

Anesthesia for Vascular Surgery

The objective of this rotation is to provide the resident with the knowledge and experience to safely anesthetize patients for vascular surgery. These may be the most difficult anesthetics because of the many disease processes that bring these patients to require vascular surgery. These are considered advanced anesthetic cases.

Goals:

Medical Knowledge

Understand the common co-morbid conditions that contribute to vascular disease, and their implications for anesthetic management.

Understand anesthetic influences on surgical outcome.

Understand the components required to perform a preoperative evaluation for vascular surgery.

Understand the physiology of Aortic cross-clamping, appropriate management strategies, and implications for spinal cord, renal, and other organ injury

Understand the implications of anesthetic in

- Carotid endarterectomy

- Aortic aneurisms and aorto-occlusive disease

- Lower extremity vascular disease

Patient Care

Understand the risk of anesthesia associated with vascular surgery.

Demonstrate a thorough preoperative evaluation of the patient for vascular surgery.

Understand monitoring considerations for the vascular patient

Demonstrate skill in the placement of

- Peripheral arterial line

- Central venous catheter

- Pulmonary artery catheter

Understand the appropriate use of the above listed monitors including indications, appropriate interpretation, complications, and limitations.

Understand the elements required for anesthetic management options for

- Carotid endarterectomy

- Aortic aneurisms and aorto-occlusive disease

- Lower extremity vascular disease

Understand postoperative considerations in the management of the vascular patient.

Interpersonal and Communication Skills

Demonstrates collegial interactions with surgeons and nurses

Professionalism

Demonstrates responsibility and physical and mental attentiveness in a positive and constructive manner.

Demonstrates willingness to show consideration and appreciation for patients and co-workers.

Exhibits compassion, empathy and support in patient care and professional interactions.

Demonstrates truthful and ethical standards in professional interactions and conduct.

Practice Based Learning and Improvement

Becomes familiar with the process of using evidence-based medicine to support clinical questions that arise during their treatment of patients.

System Based Learning

Understands the OHSU vascular service organization of attendings, fellows and residents

Objectives

Medical Knowledge

Explain co-morbid conditions that contribute to vascular disease.

Describe the components required to perform a preoperative evaluation for vascular surgery

Describe the physiology of aortic cross-clamping, appropriate management strategies, and implications for spinal cord, renal, and other organ injury

Explain the elements required for anesthetic management options for

- Carotid endarterectomy
- Aortic aneurisms and aortoocclusive disease
- Lower extremity vascular disease

Patient Care

Discuss the anesthesia risk associated with vascular surgery.

Debate anesthetic influences on surgical outcome.

Demonstrate a thorough preoperative evaluation of the patient for vascular surgery.

Discuss appropriate monitoring considerations for the vascular patient

- Peripheral arterial line
- Central venous catheter
- Pulmonary artery catheter

Demonstrate the safe and appropriate placement of

- Peripheral arterial line
- Central venous catheter
- Pulmonary artery catheter

Describe appropriate use of the above listed monitors including indications, appropriate interpretation, complications, and limitations.

Discuss and defend reasoning anesthetic management options for

Carotid endarterectomy
Aortic aneurisms and aorto-occlusive disease
Lower extremity vascular disease

Explain and defend appropriate management strategies, and implications for spinal cord, renal, and other organ injury.

Describe postoperative considerations in the management of the vascular patient.

Interpersonal and Communication Skills

Demonstrates effective team communication intraoperatively, including the use of closed-loop communication

Professionalism

Demonstrates attainment of the objectives of the residency for the level of training of the resident

Practice Based Learning and Improvement

Locates evidence using on-line resources regarding a clinical question in vascular surgery that they derive from their patients.

Evaluates the evidence for quality and strength of evidence.

Applies evidence identified appropriately to their patient population.

System Based Learning

Identifies the vascular team members and the appropriate post-surgical ICU team.

Instructional Methods:

1. Residents will be assigned to the Vascular OR as possible, or other comparable complex anesthetic cases.
2. Residents will discuss their preanesthetic workup, monitoring plan, anesthetic and postoperative plan with their attending anesthesiologist the day prior to the scheduled case.
3. Residents will be expected to create a question for evaluation stemming from a patient interaction each week. The resident will then perform a literature search using the on-line resources available from the OHSU library website. They will present the results of the most pertinent article they are able to find on the topic they

have chosen once each week to an attending they are working with in the OR. This attending will review and discuss the article with the resident. The resident will keep written log of the questions, articles and dates of discussion, and faculty signature to be turned in at the end of the rotation.

Reading, References, Resources

1. The resident will read Chapter 52 “Anesthesia for Vascular Surgery” by Ed Norris, in Miller’s Anesthesia, 6th Ed. This is available through the OHSU library website via MDConsult.
2. Journal articles, as identified by the resident for the evidence-based medicine project.
3. Reference articles are also available at J:\ANES\Adult Anesthesia articles\Vascular Anesthesia.

Evaluation:

The resident’s knowledge, technical skill and understanding of the material outlined in the above goals will be assessed by the attending anesthesiologists on the vascular service.

- 1) A daily evaluation (web form) will be completed by the attending who works with the resident.
- 2) Written confirmation by attendings of four evidence-based medicine discussions will be required to pass the rotation.
- 3) An oral exam, in the format of the ABA oral board exam, will be performed by the course director or an appointee at the end of the course.

The aggregated information will be discussed with the resident and a written summary prepared and submitted to the education director by Dr. Jarnberg, team leader for vascular surgery.

The resident will also be required to complete an electronic evaluation of the rotation after completion of the rotation.