

**Vascular Medicine Cardiology Rotation  
The Miriam Hospital**

**Overview of Rotation**

*Date: July, 2013*

<b>I. GENERAL INFORMATION TMH</b>	
<b>Name of Rotation</b>	Vascular Medicine TMH
<b>Course Director</b>	Peter A. Soukas, MD, FACC, FSVM, FSCAI, RPVI
<b>Duration of Rotation</b>	1 month rotation block
<b>Institution and Address</b>	The Miriam Hospital, 164 Summit Avenue, Providence, RI 02906
<b>Telephone / FAX</b>	401-793-4102 / 401-793-4049
<b>Administrative/Secretarial Contact and Phone</b>	Teresa Gadouas, 401-793-4102
<b>Fellowship Study/Resource Area</b>	Fellows Room 327 and Cath Lab Conference Room

**IIa. FACULTY TMH & RIH**

Interventional Vascular Lab: Drs. Peter Soukas, Paul Gordon, Shafiq Mamdani, Mitchell Sklar, Wael Al-Husami, Chris Kelley, Richard Regnante, Manuel Garcia-Toca, J. Dawn Abbott (RIH)  
 Operating room: Drs. Ibrahim Eid, Rajendra Patel, Shoma Brahmanandam, Garcia-Toca(TMH)  
 Outpatient Clinic: Drs. Peter Soukas (TMH) & J. Dawn Abbott (RIH)  
 Diagnostic Imaging: Drs. Peter Soukas, Kenneth Korr, Michael Atalay, Manuel Garcia-Toca

**IIb. Introduction**

The Vascular Medicine and Endovascular Medicine Rotation at Brown is based at The Miriam Hospital (TMH). The rotation is one month in duration. The rotation will include interventional procedures in the catheterization laboratory, outpatient clinics, and inpatient consults. One half-day/week is also protected from clinical responsibility to pursue scholarly activity. Fellows will also attend and participate in the weekly Vascular conference and monthly M&M and journal club conference.

Fellows will evaluate and treat patients with vascular disease including arterial occlusive disease, aneurysmal disease, arterial dissection, arterial/venous thromboembolism and vasospastic disease. Patients routinely treated include those with claudication, limb threatening ischemia, stroke, and renovascular hypertension. Fellows will be exposed to inpatients that may be stable or critically ill who are in need of urgent or emergent diagnostic and interventional cardiovascular procedures. Fellows will have ample exposure to evaluate and manage bleeding and vascular access complications that may arise in these patients.

The Cardiac Catheterization Laboratory at The Miriam Hospital has a state of the Hybrid lab shared with Electrophysiology for the evaluation and management of peripheral arterial disease.

In the Vascular Medicine Clinic (two to three one-half days a week), fellows will have exposure to the evaluation and management of patients with peripheral arterial disease, including on-site non-invasive vascular testing in an ICAVL accredited laboratory. Fellows will also have one on one reading with RPVI-certified attendings in the TMH hospital non-invasive vascular ICAVL accredited lab.

**III. GENERAL GOALS AND EDUCATIONAL OBJECTIVES FOR THIS ROTATION**

**Overall Rotation Goals and Objectives:**

This rotation provides an introductory experience in vascular and endovascular medicine. The goals of the experience are for trainees to become familiar with consultation in vascular medicine, diagnostic vascular imaging procedures, and the variety of peripheral artery interventional procedures, including, but not limited to: noninvasive vascular study interpretation, diagnostic angiography, peripheral interventions including carotid,

vertebral, mesenteric, renal, aortic, iliac, and lower extremity intravascular interventions, as well as venous interventions for DVY, PE and varicose vein ablation.

## **I. Patient Care**

- 1. Fellows will gain experience in the prevention, evaluation and management of both inpatients and outpatients with the following disorders:** a) peripheral arterial disease, b) renal artery stenosis, c) mesenteric ischemia; d) extracranial cerebrovascular disease, e) aneurysmal disease, f) arterial dissection, g) arterial and venous thromboembolism, h) noninvasive vascular tests such as segmental blood pressure measurements, arterial and venous duplex ultrasonography, and computed tomographic and magnetic resonance angiography, i) accuracy and limitations of diagnostic tests, j) radiation physics, safety, and radiographic imaging equipment, k) principles of image acquisition and display, l) advantages, disadvantages, and potential complications of iodinated and noniodinated contrast agents, m) advantages, disadvantages, potential outcomes, and complications of interventional procedures, n) indications, alternatives, and contraindications for catheter-based interventions
- 2. Fellows will gain introductory experience in the range of interventional vascular procedures.**

## **II. Medical Knowledge**

**Fellows will gain knowledge of the following content areas:**

1. Vascular biology precepts that govern normal blood vessel function.
2. Pathologic mechanisms that lead to vascular disease, including the molecular and cellular processes that result in atherosclerosis and thrombosis.
3. Systemic manifestations of atherosclerosis and the risk factors that contribute to its development.
4. Guidelines established to modify risk factors.
5. Pathophysiology, clinical manifestations, natural history, evaluation, and management of peripheral arterial disease, renal artery stenosis, extracranial cerebrovascular disease, aortic and peripheral artery aneurysms, and other arterial diseases.
6. Pathophysiology, clinical manifestations, evaluation, and management of venous thromboembolism.
7. Prothrombotic disorders including inherited and acquired hypercoagulable states.
8. Pathophysiology, clinical manifestations, evaluation, and treatment of chronic venous insufficiency and lymphedema.
9. Preoperative evaluation and perioperative care of the vascular surgery patient.
10. Non-invasive vascular tests including duplex ultrasonography of peripheral arteries and veins, carotid arteries, renal arteries, and physiologic tests of the peripheral circulation.
11. Magnetic resonance and computed tomographic angiography.
12. Conventional contrast angiography.

## **III. Interpersonal and Communication Skills**

**Fellows will be able to:**

1. Effectively communicate as a member of an interdisciplinary team in the Interventional Vascular Lab
2. Effectively communicate with consulting physicians
3. Provide appropriate informed consent to patients and families for elective and emergency procedures
5. Effectively communicate with patients and families regarding procedure outcomes and prognosis

## **IV. Professionalism**

None specific to this rotation.

## **V. Practice based learning and improvement**

None specific to this rotation.

## **VI. Systems Based Practice**

None specific to this rotation.

## **IV. TOPICS/TEACHING METHODS/MATERIALS USED DURING THIS ROTATION**

**Specific topics to be covered during this rotation:** See above.

### **Principal teaching methods (see Section IX):**

Clinical teaching (A)

Clinical experiences (B)

Performance feedback

    Monthly evaluations (C1)

    Semiannual evaluation (C2)

Conferences (D)

**Educational materials provided/recommended to the fellow:** A variety of text and electronic media are available in the cardiology fellow's room as well as in the cath lab cine room. Specific reference texts suggested for this rotation are:

Rajagopalan S (Editor), Mukherjee D (Editor), Mohler ER (Editor). Manual of Vascular Disease (Field Guide Series)

Creager M. Atlas of Vascular Disease, 2008.

Rooke T. Vascular Medicine and Endovascular Interventions, 2007.

Creager MA, Dzau VJ, Loscalzo J. Vascular Medicine – A Companion to Braunwald's Heart Disease Consult, 2006.

Strandness DE. Duplex Scanning in Vascular Disorders.

Zwiebel W and Pellerito J. Introduction to Vascular Ultrasonography, 5<sup>th</sup> Edition.

Hirsch AT, Haskal ZJ, Hertzner NR, et al. Peripheral Arterial Disease: ACC/AHA 2005 Guidelines for the Management of Patients With Peripheral Arterial Disease (Lower Extremity, Renal, Mesenteric, and Abdominal Aortic): A Collaborative Report From the American Association for Vascular Surgery/Society for Vascular Surgery, Society for Cardiovascular Angiography and Interventions, Society for Vascular Medicine and Biology, Society of Interventional Radiology, and the ACC/AHA Task Force on Practice Guidelines (Writing Committee to Develop Guidelines for the Management of Patients With Peripheral Arterial Disease). J Am Coll Cardiol 2006;47:1239-312.

## **V. EVALUATIONS**

A. Evaluation of the fellow's successful completion of the above goals will be carried out by the attending physicians, with additional input from additional members of the cardiac cath lab team (see section IX).

Assessment methods may include:

    Clinical performance ratings (1)

    Focused observation (2)

    360-degree assessment: Nursing or technician and physician assistant or nurse practitioner evaluations (3)

    Faculty/staff meetings (4)

    Procedure logs (5)

B. Fellows and faculty will evaluate the rotation annually.

C. Fellows will evaluate faculty anonymously at the completion of each rotation

## **VI. RESPONSIBILITY OF ATTENDING ON ROTATION**

The vascular medicine attending will be responsible for the final interpretation of all studies and management

decisions including the indication and appropriateness of coronary and non-coronary interventions performed in the cardiac catheterization lab. The attending will review each patient's data, images, interventional equipment and techniques performed that day with the interventional fellow. Educational points of each case will be reviewed with an emphasis on technical aspects of peripheral interventional procedures and evidence-based medicine regarding indications for intervention, device choice, and adjunctive pharmacology. The attending physician also is responsible to supervise the fellow in consultations in vascular medicine, both in- and out-patient.

## VII. RESPONSIBILITY OF FELLOW ON ROTATION

The rotating fellow is expected to participate in both the interventional and consultative aspects of the vascular medicine service. Daily assignments will be made by the rotation director. The fellow will be responsible for the four major aspects of the procedure as follows:

1. **Interventional Procedures:** Assigned by attending on several days per week. Responsibilities may include:
  - a. Pre-procedural assessment.
  - b. Explain the risks, benefits, and alternatives to the procedure and obtain informed consent.
  - c. Experience in cath lab procedures that are appropriate for the fellows current level and skills.
  - d. Post-procedural assessments
2. **Inpatient consults:** Fellow will perform inpatient vascular medicine consults as needed
3. **Clinic:** Fellow will attend outpatient vascular medicine clinic
4. **Conferences:** Fellow will attend all conferences that are specific to the vascular medicine service, in addition to those required for the general cardiology fellowship program.

## VIII. CONFERENCE AND CLINIC SCHEDULE SPECIFIC TO THIS ROTATION

	Monday	Tuesday	Wednesday	Thursday	Friday
AM	Vascular conference- 7:30-8:30 (weekly, RIH 1 <sup>st</sup> Monday of month, TMH all others) or Journal Club (1/month)  Cath Lab	Vascular Didactic 7-8  Cath Lab	Outpatient Vascular Clinic	Clinical Cath conference 7-8  Cath Lab	Cardiology Division Conference (weekly) at RIH, videoconferenced at TMH, 7:30-8:30  Outpatient Vascular Clinic
PM	Noninvasive vascular lab reading with attending  Interventional Research Conference (monthly)	Cath Lab / Research	Noninvasive vascular lab reading with attending	Cath Lab / Research	Outpatient Vascular Clinic

## IX. CORE COMPETENCY CURRICULUM

Competency Category	Specific Goals	Cath Lab (RIH, TMH)
Medical Knowledge	Demonstration of investigatory and analytical thinking relevant to peripheral interventional cardiology	A,B,C,D -- 1,2,4
	Acquisition the appropriate background relevant to peripheral interventional cardiology	B,C -- 1,2,4
Patient Care	Knowledge of the appropriate indications for peripheral interventional cardiology procedures	A,B -- 1,2
	Procedural/Technical Skills (Experience only)	A,B,C -- 1,2,4,5

Practice-Based Learning & Improvement	Demonstration of self-critical thinking and motivation to improve	B,C -- 1,2,4
Professionalism	Commitment to professional responsibilities, development and ethics	B,C -- 1,2,3,4
Interpersonal & Communication	Commitment to developing effective relationships with referring clinicians, hospital services, and colleagues	A,B,C -- 1,2,3
Systems-based Practice	Demonstrate risk benefit analysis and coordination of care within the health care system in patients with peripheral vascular disease	A, B, D – 1,2,3,4