SVIN Society of Vascular and Interventional Neurology

SVIN QUARTERLY

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Society News

➲ SVIN welcomes the addition of Dr. Than Nguyen (Boston, MA) and Dr. Randall Edgell (St. Louis, MO) to the exective board.

➲ The 2nd Annual meeting, held in Miami, FL, in conjunction with the Neurocritical Care society, was a tremendous success, with attendance exceeding our 1st Annual meeting. Invited speakers and chosen abstract presenters delivered high level presentations on a variety of topics ranging from novel treatment of wide-necked aneurysms, developing devices for revascularization therapies, debates on stroke imaging based triaging, training standards, and clinical research for acute ischemic stroke. The Pioneering Award was presented to Dr. Wolf-Dieter Heiss, Max Planck Institute of Neurology, Cologne, Germany, who lectured on Comparison of PET and PW/DW-MRI for the Detection of Penumbra and Irreversible Ischemic Damage in Acute Stroke.

Professor Wolf-Dieter Heiss delivering Pioneering award lecture on PWI and DWI MRI in ischemic stroke at the 2nd Annual meeting, Miami, FL, October, 2008.

➲ We are excited to announce the selection of a new management firm, SVINICKI, based in Milwaukee, WI, to assist with society administration. Jane Svinicki and her associates will take active roles in membership application processing and correspondence, new member recruitment, society fund raising, and meeting planning. We also thank Ms. Amy Lallier, who stepped down from her position as Executive Director, for her help with our society.

➲ There will be a change of date and venue for the 3rd Annual Meeting. Previously scheduled as a stand alone event to be held in Chicago, IL, September, 2009, we will instead be continuing in the tradition of combining meeting agenda with a sister society, the American Society of Neuroimaging. The new date and location will be San Francisco, CA, January, 2010 at the Palace Hotel.

➲ SVIN will serve as co-editor and sponsor of the Journal of the Society of Neurointerventional Surgery along with the Society of Neurointerventional Surgery (SNIS, formerly ASITN).

Science and Industry News

➲ ev3 (Irvine, CA) has launched the Onyx HD 500 as a novel permanent liquid embolic agent under Humanitarian Device Exemption (HDE) for the treatment of non-surgical, wide-necked, side-wall, intracranial aneurysms. Food and Drug Administration stipulation of HDE devices, requires use under local Institutional Review Board approval. In addition, specific training and certification for Onyx HD 500 must be completed prior to use.

➲ A novel device for acute ischemic stroke therapy, the Solitaire (ev3, Inc.) combining the properties of an intracranial self expanding stent and embolectomy device, is currently in development. Dr. Reza Jahan, Attending in Interventional Neuroradiology, at the UCLA medical center, Los Angeles, CA, provided preliminary experimental data on this device at the 2nd Annual meeting.

➲ Dr. Stephen Davis and researchers at the University of Melbourn and Royal Melbourne Hospital, Australia, are planning a trial for revascularization therapy in acute ischemic stroke. The EXTEND (Extended time for thrombolysis in emergent neurological disability) trial utilizes triage criteria of perfusion and diffusion weighted magnetic resonance imaging to select candidates for therapy beyond standard time windows. (Presented at the International Stroke Conference, San Diego, CA).

➲ Penumbra Inc. (San Leandro, CA), has launched their new Neuron 0.070" guiding catheter for acute stroke intervention. The larger 6 French catheter follows on the design of their initial Neuron 0.053" catheter, as an adjunct and aid to acute stroke intervention. The earlier Neuron iteration was engineered to allow distal placement in the petrous carotid for tortuous vascular anatomy, but the tapered inner lumen does not permit passage of the Penumbra Reperfusion catheters for mechanical thrombectomy cases. The newer, larger Neuron, has an inner diameter large enough to allow for passage of these microcatheters and devices.

➲ Protocol for the RETRIEVE (Randomized trial of Endovascular TReatment of acute Ischemic strokE Versus mEdical management) trial sponsored by Concentric Medical, Inc (Mountainview, CA) has been finalized with expected commencement at the first study sites anticipated as September 1st.

INSIDE THIS ISSUE...

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President's Message

This issue of the newsletter comes out with many exciting events occurring in SVIN. Some of the recent updates and activities are mentioned in the newsletter and some I will focus on further:

First, we welcome our new management company with 3 dedicated specialist providing high level of society management into SVIN activities:

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I would also like to congratulate the chair (Dr Jovin) and the members of the second annual committee meeting in Miami, Florida for a successful second annual meeting with great attendance and great topics.

The new SVIN website is now up and running and would continue to populate as our members provide material and cases to be posted on the website. Our website designer Doug Tyme did a great job with this interactive website. Please send your suggestion, comments and material to Jane Svinicki.

The Neurovascular Coalition (NVC) has accepted the SVIN as a full voting member, and we are still looking into joining the Brain Attack Coalition.

New effort from SVIN and American Academy of Neurology (AAN) to change the ACGME requirement for residents entering Endovascular Surgical Neuroradiology (ESNR) from Neurology to allow neurology candidates to complete their CT and MRI and diagnostic angiography training during residency or vascular neurology fellowship is under the way.

The Society of Neurointerventional Surgery (SNIS) partnership with SVIN continues to grow including approaching the SVIN by the SNIS director to have their upcoming journal (JNIS) be the official journal of SVIN as we grow for the next 5-10 years with an associate editor from SVIN and seats on the editorial board as well as recognition with logo and statement on the cover of the journal. The SVIN Executive Board voted in favor of endorsing JNIS as our society journal, and the first issue is expected this July 2009.

The SVIN roundtable proceedings on the Endovascular Ischemic Stroke therapy will be published later this year awaiting on few more manuscripts.

We are looking forward to the Annual Meeting committee to come with even greater program for the Third Annual Meeting.

These activities and more would not be possible without your help and support and commitments to SVIN. If you would like to volunteer or provide feedbac, comments and suggestion; please contact Jane Svinicki at jane@svinicki.com or director@svin.org

I would like to thank the annual meeting committee for such a great job.

Osama (Sam) O. Zaidat, MD
SVIN President
Milwaukee, Wisconsin

SVIN
Society of Vascular and Interventional Neurology

Editor's Corner

Current concerns regarding inflation, unemployment, and job security in the general economic sense relate as well to our field of Interventional Neurology, where inflation is related to market saturation (and oversaturation) of interventionalists, which accordingly threatens individual job security. These problems directly weigh against community concerns of the supply and demand of skilled professionals, the subject of which has created considerable internal society debate regarding training and practice standards. The main challenge to defining unified criteria lies in balancing the need for skilled interventionalists with the dilemma of potentially shrinking practice volumes for practicing professionals.

The rigorous call schedules of providing acute ischemic stroke (AIS) care become arduous over the course of a career, potentially leading to premature "burn out." Apart from hectic call schedules and unconventional hours of service, the limited availability of cross coverage distributes this burden unevenly among a limited pool of practitioners. Dealing with this dilemma succesfully either imperils the well being of the interventionalist (by providing care at sacrifice to personal life and stress level) or the patient (by limiting the hours within which acute stroke care may be delivered); this notwithstanding that reimbursement for year round 24/7 coverage is poorly reimbursed by hospitals (in contrast to other on call services). In this regard, skilled assistance, in the form of interventional colleagues, trained in endovascular stroke therapy, would be welcome.

Conversely, as more graduates seek jobs, the numbers of procedures performed by a given interventionalist, each interventional neurologist's "market share," continues to fall. Though it is desirable for us that endovascular treatments of complex cerebrovascular disease are becoming more accepted by the medical community, maintainenance of viable practices and procedural competency remains a reality. This small market share is further divided between endovascular neurosurgeons, interventional neuroradiologists, and other endovascular professionals from fields such as interventional cardiology and peripheral interventional radiology.

Theoretically, with more interventionalists (from whatever clinical sphere), the easier access to care. But this does not address variability of quality of the care delivered, a sensitive issue, considering that the benefit of interventional therapy for AIS remains unproven; the fact of which has led some major insurance carriers to deny reimbursement for such procedures. While many specialists endorse these therapies, and ongoing trials may yet establish proof of concept, it would be detrimental at this early stage to arrest endovascular stroke treatment by poor outcome simply due to unskilled delivery of care. By the same token, as long as this therapy remains the purview of a few qualified centers, leaving a void of care for the majority of the U.S. population, its benefit will never be proven.

What then is the ideal solution? Paramount to this is the adoption of generally accepted standards of practice, which are preceded by fulfillment of acceptable standards of training. For those entering Neurointervention from fields outside neurology, we can only decide upon minimum criteria of relevant procedures performed before independent practice. But for the standards of our own profession, we can also help decide upon an appropriate time frame within which training may be completed. The need to quickly fill the void of interventionalists for AIS treatment bolsters the argument to shorten training programs and facilitate the entry of new Interventional Neurologists into the arena, whereas the concern of dwindling market share and job inflation on the other hand is one argument towards continued requirements of two year training programs in addition to prerequisite requirements of vascular neurology fellowships.

The best solution may be found by recognizing where the supply and demand is truly unbalanced and creating a solution for this specific area. The greatest concern of market share centers around treatment of hemorrhagic disease such as aneurysms, yet the greatest public demand is for AIS, again, the most demanding in terms of time commitment. Perhaps a training path that ensures that all vascular neurologists can offer endovascular stroke therapy would help fill this void, while more lengthy periods for complete endovascular training may stem the tide of market oversaturation.

Whatever we decide upon as a society, we will have to recognize that our job security involves quickly proving the benefit of therapy which may require significant increase in trained professionals. Beyond this we must continue to ensure our distinct place within a multidisciplinary field by showing that the physician most able to deal with the greatest cause of long term disability in the country, is a *fully* trained vascular neurologist.

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SVIN PROFILE

DR. AMMAR AL KAWI

Department of Neurology
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and Research Center
Riyadh, Saudi Arabia

In this issue of the newsletter, we profile, Dr. Ammar Al Kawi, a neurologist trained stroke and endovascular neurointervention in the United States, who has since joined as faculty in the King Faisal Specialist Hospital and Research Center in Riyadh, Saudi Arabia, to spearhead the acute stroke and neurointerventional program.

Dr. Al Kawi completed neurology residency at the University of Illinois in Peoria. Thereafter he moved to the University of Medicine and Dentistry New Jersey (UMDNJ) in Newark to complete one year of vascular neurology and two years of interventional neurology under Drs. Adnan Qureshi and Jawad Kirmani. After graduating from his interventional fellowship, he stayed on as faculty at UMDNJ practicing stroke and interventional neurology until relocating to the Gulf region.

The King Faisal hospital, an 894 bed acute care institution, serves as tertiary care center for the Kingdom of Saudi Arabia, serving a local population of 5 million and a larger referral base of 25 million. The hospital is regarded as one of the leading institutions in the region, with a "mission to provide medical services of highly specialized nature and promote medical research and education programs," says Dr. Al Kawi. The medical center provides postgraduate educational training for a variety of programs including Neurology and Neurosurgery alongside its focus on disease prevention. Neurology is a division of the Department of Neurosciences which also includes the sections of Clinical Neurophysiology, Neurosurgery, Pediatric Neurology, and Psychiatry. Nine consultants in Neurology (including Dr. Al Kawi) serve on staff alongisde 5 full time and one part time consultant Neurosurgeons.

Given its role as an established center of excellence in Saudi Arabia, facilities and equipment (General Electric biplane unit) for the performance of endovascular procedures such as aneurysm coil embolization were already in place in the Radiology Department. "There are two other radiologists, one full time, and one part time, who were performing aneurysm and AVM embolization and other procedures prior to my arrival. The majority of cases arrive via transfer, and most cases are done as elective procedures," says Dr. Al Kawi. "Currently interventional is shared between both departments and the equipment is shared on an 'as needed' schedule. Interventional procedures are supported by Radiology technologists." Though Dr. Al Kawi's immediate appointment helped fill a temporary void in the interventional pool, his major contribution at the institution has been to develop the notably lacking acute care programs, e.g. acute ischemic stroke triage and treatment.

"Currently patients presenting within the 3 hour window are offered IV thrombolysis if they qualify for it." However, the acute stroke team and approach to patients presenting with emergent neurological conditions was lacking. Dr. Al Kawi has guided the process from its basic development; identifying members of the stroke team to respond to emergency calls and protocol of treatment to match the high standard and technical expertise to perform interventional therapeutics which already existed. At this time "not many acute stroke cases present to our center within the 3 hour or the 6 hour window since this is mostly a referral center and not geared for providing acute care primarily. This might change and the numbers will increase especially that I have been going around and giving presentations to physicians, colleagues and public to increase stroke awareness," says Dr. Al Kawi.

King Faisal Hospital and Research Center, Riyadh, Saudi Arabia.

Dr. Al Kawi is currently developing protocols for intra-arterial thrombolysis for stroke patients, which has been strongly supported by the hospital administration. "Almost all procedures are covered by the government. This takes away the financial incentive out of the process of formulating the investigation and treatment plans." This extends across disciplines in developing management strategies for patients with cerebrovascular diseases. "I am developing good cooperation with vascular surgery with regards to carotid stenosis patients. In the past all the patients that needed treatment got CEA. I have been working with the vascular surgeons closely to initiate CAS over here." Apart from the clinical infra-structure, acquisition of stroke devices and catheter equipment is required.

Apart from his commitment to the development of acute stroke protocols, Dr. Al Kawi also fulfils other clinical duties in the Department of Neurology. His background and training in vascular neurology leads him to serve as consultant to his colleagues on cerebrovascular cases. "In some cases, they may consult me for patients with cerebrovascular conditions where they are unsure if angiography is required, for example.

⇨continued on page 6

CASE REPORT 1: Clinical and Technical Challenges in Wide-Necked Basilar Aneurysms

Brijesh P Mehta, M.D. (Resident in Neurology, Partners Neurology/Harvard Medical School, Boston, MA)
Raul G Nogueira, M.D. (Assistant Professor, Vascular & Critical Care Neurology, Interventional Neuroradiology & Endovascular Neurosurgery, Massachusetts General Hospital/Harvard Medical School, Boston, MA)

Presentation

A 23 year-old female presented with sudden onset right facial droop, dysarthria, right hemiparesis and ataxia. Detailed radiologic evaluation disclosed an acute infarct involving the left hemipons (figure 1A, 1B; white arrows) presumably related to thrombosis (figure 1B, 1C; arrowheads) of perforating arteries (figure 1C; white arrow) near the neck of a large partially thrombosed basilar trunk aneurysm, measuring 2 cm witih a 6 mm neck (figure 1C, black arrow; figure 1D, white arrow).

Rationale for Endovascular Treatment

The main challenge in this case was how to balance the need to occlude the aneurysm which has an unfavorable natural history (the estimated 5-year cumulative rupture rate for posterior circulation aneurysms measuring 13 to 24 mm is 18.4% according to International Study of Unruptured Intracranial Aneurysms [ISUIA, *Lancet*, 2003]) against the ongoing issues with spontaneous thrombosis of perforating vessels arising near the neck region of the aneurysm. The decision was to perfom staged treatment with overlapping stents for flow diversion and then subsequent coiling of the dome/inflow region, while leaving the remaining aneurysm unobliterated. We thought that this approach would lead to spontaneous thrombosis of the areas of slow flow (e.g. remaning aneurysm sac) while allowing for patency of the areas with meaningful outflow (e.g. perforator arteries).

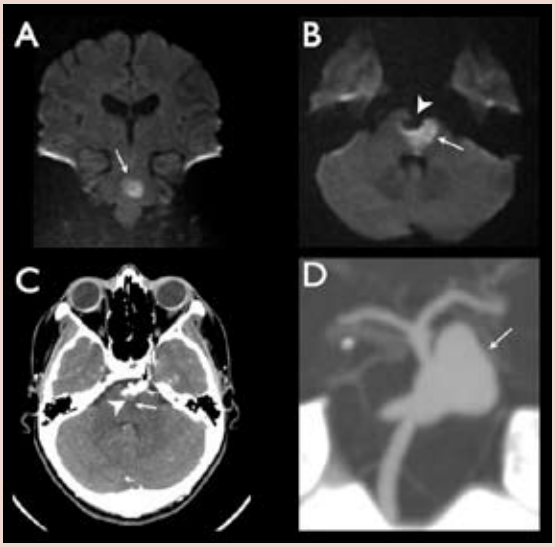

Figure 1

Procedure

Two overlapping Neuroform-3 reconstructive devices (3.5 mm x 30 mm and 3.5 mm x 20 mm) were deployed in the basilar artery across the aneurysm neck and extending to the left PCA, changing the angle of the basilar artery at the junction of the aneurysm (figure 2a, b; white arrows) as well as providing neck coverage. This effectively redirected blood flow from the aneurysm to the basilar artery with increased filling of the PCAs bilaterally (figure 2c, d; black arrows) and flow reduction within the aneurysm (figure 2c, d; white arrows). Patient was discharged on aspirin and plavix. Two months later, she underwent coil embolization of the aneurysm dome/inflow zone (figure 3a, c; white arrows).

Followup

Six-month follow-up angiogram demonstrated additional thrombosis of the aneurysm with a small amount of residual at the neck area allowing for flow into the perforators (figure 3a-d, black arrows). The patient made a near complete recovery of her initial stroke (mRS: 0; NIHSS 1 for mild residual facial droop).

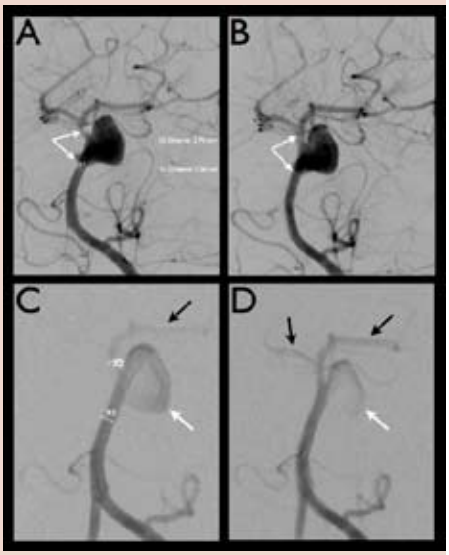

Figure 2

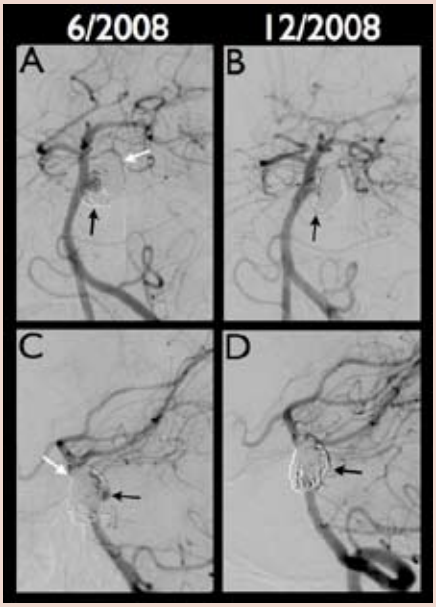

Figure 3

Please send your brief clinical/technical report along with 1-3 high quality JPEGs to NJanjua@chpnet.org

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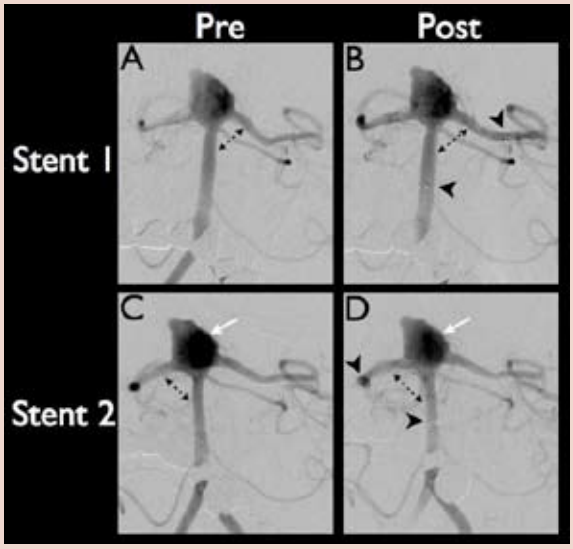
Presentation
A 55 year-old male was incidentally found to have a basilar tip aneurysm while undergoing evaluation for mild headaches. CTA revealed a 1.1 cm wide-necked aneurysm at the tip of the basilar artery, with the bilateral posterior cerebral arteries originating from the aneurysm base (figure 1a).

Rationale for Endovascular Treatment
Endovascular therapy was preferred given the unfavorable natural history of these aneurysms based on size, location and age of the patient (the estimated 5-year cumulative rupture rate for posterior circulation aneurysms measuring 7 to 12 mm is 14.5% according to International Study of Unruptured Intracranial Aneurysms [ISUIA, *Lancet,* 2003]). However, this was a technically challenging case due to the very unusual origin configuration of bilateral PCAs from the basilar artery at the base of the aneurysm. Normally, the PCAs arise from the basilar artery to form a 'Y-shaped' configuration, but in this case both PCAs appeared to takeoff at depressed angles. Decision was made to perform staged treatment with arrow-shaped stent reconstruction of the parent vessels for flow diversion and neck remodeling followed by coil embolization.

Procedure
In staged treatments, a Neuroform-2 stent (3.5 mm x 30 mm) was first deployed from the basilar artery to the left PCA (figure 1b, arrowheads), which then overlapped a Neuroform-3 stent (3.5 mm x 30 mm) placed from the basilar artery to the right PCA (figure 1d; arrowheads). This altered the angle of each PCA coming off the basilar artery at the base of the aneurysm (figure 1a-d; double arrows) and redirected blood flow from the aneurysm to bilateral PCAs causing flow reduction in the aneurysm dome (figure 1c, d black arrows). Patient was maintained on aspirin and



plavix. He subsequently underwent coil embolization of the aneurysm (figure 2a, b; arrows), while ensuring both PCAs remained patent (figure 3c, d; arrows).

Follow-up
Patient tolerated the procedure well without any complications. Neurological exam was intact after the procedure. He is scheduled for a six-month follow-up angiogram as per our routine.

Please send suggestions for future SVIN profiles to NJanjua@chpnet.org

SVIN PROFILE

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In these cases I will decide if invasive angiography is essential, and perhaps assume care of the patient. As the cerebrovascular practice is becoming busier, I am fading out my general neurology service." The infrastructure of subsequent care on the Neurology service is carried out by Neurology faculty colleagues and house staff. Stroke and interventional fellowships may develop in the future.

In regards to the neurointensive care of patients with cerebrovascular disease, Dr. Al Kawi acknowledges that this is still a remaining frontier in his hospital. "SAH here is taken care of by Neurosurgery. They are very reasonable and we work together to determine the best approach for treating the aneurysm. The ICU over here is a closed ICU and they run things completely themselves. They might look for advice often with neuro cases. But they manage the day to day issues. This might take a while to change."

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Upcoming Issues

SVIN Quarterly Editors welcome member volunteers to serve on the editorial staff, to assist with content and development of the Newsletter. Junior members are also invited to apply.