A Proposal for a National Vascular Surgery Curriculum for Medical Students

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Disclosures

• None
Introduction

• Consistent numbers of medical students have applied for a residency position in the 0+5 Integrated Vascular Surgery Residency Training Programs

• Multi-year vascular surgery-specific cognitive and skills training curricula in medical school appears to be nonexistent or deficient at best
Examples of Educational Voids

- **Wayne State University**
  - MS1: No exposure
  - MS2: No exposure
  - MS3: 1 week elective rotation during 2-month surgical clerkship
  - MS4: No available option for subinternship on vascular surgery

- **Michigan State University**
  - MS1: No exposure
  - MS2: No exposure
  - MS3: 1 week elective rotation on 6-week surgical clerkship
  - MS4: 1 month elective available on vascular surgery
Introduction

• **SVS / APDVS**
  – Lack of clear vision as to how to improve medical students exposure to vascular surgery more than once a year at VAM?
  – Lack a plan of action to implement vascular education for our potential future vascular surgeons?

• If SVS / APDVS……
  – is to continue to recruit and acquire the highest level medical students available, than a……
  – a formal vascular surgical educational curriculum for all 4 years of medical school should be considered
Curricular Content and Aim

Introduce a brief basic preliminary proposal for a vascular curriculum based on the following 5-part program:

1. Vascular Education
2. Vascular-specific Skills Training
3. Vascular Research
4. Professional Mentorships and Relationships
5. Vascular Society Relationships
Year 1

- Primary cognitive goal is to introduce the specialty of vascular surgery as a career choice to students.
- Coordinated introductory lectures about vascular surgery and basic surgical skills training
  - Use content from VAM and MVSS Student Programs
- Provides a vehicle for 1st year students to meet other students with similar interests
- Provide opportunity for introduction to vascular surgeons
- Provide a pathway for mentorship to begin
Year 1

• Begin conversations about research opportunities

• Participation in national or regional vascular meetings is encouraged
  – ei. VAM, MWVSS

• Interactions should occur on at least a quarterly basis

• Interactions should be focused, casual and fun
  – Remember that at this point vascular surgery is not a top priority of student!
  – Remember to always bring food and drink
  – Remember to bring ‘something’ they can leave with
  – Bring vascular residents or fellows
2nd Annual
2016 MVSS Medical Student Education & Participation Program

“Introducing Vascular Surgery as a Career Choice”

Mark A. Mattos, MD for the 2016 MWVSSS Education Committee
Program Overview

• 2 yr Program
• Didactic Lectures, Career Choice Discussions, Expert Demonstrations
• Basic Vascular Surgery Skills Training
• 4 Hands-on Skill Stations
  – Knot Tying, Forceps Handling/Needle Driving, Needle Accuracy Placement, Vascular Repair,
• 77 Medical Students, 23 Institutions
• 25 Vascular Surgery Faculty Proctors
Program Goals

• Introduce vascular surgery simulation and skills training/curricula as means to enhance medical school educational experience

• Provide basic vascular skills experience

• Answer questions about vascular surgery
Program Objectives

• Introduce Vascular Surgery as a Career Choice

• Provide opportunity to meet members and leaders of MVSS

• Discuss opportunity for mentorship locally, regionally and through the MVSS
Year 2

- Primary cognitive goal is to provide organ system-based lectures and associated vascular procedures.
- Increase fund of knowledge of vascular physiology, pathology and pathophysiology.
- Technical skills goals are to include knowledge of basic general and vascular surgical instrumentation.
- Technical skills training should now include basic vascular techniques.
- Participation in regional and national vascular meetings is now strongly recommended and expected.
Year 2

• Participation in vascular research projects is strongly encouraged and expected

• Interactions should occur on at least a twice monthly basis

• Faculty mentorships should be acquired

• Discussions regarding career choice should begin

• Encourage candidate membership in regional and national vascular societies
Year 3

- Primary cognitive goals are lectures which emphasize vascular procedural knowledge
- Technical skills training should be advanced to intermediate vascular skill techniques and procedures
- Offer cadaver-based vascular procedural training
- Cement research participation with expectation of submission and presentation at meetings
  - Medical student research forums, Regional/National Societies
Year 3

- Participation in national or regional vascular meetings is encouraged
  - e.g. VAM, MWVSS
- Interactions should occur as often as necessary
- Faculty mentorships should be solidified
- Discussions should revolve around a definite career in vascular surgery
- Discuss selection of 4th year rotations, subinternships and interview opportunities
- Encourage candidate membership in regional and national vascular societies
Year 4

• Continue to provide vascular procedure-based lectures
• Begin participation in faculty-based and industry driven skills/simulation training sessions with surgery residents and vascular fellows
  – Consider self-training skills program
• Recommend participation in medical school Advanced Surgical Skills Electives/Rotations
• Encourage participation in vascular conferences
• Invite to vascular journal club dinners
Vascular Anastomosis
End-to-End Anastomosis, Interposition Graft
Program Demographics

• Vascular Surgery Surgical Skills Training Sessions
• Genesys Simulation Center, (2\textsuperscript{nd} Floor)
• Monthly 5:30pm-8:00pm
• Vascular Surgery Faculty and Vascular Surgery Fellows
• General Surgery Residents (PGY-1 to PGY-5)
  – Genesys Regional Medical Center, McLaren-Flint
  – 1:3 or 1:4 faculty/resident teaching ratio
• Food and Beverages provided
• Voluntary participation
Program Format

- 5:30pm – 6:00: Introduction/Food
- 5:30pm – 6:00: Prosthetics Lecture Series
- 6:00pm – 6:30pm: Faculty Presentation
  - Goals and Objectives
  - Expert Demonstration, Video presentation
- 6:30pm - 8:00pm: Hands-on Skills Training
  - 10-15 work stations / 2 residents per station
  - 2 Procedures (Primary surgeon / 1st assistant)
  - Fill out assessment forms (if applicable)
- 8:55pm – 9:00pm: Complete Surveys (if applicable)
The Vascular Skills Stairway to Success

11 Open Skills Modules

- Aorta-Renal Artery Bypass
- Abdominal Aortic Repair – Bifurcated Graft
- Abdominal Aortic Repair – Tube Graft
- Femoral-Femoral Artery Bypass
- End-to-Side Anastomosis (Small Vessel)
- End-to-Side Anastomosis (Medium Vessel)
- End-to-End Anastomosis-Interposition Graft Repair
- End-to-End Anastomosis-Primary Repair
- Longitudinal Arteriotomy – Patch Closure
- Longitudinal Arteriotomy – Primary Closure
- Transverse Arteriotomy – Primary Closure
Year 4

- Interactions should occur as necessary but at least monthly
- Obtain letter of recommendations from vascular mentor
- Seek externships at outside institutions
- Solidify interviews for residency position
- Finalize research projects
- Mentor to provide mock interviews if warranted
- Interview, Match, Residency
Summary

• Development of a vascular surgery curriculum for medical students is feasible

• Benefits of such a curriculum seems reasonable and intuitive

• APDVS should consider this a priority for recruitment of medical students