UNIVERSITY OF MASSACHUSETTS MEDICAL SCHOOL
ANESTHESIOLOGY RESIDENCY PROGRAM

GOALS AND OBJECTIVES

ANESTHESIA FOR VASCULAR SURGERY
CA-2 REQUIRED ROTATION

Each resident will spend a required month devoted to anesthesia for vascular surgery during the CA-2 year. An additional month (or more) may be taken during the CA-3 year if desired by the resident and if approved by the Program Director.

GOALS

The resident is expected to acquire the skills necessary to manage high-risk vascular surgery patients perioperatively in a safe and evidence-based manner. As these skills are dependent on the knowledge of the comorbidities often encountered in such patients, the resident's scope of knowledge will expand to include hypertension, diabetes, cardiopulmonary, renovascular, and cerebrovascular disease. The expectations and degree of difficulty of cases will gradually increase as the level of training and skill progresses.

COMPETENCIES

By the completion of the resident's training, the resident will have demonstrated competence in the following areas related to anesthesia for vascular surgery:

I.   PATIENT CARE

At the conclusion of the rotation, the resident should be able to:

- Perform a complete preoperative anesthesia assessment of patients undergoing:
    a. major aortic surgery
    b. peripheral vascular bypass procedures
    c. carotid endarterectomy
    d. endovascular and radiological procedures
    e. dialysis access creation and repair
    f. varicose vein procedures

- Present, in a concise and logical manner, the patient's medical history

- Develop a reasonable and safe anesthetic plan utilizing an evidence-based approach, and communicate it to the supervising faculty member

- Understand invasive hemodynamic monitoring and demonstrate successful placement of

    a. intra-arterial catheters in most patients
    b. central venous catheters with guidance
    c. pulmonary artery catheters with guidance
    d. noninvasive cardiac output monitor with assistance

- Make intraoperative decisions based upon information from invasive monitors

- Understand the regional as well as general anesthetic options for a given procedure, and discuss the risks and benefits of each

- Manage anesthesia for routine vascular cases somewhat independently
- Recognize and treat intraoperative hemodynamic derangements and complications
- Discuss options for postoperative analgesia, make the appropriate choice in a given patient, and demonstrate the ability to perform such techniques with guidance:
  - a. thoracic or lumbar epidural
  - b .spinal
  - c. brachial plexus block

- Discuss choices and demonstrate appropriate use of ancillary medications:
  - a. vasopressors, inotropic agents, and antihypertensive agents
  - b. anticoagulants and their reversal agents
  - c. antibiotics

- Understand and discuss the appropriate choice of blood products and intravenous fluids for volume resuscitation

II. Medical Knowledge:

At the conclusion of the rotation, the resident should understand:

- The anatomy and physilogy of the cardiovascular system

- The anesthetic implications, and perioperative management, of:
  - a. coronary artery disease
  - b. congestive heart failure
  - c. essential hypertension
  - d. cerebrovascular disease and stroke
  - e. chronic obstructive pulmonary disease
  - f. diabetes mellitus
  - g. chronic renal insufficiency

- The pharmacology, in terms of their indications, contraindications, and kinetics, of ancillary medications, including:
  - a. vasopressors, inotropic agents, and antihypertensives
  - b. anticoagulants and their reversal agents
  - c. antibiotics

- And be able to interpret data from the following monitors and/or tests:
  - a. invasive and noninvasive hemodynamic monitors
  - b. arterial blood gases
  - c. tests of anticoagulation
- The readings assigned by the attending anesthesiologist (see Appendix) and discuss them in a critical manner.

II.   PRACTICE BASED LEARNING

At the conclusion of the rotation, the resident will have :

- Either visited in person or communicated via telephone with, each patient for whom the resident has cared. The resident will then discuss with the attending anesthesiologist of record the patient's outcome with specific reference to the following areas:

  - a. any unanticipated postoperative events
  - b. the appropriateness of the intraoperative fluid management

c. the adequacy of the postoperative analgesia regimen

d. the appropriateness of the chosen intraoperative monitors

III.   COMMUNICATION AND INTERPERSONAL SKILLS

- The resident will be the primary conduit of communication between the anesthesia and vascular surgery teams.

- In the preoperative period, the resident will communicate to the vascular surgery team any needs for additional evaluations or consultations or any indications for the need to delay surgery.

- During the surgery, the resident will communicate to the vascular surgery team any unanticipated and clinically relevant changes in the patient's condition.

- The resident will present (if necessary) the patient's pre- and intraoperative course to the intensive care team.

- In the postoperative period, the resident will communicate to the vascular surgery team any unanticipated anesthesia-related events or outcomes.

V. PROFESSIONALISM

- The resident will at all times treat all members of all perioperative teams with respect.

- The resident will facilitate turnover for patients requiring considerable preparation

- The resident will utilize professional interpreters appropriately when needed and when the patient's condition permits.

- The resident will self-identify errors in judgment or patient management, and will be prepared to discuss them in the appropriate forum to further learning

VI. SYSTEM-BASED PRACTICE

- The resident will develop an understanding of the preoperative preparation, including appropriate use of consultants, needed prior to the start of the case

- The resident will develop some understanding of the often extensive use of hospital resources in caring for many of these patients post-operatively