“What's past is prologue,”

From *The Tempest*, (act 1, scene 1)
~ William Shakespeare

Shakespeare observed that the experience of the past is but an introduction to that which is to come. In many ways, history repeats itself.
• Nothing to disclose

Acknowledgment to Eileen D’Alba
Evolution of Vascular Testing and the Vascular Ultrasound Professional

George Berdejo, BA, RVT, FSVU
White Plains Hospital Center
White Plains, NY
In the beginning...

• Pioneers

• In the early 60's heavily involved with Doppler devices built by bioengineers at the U of W, the team being led by Robert Rushmer, Dean Franklin and Donald Baker.

• Responsible for most of the early clinical trials using these pioneering equipment.
History of Vascular Testing –

• 1965 Gene Hokanson (physicist), used his knowledge and electronics to develop and build various non-invasive instruments.
• 1966 David Sumner and Strandness wrote a short booklet called "Hemodynamics for Surgeons".
• Evolved into an important guide for applied vascular physiology.
  • Strandness, Sumner and Hokanson hosted display at the American College of Surgeons Conference in San Francisco in the same year.
Organizational Meeting - San Diego, California
March, 1977

At the fourth annual San Diego Vascular Symposium, eight technologists met several times to discuss the structure of a proposed organization for those working in vascular laboratories:

Barton Bean, San Francisco, CA       Andrew Hayes, Maywood, IL
Donna Blackburn, Chicago, IL          Michael McCloy, Phoenix, AZ
Mitzi Andrews Clark, Columbus, OH     Cindy Ramirez, Cincinnati, OH
Valerie Crain, Tucson, AZ             Victor Wedel, Palo Alto, CA

They decided on a name:

The Society Of Non-Invasive Vascular Technology
During the year, the officers made plans for the fledgeling society.

- They wrote a code of regulations to be approved at the first annual meeting.

- They met in September, 1977.
  It was decided that the first annual meeting would be in Los Angeles in June, 1978.

- The first issue of BRUIT was published.
• Formed in 1977 in Columbus, OH, as SNIVT
• Moved in 1986 from Columbus, OH, to Washington, DC
• Name changed from SNIVT to SVT in 1988
• SVT moved to Lanham, MD, in Dec. 1994 as an independently managed 501 (c) (3) non-profit professional medical society
• Name changed from SVT to SVU in Sept. 2002
- Formed in 1977 in Columbus, OH, as SNIVT
- Moved in 1986 from Columbus, OH, to Washington, DC
- Name changed from SNIVT to SVT in 1988
- SVT moved to Lanham, MD, in Dec. 1994 as an independently managed 501 (c) (3) non-profit professional medical society
- Name changed from SVT to SVU in Sept. 2002

**Executive Directors**
- Pat Horner
- Suzanne Stone
- Robert Van Hook*
- Steve Haracznak
- Thomas Stefaniak
- James Wilkinson
Alexis Carrel
During the year, the officers made plans for the fledgeling society.

- They wrote a code of regulations to be approved at the first annual meeting.

- They met in September, 1977. It was decided that the first annual meeting would be in Los Angeles in June, 1978.

- The first issue of BRUIT was published.
Evolution of the Journal

Current Co-Editors
Steven R. Talbot
Barton A. Bean

The Journal for Vascular Ultrasound is indexed in EMBASE/Exerpta Medica and Cumulative Index to Nursing and Allied Health Literature

Editors Emeriti
Cynthia Burnham
Paul Cardullo
Ann Marie Kupinski
Barbara Rhodes
The Noninvasive Vascular Laboratory: A Personal Opinion

James S. T. Yan, M.D., Ph.D.

During the last decade, noninvasive testing has emerged as the standard diagnostic technique for patients with vascular problems related to arterial or venous disorders. Because of the rapid expansion of technology, vascular laboratories are now a common sight in many hospitals in the United States. As we all know, many of these laboratories provide valuable diagnostic information regarding cerebral ischemia, occlusive disease of the upper and lower extremities, and acute deep venous thrombosis.

The role of the vascular laboratory in the delivery of care to vascular patients is now undisputed, but many new challenges are bringing changes. In addition to keeping up with new developments in technology, we face issues including administrative responsibility, quality control, budget and financial arrangements which are an integral part of the success of running a vascular laboratory. The abuse of noninvasive tests must be addressed by us. This editorial is intended to express my personal opinion on these issues.

Ideally, the vascular laboratory should be hospital based with administrative responsibility placed under the umbrella of the hospital diagnostic services. Similar to other diagnostic laboratories, budgetary and financial arrangements including proper charges must be dealt with by the hospital on a yearly basis. Noninvasive tests must be cost effective, and their cost must not be allowed to approach the charges for direct, invasive procedures. Finally, the laboratory should aim at providing service to all physicians, rather than catering to a special group of physicians or surgeons.

Who should be in charge of the vascular laboratory? Those who are not familiar with noninvasive tests or unable to interpret the tests must be banned from running the laboratory. Those who are interested in financial gain rather than in quality of testing are poor persons to direct laboratories. The director, either an M.D., Ph.D., or a vascular technologist, must be well versed in knowledge of vascular problems and in the medical instrumentation. He or she must have a keen interest in noninvasive testing. Although the day-to-day running of the laboratory and performance of testing is the hands of the vascular technologist, the director must be responsible for interpretation of tests. Such interpretation of testing is best done with input from the technician doing the examinations. Participation of the technician is essential if quality of laboratory performance is to be improved. This cooperative input provides valuable feedback information, especially on diagnostic accuracy when invasive tests such as arteriograms and venograms are available to compare with the noninvasive tests.

In conclusion, it appears that there is a need to maintain a constant surveillance of diagnostic accuracy of each noninvasive test. They must be compared with invasive testing whenever such studies are available for analysis. The overall diagnostic accuracy is essential to improvement of laboratory performance and is of use to referring physicians. Regardless of the type of instruments used, each laboratory must establish its own diagnostic accuracy compared with invasive testing. Such information is necessary in order to upgrade diagnostic accuracy.
37 years later the Vascular Lab remains the standard for diagnostic evaluation! We have evolved the technology, how we use it and how we look...
Yet we still face many of the same challenges!
Montefiore Experience

Evaluation of graft patency utilizing the ankle-brachial pressure index and ankle pulse volume recording amplitude.

Inadequacy of the noninvasive hemodynamic evaluation of percutaneous transluminal angioplasty.


Annette Pitskele
NorthPort VA Res Center
120, old filzd Road
Setauket NY 11733
Home: 516 752-2966
Bus: 516 261-4400 Page 383
Length of experience: 6 years

Trudy L. Heits
Roosevelt Hospital
310 West 56th St.
New York City NY 10019
Bns: 212 554-7309
Home: 212 757-6929
Length of experience: 2 years

Barbara Rhodes
Montefiore Hospital
111 East 210 Street
Bronx NY 10467
Home: 212 777-7074
Bus: 212 920-6603
Length of experience: 6 years

Pamela Clause
930 5th Avenue
New York, NY 10021
Home: 737-1919

Barbara S. Elting
Jacobsen & Strelson, MD's PC
2 Berkley Circle East
Chester NY
Home: 914 636-6340
Bus: 914 948-4433

Pat Volcarelli
Tru, NY NY
Home: 212 340-2254
Bus: 212 679-5647

Gary P. Gilich
Jacobsen & Strelson MD's PC
2 Bryant Crescent Apt 2K
White Plains NY
Home: 914 946-5089
Bus: 914 948-6633

Sonicaid Doppler Medasonic
dodler, Life Science Doppler,
Codman IPG, Digital Plethysmograph,
Echoflow Angioscan, (Reactive Hyperemia Studies,
Supraorbital & Carotic Artery Studies)
Length of experience: 5 years

Sonicaid Doppler, Medasonic Doppler, Life
Science Doppler Codman IPG, Digital
Plethysmograph, Echoflow, Angioscan,
Reactive Hyperemia Studies- Supraorbital &
Carotic Artery Studies.
Length of experience: 5 years

Sonicaid Doppler, Medasonic IPG, Spectrum
analysis, E-mode, Doppler imaging
Length of experience: 6 years
December 27, 1982
THE BROOKLYN HOSPITAL
121 Osborn Avenue, Brooklyn, New York 11207

To: All members of the New York S.N.I.V.T. Local Chapter Meeting

Re: Our January 22, 1983 meeting at The Brooklyn Hospital, Brooklyn, New York

Dear Member,

As your hosts for the January 22nd meeting, I wish to welcome you to our first meeting of the new year and remind you that it will be held at The Brooklyn Hospital, on January 22, 1983, in Conference Room K-1 on the third floor of the main building, at 1:00 p.m.

The main theme of the meeting will be Carotid Artery Occlusive Disease and Associated Non-Invasive Vascular Studies. The program will consist of the following presentations:

- Barbara Rhodes --- Pulse Volume Recordings
- Debbie Breen --- Venous Pathophysiology
- Coffee Break
- Dr. Constantin D. Papadopoulos --- Carotid Artery Occlusive Disease and Associated Non-Invasive Vascular Studies

EASTERN SOCIETY FOR THE ADVANCEMENT OF VASCULAR TECHNOLOGY

Volume 1, Number 6 January 31, 1989

*****Chapter Minutes*****

First of all I wish you all a very happy and healthy New Year! After speaking with many of you it seems that it hasn’t been too healthy so far for a lot of us. The flu seems to be wiping out a lot of vascular labs including the one here at Montefiore.

The ESAT meeting held on January 28 was very successful. Over thirty people attended and I was happy to see several physicians attend. From the reviews I received it seems that everyone found the meeting very educational. All attendees will receive 2 CMHS for the meeting.

I would like to take this opportunity to thank Drs. Bakal, Dietzek and Montefusco as well as Mr. Haughton for their excellent presentations and for sacrificing part of their weekend in order to impart their knowledge to us. Their efforts were appreciated by all who attended.

I would also like to thank Mr. Haughton of the Kendall Company for providing the splendid lunch for us.

This was the first meeting in which we attempted to approach a topic from different aspects. We tried to cover the anatomy of veins as well as the invasive and noninvasive diagnosis of venous disease. We also covered the treatment and possible prevention of the disease as well. Those in attendance seemed to like this approach so we will try to keep to the same format whenever possible.

I would like to give you a summary of the meeting for those of you who were not able to attend but there was so much information presented that it will take time to put it in a reasonable format for the newsletter. If I can do it, I will.

Tentatively, our next meeting will be in April and will be held at Stony Brook University Hospital. The proposed topic will be on carotid disease. So all of you members from LI will have no excuse not to attend this one! Our host will be Annette Fiteze. I will let you know in the next newsletter the specifics of date, time and place.
...also a trend towards the multi-credentialed tech who works in a non dedicated vascular lab
Fig 2—High resolution B-mode images of extracranial carotid system in a 60-year-old man during follow-up.

Initially (September, 1982) there was a soft plaque on the inner wall of the proximal internal carotid artery (ICA) (small arrows) and a small ulcerative crater on the anterior wall of the bifurcation (large arrow). During follow-up (January, 1983) the latter disappeared. Note the similar shadows of the external carotid artery (ECA) indicating identical sections imaged. 14 months later (C) a severe stenosis had been produced by encroachment of the posterior wall plaque and atherosomatous degeneration of the anterior wall near the proximal ICA and the distal common carotid artery (CCA).

Hennerici et al. (1985) Lancet 325: 1415-9
I remember asking for smaller machines....and transducers
Miniaturization

asking for smaller transducers again...
The role of duplex scanning and arteriography before carotid endarterectomy: A prospective study


Purpose: This study examines the current role of diagnostic tests done before carotid endarterectomy and the need for routine arteriography.

Methods: We prospectively studied vascular surgeons’ decision-making over a 29-month period during which 111 carotid arteries in 103 patients were considered for endarterectomy. For each case the surgeon’s management plan was recorded after clinical evaluation and review of the duplex scan findings, but before arteriography. This plan was later compared with the patient’s ultimate clinical management.

Results: Of 111 total cases in this period, 17 were excluded from analysis because arteriography was not done or it was performed before the surgeon’s evaluation. Carotid duplex scans were diagnostic in 87 (93%) of the remaining 94 cases. The carotid lesion was incompletely assessed by duplex scanning in seven patients because the disease was not...
Endovascular Revolution

We are now involved in the full spectrum!

• Pre-operative diagnosis
• Patient selection
• Intra-procedural execution
• Duplex determined endpoints
• Post procedural follow-up and long term surveillance
COLOR FLOW DOPPLER DIRECTED MANUAL OCCLUSION OF IATROGENIC ARTERIO-VENOUS FISTULAS

George Berdych, BA, RVT, Kurt R. Wengert, MD, RVT, Michael Marin, MD, and Frank J. Voith, MD, Montefiore Medical Center, Bronx, N.Y.

Techniques for the application of color flow duplex directed manual occlusion (CFDMO) of femoral artery false aneurysms (FA) have been well described. Little has been reported on duplex scan evaluation and CFDMO of iatrogenic arterio-venous fistula (IAVF). Over the past 12 months we have performed duplex scans on 70 arterial sites for suspected iatrogenic FA. A patent FA was detected in 13 (18.5%) studies, and an IAVF associated with a FA was found in 2 (2.7%).

CASE 1. A 78 year old male presented with a bruit and thrill over the right CCA after several attempts at cannulation of the IJV. Color duplex evaluation revealed a FA immediately anterior to the CCA. An afflicted tract from the CCA to the FA, and an effluent tract to the IJV were demonstrated. The diagnosis of IAVF with an associated FA was made. CFDMO was applied to the afflicted tract of the FA, and both the FA and IAVF were successfully thrombosed.

ABSTRACT

CASE 2. A 75 year old male presented with a pulsatile mass in the left groin and a loud bruit over the external iliac vein 24 hours after cardiac catheterization. Duplex evaluation revealed low resistance flow in the CFA with a pulsatile CPV Doppler spectral waveform, a diagnosis of CFA-CPF fistula was made. The patient underwent rapid cardic catheterization, and an arteriogram of the affected area confirmed the diagnosis. Repeat scan demonstrated an associated FA, with an affluent tract from the CFA and an effluent tract to the CPF. CFDMO was applied to the affluent tract resulting in successful occlusion of the FA and IAVF.

These two cases demonstrate the effectiveness of color flow duplex scanning for diagnosis of IAVF. Successful thrombosis of the false aneurysm by CFDMO of the affluent tract led to obliteration of the IAVF in both cases, and appears to be a useful option for the treatment of IAVF associated with false aneurysm.
Vascular Annual Meeting 2004-2013
The Role of Duplex Ultrasound in Characterizing Carotid Plaque Risk -- Timothy Wu, MD

Intrinsic Spectral Broadening: A Possible Source of Inter-Laboratory Variability on Carotid Doppler Examinations -- Jean Alessi-Chinetti

Session 16: Carotid Criteria

Doppler Sounds Philip Bendick and George Berdejo
Credentialing in the Vascular Laboratory

- Cardiovascular Credentialing International (CCI) – RVS, RPhS (peripheral venous testing only)
- American Registry of Radiologic Technologists (ARRT) - RT (VS)
- American Society of Neuroimaging (ASN) - Neurosonology (IC/EC cerebrovascular testing only)
- American Registry for Diagnostic Medical Sonography (ARDMS) - RVT
- Alliance for Physician Certification and Advancement (APCA) – RPVI*  

*Formerly under ARDMS
ARDMS

- 1975 - ARDMS is incorporated in the state of Ohio with the mission to protect the public by providing valid and high-quality certification procedures for medical professionals who perform diagnostic medical sonography.

In 2016 - Spring 2016 Council Meeting

- ARDMS Vision: The American Registry for Diagnostic Medical Sonography (ARDMS) creates the *global standards* of professional *excellence* in sonography.

- ARDMS Mission: The American Registry for Diagnostic Medical Sonography (ARDMS) *empowers* sonographers to provide exceptional *patient care* through rigorous assessments and *continual learning*. 
ARDMS

• Has awarded credentials to over 100,000 medical professionals worldwide and are recognized as the international standard in sonography credentialing.

• Credentialed in 1989 (RVT)
The IAC incorporated all of its divisions into one IAC organization in 2008, but its history began more than 25 years ago with the inception of the first of the IAC accreditation divisions — the IAC Vascular Testing — formerly the InterSocietal Commission for the Accreditation of Vascular Laboratories (ICAVL) in 1991.
The future ain't what it used to be.

(Yogi Berra)
“What's past is prologue,”

• Our **strength** is the fact we are and have always been the recognized leaders in **Vascular Ultrasound AROUND THE WORLD**
  • Leadership
  • Vision
  • Passion
  • Purpose
  • Mentoring
  • Excellence
  • Innovation
  • Family

*Hope we never evolve away from these attributes but only evolve in how we can do them BETTER!*