Recent Developments in Global Education for Vascular Surgeons

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Globalization in the 21st century has impacted mankind well beyond the convergence of economics and has truly resulted in creating a world that is flat. This convergence of technology and communication has had an impact on our ability to collaborate and share medical knowledge, and exchange ideas that is measurable in our abilities in our ability to diagnose and treat our patients. Many forms of global education have been established; from web based, to international vascular symposium, and more recently comprehensive ‘hands on’ vascular and endovascular training programs.

Albany Vascular International Academy (AVIA) is a ‘hands-on’ vascular and endovascular fellowship program that is designed to offer vascular clinicians from across the globe the opportunity to participate in comprehensive practical ‘hands-on’ training in the operating room and interventional suits on all aspects of vascular and endovascular procedures. AVIA offers international vascular specialists a chance to participate in an ongoing academic partnership with the leading vascular specialists at The Institute for Vascular Health & Disease at Albany Medical Center, and develop ongoing vascular educational strategies. These include continued educational opportunities; access to resources including a comprehensive vascular database, web based meetings and seminars; and the availability of colleagues for consultation and case discussion.

It is our fundamental belief that through international collaboration, vascular specialists can share knowledge; participate in more advanced medical, endovascular, and surgical management of vascular health issues; and, ultimately improve vascular health throughout the world. At AVIA, international fellows will have the opportunity to scrub in on cases and get hands-on training on the latest technology and techniques employed in addressing fundamental highly complex vascular and endovascular conditions. The curriculum will be inclusive of all aspects of vascular care, and the training program will allow the fellows to participate in and learn “The Albany Vascular Group’s approach” to managing vascular health and disease. For more information on this 2-4 week fellowship, please visit Vaware.org or email Christine Sawh at sawhc@albanyvascular.com

Further collaboration with International vascular symposium such as Vascular Interventional Advances (VIVA) is underway. The international symposium at VIVA is an educational opportunity for vascular surgeons and interventionists from across the globe to participate in an intimate program designed to engage the audience in a discussion of the latest trials, live case presentations, and practical complex case management presented by vascular key opinion leaders from across the globe.
INT SY-2  Recent Educational Trends for Vascular Surgeons Around the World
(Acquiring surgical and endovascular skills)

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Over the last two decades the spectrum of therapeutic armamentarium for treating vascular patients has changed dramatically. The patients need and desire goes towards more and more minimally invasive techniques as the harm to the patient is more caused by “the way to get there, than being there”.

Already Hippocrates stated that we should not harm but try to cure and always comfort. The need and desire of the young vascular surgeon (specialist) goes in line with this.

In many European countries the newly applied "work force law" has diminished the hours of work in the hospital and accordingly the number of doctors needed to be increased for the emergency cover. This has led to a diminution of the elective operating hours for each surgeon and therefore several “simulators” have been introduced even for open surgery techniques. The European Society for Vascular Surgery supports the efforts by the European UEMS Section and Board of Vascular Surgery to examine residents also in these skills.

Several companies have the simulators available for endovascular courses, and they are being offered at various levels and standards.

In Germany there are a dozen such courses every year and they are well frequented by young residents in order to faster get basic training. In several hospitals joint forces of radiology and vascular surgery enhances the endovascular skill level, but several obstacles are to be dealt with in the various health systems.

In my own hospital we educate the residents in open surgery with standardised techniques and divided in preparation, vascular procedure and closing, where the resident start with one third and alternating with his mentor. The endovascular skills are beginning with the diagnostic angiographies and ending with stent graft deployment.

This of course requires a high volume centre in order to be able to educate well enough.
The education system for Vascular Surgeons in Italy

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The practice of Vascular Surgery in Italy started in the 60s. For many years Vascular Surgery has been considered as a sub-speciality of General Surgery. Starting in the mid 70s however, Vascular Surgery progressively gained a status and in the early 80s became an individual speciality, with the creation of a specific postgraduate residency program in Vascular Surgery in several Italian Universities. At present Vascular Surgery is an autonomous residency program (School of Speciality in Vascular Surgery), with a title recognized by the UEMS (European Union of Medical Specialists). In particular, since 2004, Vascular Surgery has its own board and section in the UEMS, and we can proudly say that Italian vascular surgeons greatly contributed to this achievement.

The education for Vascular Surgeons in Italy is characterized by a specific course with a 5 years length that can be attended by Medical Doctors, after they have obtained their degree. Specifically, after school (13 years in Italy), a student has to participate to a public exam in the University of choice to enter Medical School. All Medical Schools in Italy have a limited number of positions, which are programmed on an annual basis by the Italian Education Ministry. Universities in Italy are mainly public, with only a limited number of private Institutions (including our own). Once the student enters Medical School, he/she attends a 6 years long course and, at the end, he/she is granted the title of Doctor in Medicine and Surgery. To finish the course, every student has to write and discuss a thesis on a specific topic of their choice.

The medical graduate can then decide to attend a specialization course on a particular speciality area. Positions for these courses are very limited and not all Universities offer all specializations. To enter these post-graduate courses, the Doctors have to pass a public exam; evaluation is also based on the grades of the student during Medical School and on the scientific publications written. For Vascular Surgery, throughout Italy, there approximately 50-70 positions per year. Those who enter the Specialization course start working in a Vascular Surgery Unit, with a monthly wage granted by the Health and Education Ministries, and a yearly exam is performed to assess the level of formation reached.

During the 5 years program, every Doctor has to learn the clinical characteristics, patophysiology and treatment of vascular diseases. Moreover the Doctor has to spend part of the formation in other clinical Units. In particular during the first three years, a definite time period has to be spent in the General Surgery Unit and in the Emergency Department. Other Units that need to be attended are the Cardiac Surgery Unit, the Thoracic Surgery Unit and the Intensive Care Unit. A specific hands-on formation for the young Vascular Surgeon is a mandatory part of the program. Before the end of the course, the Doctor has to perform a predetermined number of procedures as first or second operator. Another important aspect of the formation of Vascular Surgeons in Italy is learning the vascular diagnostic techniques. Particular attention is devoted to Duplex Ultrasonography, which in Italy is mainly performed by Vascular Surgeons, even in outpatient clinics. Angiography and endovascular techniques are also learned during Specialization and a specific number of procedures as first operator is required before the end of the 5 years program. At the end of the program the Doctor has to pass a final exam, with the discussion of a thesis on a topic of interest. The Doctor is granted the title of Specialist in Vascular Surgery and this qualification is recognized in the entire European Union.

The Specialist in Vascular Surgery can then continue his/her education as some Universities offer PhD degrees in Vascular Surgery, with a three years length. Some Universities also offer Masters in specific area of Vascular Surgery. In particular our Institution offers a one year Master Degree in aortic surgery, that is open also to foreign students.

In the last 20 years, we have witnessed an ever growing interest in Vascular Surgery, also due to the growth of endovascular techniques, and Italy was one of the first country in Europe that recognized the importance of Vascular Surgery as a speciality, “per se”.

INT SY-3
Endovascular techniques are a disruptive technology for traditional surgical approaches to cardiovascular pathologies. Interventional cardiology continues to grow and attract trainees, with concomitant reduction in the scope of cardiothoracic surgical practice. The leaders of vascular surgery warned the community to acquire endovascular skills for survival of the specialty. Although this required a huge effort to retrain established practitioners, the importance of this knowledge and skills growth forced most vascular surgeons to seek the retraining necessary to gain endovascular skills. Common methods of retraining included mini fellowships, industry sponsored courses, and learning from local clinical partners.

The sequelae of this retraining effort resulted in a large increase in endovascular practice, with a resultant increase in overall procedures performed per surgeon. Nonetheless, the smaller vascular surgery community remains at risk for losing referrals to the much larger interventionalist communities, especially cardiology. Therefore, several important new strategies have been advocated in order to continue to attract bright young medical students into the field of vascular surgery.

First, advantage has been taken of several simulator-based learning strategies, including use of hands-on endovascular and open procedure simulators; this is a cost-effective and attractive strategy for acquisition of procedural competence. Second, training of vascular surgeons has been shortened, from the traditional 2-year fellowship after a 5-year general surgery residency program (traditional “5+2” program) to a shorter 5-year program dedicated to vascular surgery (new “0+5” program). Lastly, intense effort is being made to try to show medical students the new specialty of vascular surgery; since the new 0+5 training program necessarily trains graduating medical students, not finishing general surgery residents, vascular surgeons must continue to work with and appeal to medical students in order to have them consider vascular surgery as a specialty. In addition, strong appeal is being made to female students, reflecting the national trend of increasing women in surgery and surgical specialties.