

Division of Vascular Surgery

General Surgery Resident Goals, Objectives, and Curriculum

Description of Educational Experience: PGY-4

General Surgery residents rotating on the Vascular Surgery Service should have a basic understanding of vascular disease factors and their management. Residents are also expected to be closely involved in the management of vascular surgical patients in intensive care units and should have an active role in all critical care management decisions.

Patient Care

Goal

R-4 residents must be able to provide patient care that is compassionate, appropriate, and effective for the treatment of vascular problems. Residents are expected to:

Competencies

Demonstrate willingness to assume responsibility for the clinical evaluation of all vascular patients, including history, physical examination, medical management (pharmacotherapy and risk factor reduction), and surgical management.

Objectives:

1. Conduct a comprehensive patient centered vascular interview, focusing on vascular issues.
2. Identify the risk factors which might influence the patient's ability to tolerate a surgical procedure.
3. Perform a competent complete vascular physical examination with evaluation of pulses, bruits, and possible aneurysms, including ankle/brachial index.
4. Discuss treatment options, risks and potential complications with patients having vascular disease.
5. Assist in the performance of vascular operations.
6. Manage the post-operative care of vascular patients, identify and manage complications.
7. Maintain adequate records including history, physical exam, lab tests and notes indicating progress of treatment.
8. Demonstrate ability to work with medico-legal problems in the hospital setting
9. Oversee work of the junior resident on service.
10. Be available to the patient and staff, and supervisors when needed.

Medical Knowledge

Goal

Medical knowledge is gained over a continuum of increasing understanding that occurs at an individual rate. The resident will gain progressive knowledge of diagnosis,

management, treatment options (surgical and non-surgical), long term prognosis, post operative results, complications, patient risk and cost considerations associated with:

Cerebrovascular disease:

1. symptomatic and asymptomatic carotid disease
2. carotid body tumors

Upper extremity occlusive disease:

1. thoracic outlet syndrome
2. Raynaud's syndrome (primary and secondary)

Aneurysm disease:

1. ruptured versus elective aneurysm AAA repairs
2. management of small abdominal aortic aneurysms
3. iliac, femoral and popliteal aneurysms
4. aortoiliac occlusive disease
5. extra anatomic reconstruction indications and techniques, ie: ax-fem, fem-fem

Lower extremity occlusive disease, chronic:

1. medical management
2. autogenous venous bypass
 - i. above knee, below knee
 - ii. in-situ, reversed
3. artificial material bypass

Lower extremity occlusive disease, acute:

1. embolic occlusion
2. thrombosis
3. balloon catheter embolectomy

Vascular trauma:

1. penetrating injuries
 - i. aorta and arch vessels
 - ii. extremity vessels
2. blunt trauma
 - i. associated with fractures of extremities
 - ii. thoracic aorta
 - iii. compartment syndrome

Mesenteric vascular disease:

1. renovascular
2. chronic splanchnic occlusive disease
3. acute splanchnic occlusive disease

Angioaccess:

1. methods of access

2. techniques of arterio-venous shunts/fistula
3. various devices used for angioaccess

Venous disease:

1. varicose veins
2. management of deep venous thrombosis
3. post phlebitic syndrome
4. venous stasis change and ulceration
5. effort thrombosis
6. medical and surgical treatment of acute PE
7. IVC filter use

Residents are expected to:

Competencies

Demonstrate a clear understanding of the pathophysiology of the formation and natural history of arterial and venous disorders.

Demonstrate a clear understanding of the indications and techniques for open surgical treatment of vascular disorders.

Objectives:

1. Demonstrate the ability to order appropriately, interpret accurately and efficiently use the information from laboratory tests, non-invasive vascular lab studies (Duplex ultrasound scanning, Doppler testing, plethysmography), vascular imaging studies (magnetic resonance imaging, computed tomography angiography, contrast angiography and venography, intravascular ultrasonography) other diagnostic procedures and consultations.
2. Make appropriate vascular diagnosis.
3. Evaluate the need for hospitalization or intervention.
4. Formulate a treatment plan and implement it through personal effort or appropriate referral.
5. Demonstrate ability to take medical and surgical care of patient and use consultation from other medical specialists.
6. Demonstrate ability to evaluate and treat concomitant chronic medical problems.
7. Demonstrate ability to recognize and manage a medical crisis.
8. Demonstrate detailed knowledge of the risks, complications, side effects and benefits of open surgical treatment of vascular disorders.
9. Demonstrate the ability to manage perioperative care for patients with vascular disorders, including recognition and appropriate treatment of complications.
10. Demonstrate the ability to provide intensive care for patients with vascular disorders, including use of vasoactive medications, artificial ventilation and invasive hemodynamic monitoring, including arterial, central venous, and pulmonary artery catheters.

Practice- Based Learning and Improvement

Goal

R-4 residents must demonstrate the ability to investigate and evaluate their care of patients, to appraise and assimilate scientific evidence, and to continuously improve patient care based on constant self-evaluation and life long learning. Residents are expected to develop skills and habits to be able to :

Competencies

1. Exhibit self-directed learning.
2. Demonstrate improvement in clinical management of patients by continually improving vascular-related knowledge and skills during the residency.
3. Identify strengths, deficiencies and limits in one's knowledge and expertise.
4. Set learning and improvement goals.
5. Incorporate formative evaluation feedback into daily practice.
6. Locate, appraise and assimilate evidence from scientific studies related to their patients' health problems.
7. Use information technology to optimize learning.
8. Participate in the education of patients, families, students, residents and other health professionals, as documented by evaluations of a resident's teaching abilities by faculty and/or learners.

Objectives

1. Demonstrate ability to use information technology to manage information, access online medical information and support self-learning.
2. Set learning and improvement goals for self based on feedback and evaluation from vascular faculty.
3. Demonstrate a personal plan for continuing medical education after residency, including review of the general medical literature and that specific to vascular surgery.
4. Seek, achieve and maintain board certification in vascular surgery.

Systems Based Practice

Goal

Residents must demonstrate an awareness of and responsiveness to the larger context and system of health care, as well as the ability to call effectively on other resources in the system to provide optimal health care. Residents are expected to:

Competencies

1. Demonstrate understanding of medical delivery systems as they relate to both inpatient and outpatient resources.
2. Work effectively in various health care delivery settings and systems relevant to their clinical specialty
3. Coordinate patient care within the health care system relevant to vascular surgery.
4. Arrange for postoperative care and follow-up for patients.
5. Work in interprofessional teams to enhance patient safety and improve patient

- care quality.
6. Participate in identifying systems errors and in implementing potential systems solutions.

Objectives

1. Coordinate the care the vascular patient prior to hospitalization including scheduling pre-operative studies and consults, arranging for vascular imaging studies and scheduling the date for surgery.
2. Manage the patient post-operatively including communicating between consulting services, ancillary staff, and discharge planners.
3. Demonstrate the ability to integrate knowledge of new medical evidence into practice decisions/actions.

Professionalism

Goal

R-4 residents must demonstrate a commitment to carrying out professional responsibilities and an adherence to ethical principles. Residents are expected to:

Competencies

1. Demonstrate compassion, integrity, and respect for others.
2. Exhibit competency in working with patients regarding advanced directives, DNR status, futility, and withholding/withdrawing therapy.
3. Demonstrate responsiveness to patient needs that supersedes self-interest.
4. Demonstrate respect for patient privacy and autonomy.
5. Demonstrate sensitivity and responsiveness to a diverse patient population, including but not limited to diversity in gender, age, culture, race, religion, disabilities, and sexual orientation.
6. Identify and assist with the psychological stress of patients with chronic vascular disease as it affects their personal life, their family life, and their socioeconomic environment.

Objectives

1. A caring and respectful attitude to vascular patients, their families, colleagues and other health care professionals.
2. The attitude of being a learner and teacher, able to ask and respond to questions.
3. Willingness to consider and evaluate criticism and peer review of one's professional work.
4. Sensitivity to and tolerance towards different opinions and attitudes.

Interpersonal and Communication Skills

Goal

Residents must demonstrate interpersonal and communication skills that result in the effective exchange of information and teaming with patients, their families, and professional associates. Residents are expected to:

Competencies

1. Establish rapport with patients and their families.
2. Perform a patient-centered medical interview, focusing on vascular issues.
3. Communicate effectively with patients and families across a broad range of socioeconomic and cultural backgrounds.
4. Engage patients in shared decision-making, and participate in family discussions.
5. Communicate effectively with physicians, other health professionals, and health related agencies in a manner that promotes care coordination.
6. Work effectively as a member or leader of a health care team or other professional group.
7. Act in a consultative role to other physicians and health professionals.
8. Maintain comprehensive, timely, and legible medical records.

Objectives

1. Articulate a sound and efficient plan for diagnosis of vascular disorders, based upon medical knowledge, history and physical exam.
2. Demonstrate the ability to communicate effectively and professionally with patients, families, referring physicians and staff.
3. Demonstrate the ability to request appropriate consultation from other medical specialists for patients with vascular disorders.
4. Demonstrate the ability to provide effective vascular consultation to other physicians and providers.
5. Demonstrate the ability to interact effectively and professionally with hospital staff and other health care professionals.

Teaching Methods

Clinical teaching
Clinical experiences
Conference
Lectures
Case-based discussions
Required reading
Computer modules
Surgical skills labs & simulation

Assessment Method (residents)

Faculty Evaluation of Residents – evaluation of residents includes written evaluation forms, faculty discussion of resident evaluations/progress and verbal and written feedback regarding each evaluation of the residents.

OHSU Clinics

Monday Vascular Clinic: 830am-4pm

Outpatients with all vascular disorders. Attended by vascular faculty, OHSU A vascular residents, surgery residents and students on the vascular surgery service.

Wednesday General Vascular Clinic: 830am-4pm

Outpatients with all vascular disorders. Attended by vascular faculty, OHSU A&B vascular residents, surgery residents and students on the vascular surgery service.

OHSU Vascular Conferences

Vascular Journal Club:

Key papers from the current literature serve as the basis for discussion.

Attended by vascular faculty, residents, general surgery residents on the vascular service, and medical students on the vascular surgery service.

Vascular Morbidity and Mortality Conference:

Vascular surgery cases are presented by the OHSU A vascular resident as chosen by the department of surgery faculty.

Attended by all Vascular faculty, OHSU A&B vascular residents and general surgery residents and students rotating on the service.

Surgery Morbidity and Mortality Conference:

Vascular surgery cases are presented by the OHSU A vascular resident as chosen by the department of surgery faculty.

Attended by all Department of Surgery faculty, residents and students.

Vascular Fellow Lectures Series:

All vascular residents including vascular research resident in rotation give a 30-45 minute presentation in one of the core areas of vascular surgery knowledge including embryology, anatomy, pathology, physiology, diagnosis and treatment.

Attended by vascular faculty, vascular residents, surgery residents and medical students on the vascular surgery rotation.

Vascular Surgery Research Conference:

Discussion of current and future vascular surgery research projects.

Attended by vascular surgery faculty, OHSU B vascular and research residents and Division of vascular surgery research personnel.

The John M Porter Memorial Lecture Series:

Meets every Saturday from October through May at 0830.

Lectures cover the broad range of vascular surgery including clinical, basic science and research topics. The series is funded by an educational grant from W.L. Gore which allows inclusion of 5-6 invited speakers each year.

Attended by vascular faculty, interventional radiology faculty, vascular residents, interventional radiology residents, surgery residents and students, and community surgeons and interventional radiologists

Vascular Surgery City Wide Clinical Case Conference:

Meets weekly from October through May at 0930.

Discussion of clinical cases from the vascular surgery service and from community practices.

Attended by vascular faculty, interventional radiology faculty, vascular residents on call, interventional radiology residents on call, surgery residents and students on call, and community surgeons and interventional radiologists.

Fellow Lecture Series:

The vascular fellows are responsible for giving lectures to their staff, co-fellows, general surgery residents, and medical students. Vascular lectures are to be given every other Wednesday.

Lecture Topics

1. Renovascular Hypertension and Renal Artery Stenosis
2. Diagnosis and Management of Visceral Ischemia (Acute and Chronic)
3. Diagnosis and Management of Chronic Venous Insufficiency
4. Acute Iliac Femoral Deep Venous Thrombosis and Post-phlebotic Syndrome
5. Congenital Vascular Anomalies
6. Lymphatic Disorders
7. Symptomatic Internal Carotid Artery Stenosis
8. Asymptomatic Internal Carotid Artery Stenosis
9. Carotid Artery Dissection Aneurysm and Kinks, Complications of Carotid Artery Surgery
10. Diagnosis and Management of Innominate, Subclavian, and Vertebrobasilar Arterial Dz
11. Diagnosis and Management of Lymphedema
12. Vascular Trauma of the Abdomen and Chest
13. Vascular Trauma of the Carotid/Vertebral Arteries and Extremities
14. Acute Leg Ischemia
15. Diagnosis and Management of Chronic Leg Ischemia (Claudication)
16. Diagnosis and Management of Chronic Leg Ischemia (Critical Limb Ischemia)
17. Diagnosis and Management of Diabetic Foot Problems
18. Upper Extremity Ischemia

19. The Basic Science of Aneurysms
20. Open Repair of Abdominal Aortic Aneurysms
21. Evolving Endovascular Techniques for Abdominal and Thoracic Aortic Aneurysms
22. Inflammatory and Mycotic Aneurysms
23. Thoracoabdominal Aortic Aneurysms
24. Acute Thoracic Aortic Dissection
25. Diagnosis and Management of Visceral Aneurysms
26. Diagnosis and Management of Peripheral Arterial Aneurysms (UE and LE)
27. Non-atherosclerotic Vascular Disease (Connective Tissue Disorders, i.e. Takayasu's and Temporal Arteritis)
28. Non-atherosclerotic Vascular Disease(Popliteal Entrapment, Buerger's disease, Adventitial Cystic Disease)
29. Neurogenic and Venous Thoracic Outlet Syndrome
30. Diagnosis and Management of Arterial Venous Malformations

Educational Resources