



## SURGICAL RESIDENT CURRICULUM FOR THE DIVISION OF VASCULAR SURGERY

July 2012

Residency Years Included:

PGY1 X    PGY2 X    PGY3       PGY4 X    PGY5   

### **I. Overview of the Division**

The Vascular Surgery Division provides comprehensive care of patients with arterial and venous pathology. In addition to performing a wide range of complex operative procedures, the Division has developed an endovascular surgery center, a wound care center, and a center for the care of venous pathology. The wound care and endovascular programs are internationally recognized and offer training programs for physicians interested in learning the latest techniques in these areas. The Division has close relationships with the interventional radiology division and the non-invasive vascular laboratory. The majority of patients with peripheral vascular are seen by all three groups during the course of their diagnosis and treatment. Faculty members in the Division of Vascular Surgery include:

- Dr. Blair Keagy
- Dr. William Marston
- Dr. Mark Farber
- Dr. Raghuveer Vallabhaneni
- Dr. Joseph Fulton
- Dr. Peter Ford

In 1973, UNC Hospitals supported the development of the Peripheral Vascular Laboratory to perform noninvasive assessments of patients with vascular disease. Initially one of only 10 clinical vascular testing facilities in the country, the laboratory continues as a national leader in clinical performance, education, and research. It was one of the first accredited laboratories in the state and performs more than 11,000 examinations per year.

The Wound Care and Limb Salvage Center was created in 1998 as a specialized facility in and enjoys a national reputation as a leader in both the delivery of care to patients with chronic wounds and as a center for clinical research. There has

been a documented decrease in the amputation rate at UNC for individuals with arterial and venous problems of the lower extremity.

The Vein Clinic offers state of the art treatment to patients with venous pathology of the lower extremity. It is a comprehensive program that provides appropriate noninvasive testing and utilizes the latest treatment modalities including sclerotherapy, laser vein closure and rotoblader removal of venous varicosities.

The dialysis access clinic has expanded over the last year and is associated with a 24% increase in the number of access procedures performed. Surgeons in the Vascular Surgery Division are responsible for all of these operations and are assisted in patient management by a registered nurse and a nurse practitioner. In addition to the operative procedures required for dialysis access, many of the patients require other interventions such as venograms, lytic therapy for clotted shunts and venoplasties to treat graft stenoses.

The endovascular aneurysm program was pioneered over 15 years ago in the UNC animal research laboratories. The earliest clinical trials were then undertaken at UNC. To date over 1000 of these devices have been placed by UNC vascular surgeons. It has a national reputation for endovascular repair of aortic aneurysms and physicians from across the country come to UNC for training in these new procedures. The vascular division participates in a number of clinical trials to evaluate new devices. Recently a clinical trials program in the endovascular treatment TAAA has been instituted in the Division, and UNC is the largest patient enroller in the United States in many of these studies.

The treatment of peripheral vascular disease is increasingly less reliant on open surgical procedures with endovascular therapies assuming major importance. The UNC endovascular program uses the latest equipment and minimally techniques to treat obstructive arterial disease. Physicians at UNC are skilled in the latest treatment methods, some of which are still in the experimental stage. These include angioplasty, stent placement, carotid dilatation and subintimal recanalization.

## **II. Educational Program**

**Overview:** The emphasis in this residency program will be on educating the house staff in the pathophysiology and social dynamics of the patients with disease involving the peripheral vascular system. The trainee will be expected to know, present, and discuss not only the details of patient care but also current knowledge on the disease process. Development of patient care oriented skills will be through a systematic progression of duties and responsibilities. There is a strong emphasis on the basic mechanisms of disease, understanding the patient's social dynamics, and relating to families, and referring physicians.

**Non-Invasive Vascular Laboratory:** The resident is expected to become proficient in the interpretation and technical aspects of non-invasive vascular laboratory studies.

**Outpatient Clinic:** The resident will spend one full day a week in the outpatient clinic. He/she will see and evaluate new patients with vascular pathology and review their laboratory and radiologic studies with a member of the attending staff. He/she will also follow the patients postoperatively. A member of the attending staff will be in the clinic at all times but the resident is expected to make primary contact with the patient. No elective surgery will be scheduled on clinic day.

**Interpretation of Radiologic Data:** The resident will become proficient in the evaluation of radiologic studies including angiograms, CT scans, MRA's and spiral CT's. This will be accomplished by participation of the interventional radiologists in a weekly conference, by spending required time in the angiogram suite and by direct contact with the attending surgical staff and the interventional radiologists.

### **III. General Resident Competencies**

**Interpersonal and Communication Skills:** The resident will be expected to develop skills in dealing with patients and their families. He/She should be able to explain complex procedures in a clear and understandable fashion. He/She must be able to understand the impact of the procedure on the lifestyle of the patient and the increased demands on the family of caring for that patient in the post-operative period. He/She will learn the necessity of dealing with all health care professionals in the total care of the patient.

**Systems based practice:** The necessity of cost-effective practice will be stressed. The resident will be expected to know the financial impact on the health care system of utilizing the high technology diagnostic and therapeutic modalities that exist in today's medical practice. He/She will work closely with hospital and practice programs that enhance patient throughput and streamline medical care.

**Professionalism:** The resident will maintain a professional attitude and demeanor at all times. He/She will be expected to exhibit the qualities of responsibility, integrity and compassion. He/She will learn the importance of patient confidentiality, informed consent and timely and accurate record keeping

**Practice based learning and improvement:** The resident will be expected to have an in-depth knowledge of the medical literature. He/She will learn the art of critically reading and evaluating a scientific study. He/She will be taught to use that information to make better informed clinical management decisions. The

resident will be responsible for presenting patient information at the Friday morning patient care conference. He/She will be quizzed on the appropriate literature and will be expected to advance a cogent treatment plan. He/She will be asked to expound on this plan as the discussion dictates.

#### **IV. Conferences and Seminars**

**Didactic Teaching:** The resident will be expected to attend and participate in the following conferences:

**Vascular Review Conference:** At this weekly conference, the vascular surgery resident will be responsible for presentation of cases and review of the literature pertaining to various vascular surgery topics. The program director will be responsible for ensuring that topics are varied so that the entire gamut of vascular surgery pathology is discussed. Additionally, pre and postoperative cases will be reviewed as well as morbidity and mortality that occurs on the service.

**Basic Science Conference:** This monthly conference is designed to cover a wide variety of basic science topics related to vascular surgery problems. The conference will generally be given by the pre-clinical resident although guest speakers will occasionally be responsible for the presentations. A schedule of topics will be published at the beginning of each academic year. All residents and faculty are expected to participate in the discussions.

**Morbidity and Mortality Conference:** All problems occurring on the vascular service will be presented at the weekly conference.

**Non-Invasive Vascular Laboratory Conference:** This weekly conference will be led by the pre-clinical resident. Interpretation of laboratory studies will be reviewed with the vascular laboratory technologists and the medical director of the laboratory.

**Symposia:** At least one and usually two formal conferences are held each year. They last one and one/half days and include the regional vascular surgery community (about 90- 100 attendees). At least three national figures in the field of vascular surgery are invited speakers.

## **V. Specific Goals By Resident Year (in addition to skills described above)**

### **PGY1**

#### **Patient Care**

- Monitor the post-operative care of vascular patients
- Learn basic operative skills by performing minor vascular procedures under the supervision of a member of the attending staff
- Evaluate patients in the outpatient clinic in conjunction with a member of the attending staff

#### **Medical Knowledge**

- Understand the basics of the non-invasive vascular laboratory
- Become familiar with endovascular techniques
- Understand the basics of wound care as applied to patients with ischemic extremities or venous insufficiency ulcers
- Learn how to perform a complete vascular physical examination

#### **Practice-based Learning and Environment**

- Participate in the weekly patient care conference
- Understand the medical surgical and scientific bases of a medical treatment plan
- Understand when to obtain consultation for difficult medical problems

#### **Interpersonal and Communication Skills**

- Learn how to participate in a team approach to patient care
- Develop skills in writing progress notes and dictating basic operative reports

#### **Professionalism**

- Develop Abilities to interact in a compassionate basis with patients and their families
- Learn skills and relating to non-physician health care professionals

#### **Systems Based Practice**

- Learn how to effectively transfer care when duty hours are completed
- Understand the compliance measures developed by the hospital
- Participate in the development of standardized order sets

### **PGY3**

#### **Patient Care**

- Assist in the supervision the post-operative care of vascular patients
- Assume responsibility for the preoperative evaluation of all patients with planned vascular access procedures
- Evaluate all consultations directed to the vascular surgery service and discuss the findings and care plan with a member of the attending staff
- Evaluate patients in the outpatient clinic in conjunction with a member of the attending staff
- Understand complex vascular laboratory evaluations and their application to care of the vascular patient

#### **Medical Knowledge**

- Become familiar with advanced endovascular techniques

- Perform the majority of vascular access operations such as arc grafts, fistulas and basilica vein transpositions
- Understand the basics of wound care as applied to patients with ischemic extremities or venous insufficiency ulcers
- Learn how to apply the results of a complete vascular physical examination to a patient care plan
- Perform some vascular procedures such as thrombectomies and simple bypass procedures
- Develop the ability to interpret angiograms and other radiographic diagnostic techniques.

#### **Practice-based Learning and Environment**

- Present at the weekly patient care conference
- Understand the medical surgical and scientific bases of a medical treatment plan
- Understand when to obtain consultation for difficult medical problems

#### **Interpersonal and Communication Skills**

- Learn how to participate in a team approach to patient care
- Develop skills in writing progress notes and dictating operative reports
- Learn how to write an effective consultation request

#### **Professionalism**

- Develop Abilities to interact in a compassionate basis with patients and their families
- Develop skills in the supervision of junior residents as they care for patients on the vascular surgery service.
- Learn skills and relating to non-physician health care professionals

#### **Systems Based Practice**

- Learn how to effectively transfer care when duty hours are completed
- Understand the compliance measures developed by the hospital
- Participate in the development of standardized order sets
- Understand basic statistical methods and their application to data obtained from patient studies

## **PGY4**

#### **Patient Care**

- Supervise the daily care of all patients on the vascular surgery service under the direction of the vascular surgery fellow and a member of the attending staff
- Make decisions in the outpatient clinic with regard to a patient treatment plan and communicate this with a member of the attending staff

#### **Medical Knowledge**

- Perform moderately complex vascular operations such as Femoral-Popliteal bypass grafts, Femoral-femoral bypass grafts and treatment of traumatic injuries to the vascular system

- Participate in endovascular procedures such as those associated with endovascular repair of abdominal aortic aneurysms
- Interpret angiograms, MRAs and CTAs under the supervision of a member of the division of vascular surgery or the division of interventional radiology

#### **Practice-based Learning and Environment**

- Present at the weekly vascular conference to include a patient care history and a review of all the pertinent literature
- Understand how to apply data obtained from medical journals to the development of a comprehensive treatment plan

#### **Interpersonal and Communication Skills**

- Develop the ability to present patient data in a complete and concise fashion
- Develop skills in dictating operative notes related to complex surgical procedures
- Understand how to coordinate patient care when multiple specialties are managing various aspects of the patient's medical condition

#### **Professionalism**

- Learn how to manage a large clinic while maintaining patient satisfaction
- Develop skills in communicating with families following the completion of surgical procedures

#### **Systems Based Practice**

- Participate in the development of standard order sets and patient care plans
- Learn how to individualize patient orders when standard care plans are not applicable