



THE CORE

SVIN Newsletter • Volume 2, Number 2 • December 2013

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Society News

1. The 6th SVIN Annual Meeting was held October 25-27th at the Omni Hotel in Houston, chaired by Dr. Randall Edgell. This year's meeting was a special joint meeting with the Intracranial Atherosclerosis Society (ICAS) led by Dr. Mark Chimowitz.
2. We are also pleased to announce that SVIN hosted its 1st Annual Comprehensive Stroke Center Workshop on October 25th at the Omni Hotel in Houston. This meeting was co-chaired by Drs. Anne Alexandrov and Dr. Robin Novakovic.
3. New officers were elected to the SVIN council in 2013. We would like to extend congratulations to:
Tudor Jovin, President
Raul Nogueira, Vice-President
Andrew Xavier, Secretary
Vallabh Janardhan, Treasurer

Congratulations to Johanna Fifi, who was elected to the SVIN Board of Directors.
4. We would like to extend special thanks to Dileep Yavagal, SVIN Immediate Past President for his incredible hard work and very productive time these past 2 years. Dileep has been instrumental in advancing the vision of SVIN. Among his many accomplishments, Dileep represented SVIN as an active voice in the Comprehensive Stroke Center efforts, and implemented the Fellow of SVIN award. Thank you very much Dileep for your leadership and your excellent work!

PRESIDENT'S MESSAGE



Dear Friends and Colleagues:

Having begun my tenure as the president of the SVIN in April 2013 it is my great honor to serve in this capacity for the next year and a half. As I have stepped into the shoes so ably occupied by my predecessors Adnan Qureshi MD, Osama Zaidat, MD and Dileep Yavagal, MD, I am constantly humbled by their tireless dedication to the job and their decisive contribution to the transformation of our young society over the past 9 years from a handful of junior interventional neurologists, orphans with respect to their professional affiliation, to a strong organization that is increasingly influential in the field of neurovascular interventions and has grown exponentially both in numbers and in depth.

The field of interventional vascular neurology is currently at crossroads. Recent negative trials in acute stroke intervention, carotid stenting

beating. Challenging times can provide great opportunities, and I feel that the SVIN is well positioned to take advantage of such opportunities. Our executive committee and board of directors are composed of passionate individuals, highly motivated in their desire to advance the mission of the SVIN who are thought leaders in our field and enjoy diverse backgrounds and global perspectives. Importantly, a cadre of outstanding junior members eager to lend their services to the society provides reassurance that continuity is real.

The challenges and opportunities our society is confronted with constituted the main focus of

Our mission as a society was stated to represent the advancement of interventional neurology as a field with the ultimate goal of improving clinical care and outcomes of patients with stroke and cerebrovascular diseases.

and endovascular management of intracranial disease, all of which constitute procedures of vital importance for our existence in this field have yielded negative results. The long term impact of these negative trials on our sub-specialty is hard to estimate. Nonetheless, I know that under the right circumstances and in the right patients these interventions will ultimately prove themselves beneficial. Therefore, I feel that just like our predecessors from cardiology, we will be able to weather the storms of early negative trials and ultimately enjoy a sunny future in which ischemic neuro-interventional procedures will become standard of care and grounded in evidence. Short term however, there is little doubt that our field has taken a

our SVIN Board of Directors retreat from May 2013. Credit for this well attended and well planned event goes first and foremost to Dilleep Yavagal, MD whose vision and organizational talent put to use during his tenure as SVIN president led to the great success of this event. Our mission as a society was stated to represent the advancement of interventional neurology as a field with the ultimate goal of improving clinical care and outcomes of patients with stroke and cerebrovascular diseases. Our vision as formulated during the retreat is to become the leading global society for vascular and interventional neurology.

Over one and a half days of focused discussions we were able to agree upon a strategic frame-

PRESIDENT'S MESSAGE (cont.)

work that outlines the society's priorities for the next 5 years.

Because only the existence of level I evidence will establish ischemic neuro-interventional procedures as standard of care, the SVIN needs to position itself as a major force in generating such evidence. Therefore a strategic priority for the SVIN is to foster scientific research in the field of cerebrovascular diseases and neuro-interventional procedures.

There was unanimity in acknowledging the fact that interventional neurologists will do best if grounded within neurology, that our neurology and vascular neurology colleagues are our closest partners and that our best chances of thriving as a sub-specialty are from within the neurology community. Therefore, promoting full integration of interventionalists

vital importance of promoting and constantly improving training for interventional vascular neurologists. This should be offered within formal training programs whose design, planning and staffing should ideally take place in collaboration with the two other specialties involved in neuro-interventions, neuroradiology and neurosurgery.

Finally, an essential function of our society is to represent a source of support for its practicing members. Improvement in practice management has also been identified as a SVIN strategic priority.

Another important SVIN event, the 6th SVIN annual meeting at the end of October 2013, was a highly successful endeavor in term of attendance, scientific content and financial benefits. Randy Edgell, MD meeting chair, along

Our impact on the field can only be positive if we ensure the highest quality training for our next generation.

within the neurology/stroke community has been identified as another vital priority for our society.

The enormous potential for membership growth has been uniformly acknowledged and the need for reaching out to the growing international community of interventional and vascular neurologists has been clearly recognized. Consequently expansion of SVIN membership, and inclusion of members from the international community of vascular and interventional neurologists has been identified as a third strategic priority.

Our impact on the field can only be positive if we ensure the highest quality training for our next generation. As another strategic priority for the SVIN we acknowledged the

with the entire annual meeting committee deserve our congratulations for an outstanding job. As does Robin Novakovich, MD, the organizer of a highly successful CSC certification course organized as a satellite symposium to the SVIN meeting. In keeping with our society's academic mission, the overall focus of the SVIN scientific program was to highlight the importance of evidence based practice of neurointerventional procedures. Numerous presentations on ongoing or recently completed randomized trials contributed to establishing evidence based upon which neurointerventional procedures are currently practiced. As previously mentioned, consolidating this evidence has been identified by the SVIN's Board of Directors as one of the society's top strategic priority. In that regard I was pleased to note

PRESIDENT'S MESSAGE (cont.)

that a significant proportion of SVIN leadership members who also occupy leadership roles in most ongoing or recently completed randomized trials such as THERAPY, SWIFT PRIME, REVASCAT, DAWN, VISSIT were able to present on the current status of these trials at the meeting.

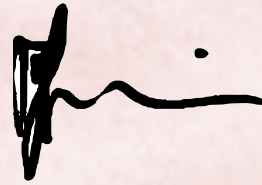
Other highlights of the SVIN meeting included the joint session with the 6th annual ICAS (International Conference on Intracranial Atherosclerosis) where ground breaking science was presented in premiere. This included long term follow-up results of SAMMPRIS and final results of VISSIT. The Stroke conquerors session featured two stroke patients treated with endovascular therapy who have made an excellent recovery. These remarkable individuals shared with the audience their experience related to their acute stroke presentation, their perspectives on the procedure they went through and their life's perspectives following the intervention. It was a touching moment that reminded us all in the audience why we do what we do in our professional lives, the pro-

found impact that these interventions can have on people's lives and why dedicating our time and energy to the advancement of acute stroke interventions is so important and rewarding.

The seventh SVIN annual meeting will take place at the beginning of November 2014 in Miami. Dr. Robin Novakovich, chair of the meeting, has already shown an outstanding organizational talent as evidenced by her highly successful oversight of the CSC course. I have no doubt that under her leadership we will experience yet another tremendously successful meeting.

With the approaching holidays in mind I wish you and your families a wonderful holiday season and all the best for the New Year.

Yours sincerely,



Tudor Jovin, MD
SVIN President

PROGRAM CHAIR'S MESSAGE



Dear Colleagues,

The Society of Vascular and Interventional Neurology (SVIN) is excited to announce that this year's 6th Annual Meeting in Houston, Texas, held from October 25th to 27th at the Omni Houston Hotel, was full of exciting innovation and expansion with two new courses this year.

The meeting featured a joint session with the Intracranial Atherosclerosis Society (ICAS) led by Marc Chimowitz, MBChB. This collaboration brought an unprecedented number of world-renowned scientists and endovascular specialists to Houston, who presented original and impactful scientific data. Building on this session were talks on all the major clinical trials and emerging treatments, presented by leaders in the field.

Topics included intracranial atherosclerosis, extracranial stenting, acute stroke thrombectomy, flow diverters, treatment of challenging aneu-

rysms, arteriovenous malformation treatment, along with other related conditions.

There were opportunities to submit field specific abstracts, discuss challenging cases and network with both colleagues and industry.

Finally, there were sessions dedicated to practice development and career planning. We are confident that participants found the meeting to be an intense, highly educational experience and we look forward to seeing you next year in Florida!

Yours sincerely,

Randall C. Edgell, MD

2013 Annual Meeting Program Chair



SVIN Calc

By: Dr. Marc Lazzaro

We are proud to introduce the Society of Vascular and Interventional Neurology App, "SVIN Calc," which is now available for Apple and Android platform smart phones. The app addresses an unmet need for a comprehensive neurovascular app to serve as a decision support tool for the neurovascular specialist. The current version includes 24 formulas and references for ischemic disease, hemorrhagic disease, neurointervention and outcome scales. The app is available free. Please download the app and submit questions, comments and suggestions for improvement to info@svin.org.

**The Core
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EDITOR'S CORNER

In this edition of The Core, we are very pleased to have the privilege of including a special tribute to Dr. Fernando Vinuela. A pioneer and giant in our field, Dr. Vinuela has been involved in the development of coil technology, balloon embolization, embolic materials, AVM hemodynamics, and hemodynamics of intravascular occlusion. We thank Dr. Gary Duckwiler for providing us with Dr. Vinuela's pathway in interventional neuroradiology and photos.

Drs. Szeder, Santiago and Linares provide us their valuable perspective of the senior year of neurointerventional fellowship, two years after their article advising prospective trainees in the November 2011 Core Newsletter. Their article provides optimism and valuable advice for incoming and current trainees looking to the next steps. In addition, the ReCCLAIM and JR-NET studies are reviewed by Dr. Linares and Dr. Szeder respectively in this issue of The Core; Dr. Teleb reviews the 5Max Ace catheter in our New Devices section.

We would like to extend special thanks to our excellent team of writers over the past few years for their contributions to keep you informed. They have responded to our numerous requests and badgering to deliver you timely information. Thank you to Dr. Szeder for initiating the Core Review section of the newsletter, and to Dr. Teleb for his ongoing contributions to the New Devices section. We also thank Jane Svinicki, Marie Marinello and Sam Dobrzynski for their excellent help with production.



Thanh Nguyen
SVIN Newsletter Editor



Syed Hussain
SVIN Newsletter Associate Editor

As the 6th SVIN Annual Meeting concludes, we strive to keep you updated on recent developments in SVIN and the field of Neurointervention. As Newsletter editors, we will be passing the torch to Dr. Mouhammad Jumaa from the University of Toledo, who will take leadership as the next Editor for The Core. Thank you to our readers and writers for the privilege of serving as editors in the last 3 years. We have enjoyed working and writing with you.

SVIN 6TH ANNUAL MEETING AND THE INTERNATIONAL CONFERENCE ON INTRACRANIAL ATHEROSCLEROSIS (ICAS)

SAMEER SHARMA

SVIN's 6th Annual Meeting was held in conjunction with the 6th International Conference on Intracranial Atherosclerosis (ICAS)

in Houston, Texas. ICAS was held under the guidance of Dr. Marc Chimowitz and saw researchers from around the world bring the latest ongoing research to a common stage.

After a warm welcome by Dr. Chimowitz, the plenary lecture was given by Dr. Juan Arenillas from Spain, underlying various basic and translational research in the field. He provided a glimpse of where we stand and where we need to go in terms of research in the field. It included animal models, which can be used to mimic intracranial atherosclerotic disease, molecular imaging, and genetic advances especially by the Japanese and limitations of the current stents used for intracranial stenting throughout the world. The plenary lecture was followed by three subsequent sessions encompassing current knowledge and advancements in epidemiology, imaging and biomarkers and therapeutics respectively.

The first lecture by Dr. Lawrence Wong from China highlighted the long term outcome of patients with intracranial atherosclerotic disease. He discussed the importance of collaterals, presence of a complete circle of Willis and diastolic blood pressure as being important predictors of stroke in the Chinese population with intracranial atherosclerosis. In addition,



he emphasized that the use of fractional flow reserve could be of more prognostic significance than the degree of stenosis in intracranial vessels, which the cardiologists have already started utilizing in cardiac angiographies. The subsequent talk by Dr. Jong Kim on the risk factors and mechanisms of stroke according to the location of intracranial atherosclerosis highlighted the importance of the pathology in Asian population more than their Caucasian counterparts. He suggested a new way to measure MCA intracranial atherosclerosis and gave a brief overview of PROSAC study. It was followed by a talk by Dr. Liping Liu from China, on the epidemiology of intracranial atherosclerotic disease in Asia, where she discussed the CICAS study. The last talk of the session was by Dr. Elena Lopez-Cancio from Spain who not only discussed the Barcelona-Asia study, but also mentioned the ROCAS and the PERART study underlining the important risk factors associated with intracranial atherosclerotic disease.

The next session focused on imaging and began with a talk by Dr. Tanya Turan from MUSC, who discussed the possibility of using high resolution MRI to identify high



SVIN 6TH ANNUAL MEETING AND THE INTERNATIONAL CONFERENCE ON INTRACRANIAL ATHEROSCLEROSIS (ICAS) (cont.)

risk plaques in intracranial vasculature, hence the possibility of better selection of patient for intervention. Dr. Richard Swartz from Canada



followed with a talk on use of high resolution MRI to differentiate ICAS from other pathologies, proposing the wall thickness hypotheses to differentiate various pathologies. This was followed by talks by Dr. Sepideh Amin-Hanjani from UIC, Dr. Shyam Prabhakaran from Northwestern University, Dr. David Liebeskind from UCLA and Dr. Edward Feldman from Tufts University to end the session. Dr. Amin-Hanjani talked about VERITAS study exploring the verteberobasilar stenosis as the subsequent cause of TIA and stroke, Dr. Prabhakaran talked about the MyRIAD study, utilizing multi-modal imaging techniques in the evaluation of ICAS, Dr. Liebeskind again emphasized about the role of collaterals and discussed WASID and SAMPRISS trials in the context and the last talk by Dr. Feldman focused on use of fractional flow reserve rather than degree of stenosis as the marker of severity of ICAS.

The session on biomarkers and therapeutics started with Dr. Nelson Gonzalez discussing

the role of encephaloduroarteriosynangiosis (EDAS) in treatment of intracranial atherosclerosis, highlighting its emerging use in treatment of Moya Moya disease. He briefly talked about ERSIAS and ANFIS trials during his talk. Next talk by Dr. Michael Frankel from Emory focused upon the role of biomarkers in predicting outcome in ICAS and he also presented preliminary results from the BIOSIS study. It was complemented by Dr. Oh Young Bang's (South Korea) talk that followed, who presented the results from a Korean study assessing the role of biomarkers for ICAS and Moya Moya patients. The next two talks discussed the medical arm of the SAMPRISS trial and started with Dr. Tanya Turan, who showed the importance of risk factor management on outcome followed by Dr. Marc Chimowitz, who talked about the predictors of increased risk in the medical arm of the SAMPRISS trial. When Dr. Turan emphasized the significance of exercise even more than medications in the management of risk factors, the topic of ischemic preconditioning came up during the Q&A session where most recent data from a Chinese trial recently published in Neurology was mentioned. This was followed by a talk by Dr. Zhongrong Miao from China, who discussed the impact of SAMPRISS on management of ICAS in China, where he mentioned continuing use of stenting in selective patient population in China and emphasis on need for further trials in a Chinese population. The last talk of the session was given by Dr. David Bonovich, who talked about the future of endovascular management in the treatment of ICAS, while mentioning the WIRE and

SVIN 6TH ANNUAL MEETING AND THE INTERNATIONAL CONFERENCE ON INTRACRANIAL ATHEROSCLEROSIS (ICAS) (cont.)

the WEAVE studies in brief, and the current FDA requirements for ICAS treatment. The end of the session saw a panel discussion with legends, such as Dr. Louis Caplan discussing the impact of current research and the need for continuing future research in the field of ICAS. The day ended with poster presentation with Dr. Caplan and the highlight being a 7T MRI study of intracranial vessels, where someone from audience could not differentiate between a histologic and a radiologic image of an intracranial vessel.

The next morning saw ICAS and SVIN having a joint half-day session, which saw the final results from the SAMPRISS trial and the VISSIT trial being discussed on podium before being published anywhere. Breakfast session included Dr. Osama Zaidat and Dr. Sonia Janjua discussing the THERAPY trial and the use of ACE devices respectively. Dr. Colin Derdeyn started the much awaited presentation on final results of the SAMPRISS trial at 0830 and his first slide showed the paper being accepted in LANCET and embargo on presenting the results being lifted at 0800 the same morning. The results, although discouraging for endovascular procedures, underlined the tremendous effect of medical management in decreasing stroke risk in patients with ICAS. The SAMPRISS method of medical management was later commended the next day and is being adopted as standard of care in the upcoming CREST 2 trial in the medical arm. The next presentation by Dr. Liping Liu from China compared the outcome of patients with ICAS in both medical arms

suggesting the possibility of benefit with dual antiplatelets. The next speaker, Dr. Weijan Ji-ang, talked about his experience with intracranial stenting for ICAS and showed how lower risk of complications and better outcome have been achieved in China by different method for selection of patients, a different approach used in the country and effect of experience by sheer massive number of stents placed. He also announced and welcomed everyone to the 7th International Conference on Intracranial Atherosclerosis being held in China next year. The next speaker, Dr. Thomas Leung, discussed the Hong Kong Wingspan study and again highlighted the importance of intensive medical management with regression of ICAS in a subpopulation of patients. Dr. Zaidat followed it with a landmark talk, not because of the significance of its outcome, but because for the first time negative results were released by a company and result was allowed to be presented in a conference. It was the VISSIT trial, which used Vitesse Intracranial Stents for management of symptomatic ICAS and showed



SVIN 6TH ANNUAL MEETING AND THE INTERNATIONAL CONFERENCE ON INTRACRANIAL ATHEROSCLEROSIS (ICAS) (cont.)

no benefit of stenting as compared to medical management. The morning session ended with Dr. Liebeskind talking about mechanism of disease in ICAS, emphasizing upon various different mechanisms of stroke with ICAS as compared to ECAS.

Pre-lunch session started with Dr. David Fiorella discussing the benefits of stand-alone angioplasty for management of ICAS building upon lessons learnt from SAMPRISS' stent arm. It was followed by Dr. Colin Barker,



discussing experience in field of intervention cardiology and emphasizing upon total ischemic time as the new predictor of outcome in cardiology. Q&A session saw Dr. Grotta announcing the arrival of mobile CT scan equipped ambulances in Houston, again emphasizing upon need to reduce total ischemic time parallel to cardiology. Last two talks of the session saw Dr. Alex Abou-Chebl and Dr. Juan Arenillas talking about mechanism of stroke in ICAS and non-invasive characterization of ICAD patients using newer imaging modalities. Lunch session saw Dr. Joey English discuss-

ing experience with TREVO retrievers using Merci balloon guided catheters, followed by Dr. Osama Zaidat's presentation on Stryker's contribution to acute ischemic stroke research including the DAWN trial, an update of which was subsequently discussed by Dr. Tudor Jovin. Post-lunch session started with Dr. Ajay Wakhloo, who won the SVIN innovation award last year for his research in flow diverters, talking about the SURPASS flow diverter and the SCENT trial. The next talk by Dr. Mikael Mazighi from France was on natural history and epidemiology of vertebral artery origin stenosis and the focus of the talk was the CAVATAS study and how little is known about the disease as compared to other pathologies leading to acute stroke. Dr. Randall Edgell, this year's organizer of the SVIN meeting, followed the talk with his presentation on current literature regarding stenting for vertebral artery stenosis and primarily discussed the VAST trial. He ended with a suggestion of a new trial based upon our current knowledge about the disease. Dr. Robert Taylor followed suit with talk on possible trial design in vertebral artery stenosis, discussing both VIST and VAST trial, and talked about possibly the only roadblock in doing such trial being funding, explained the difficulty in getting NIH sponsorship due to lack of knowledge of its natural course of progression. The last talk of the session was one of the much awaited presentation by Dr. Thomas Brott, who discussed the upcoming CREST 2 trial comparing medical and two surgical therapies (CEA and stenting) for management of asymptomatic carotid artery disease with more than 70% stenosis. It

SVIN 6TH ANNUAL MEETING AND THE INTERNATIONAL CONFERENCE ON INTRACRANIAL ATHEROSCLEROSIS (ICAS) (cont.)

saw a lot of discussion on the trial design and a shot in the arm for the medical university of South Carolina's methodology for successful management of risk factors for stroke in the SAMPRISS trial. It has been adopted as CREST 2's medical intervention arm. The next two sessions saw participants presenting oral abstracts and a session of complex case discussions in front of the panel consisting of Dr. Mouhammad Jumaa and Dr. Nirav Vora.

The next session started with a talk by Dr. Tudor Jovin on large bore aspiration catheters and suction thrombectomy. The highlight of the talk was discussion on transcervical approach and how the approach could make suction thrombectomy much more effective. It was followed by Dr. David Bonovich's discussion on how balloon guides are the sine qua non for effective thrombectomy, but again discussion went into how suction thrombectomy could be more effective with transcervical approach. The last talk of the session was by Dr. Marc Ribo from Barcelona, who was later announced as the first international board member of SVIN. He talked about possible methods that can abbreviate the time from access to reperfusion, discussing his own experience in Barcelona.

The next session saw two stroke survivors whose life had been changed by endovascular treatment. They presented their story and pledged their continued support for the promotion of the field of intervention neurology. It saw a standing ovation to the courage and perseverance of the two stroke conquerors, Mr. Chase Anderson and Mr. Andrew Fisher. It was followed by the Keynote lecture that was given by Dr. Stanley Barnwell, who was

the first neurosurgeon to get formal two-year training in interventional neurology. He talked about the difficulties faced by neurosurgeons in early nineties when they were trying to get into the field owned by radiologists and compared them to the ones faced by neurologists today. He talked about the evolution of endovascular stroke therapy, from failed devices to lessons learnt and the questions faced by the field today. It ended with him being given the Honorary Lecture Award and was followed by award presentations, with Dr. Jim Grotta getting the Pioneer Award for his dedication and research in stroke management.

The last session of day started after a wonderful dinner reception and saw Dr. Andrew Demchuk from Calgary presenting a post-hoc analysis of the IMS-III trial. The intervention showed a trend towards benefit in the sub-group of patients with carotid-T or M1 occlusion. He also talked about the lessons learned from the trial in designing future trials to study the benefit from intervention. This was followed by Dr. Reza Jahan's talk on



SVIN 6TH ANNUAL MEETING AND THE INTERNATIONAL CONFERENCE ON INTRACRANIAL ATHEROSCLEROSIS (ICAS) (cont.)

final results from MR RESCUE trial, which showed better results with thrombectomy in patients unresponsive to tPA, although the primary end point did not show any significant benefit of endovascular therapy. Dr. Amrou Sarraj presented a possible new score (HIAT) to help make decision with regards to endovascular therapy for acute ischemic stroke. He also mentioned in brief HIAT 2, the modified version of HIAT, which he will be presenting in the International Stroke Conference next year. The day ended with Dr. Rishi Gupta talking about various changes that need to be implemented to provide a better care for the patients and increase the possibility of them being treated at an institute with endovascular capabilities in case it's needed. He talked about "hemiplegia" being the "EKG equivalent" for EMS to take patients to a comprehensive stroke center instead of a primary stroke center and importance of total ischemic time in parallel to cardiology.

The last day started with Dr. Jeffrey Saver giving an update on SWIFT Prime trial, hoping to end it before enrolling pre-specified number of patients due to interim analysis showing significant benefit in the intervention arm. It was followed by Dr. Antonio Davalos presenting an update on REVASCAT trial, which is comparing iv tPA to Solitaire assisted thrombectomy for patients with acute stroke. Dr. Andrew Demchuk gave an update on the ESCAPE trial in Canada and was followed by Dr. Italo Linfante's introduction of the STAR study, again involving the Solitaire device. The breakfast session ended with Dr. Nirav Vora from Riverside Methodist hospital presenting his experience with the Solitaire device.



Post-breakfast session saw two sessions discussing aneurysms and AV-malformations respectively. First session started with Dr. Stanley Barnwell discussing cavernous carotid aneurysms and his experience with using flow diverters for their management. Next talk by Dr. Michel Mawad on using flow diverters for distal intracranial vasculature saw a robust discussion ending with a unanimous suggestion by endovascular neurologists to get rid of the distal wire from the device. Dr. Hashem Shaltoni ended the session with a discussion on new devices for treatment of bifurcation aneurysms. Next session saw discussion of AVMs, starting with Dr. Lucas Elijovich talking about sclerotherapy of head and neck venous and lymphatic malformations showing examples from his institute and discussing the approach their team used along with the outcome in those patients. It was followed by Dr. Richard Klucznik discussing Arteriovenous fistula and its management citing examples from his experience. The last talk on AVM was given by Dr. Linfante, who talked about his experience with use of contemporary AVM embolization and whether it can be used as a cure or is only an adjunct to surgical therapy. The Q&A session

SVIN 6TH ANNUAL MEETING AND THE INTERNATIONAL CONFERENCE ON INTRACRANIAL ATHEROSCLEROSIS (ICAS) (cont.)

saw discussion of ARUBA trial and various participants discussing their experience with AVMs.

It was followed by a session on oral abstracts and complex case discussions followed by the presidential address by Dr. Tudor Jovin, which saw important announcement being made for the coming year. Dr. Thanh Nguyen took over as the Research Chair, Dr. Jeff Saver as Neurology Collaboration/Integration Chair, Dr. Randall Edgall as Membership Chair, Dr. Jawad Kirmani as the Training Chair, Dr. Nils Mueller Kronast as the Practice Management Chair, Dr. Robin Novakovic as Annual Meeting Chair for 2014 and Dr. Alex Abou-Chebl as Annual Meeting Chair for 2015. Dr. Italo Linfante will be heading the Certification and Training Taskforce Committee, Dr. Mouhammad Juma became the Newsletter Editor and Dr. Marc Ribo became the first international board member. Dr. Jovin also highlighted



The last session saw the practical aspects of intervention neurology coming to the forefront, starting with Dr. Nils Muller Kronast discussing the reimbursement with reference to recent changes. It was followed by Dr. Marc Lazzaro's talk on telestroke and Dr. Ammar Alkawi from Saudi Arabia discussing the role of endovascular neurology in his part of the world. Dr. Alkawi's talk showed the poor penetrance of interventional neurology in the developing world and the amount of effort needed to increase delivery of such services in developing world. Dr. Vallabh Janardhan gave the penultimate talk on standardization of neuroendovascular lab based upon intervention cardiology and neurology experience. He mentioned the SILC program that has been formulated for the standardization and was going to be launched in the near future. The last talk was given by Dr. Mark Alberts on comprehensive stroke center and neurointerventionalists focusing on the roadblocks and new ideas and principles behind certification procedures. Closing remarks were given by Dr. Jovin with the announcement of SVIN 2014 in Miami, Florida.



the sound financial foundation of SVIN and congratulated Dr. Edgall for the wonderful organization.

SVIN 6TH ANNUAL MEETING AND THE INTERNATIONAL CONFERENCE ON INTRACRANIAL ATHEROSCLEROSIS (ICAS) (cont.)

This meeting saw a lot of exciting results, especially from post-hoc analysis of IMS-III data showing light at the end of tunnel for thrombectomy procedures, and showcased multiple trials underway assessing the efficacy of thrombectomy devices. It also saw a unanimous adoption of TICI 2b – 3 as the standard of revascularization. Addition of an international board member was welcomed with

excitement and hope of extending the society's reach beyond North America. The conference also witnessed multiple important results being discussed on platform underlying the growing significance of the Society of Vascular and Intervention Neurology.



Annual Meeting

1ST ANNUAL COMPREHENSIVE STROKE CENTER (CSC) WORKSHOP

ROBIN NOVAKOVIC, MD

The reviews are in and the 1st Annual Comprehensive Stroke Center (CSC) Workshop was a highly attended and well-received success.



The 6th Annual SVIN Meeting was hosted in Houston, Texas. As part of this year's annual meeting the SVIN was proud to offer its first CSC Workshop, a new endeavor for the SVIN, Co-Chaired by Anne Alexandrov PhD, RN and Robin Novakovic, MD. The workshop represented fruition of a SVIN mission to play an active role in improving and educating others on stroke care. Dr. Alexandrov notes, "The workshop was a great success and exceeded our expectations. This is a hot topic and SVIN's leadership in this area is absolutely essential."

Meeting attendees were able to learn from leaders in the field on the requisite components proposed by the Brain Attack Coalition and The Joint Commission for hospital

accreditation of a CSC. The daylong course offered instruction on learning to identify institutional gaps and bridging measures to overcome those gaps to meet CSC standards; understanding the economics of becoming and maintaining a CSC; learning how to align electronic health records to regulatory and certification requirements and much more.

SVIN looks forward to hosting the 2nd Annual CSC Workshop as part of the 7th Annual SVIN Meeting being hosted in Miami, Florida in 2014.



CSC Workshop

A SPECIAL TRIBUTE TO DR. FERNANDO VINUELA, PIONEER AND INNOVATOR OF INTERVENTIONAL NEURORADIOLOGY

GARY R. DUCKWILER, MD
PROFESSOR AND DIRECTOR
INTERVENTIONAL
NEURORADIOLOGY
DAVID GEFLEN SCHOOL OF
MEDICINE AT UCLA

UCLA is announcing the retirement of Dr. Fernando Vinuela. Originally from Montevideo, Uruguay, he went to the University of Western Ontario for residency and fellowship. He was then a clinical instructor at the University of Pittsburg for a year before returning as faculty to the University of Western Ontario until 1986. He has been Professor and Director of the Division of Interventional Neuroradiology at UCLA since then. A giant in the field of Neurointervention, he is a true pioneer and innovator in all aspects of our specialty. A retirement celebration will be held in Los Angeles on February 1, 2014 (location TBD). Please contact Tracy Aden (taden@mednet.ucla.edu) for more information.



Dr. Fernando Vinuela

Dr. Dileep Yavagal, SVIN Immediate Past President, conducted a short interview with Dr. Fernando Vinuela.

Dileep Yavagal: When you were training in radiology, only very few radiologists chose to do neurovascular intervention. Was there an inspiration or impetus that led you to the neuroradiology and more specifically neurovascular intervention?

Fernando Vinuela: Dr. Charles Drake was

my strongest mentor. He was one of the most famous neurovascular surgeons in the world and used to receive cases from everywhere. I used to review complex cases with him and discussed the possibilities and limitations of vascular neurosurgery. He strongly encouraged us to go the lab and develop endovascular alternatives of intracranial navigation and provided all the first 54 cases of endovascular embolization of brain AVMs using a percutaneous approach.

DY: It appears that you focused on finding innovative catheter based treatment for cerebral aneurysms from very early on in your career. What were the innovations you considered for embolizing cerebral aneurysms prior to invention of the GDC coils? What made you focus on a coil based approach rather than other embolic materials for cerebral aneurysms?

FV: The utilization of detachable balloons was a disaster in our hands. We had a complication rate of 18% and the results were totally unpredictable. The inflation of the balloon imposed a shape to the aneurysm and elicited aneurysm re-rupture in many cases. The utilization of pushable coils had less complication rate than the balloons, but their anatomical results were incomplete in most cases. Both techniques were “unforgiving.” The original idea from Guido used the location of a small magnet in the center of the aneurysm, followed by the injection of ferrous micro-particles within the aneurysm. The detachment of the magnet needed the use of a small electric current. Guido observed clot formation when the electric current was used

A Special Tribute

A SPECIAL TRIBUTE TO DR. FERNANDO VINUELA, PIONEER AND INNOVATOR OF INTERVENTIONAL NEURORADIOLOGY (cont.)

before the injection of ferrous micro-particles.

This technique was especially developed for small-ruptured aneurysms due to softness of the detachable coils. The coils adapted to the size and shape of the aneurysm (huge difference with the balloons).

DY: You were one of the first neurointerventionalists in the world to embrace the entry of neurologists into neurointervention. What was your vision that led to your pioneering this new

movement in the field?

FV: The field of Interventional Neurosciences belongs to the fittest! I noticed that an increasing number of young neurologists were very discontent with their role in the management of acute stroke. They have the appropriate academic background to understand the disease and the will power to change its management. I found that ethical and moral reasons are well above pitiful political ones.



Dr. Fernando Vinuela in a recent photo.



Fall 1991, doing one of the first coiling procedures in patients at UCLA. Drs. Guido Guglielmi, Gary Duckwiler, Fernando Vinuela



1990s Drs. Pedro Lylyk and Fernando Vinuela



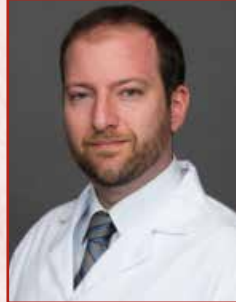
1990 Drs. Guido Guglielmi, Gary Duckwiler, Fernando Vinuela photo shoot GDC coils.

A Special Tribute

JOURNAL CORE REVIEW: THE RECCLAIM STUDY

GUILLERMO LINARES, MD

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TEMPLE UNIVERSITY



Endovascular Reperfusion and Cooling in Cerebral Acute Ischemia (ReCCLAIM I).

Christopher M Horn, Chung-Huan J Sun, Raul G Nogueira, Vishal N Patel,

Arun Krishnan, Brenda A Glenn, Samir R Belagaje, Tommy T Thomas,

Aaron M Anderson, Michael R Frankel, Kiva M Schindler, Rishi Gupta. *J Neurointerv Surg.* 2013 Mar 6.

Summary: Gupta et al published the fascinating results of their phase 1 pilot study of intravascular hypothermia after definitive intra-arterial reperfusion. Although hypothermia remains investigational in the treatment of acute ischemic stroke, it is the most promising adjuvant therapy to recanalization. ReCCLAIM (Reperfusion and Cooling in Cerebral Acute Ischemia) was a prospective single-arm open-label clinical trial. Twenty patients with Alberta Stroke Program Early CT Score (ASPECTS) 5–7 and NIH Stroke Scale (NIHSS) score > 13 were enrolled and treated with intravascular cooling immediately after IAT. The mean age, median NIHSS score and median final infarct volume were 59.7±14.6 years, 19 (IQR16–22) and 78 cm³ (IQR 16–107), respectively. The average time to the target temperature (33°C) was 64±50 min. Intracranial hemorrhages were found in three patients, of which one was symptomatic. Evidence of blood brain barrier breakdown was observed on 3 of 14 MRIs (21%). Six patients died due to withdrawal of care, whereas six patients (30%) achieved mRS of 0–2 at 90 days. In a binary logistical regression model comparing ReCCLAIM patients with 68

historical controls at their institution, hypothermia was protective against intracerebral hemorrhages (OR 0.09, 95% CI 0.02 to 0.56; p<0.01).

Commentary: The authors deserve much praise for their work. Their innovative utilization of hypothermia highlights the importance of interventions that target the pathophysiology of cerebral ischemia and go beyond the anatomical resolution of a vascular occlusion. The trial selected a subgroup of patients that have traditionally been excluded from therapy, those with an established large infarct as documented by an ASPECTS of 5–7 and, by doing so, has the potential to broaden the applicability of intra-arterial recanalization to novel patient populations. There is a “double edged sword” effect however since these individuals have much higher odds of a bad outcome as can be seen with the reported mRS result. Future efforts to apply this intervention will certainly benefit from randomized controls rather than historical controls in showing the reduction of reperfusion injury. The use of radiographic biomarkers for disruption of the blood-brain barrier is an elegant and laudable addition to ReCCLAIM and shows just how much thought went into the trial design. It should be noted that all patients were mechanically ventilated for the purposes of hypothermia and the effect of this intervention is difficult to measure. While awake hypothermia is known to be possible, it necessitates a higher degree of monitoring and may carry higher risks of aspiration pneumonia due to shivering control interventions. ReCCLAIM tests the hypothesis that hypothermia can be beneficial when initiated after successful recanalization. Achieving hypothermia prior to recanalization may potentiate its beneficial effect, particularly when treating patients with small core infarct volumes (ie ASPECTS 8–10). ReCCLAIM is an inspiring publication that will likely change the future of ischemic stroke therapy, I look forward to what the future will bring.

JOURNAL CORE REVIEW: THE JR-NET STUDY

**VIKTOR SZEDER,
MD PHD**

DAVID GEFFEN
SCHOOL OF
MEDICINE AT UCLA



Endovascular Therapy for Asymptomatic Unruptured Intracranial Aneurysms JR-NET and JR-NET2 Findings. Shigematsu T et al. *Stroke*. 2013; 44:2735-2742

Summary: This article is a retrospective analysis of prospectively collected data of the Japanese Registry of Neuroendovascular Therapy [JR-NET and JR-NET2] analyzing short-term outcomes (30 days) and the usual procedural and periprocedural data of neuroendovascular therapy (EVT) for asymptomatic unruptured intracranial aneurysms (UIAs) between 2005-2009.

From 31 968 registered procedures, 4767 EVTs were analyzed. 80% of the aneurysms were in the anterior circulation (most frequent paracallosal). 35% were < 5mm. The success rate of EVT was 98% and adjunctive techniques were used in 55%. Antiplatelet agents were used in 86% with complete aneurysm occlusion in 58%. Complication rate was 9% (2% hemorrhagic and 5% ischemic) with 30-day morbidity and mortality of 2% and 0.3%, respectively.

Authors' conclusion: The radiographic results of EVT for asymptomatic UIAs in Japan were acceptable, with low mortality and morbidity rates.

Commentary: Randomized controlled trials are considered being the highest level of evidence. However, institutional case series, registries, national databases reflect the "real life" practice patterns. These data are very important to

review and possibly see if any change in practice should be considered.

We congratulate Japanese NeuroInterventionalists on collecting their data and the authors on this great publication. Some would argue that the results are not telling anything new, however they confirm the general notion of the need of high caution in indications to treat small unruptured aneurysms (<5mm).

This is the largest nationwide study on UIAs in Japan showing very comparable results on EVT feasibility, low morbidity and mortality.

The limitations are naturally drawn from the retrospective nature of the study; bias of the patient enrollment, which was based on volunteer agreement of the NeuroInterventionalists (only 36% of all UIAs treated on Japan) as well as treating physicians' assessment of the radiological and clinical endpoints. Furthermore, intracranial stent- assisted techniques and bioactive coils were used only in the later part of the study (due to the approval process in Japan). Comparing to the current practice in the US, flow diverters were not available in the study.

Overall, it confirms that the UIAs can be treated very successfully from radiological and clinical standpoint. However, the peri-procedural mortality and morbidity should be less than 1% and 4%, respectively.

Special attention should be given to the consideration of indications to treat small (<5mm) or very small (<3mm) UIAs, because of the higher complication rate.

FELLOW'S CORNER: THE SENIOR YEAR

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About two years ago, we wrote on our experience going through the search for NeuroInterventional fellowship, the challenges of the interview and selection process. Today we would like to share our experience of going through the last year of training, searching for “the job” and the preparation of starting our first NeuroInterventional attending position.

First, we all would like to express our passion for the field and great excitement we are currently experiencing while starting our careers. We feel it is very important for us to make this statement given the atmosphere of uncertainty about the future of the field in the NeuroInterventionalist community. The recent “negative” interventional ischemic stroke trials, and articles addressing the cessation of fellowship training, is somewhat worrisome for young applicants as well as graduates. The truth is however that, at least for this year, there were still plenty of job

opportunities. The field is distinctly evolving. The conditions and environment in which we practice medicine are changing and this, without a doubt, influences the job market.

To remind you a little about our training, we come from very different fellowship programs. Not only geographically (Northeast, West coast), but our “home” departments were different (Neurology, Neurosurgery, Radiology), the number of fellows in the program was different (2 vs. 1 vs. 4). There were major differences in the structure of rotations, educational program, and cases we treated. However, eventually we looked at similar jobs, even interviewed at a few places for the same positions! At the end we got the jobs we wanted, started our faculty positions at great institutions and we feel very excited about the future. Hopefully our experience might serve to guide and prepare you for what you are about to encounter.

Let's first talk about what to do in the 2nd year of the fellowship. The most important message about this stage is to focus on learning, observing and asking as much as you can from your faculty. It is normal to feel that the most important is to “do” as many cases as you can, but what really matters in the long run is the thought process that goes into a case. Try to focus on indications for when to do (or not to do) an intervention, patient selection, anatomy, technique, materials, importance of the wet read, dangerous anastomoses, bailout techniques and frequent mistakes, to name a few. One senior faculty member once said, “It takes about 5 years out there doing cases by yourself before you start to understand what you should do, but mainly what you shouldn't do.”

As you clinically prepare yourself to start this new endeavor of looking for a position, you need to start developing a new skill, one that

FELLOW'S CORNER: THE SENIOR YEAR (cont.)

you have never been taught during fellowship. A “detective skill” that helps you to search what is obscure within the job market. First you need to ask yourself two important questions that might affect your search: 1) the geographic region you want to work in, 2) the relationship with academia. Unlike your fellowship search, the majority of great jobs will not be found online. Your mentors and faculty, former senior fellows and regional reps are a great source of information. Some of the industry representatives have a list of jobs that might be available before they are advertised. It is also advisable to use academic meetings and fellow's courses to start networking and set up potential interviews. Do not be shy about introducing yourself and tell your mentors to introduce you to all those people that have been writing the books and papers you study from! For the most part, they are very approachable and helpful. Other potential sources include online resources, advertising via societies, commercial websites and hospitals or health networks in the geographic area you are interested in.

Once you have come up with a list of potential places, we personally suggest to also include in your search those dream places that you would love to work at because of the location or the institutional prestige. We also suggest one should be very inclusive and look at places which might not be top in your mind. However, visiting and talking to these other institutions might give you lots of valuable information as well as experience in the interview process. Do not limit yourself by your specialty background! The future of this specialty is heading towards hospitals to have neuroendovascular divisions with representatives from the three fields!

We strongly recommend that the applicants directly contact Chairmen of their respective

departments as well as endovascular directors via email. Include a short personal statement in the email summarizing your training and your future goals. Also, attach your CV including your publication, leadership and teaching experience. Although recruiters might be helpful at times, let your CV and training initially talk for themselves. Utilize your additional training skills to enhance your possibilities. The days of hiring people for 100% endovascular positions are soon coming to an end. Thus, providing an extra hand to help with stroke coverage, NeuroICU care, reading diagnostic Neuroradiology films or performing general neurosurgical procedures depending on your specialty, might make you a more desirable candidate.

When you initially reach out to institutions, it is imperative to clearly define what your role is going to be within that group/department. Although stroke is highly remunerable for hospitals, it is very demanding for the neurointerventionalist due to the 24/7 availability requirement. Thus, it is not uncommon for private groups to primarily search for a neurologist to cover only stroke call without the possibility to independently treat hemorrhagic disease. Although this is less common in academic centers, it is still possible especially in centers where the neurointerventionalists belong to independent departments without a common neuroendovascular division and competition for reimbursement exists.

Once mutual contact has been established, the time for interview begins. A successful interview can be thought of as an honest exchange of likes and dislikes. If you fail to share the things that are truly important to you due to fear of closing future doors, you will only decrease your likelihood of success. If during an interview you share what you truly feel is your perceived role

FELLOW'S CORNER: THE SENIOR YEAR (cont.)

within the endovascular field, and this perception does not fit the needs of the program you are interviewing for, the interaction is just as valuable as a job offer. Think long and hard about what you want, what is negotiable and what is a “deal breaker”. You will be surprised at how much variability there is in the job description for a Neurointerventionalist. For example, one of the authors (GL) is currently staffing all ED consults (including headache, leg weakness and dizziness) and performing all procedures in the NICU (including central lines, lumbar puncture, chest tubes, etc.) willingly, and very

happy to do so. This would be a nightmare for some, and desirable for others.

The future is indeed very bright. Do not lose sight of the reasons why you joined this exciting field. Be proud of what you do and your background as a Neurologist. We are all standing on the shoulders of giants but it is our responsibility to bring our best to this field and to adapt to an ever-changing environment.

5 MAX ACE- A BIGGER MOUTH, MEANS MORE ASPIRATION POWER

MOHAMED TELEB, MD



The latest clot retriever device is not a stent. Yes I said it. It's just a guide catheter with aspiration. The 5Max Ace from Penumbra, Inc (Alameda, CA) has been marketed as a stand-alone clot extractor. The overall concept is taking the more trackable, larger 5Max Ace to the M1 clot and just applying aspiration. No separator needed, no balloon needed, no stent needed. They have termed this technique the ADAPT technique. ADAPT stands for "A Direct Aspiration first Pass Technique".

The publication and penumbra marketing report a TICI 2B/3 recanalization rate of 75%. But just reading the abstract reveals that additional devices are needed to achieve this.

"The ADAPT technique alone was successful in 28 of 37 (75%) cases although six cases had large downstream emboli that required additional aspiration. Nine cases required the additional use of a stent retriever and one case required the addition of a Penumbra aspiration separator to achieve recanalization."¹

Their SNIS poster was up to TICI 3 in 53% & TICI2b/3 in 93% with 81 patients, but again this was with adjunctive therapy.

Design: It shares many of the same dimensions as the previous 5Max. The biggest difference is the distal ID, which improved from 054 to 060. The proximal OD is unchanged. 12 Transition Zones enable outstanding force transmission and exceptional kink resistance. An Advanced Polymer provides flexibility for superior tracking and a Nitinol Round Wire Reinforcement maintains lumen integrity is the reason per penumbra for the better trackability despite larger size.

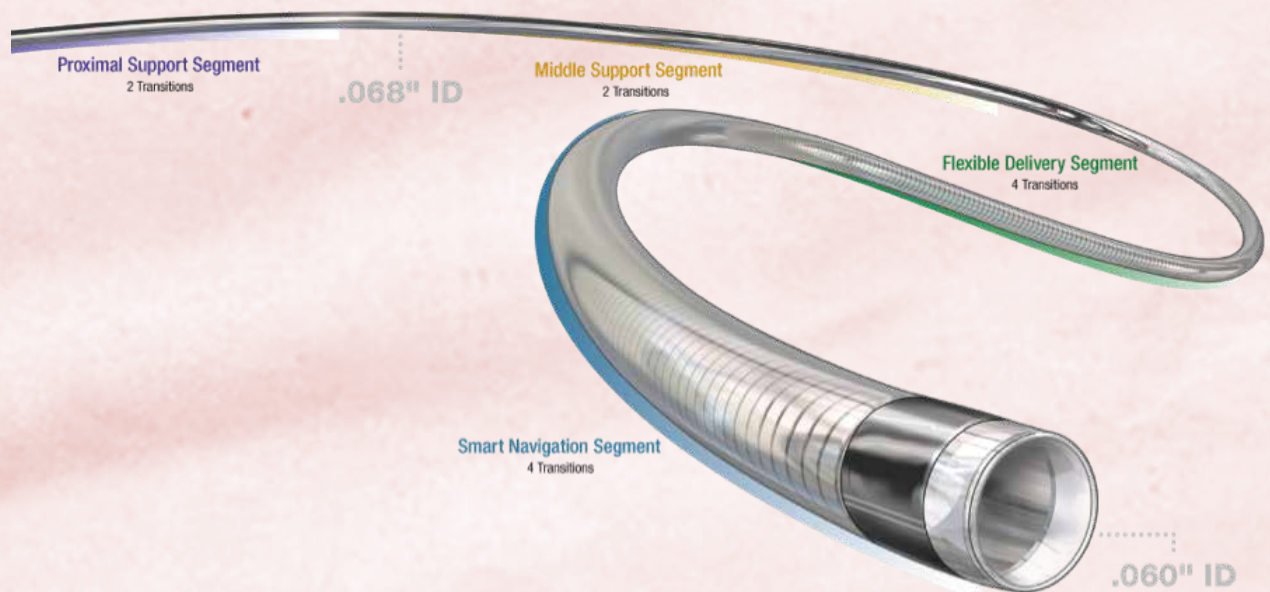


Figure from 5 Max ACE Brochure, permission granted from Penumbra, Inc.



Just

ACE

It

ACE™

1. Dr. Satoshi Tateshima, UCLA, Los Angeles, CA (30 sec. aspiration)
2. Drs. Jeff Haithcock and Kenneth Layton, Baylor Medical Center, Dallas, TX
3. Drs. Ajit Puri and Sam Hou, University of Massachusetts, Worcester, MA (2 min. 45 sec. aspiration)
4. Dr. Gary Spiegel, Hartford Hospital, Hartford, CT (6.5 min aspiration)
5. Dr. Giuseppe Ammirati, Scripps Health, San Diego, CA
6. Dr. Dan Sahlein, Columbia Presbyterian, New York, NY
7. Dr. Doug Deorchis, Boca Raton Regional Hospital, Boca Raton, FL
8. Dr. Keith Woodward, Fort Sanders Regional Medical Center, Knoxville, TN
9. Drs. Imran Chaudry, Alex Spiotta, Quill Turk and Ray Turner, Medical University of South Carolina, Charleston, SC
10. Dr. Kurt Reuland, Trinity Mother Frances Health System, Tyler, TX
11. Dr. John Scott, Indiana University, Indianapolis, IN (1 min. aspiration)
12. Dr. Jeffrey Farkas, Lutheran Medical Center, Brooklyn, NY (29 min. procedure*)

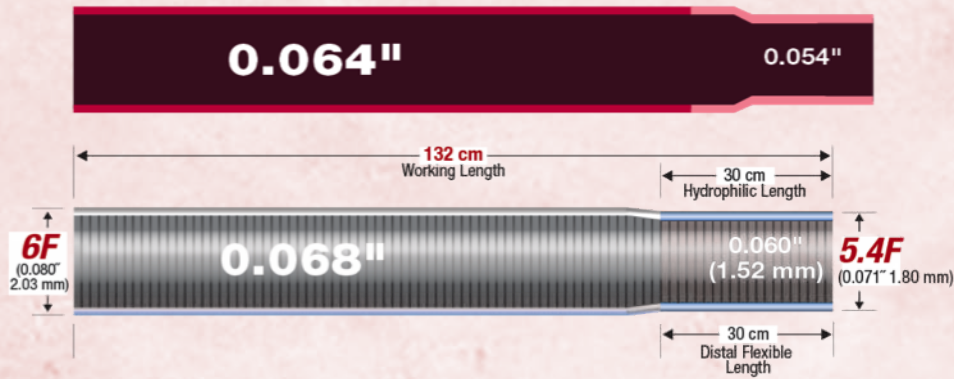
13. Dr. Blease Graham, Palmetto Health Richland, Columbia, SC
14. Dr. Todd Peebles, Theda Clark Medical Center, Neenah, WI (< 5 min. aspiration)
15. Drs. Jeff Haithcock and Kenneth Layton, Baylor Medical Center, Dallas, TX
16. Dr. J Mocco, Vanderbilt University Medical Center, Nashville, TN
17. Dr. Keith Woodward, Fort Sanders Regional Medical Center, Knoxville, TN (15 min. procedure*)
18. Dr. Jeffrey Farkas, Lutheran Medical Center, Brooklyn, NY (26 min. procedure*)
19. Dr. Satoshi Tateshima, UCLA, Los Angeles, CA (30 min. procedure*)
20. Dr. Don Frei, Swedish Medical Center, Englewood, CO (21 min. procedure*)
21. Dr. Kurt Reuland, Trinity Mother Frances Health System, Tyler, TX (20 sec. aspiration)

* Procedure time is puncture to final revascularization.

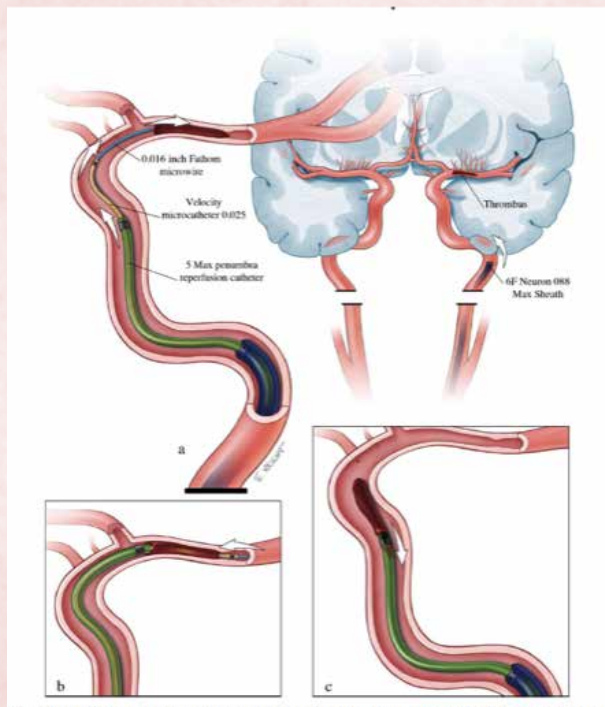


5 MAX ACE- A BIGGER MOUTH, MEANS MORE ASPIRATION POWER (cont.)

Compatibility: Same as previous 5Max.



Figures from 5 Max ACE Brochure, permission granted from Penumbra, Inc.



Use: See steps below and illustration.

1. Track wire alone or smaller micro-catheter into or past clot.
2. Advance 5Max Ace to clot edge
3. Aspirate on max setting (90 s)
4. If no recanalization is seen, withdraw slowly until flow is achieved and leave for another 90 s on full aspiration.

I have tried this technique 3 times unsuccessfully, but did get recanalization with additional devices and used it as a proximal aspiration catheter. Every stroke is different and maybe with more experience it can achieve its goal. If it only works half the time, it might be worse to cut down on time to recanalization. You will have to try it yourself. Please feel free to ask your local Penumbra representative for some technical assistance and tricks.

References

1. Turk AS, Spiotta A, Frei D, et al. Initial clinical experience with the ADAPT technique: A direct aspiration first pass technique for stroke thrombectomy. *J Neurointerv Surg.* 2013.



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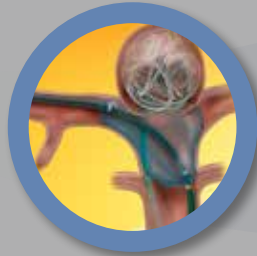
*As compared with Solitaire FR Device 4x20mm.
Testing performed by Stryker Neurovascular. Data are on file at Stryker Neurovascular and will be made available upon request.

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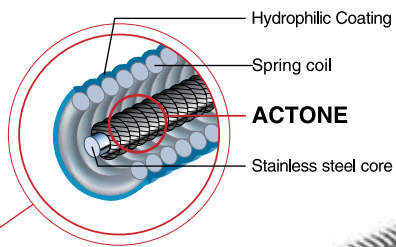


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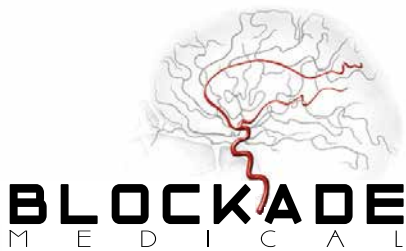
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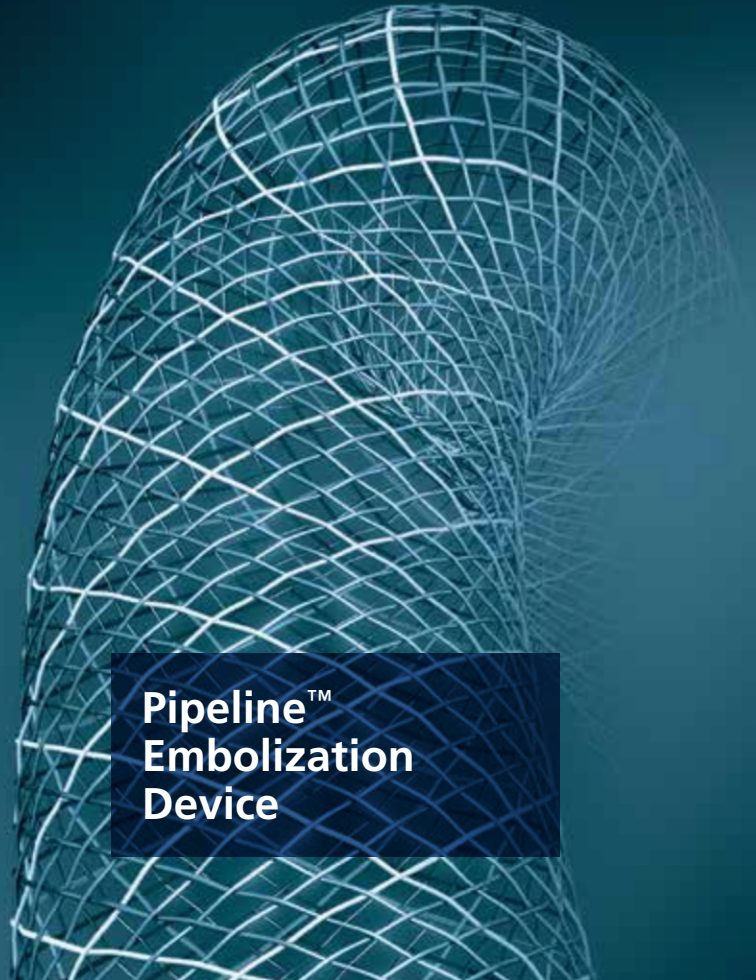


Changing paradigms



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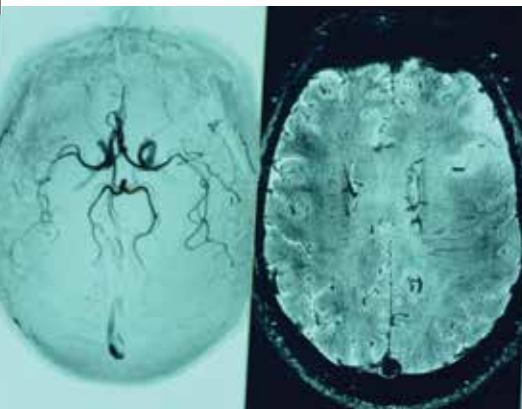


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