumb to Cherry Garcia or the Critical Cocktail. Self control. The “Big Ticket” gets to me sooner or later. Each time I read the excessive description of excessive consumption of individuals who have access to such places, I wonder who really needs 3 floors on top of one of the tallest buildings in NYC whose carrying charges are more than the Gross National Product of Greece. Maybe not a good example, how about the GNP of Canada?

Every week the New York Times has an article in the Real Estate section that only serves to remind 99.9% of the population what financial losers we are. This feature is entitled “Big Ticket”. Even the title makes you feel small and insignificant. Sometimes I try not to read it. I try to control the masochistic aspect of my mind and not look at this section for as long as I can. Sort of like not opening the freezer when you know that there is a carton of Ben and Jerry’s Cherry Garcia ice cream inside. Or like not having that critical cocktail that will have you pass through the portal which separates “pleasantly tipsy” from “I really don’t care at all”. Self control.

In Vein Specialist no one is anonymous, no one is shielded and no one has spent 47 million dollars on an apartment. Probably none of us have spent 47 million dollars on anything recently. Correct me if I’m wrong. This issue there seems to be an international theme. Patrick Muck fills us in on the past participation of AVF members in international meetings as well as future plans. There is a great effort to cross-pollinate with other societies outside the US. We all benefit. Phlebosophy is an Italian concept discussed in an article by our international member Dimitris Kontothanasis. Dimitris is actually a multi-international, born in Greece, practicing in Italy and speaking English with a Greek-Italian ac-
cent. Rick Pittman highlights what obstacles and solutions we need to be aware of since much of vein care has moved to the office setting. His historical insight and practical solutions are very helpful. Breaking news: a new category of endovenous ablation has been added to the existing acronyms TT and NTNT, It is TNT or thermal non tumescent. TNT is elucidated by another one of AVF’s international members, Sergio Gianesini. He describes his experience with the Holmium laser and ablation. Can this combine the best of both worlds? Read and decide.

The BSN-Jobst Research Award is something that has been around but perhaps not fully appreciated. Kathleen Osvath’s article will hopefully generate interest and understanding. The generosity of BSN-Jobst has enabled our members to do some good work. This is what the AVF is about: cooperation amongst all for the good of all. Thank you BSN-Jobst. One of the very important functions of the AVF is to educate. At the end of July AVF and other venous societies and industry involved with vein disease were invited to the MEDCAC meeting to educate CMS about lower extremity vein disease. A summary of the proceedings is provided by Glenn Jacobowitz. This was an important gathering. Read this article and all others.

These articles clearly highlight what we can do as vein specialists. What we should do as vein specialists. Our society has evolved from the days of slides, video cassette recorders and cameras that used film to take pictures. Some pictures we would use for our talks and some we would use to annoy and torture our colleagues, friends or even strangers. But there is just so much room in a wallet for pictures. Pictures of children, pictures of family, pictures of not much else. Now our phones can serve an eternity of memories with which we can inundate our friends and enemies endlessly. The later the evening, the more alcohol consumed, the more the phones come out. Most of us have children, most of us have family, many of us have grandchildren, many of us have pets, and most of us go on vacations. Most of us are not really interested in your kids, your family, your pets or your vacation. Most of us tend to be polite up to a point. My limit: 2 pictures per category. Be selective, be judicious. The same goes for treating vein patients. If the VEITH meeting gives you 5 minutes to convey very important information, why do I need to feign interest for more than 5 minutes when the pictures come out? If 5 is good enough for Frank, 5 is good enough for me. Stop the madness.

Keep your phone to yourself. As a matter of fact, endlessly, continuously showing personal pictures to strangers is considered a form of torture. It was included when interrogating prisoners during the Iraq War. I think only 2 never relented. Everyone else broke.

Read this issue of Vein Specialist and learn what you should and shouldn’t do and what you can do appropriately when managing vein disease. Don’t just do something because you can. Don’t be the person that buys an apartment for 24 million dollars, tortures friends and strangers with your cell phone showing pictures of your kids in your new place while they are watching your dog doing what dogs can do and we can’t. If you insist on practicing this form of torture; join the Army, interrogate some prisoners and get us some useful information.

Steve Elias, MD
Editor-in-Chief
It is with great honor, pride, and privilege that I serve as the 29th President of the American Venous Forum. In our twenty-nine years of history, our society has experienced and will continue to experience significant milestones and changes. Originally a society of vascular surgeons with interests in venous and lymphatic disease, we have morphed into a society representing the collective intelligence of medical professionals who care for patients and families with venous and lymphatic disease and who promote excellence in practice.

Our 28th Annual Meeting held in February in Orlando, Florida represented a growth year for the American Venous Forum. We exceeded our attendance from the year prior with 636 members (representing more than 26 countries), guests, and exhibitors networking and participating in the superlative educational programming and social functions. In addition, we enjoyed a banner year for the number of new scientific abstracts submitted for presentation. This year, I am proud to announce the 29th Annual Meeting of the American Venous Forum will take place at the Hilton New Orleans Riverside Hotel February 14-17, 2017. I extend to you a warm welcome and invitation to join us in New Orleans, Louisiana.

Over the next year and during my tenure as President of the American Venous Forum, the Board of Directors, Councilors, and Committee members will continue to advance the society’s missions and goals as follows:

1. Scientific/Educational
   a. Increase awareness of AVF and venous disease among health care professionals and patients
   b. Increase research in venous disease
   c. Continue to increase physician and industry attendance at AVF Annual Meetings
   d. Improve the quality of venous care in America through patient education
2. Financial/Membership
   a. Increase financial reserves through strong partnering with the AVFF
   b. Increase the professional diversity of the AVF membership
3. Strategic Positioning for the Future
   a. Improve the representation of AVF within JVS-VL
   b. Promote collaborative relationships with like-minded professional associations
4. Advancing AVF Leadership in Health Policy
   a. Strengthen our visibility and become the expert referral society for venous and lymphatic disease with the FDA, CMS, 3rd party payors, RUC, and MEDCAC
   b. Become the leading organization in writing and/or updating guidelines and evidence summaries
   c. Develop outcome studies from the VQI venous dataset, with a study on the first module in year one and a report on all other modules within three years
   d. Develop reporting standards and evidence summaries
   e. Become the voice for patients’ access to care

The American Venous Forum is a multidisciplinary, international medical society whose members are dedicated to saving and improving lives by reducing venous and lymphatic disease through education, innovative research, and advocacy. As a member or future member in the American Venous Forum, venous practitioners unite to create a distinct and significant voice in all aspects of our specialty. As most of us realize, our ability to diagnose, deliver, and adopt new procedures for venous health continues to change radically. In addition, by 2019 the algorithm for reimbursement will be drastically altered. In this regard, the American Venous Forum is extremely proactive: meeting with CMS, playing an important role in the first Venous Medicare Evidence Development and Coverage Advisory Committee, and challenging venous healthcare policies.

On behalf of the American Venous Forum Board of Directors, we thank you for your efforts in pursuit of completing our strategic initiatives.

Lowell S. Kabnick, MD, RPhS, FACS, FACPh
President, American Venous Forum
The Annual Meeting of the AVF is a unique opportunity to learn about the latest research results and innovative practical solutions from the very people who move forward the field of venous and lymphatic healthcare. World-renowned experts will participate in discussion panels, sharing their views and experiences while critically assessing recent developments in the field.

The 28th Annual Meeting opened on Tuesday afternoon with the inaugural Day of Innovation and Science, developed and presented by AVF Foundation President Fedor Lurie, MD, PhD. This unique educational session featured speakers from a broad range of scientists, physicians, and others who contribute to innovation in venous science and patient care. This included key officials from the NIH, FDA, and CMS who shared their perspectives and highlighted the relevance of the AVF in the venous landscape. This was followed Wednesday morning with the David S. Sumner Venous Summit, presented by AVF President-Elect Lowell Kabnick, MD. This post-graduate course addressed a broad range of timely topics in venous disease care including pivotal clinical studies of deep venous disease, saphenous reflux, and health disparities.

AVF President, John Blebea, MD, MBA and AVF Annual Meeting Chair Harold Welch, MD, opened the first Scientific Session on Wednesday afternoon. Meeting highlights included an outstanding range of original research presentations; forward-looking Specialty Symposia presented with collaborating organizations (Symposium on Advanced Wound Care, Society of Interventional Radiology, American College of Phlebology, Polish Society of Venous Disease, and the Union of International Phlebology); poster presentations; the Villavicencio Symposium (chaired by Marc Passman, MD and David Gillespie, MD) which was focused on IVC filter controversies; and the D. Eugene Strandness Memorial Lecture by Alun Davies, MD entitled “Evidence-Based Venous Disease Intervention”.

Each year the AVF Annual Meeting features The Venous Open golf outing. The Venous Open is organized by the volunteers of the American Venous Forum Foundation and is dedicated to raising awareness of venous and lymphatic disease. Your participation and support will help advance the mission of the American Venous Forum Foundation by funding pioneering research, medical education and awareness through the initiatives of the America Venous Forum.

The President’s Session on Friday morning included reports from 2015 award winners, updates on a variety of AVF initiatives, and Dr. Blebea’s Presidential Address.

On Friday evening, AVF and the Foundation partnered to host the Forum Finale, a beautiful way to end an incredibly eventful meeting. This evening event featured an exclusive silent auction and lively a fundraiser game, cocktails, dinner, and various presentations.

Thank you to all who joined us at the 2016 Annual Meeting. We hope to see you next year, February 14-17, 2017 at the Hilton Riverside in New Orleans, Louisiana. Dr. Suresh Vedantham, Annual Meeting Chair, has indicated that the 2017 meeting will be the most interactive and stimulating AVF meeting to date. Among other highlights, the Day of Innovation and Science will be extended to accommodate even more groundbreaking discovery and the Program Committee is working hard to maximize opportunities for AVF attendees to interact with meeting faculty. The AVF has continued to extend its reach in multidisciplinary collaboration and leadership in the venous community, a theme that will be highlighted at the meeting. Can't wait to see you there!

Suresh Vedantham
Annual Meeting Chair
West Coast Vein Forum

The American Venous Forum hosted the second annual West Coast Vein Forum on September 8-10, 2016 in stunning Monterey, California. West Coast Vein Forum is a unique educational opportunity for beginning to advanced vein specialists. Rather than a comprehensive overview, the curriculum focuses on a variety of topics including challenges and controversies that face those treating vein disorders. Experts provide brief lectures on topics in venous treatment followed by extended time of panel discussion and audience participation. The inaugural meeting in the spring of 2015 in Napa Valley was a “resounding success.” Feedback from attendees confirmed it was an outstanding educational event. This year’s program followed the same interactive format and introduces current topics, making it an exceptional annual educational opportunity for practitioners who strive to stay abreast of current issues and state of the art treatment in venous disease.

The committee chair, Dr. Daniel Monahan, along with his committee members selected an outstanding venue with a world class faculty. The Plaza Hotel on Cannery Row in Monterey, California was a delightful setting for this year’s meeting.

We are honored to have had world renowned faculty participating in the conference who reside throughout the United States and Europe. Their presentations and discussions enhanced every audience member’s appreciation for the breadth and depth of the field of vein disease. The meeting topics focused on problems that frequently present to a vein clinic. More complex and unusual clinical scenarios were discussed as they affect the evaluation of a vein patient. In addition, there was extended opportunity for questions during the sessions as well as at social events. The format provided for a lively and enlightening educational experience.

Our faculty members were:

- Kathy Gibson, MD
- Robert Kistner, MD, past president of the AVF
- Fedor Lurie, MD, past president of the AVF
- William Marston, MD
- Mark Meissner, MD, past president of the AVF
- Robert Merchant, MD
- Daniel Monahan, MD
- Mel Rosenblatt, MD, past president of the ACP
- Julianne Stoughton, MD
- Harold Welch, MD

This year's program included presentations about endovenous ablation, the newer ablation technologies, sclerotherapy techniques, the place of surgery in varicose vein treatment, timing of adjuvant interventions, pelvic vein problems, venous thrombosis management and more. We had special lectures that addressed excellence in vein care, dealt with insurance issues, the new anticoagulants, and the history of modern varicose vein treatment.

Due to the limited size and structure of the conference, this was an irreplaceable learning experience that gave each participant an opportunity to personally interact with expert, world class faculty. While socializing with leaders in vein treatment, updating knowledge or filling educational gaps, 15 hours of CME credit was available through the American College of Surgeons.

The West Coast Vein Meeting is designed for busy clinicians who have a difficult time leaving their practice for an extended period to attend far away annual vein society meetings. The intimacy of the meeting venue and the town of Monterey made it a perfect beach get-a-way. September was one of the best months to visit Monterey Bay and Carmel by the Sea. These areas had unforgettable weather, magnificent sunsets and world famous attractions including Big Sur, Monterey Aquarium, 17 Mile Drive and Pebble Beach Golf Course. Be sure to visit www.veinforum.org for more information on upcoming conferences. We hope to see you next year!
**VENOUS EDUCATION AT THE NEXT LEVEL**

**Course Directors**
Steve Elias
Antonios Gasparis
Nicos Labropoulos

**In Affiliation with AVF**

**JUNE 9-10, 2017 • ENGLEWOOD, NJ**
Case Presentations & Case Discussions Only
No formal lectures, No didactic talks, No jackets or ties

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<td><strong>FRIDAY, JUNE 9</strong></td>
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<td>7:45 - 8:30</td>
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<td>8:30</td>
<td>Welcome</td>
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<td><strong>SESSION 1</strong></td>
<td>I AM SO SUPERFICIAL</td>
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<td>8:30 - 9:00</td>
<td>Case Presentation – 1</td>
<td>Saphenous trunk thrombosis</td>
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<td>9:00 - 9:20</td>
<td>Case Presentation – 2</td>
<td>Too big to ablate?</td>
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<td>Live Imaging</td>
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<td>WHAT’S MISSING</td>
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<td>10:30 – 11:00</td>
<td>Case Presentation – 3</td>
<td>Pelvic varices with normal ovarian veins</td>
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<td>Case Presentation – 4</td>
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<td>12:00 – 12:40</td>
<td>Guest Speaker</td>
<td>“The Art of Veins: When I Paint My Masterpiece.”</td>
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<td><strong>SESSION 3</strong></td>
<td>WHAT WENT WRONG</td>
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<td>1:30 – 2:00</td>
<td>Case Presentation – 5</td>
<td>Vein ablation done in vain</td>
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<td>Stent occlusion</td>
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<td><strong>SESSION 4</strong></td>
<td>VENOUS MYSTERIES</td>
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<td>3:30 – 4:00</td>
<td>Case Presentation – 7</td>
<td>Unilateral leg swelling in the obese patient</td>
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<td>Case Presentation – 8</td>
<td>Recurrent venous ulcer</td>
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<td>4:30 – 5:30</td>
<td>EVM Jeopardy</td>
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<td><strong>SESSION 5</strong></td>
<td>TELL ME WHAT TO DO</td>
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<td>8:30 – 9:00</td>
<td>EVM Journal Club</td>
<td>Renal vein compression with pelvic symptoms</td>
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<td>Case Presentation – 9</td>
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<td><strong>SESSION 6</strong></td>
<td>DEEP BLUE</td>
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<td>10:30 – 11:00</td>
<td>Live Imaging</td>
<td>Attendee Case #3 - IVC thrombosis</td>
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<td>11:00 – 11:30</td>
<td>Case Presentation – 11</td>
<td>Leg swelling with previous infrainguinal DVT</td>
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<td>11:30 – 12:00</td>
<td>Case Presentation – 12</td>
<td>The missing IVC</td>
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**FOR MORE INFORMATION OR TO REGISTER ONLINE, VISIT:** [WWW.EXPERTVENOUSMANAGEMENT.COM](http://www.expertvenousmanagement.com)
The pursuit of scientific research is a noble and challenging path. Without research, advancement and knowledge is not possible. Great advancements in science in the last century has led to our understanding of disease processes and treating previously incurable diseases. As funding for scientific research has become more and more difficult to obtain, young scientists must contend with exceedingly strenuous competition to obtain necessary funding in an environment of increasing budget cuts. Traditionally, funding for research has largely come from private sources and government. Some large medical technology companies and pharmaceutical companies have made commitments to support education and research. Without this dedication to the advancement of science, opportunities will become extinct.

BSN medical is a global medical device company supplying casting, bandaging, wound care and compression products. Jobst compression stockings were specifically designed to treat patients with venous and lymphatic disease. In 1995, the American Venous Forum (AVF) Foundation announced the BSN-Jobst Research Grant. The first grant was awarded to Dr. Peter Pappas. This prestigious grant specifically provides funding to residents, fellows, or physicians within the first five years of their practice, for original basic science or clinical research in venous or lymphatic disease. In 2014, the grant application process was changed to mimic the National Institutes of Health grant application process. This allows applicants to learn the process of grant application. Additionally, the award changed from $50,000 for one year to $100,000 given over two years to the deserving recipient. Chosen members of the AVF review the grant applications and pick one winner per year. The winner is then asked to present the work supported by the grant at the AFV annual meeting. Past recipients have continued to pursue research, and have made significant contributions to vascular research. Their careers are praiseworthy and impressive.

Dr. Rabih Chaer, Professor of Surgery at University of Pittsburgh Medical Center, was awarded the BSN-Jobst grant a few years ago. “This award enabled me to launch a career in academic vascular surgery.” The focus of his research has been studying how genetics may play a role in the etiology of venous stasis ulceration. Dr. Chaer hopes his research will bring light to understanding the incidence and the response to therapy.

Dr. Harry Ma was chosen as a recipient of this coveted award in 2014. At the time of the award, Dr. Ma was an assistant professor of Surgery at the University of Oklahoma. Dr. Ma’s research project was entitled A comparison of reliability and durability of class 2 compression stockings. “The process of applying for the grant was an excellent representative of NIH grant application” says Dr. Ma. “The experience of writing the grant was tremendously educational and has helped me become a better clinical researcher. It has also given me the opportunity to present my work at regional and national meetings.” The prestige associated with the award has also lead to helping further his career in vascular surgery. He will be joining The Vascular Experts at the Southern Connecticut Vascular Center.

Maxim Shaydakov is a cardiovascular surgeon from Russian who is a research fellow at the Conrad Jobst Vascular Research Laboratories at the University of Michigan. Dr. Shaydakov’s research is devoted to the pathogenesis of deep vein thrombosis(DVT). He is hoping that his research will help elucidate the causes of “idiopathic” DVT. As a grant recipient he has been able to collaborate with other researchers which could potentially advance the research to a multi-center level. “This exposure is very important for physicians at my training level” says Dr. Shaydakov. “As a principal investigator of this sponsored project, I feel many responsibilities that will turn me into an independent scientist.”

Previous recipients of this award have become nationally and internationally acclaimed experts who have made significant contributions to vascular research. The list of recipients can be found on the AFV website. Applications for the 2017 BSN-Jobst grant will be available on the AVF website.

Kathleen Ozsvath MD
Chair, AVF Research Committee
The 15th annual International Vein Congress is designed for vascular surgeons, interventional radiologists, and cardiologists, focusing on clinical applications for treating deep and superficial venous disease, evidence-based guidelines, practice management, and more.

- Live Cases
- IVC Video Theater
- Practice Management & Insurance Issues
- Venous Governance & Ethics
- Venous Diagnostics
- New Experts Added to 2017 Faculty
- Office Angiosuite

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Jose I. Almeida, MD, FACS, RPVI, RVT

**Co-Directors**
Edward G. Mackay, MD, FACS, RPVI, RVT
Lowell S. Kabnick, MD, RPhS, FACS, FACPh

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AVF Around the World

The AVF’s International Committee was created in 2015 under the direction of Drs. Patrick Muck, Enrico Ascher and Lowell Kabnick. The goal of the committee is to expand the AVF’s mission of promoting venous and lymphatic health throughout the world. The committee consists of 10 AVF members from 8 countries and 4 continents:

- Patrick Muck, MD, Chair
- Enrico Ascher MD
- Patrick Carpentier MD
- Alun H. Davies MS, DM, Dsc, FRCS
- Mehmet H. Kurtoglu MD
- Alvaro Esteban Orrego MD
- Malay Patel MD
- Paul Pittaluga MD
- Mark S. Whiteley MD
- Takashi Yamaki MD
- Ruth Bush MD JD MPH, ex officio
- Lowell Kabnick MD, RPhS, FACS, FACPh, ex officio

This past fall the AVF collaborated in Lyon, France at the IUA; Rio de Janeiro, Brazil at the inaugural “AVF@Pan American Vascular Congress”; and in Krakow, Poland at the Polish Society of Phlebology. Future “AVF@” collaborations are in discussion for meetings in India, China, and Europe.

Patrick Muck MD
Chair, International Committee

The AVF recently completed an international collaborative session at CICE in Sao Paulo, Brazil. The 3rd annual “AVF@CICE” had standing room only attendance at all of its’ presentations. The AVF was also represented by Dr. John Blebea at UIP in Rome and Dr. Limael Rodriguez at the EVF (our Servier Traveling Fellowship Recipient).
Introduction

The quality gap in healthcare, according to Berwick, is a result of multiple factors, including the growing complexity of science/technology and a poorly organized delivery system. “Medical errors represent a chronic threat to public health as lethal as breast cancer, motor vehicle accidents or AIDS.” (Berwick, 2002) In 2009 the World Health Organization recommended that all hospitals and ambulatory surgical centers adapt a 3 phase surgical safety checklist (SSC) including a pre-op brief, a timeout pause and a postop debrief, in order to make our operating rooms safer. I propose we extend this recommendation to every Vein Care Center no matter how large or small. Each of our microsystems is responsible for the safety and quality of patient care, but this local phenomenon can only occur as an extension of an organization’s over all culture of safety. In the late 90s when Endovenous ablation became available we transitioned from performing vein procedures in the hospital to our offices; Vein Centers began to emerge and spread. Since most vein centers do not come under the same scrutiny as hospitals and ambulatory surgical centers, it is not certain how many of these centers have adapted the use of the SSC. I will discuss the history of Surgical Safety Checklists, which originated in the aviation industry, examine their usage worldwide and offer a rationale and some suggestions for incorporating this tool into your Vein Practice.

The Origin of Checklists

In 1935, Boeing lost two pilots while test flying the model 299 (later re-designated as the B-17 Flying Fortress). On the basis of that accident and subsequent investigation it was determined that ‘modern planes’ were just too complex to operate safely (the control lock had been left in place—a very simple thing). The solution was to create a simple checklist. “....all of the items would be listed in the order they were to be performed and the pilots, for each operation, would consult the checklist, never again simply relying on their memory.” (Van Hare, 2012)

In the 1800s surgery was simple. The anesthetic was simple, usually ether, and the surgeon only required a table and a few instruments. With super specialization in surgery and the variation in outcomes for similar procedures we have become focused more on the parts than the patient while doing harm due to the lack of collaboration. We have over 6,000 drugs and over 4,000 surgical procedures that we can offer, but this has to be done safely.

In his book the Checklist Manifesto, Atul Gawande notes that in spite of improvements in safety in the US we continue to have more than 150,000 deaths following surgery every year and as a surgeon himself, he believes that we will never be great at what we do without using checklists. (Gawande, 2009)

The Origins of Surgical Checklists-Hospitals Need to Fly

In 2006 a small group of physicians were invited by the World Health Organization (WHO) to improve surgical safety worldwide. Included in the group were physicians from Johns Hopkins who had already tested a presurgical checklist and found that “....it reduced some complications dramatically and raised the level of safety in the OR.” (Makary, 2012) (Haynes & et.al., 2009). The WHO published work from its Safe Surgery Saves Lives campaign and made specific recommendations for surgical checklists ((WHO, 2009). They recommended three phases of Surgical Safety Checklists (stops);
The pre-op brief: Before induction of anesthesia
b. The Time Out: Before skin incision
c. The DeBrief: Before patient leaves the OR

The goal is to reinforce accepted safety standards while promoting a culture of communication and shared patient safety goals. The adaptation of checklists born out of the aviation industry will bring increased patient safety to our delivery system.

**Adaptation of the Surgical Checklists**

The centers for Medicare and Medicaid Services “Requested” that ambulatory surgery centers and hospitals report whether or not they have a surgical checklist policy in place, with reporting beginning in 2013 for the year 2012; all that is required is a simple yes or no response. There is no penalty for not using a checklist. It may become mandatory as part of the reimbursement structure for Medicare- maybe by 2017. In 2012 (1st year reported) 366 hospitals said they don’t use them and 497 did not know.

The JACHO “…encourages organizations to supplement the Universal Protocol with additional good practices that will increase patient safety.” (JACHO, 2012)

In 2014, 90% of US hospitals said they had a surgical checklist ‘policy’ in place but 12% of these hospitals could not say for certain whether or not the checklists were actually being used. “The CMS metric won’t improve care by itself,” Gawande says. “It only documents a promise to use [a] checklist. Whether their teams actually use the checklist will remain to be seen.”

So if SSCs are good for patient care, then why not 100% universal adaptation? It’s complicated. It is not mandated in the US. Many are skeptical given the paucity of RCT’s (randomized clinical trials). The most recent RCT (it may be the only RCT on the subject) compared 2,212 control procedures with 2,263 Surgical Safety Checklist (SSC) procedures across two hospitals in Norway. The complication rates went from 19.9% to 11.5%; mortality 1.9% to 0.2% and mean LOS was decreased by 0.8- all of these improvements were in the SSC group. (Haugen & et.al., 2015) In the United Kingdom RCT’s cannot be carried out because the WHO SSC is a National Policy (is mandated).

**What’s The Problem?**

When the first checklists were introduced in aviation the test pilots were insulted. Sometime between 1935 and 1977 it appears as if the checklists became ticklists and the result was the worst accident in the history of commercial aviation when two 747’s collided killing 583 people. The pre-take off checklist was ignored. Analysis of the day concluded that it was the culture of an ‘authority gradient’ that supressed the ability of team members to “Speak Out” when they knew something was wrong.

Thus, the fundamental problem appears to be a problem of relationships. Atul Gawande said that people “….need to be taught how to talk to one another”. In the pilot studies that were done at Johns Hopkins, the investigators found that the most important element was introduction of the team members; by allowing them to get to know each other’s names and roles, a culture of ‘speaking-up’ emerged.

Surgeons in general have huge egos and historically see themselves as captain of the ship creating an ‘authority gradient’. Many surgeons believe that checklists are a waste of time even though hospitals that are currently using them have seen a decrease in operating room delays directly attributable to the checklists.

Communication and the creation of a speaking-up culture are necessary frameworks to evolve a culture of safety, which includes the use of surgical checks, but resistance to using them is widespread. A recent study from England (where checklists are mandated) concluded that the top 3 reasons for not using the surgical checklist were:

1. Staff resisted or failed to complete the checklist. 51%
2. The checklist was inappropriate or illogical. 34%
3. The checklist was thought to be a waste of time 29%; Russ, S., Sevdalis, N., & al., e. (2015)

**Concluding Remarks**

Surgical checklists are but one small piece of the puzzle needed to make the paradigm shift from volume-based medicine to value-based medicine. In my own organization, we adapted the use of the SSC approximately 2 years ago. One year ago, we added a morning huddle checklist. Each morning our team examines the schedule noting possible problems and solutions. For example, we calculate a Caprini score for every patient having an invasive procedure and assure ourselves that the dose of Lovenox (when indicated) has been ordered and arrangements for administration of
the medication have been made. In addition to the 3 phase SSC for ablations, we use a checklist before each and every ultrasound guided foamed sclerotherapy treatment: History of asthma (don't use STS), Previous problems with injections? Migraine headaches? Need for Lovenox? Etc. Recently we had a situation where the standard introducer for the radiofrequency catheter would not reach the great saphenous vein due to the patient's large thigh; since this happens very rarely, we do not keep many of the long introducers on hand. Luckily this day we had a single long introducer and on the basis of that event we added the “distance from the skin to the vein” to our worksheet and incorporated this information into our morning huddle. Since we also have the patient sign the leg to be operated on, questions about laterality are settled before the patient is sedated.

Juran lists 10 steps of quality improvement, and it begins with—“Create awareness of the need and opportunity for improvement.” (Juran & Godfrey, Juran's Quality Handbook, 1998). As we have seen, it is not enough to mandate the use of surgical checklists. We must create an awareness and purpose of why these checklists should be used. I applaud those of you who have already adopted these checklists; I believe that you are ahead of the curve. For those of you who work in small Vein Centers and think that Surgical Safety Checklists are not necessary I challenge you to use them for at least one month on a daily basis. Design checklists that are specific to your clinic so that they make sense to you. After one month you will never look back.

It has been said that it takes between 6 and 10 years before new ideas become embedded in the culture of an organization. I would encourage every Vein Care organization that has not yet adapted the Surgical Safety Checklists begin that long journey now.

References
Stent placement for proximal venous outflow obstruction has become an important procedure for vein specialists. How do I access the venous system for this procedure? There are undoubtedly countless variations of accessing the deep vein. The basic approach usually comprises of needle entry into the common femoral vein using the Seldinger technique, followed by the placement of an 180 cm .035 guidewire, and then the placement of either an 9-French sheath (8.5 French minimal sheath size for the IVUS catheter) or 11-French sheath (if one uses Wallstents). The access technique that I use has changed over time, primarily driven by using as few disposables as possible, the elimination of any non-essential parts of the procedure, and safety concerns.

I mostly use the greater saphenous vein or a superficial vein in the proximal thigh to gain entry into the deep veins. The disadvantage of this saphenous vein approach is the inability to visualize the common femoral vein distal to the saphenofemoral junction during the subsequent venogram and intravascular ultrasound. When the greater saphenous vein is not available, the common femoral vein is my second choice if there is no ultrasound evidence of common femoral vein involvement. Occasionally it is important to evaluate the entire common femoral vein. For these few cases, I will assess the femoral vein. While the femoral vein is deep to the superficial femoral artery, it is frequently possible to find a section of the femoral vein that deviates slightly laterally or medially to allow entry. Accessing the femoral vein requires greater skill with ultrasonography and the avoidance of any crossing branch of the superficial femoral artery and the femoral nerve. The popliteal vein and the small saphenous vein are good entry sites in acute DVT cases because the thrombus frequently involves the common femoral vein and sometime the femoral vein as well. I don’t use the popliteal vein or small saphenous vein in chronic venous outflow obstruction cases because placing the patient in a prone position may alter the severity of the compression and the length of stent delivery system may not be long enough.

I usually access both common femoral veins for most cases, which I find to be the fastest way to evaluate and stent both iliac veins. I have done many cases where I stented bilateral iliac veins from the left using an up and over approach to the access the right side. This approach will take more time and which I have mostly abandoned. The up and over contralateral approach is very useful in the rare case where it is necessary to place a stent into the distal common femoral vein.

This is how I do a routine vein stent placement: After gaining access with a micro-puncture catheter, I place a 180 cm Amplatz guidewire under fluoroscopic guidance. If difficulty is encountered navigating the Amplatz guidewire through a severely compressed iliac vein, the IVUS catheter serves as an excellent guiding catheter. Once the Amplatz guidewire is in the vena cava, a decision is made regarding the best imaging needed to characterize the iliac lesions. If intravascular ultrasound is used, the catheter is inserted over the Amplatz guidewire without a sheath. Similarly, if stent placement is indicated, the stent is inserted over the Amplatz guidewire also without a sheath. The stent is positioned but not deployed. I then direct my attention to the contralateral side where the same steps are repeated including the placement of the stent. At the conclusion of the case, both stents are deployed simultaneously. If the stent is not fully expanded, a 7-French sheath is placed for the balloon angioplasty because subsequent removal of the deflated balloon catheter without a sheath may injure the vein.

This is merely one approach. For me, this approach is quick and safe. Undoubtedly, everyone has developed an approach that works best in his/her practice.
The safety, efficacy, ease of use and mini-invasiveness of these techniques recently led to Grade 1B guidelines that recommended them over surgery.3

The mechanism of action of EL and RF is based on intra-luminal thermal energy delivery. Consequently, a protein denaturation and destruction of cell structure follows, thus leading to collagen contraction.4

These thermal techniques require tumescent anaesthesia to be delivered all along the treated segment, thus, these options can be defined as Thermal Tumescent (TT). In the last few years, technological creativity has led to innovations defining an even newer age in phlebology: the age of new TT devices, like steam technology,5 together with Non Thermal Non Tumescent (NTNT) options.

These last ones are represented by devices able to ablate the refluxing saphenous vein without any need of thermal injury nor of tumescent anaesthesia. Literature supporting these options is already available for the cyanoacrylate glue,6 for the polidocanol endovenous microfoam,7 and for mechanochemical ablation.8,9

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But now another option has been added to TT and NTNT: the Thermal Non Tumescent treatment by holmium laser (HOL). This device is able to reduce saphenous calibre by delivering thermal energy, but without the need of tumescence. When ablation is indicated, subsequent foam sclerotherapy can be performed immediately, even in the largest veins. This article is aimed at describing this new option and the preliminary scientific evidences about its performance.

Technical Features of the Device

HOL is a Ho:YAG laser using a wavelength of 2,100 nm, thus highly absorbed by water. The energy is delivered by short pulses of 300 mJ, lasting 350 µsec at a frequency of 7 Hz. Consequently, the device is emitting 2.1 J/sec (7 pulses/sec x 300 mJ = 2.1 J/sec). The producer suggests delivering 3 cycles of 2.5 sec each, per cm, for a total of 15.75 J/cm (2.1 J/sec x 2.5 sec x 3 = 15.75 J/cm). The short pulses of energy can be delivered between 100 and 500 mJ.

Short pulses allow the vessel to be cooled by venous blood convection and wall conduction. For this reason, compared to traditional TT devices, HOL delivers lower thermal energy levels, leaving the endothelium histologically intact, while creating a hyalinization inside the media - adventitia layers.

The difference among the effects obtained on the different vessel layers is explained by the cooling down effect by venous blood convection (faster cooling down) on the endothelium lining, compared to the slower cooling down by conduction on the media and adventitia.

The producer claims lab data reporting a temperature around 40 degrees at the endothelial level, compared to more than 70 degrees at the media level. This data could provide the rationale for the collagen denaturation of the media, together with the endothelial sparing, that were recently demonstrated in the published histological evaluation about HOL effects.

While delivering the energy, a sort of “cloud effect” can be detected around the fiber tip during the intraoperative sonographic scanning (Fig. 1). Intraoperatively, by sonographic assessment, it is also possible to detect the progressive vessel changes. Thickening of the media is clearly visible, together with a double wall image at the out-
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The operative kit includes the following (Fig. 3):
1. Percutaneous access needle (18G, 7 cm)
2. 0.035 inch – 150 cm nitinol J-guidewire (with adapter to facilitate cannulation into the needle)
3. Y-connector for immediate post-procedure sclerotherapy (18G, 5 cm)
4. Lock for locking the laser fiber to the catheter
5. 80 cm – 4 Fr catheter marked at 1 cm intervals
6. Holmium laser fiber (Sclerolux, cod. M210508S; 800 μm; length 200 cm)

The Procedure
1. Place the patient in mild reverse Trendelenburg.
2. Locally anesthetize the intended access site.
3. Cannulate the vein with the 18G access needle.
4. Insert the guidewire.
5. Remove the needle.
6. Insert the catheter over the wire and into the vessel, positioning its tip at the desired treatment site.
7. Check the presence of the lock along the vessel. A patent, yet significantly reduced, calibre can be appreciated already at the intraoperative observation (Fig. 2)

Fig. 2 A: Intraoperative sonographic assessment after HOL energy delivery. Thickening of the media is clearly visible, together with a double wall image of the outer border of the vessel. The calibre is reduced and patent. 2 B: In case an ablation is indicated, foam sclerotherapy is performed by delivery of sclerosant through the same laser introducer.

Fig. 3: Operative kit contents.
8. In case of difficult access, the use of an introducer is suggested (minimum 6 Fr; not included in the kit)
9. Remove the guidewire
10. Insert the laser fiber into the catheter
11. The laser fiber extends 1 cm beyond the distal tip of the catheter when the black marking on the fiber is inside the catheter luer adapter
12. Snap the lock in order to lock the fiber in place.
13. Place the patient in flat position
14. Confirm fiber tip placement with ultrasound, begin the energy delivery.

Discussion
HOL has been on the market for more than a decade now, being mainly used in urology and orthopaedics, with just preliminary reported experiences in the phlebology field. In 2013, Frullini proposed a new strategy based on HOL utilization for CVD: the so-called LAFOS technique (Laser Assisted FOam Sclerotherapy).

According to this option, even large saphenous veins can be treated by foam sclerotherapy thanks to the calibre reduction previously obtained by HOL, without the need of tumescence. This year, we published a histologic evaluation demonstrating the effective intraoperative HOL-induced saphenous calibre reduction, the endothelial lining sparing, the collagen denaturation, the elastic fibres fragmentation, and the media swelling.

Despite the mild HOL-induced thermal injury, this investigation demonstrated wall damage that leads to a chronic rather than transitory process. Even if significant data have been reported in the literature about endovenous thermal techniques, there is still a lack of agreement regarding the mechanism of action of these devices.
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procedural scenario, so providing a brand new chance for moving forward in our technical and strategical therapeutic options, while looking for a deeper understanding of the intriguing venous hemodynamics of the lower limb.

Device Potential
The device potentials are associated with its being safe, effective, tumescentless, potentially code-able and usable both in a saphenous ablative and sparing strategy. According to hemodynamics laws, a variation in the vessel section leads to a modification of those pressure gradients that feed the reflux inside the venous network. Consequently, HOL could be suitable not just for ablative but also for saphenous sparing therapeutic options. Further investigations regarding this topic are ongoing, hopefully leading to a better understanding of the still only partially understood application of hemodynamics inside the human body.

A secondary advantage associated with the calibre reduction is the decreased sclerosant volume and/or concentration needed to treat large vessels, so reducing also eventual induced side effects and complications.

Future Studies
A follow-up regarding the HOL-induced calibre reduction has not been reported in the literature yet.
At the same time, an investigation is ongoing regarding the actual lack of histologic data regarding long term effects on the vessel wall.
Clinical investigations and randomized comparative trials are strongly encouraged in order to assess the medium and long term efficacy of this innovative device.

Thanks to the potential use of this device both as an ablative and saphenous sparing tool, further hemodynamics studies are suggested in an in-vivo setting.

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