Establishing a CLI Referral Program for Your Hospital

One center's successful experience developing a PAD referral program to ensure patients are identified and treated early enough to prevent amputation.

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Peripheral arterial disease (PAD) occurs often across many populations, yet it remains a very serious and often undiagnosed problem. The reported prevalence of PAD varies throughout epidemiological studies depending on the population being screened and associated risk factors. However, 74% of the population surveyed respond that they are unaware of this disease, and only 19% of patients learn about PAD through their health care provider.[1] Most PAD patients complain of claudication, some instances of which are life limiting in severity.

Critical limb ischemia (CLI) is a serious complication related to advanced PAD. In the not too distant past, CLI resulted in the unfortunate outcome of eventual amputation. This is no longer acceptable, as the option of amputation is increasingly challenged by interventional options. As vascular specialists, we are at the forefront of treating these patients, and it is incumbent upon us to ensure they have access to proper imaging and modern therapeutic options before amputation is even considered. This article discusses the critical frontline challenge of identifying PAD patients early and getting them access to appropriate treatment.

INTERNAL SCREENING AND REFERRAL PROTOCOLS

Multiple PAD treatment modalities have seen tremendous advancement in recent years. However, before these technologies are even a factor in a patient's care, the disease must first be identified in that individual. This, rather than the treatability of the disease itself, is often the most significant barrier to effective treatment. More health care providers must implement strategies aimed at bringing potential PAD patients through the doors and initiating early treatment in those deemed to be viable candidates. The first step in integrating a referral pattern is to start within your own practice. PAD screening should be integrated into the daily routine of your office. However, the screening process should not be limited to the physician. All employees and aspects of your practice should be involved in screening and treating these patients. This is the only way to build a successful internal screening program.

PATIENT SYMPTOMS OF CLI: THE FIVE "P"s

- Pain
- Pale
- Pulseless
- Parasthesia
- Paralysis

Nurses, medical assistants, and frontline staff (eg, schedulers and telephone operators) should all be involved and educated regarding the impact of this illness and the importance of treating the patients promptly. For example, it should be understood throughout the practice that a patient with rest pain (Rutherford IV) should be treated urgently; a patient with ischemic ulcers or gangrene (Rutherford V and VI) should be treated emergently. The staff should be educated to prioritize these patients the same as those who phone with chest pain and schedule them accordingly (see *Patient Symptoms of CLI* sidebar and Table 1). The importance of triage protocols cannot be stressed enough.

All patients coming into the practice should undergo routine PAD screening. Medical assistants should assist patients in the removal of shoes and socks. These staff members should receive proper training in the removal of wound dressings and proper redressing techniques. A Doppler ultrasound unit and associated supplies should be readily available to the provider. Office staff can be trained to routinely perform pedal and tibial pulse assessment and perform straightforward ankle-brachial index (ABI) assess-

TABLE 1. PERIPHERAL VASCULAR PHONE CALL TRIAGE

Classification	Acute CLI[a] (Office visit: ASAP/same day)	Amputation Prevention (Office visit: within 24–48 hours)	Chronic CLI (Office visit: up to 4 weeks out)
Pain	New onset of moderate to severe foot pain (better with dangling/ worse with lying flat), pain with walking < 20 feet or at rest	Ongoing moderate to severe pain (at least 2 weeks)	Chronic/low-grade pain or pain associated with walking (> 20 feet)
Temperature	Cold to cool	Cool	Warm to slightly cool
Sensation	Numb/changed from their normal sensation	Tingling	Decreased/decreased sensation to vibration/or awareness of where their foot is (loss of proprioception)
Ulcer	New onset (within 1 week) or expanding existing ulcer, gangrene present	Present/chronic/> 2 weeks/not changing, may or may not have gangrene	Not present
Color	Pale, cyanotic, mottling	Pale/mottled	Pale to pink
Muscle Weakness	Limb feels heavy, new weakness or paralysis/no toe movements	Calf atrophy	May or may not have calf atrophy
Operator/ Clerical	1. Keep patient on hold, 2. Verbal communication to RN via phone 3. RN message inbox high priority	1. Instruct patient will be contacted by RN today/may hang up with patient 2. Verbal communication to RN via phone 3. RN message inbox high priority	RN message inbox
RN Phone Call to Patient	Required pick up phone ASAP/question patient re: priority level	Required within 2 hours/before the end of the day to question the patient re: priority level	Required within 24 hours to question the patient re: priority level
RN/Interventional Physician On Call Notification	Required	Required	Not required
RN Assessment of Priority Level	1. Pick up phone/speak to patient, follow triage questionnaire 2. Notify Clerical to schedule office visit to PA emergency office slot 3. Notify rounding PA 4. Update interventionist/on call of potential CLI patient	1. Follow triage questionnaire 2. Notify Clerical to schedule office visit within 24–48 hours/may use PA emergency office slot 3. Notify interventionist/on call of potential amputation prevention patient	Notify Clerical to schedule office visit no longer than 4 weeks out
Clerical: Office Visit	1. Follow RN instruction re: priority status 2. Schedule office visit ASAP with PA if existing patient 3. Schedule with interventionist or attending same day if new patient Begin to assess immediate plan to schedule patient for procedure with interventionist	1. Follow RN instruction re: priority status 2. Schedule office visit with PA within 24 hours and assess plan for 24-48 hours procedure with interventionist	Schedule office visit within 4 weeks

[a]Acute CLI should be given the same priority as chest pain/ST-segment elevation myocardial infarction.

EXAMPLE OF A PATIENT'S GUIDE TO PAD

What is Peripheral Artery Disease (PAD) and what causes it?

PAD is a common circulatory problem where narrowed arteries reduce blood flow to your arms or legs (usually your legs). This narrowing prevents your legs from receiving enough blood flow to keep up with demands. PAD is often caused by atherosclerosis where fatty deposits (plaques) build up in your artery walls and reduce blood flow. PAD may also be a sign of a more widespread narrowing of your arteries causing reduced blood flow to your heart and brain.

What are the symptoms of PAD?

Some people with PAD have very mild or no symptoms while others have leg pain when walking (intermittent claudication). Intermittent claudication includes muscle pain or cramping in your legs or arms that is triggered by activity and disappears after rest. The location of the pain depends upon the location where the artery is narrowed or blocked. Calf pain is the most common.

Symptoms of PAD include:

- Intermittent claudication
- Leg numbness or weakness
- Coldness in your leg or foot (especially when compared to the other leg)
- Sores on your toes, feet or legs that don't heal
- A change in the color of your legs
- Hair loss or slow hair growth on your feet and legs
- Slower growth of your toenails
- Shiny skin on your legs
- No pulse or a weak pulse in your legs or feet
- Erectile dysfunction in men

When should I see a doctor?

If you have any of the above symptoms, don't dismiss them as a normal part of aging. Call your doctor and make an appointment.

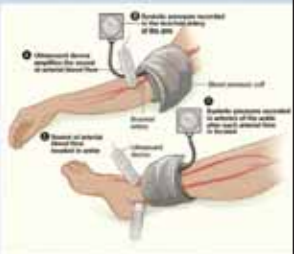
Even if you don't have symptoms of PAD, you may need to be screened if you are over age 70, over age 50 and have a history of diabetes or smoking, or if you are under age 50 and have diabetes and other PAD risk factors such as obesity or high blood pressure.

What are risk factors for PAD?

Factors that increase your risk of developing PAD are smoking, diabetes, obesity, high blood pressure, high cholesterol, increasing age and family history.

How do I find out if I have PAD?

The best method to test for PAD is to have a physical exam by your doctor and an Ankle-Brachial Index (ABI). This test uses sound waves to detect if there is reduced blood flow in the arteries. ABI also compares the blood pressure in your ankle with the blood pressure in your arm.



Other tests include special ultrasounds, blood tests (to check for high cholesterol and diabetes) and angiography (injecting a dye into your blood vessels and taking X-ray images to check for narrowing or blockage of the blood vessels.

Prevention

Reducing your risk factors is the best way to prevent PAD. If you smoke, quitting is the single most important thing you can do to reduce your risk of complications. Other steps you can take to decrease your risk of PAD are to exercise and eat a healthy diet.

Careful foot care is especially important for those who have diabetes as they are at risk of poor healing and sores on the lower legs and feet.

ments. An ABI is a very simple and inexpensive tool that will aid in identifying patients with PAD.

Patients should be offered multiple resources to educate them about PAD diagnosis and treatment. Reading materials, including various handouts (see *Example of A Patient's Guide to PAD* sidebar), are a simple and inexpensive starting point. Many of these materials can be obtained at no cost to your practice from industry vendors. It is very important to offer guidance, assurance, and treatment option explanations to patients. In addition to the provider, the nursing staff can provide valuable patient education. In our center, the Peripheral Vascular Coordinator also serves in this capacity. Encourage your staff to attend educational sessions on PAD and CLI. The more knowledgeable the staff is on this matter, the more your patients will benefit.

Having a PAD champion within your practice to drive the day-to-day logistics and ensure the rest of the staff is well educated and prepared to care for patients is an important asset. Our practice has a dedicated registered nurse peripheral vascular coordinator who fills this role. She assists in protocol development and implementation and helps to coordinate screening and educational events.

Clinicians who operate within a hospital environment should educate and inform clinicians in other specialties about the type of work and level of expertise provided. These specialties include other vascular specialists, wound care, primary care, podiatry, endocrinology, orthopedics, infectious disease, dialysis units, and neurology. It is very helpful to other providers to be aware of procedures being done on PAD patients, especially if a patient is also under their care. Lectures and grand rounds are excellent tools to introduce other clinicians to PAD and available treatment modalities.

Maintaining knowledge and an awareness of current research by reading current literature and attending relevant conferences is helpful in maintaining credibility within your practice. Participating in and contributing to clinical research is a responsibility of those who are thought leaders and pioneers in this revolutionary stage of CLI awareness and therapy.

EXTERNAL SCREENING PROGRAMS AND PATIENT REFERRAL

Reaching External Physicians and Health Care Providers

The next step in identifying and eventually treating patients with symptomatic PAD requires a comprehensive program designed to utilize external screening and education resources. Health care systems and/or providers should adopt creative methods for reaching these patients. This is particularly important in an outpatient setting.

In the PARTNERS study, 29% of screened patients were found to have PAD.[2] Only 49% of physicians were aware of the PAD diagnosis in their patients. As such, clinicians should be among our primary targets as we go out and promote PAD awareness and the treatment capabilities of our practices. Reaching out to physicians who treat patients at a high risk for PAD is key. It is very common for physicians who care for patients with PAD not to be aware of advanced therapy options that can be provided to their patients. It is our responsibility as vascular specialists to reach out and inform our colleagues of all the current options available.

The vascular specialists in our practice meet with other specialists during grand rounds, lunch periods, and after-hours dinners to provide PAD diagnosis information and build treatment awareness. By welcoming discussion with other health care providers and making ourselves available, we have experienced an increased source of referrals.

We have developed a referral form that is simple for the referring office to complete and provides the basic information necessary to triage the patient appropriately (see *Peripheral Vascular Order Form* sidebar). We also participate in a local Save a Leg, Save a Life chapter, which allows us access to PAD educational information and opportunities to contribute to awareness.

Wound care clinics are very important in the identification of these patients and are also instrumental in the follow-up as well. Close relationships with your wound care specialists are of paramount importance in achieving optimal patient outcomes in wound healing after revascularization.

Increasing Community Awareness, Identifying PAD Patients

Community outreach programs are also an important component in establishing a wide referral base. Physicians can partner with hospitals and initiate media campaigns that raise awareness of the disease (Figure 1). Making vascular specialists available and accessible plays a major role in increasing patient referrals. Organizing free screening campaigns can help raise awareness and identify patients with PAD. At our institution, we organize free community PAD screening events and typically identify 10% to 15% of the screened patients as undiagnosed with PAD. We utilize local media, our Web site, and local health fairs to publicize these events. We hold them on Saturdays so as not to disrupt routine office flow. We staff these events with volunteers from the practice and hospital setting. Community members who attend receive ABI testing and the ability to speak with a podiatrist and/or vascular specialist after their testing. Education regarding PAD diagnosis, prevention, and treatment is provided to the attendees. Results of the testing are provided to the patient's primary care provider. We make adjustments with each event to streamline an efficient flow. This results in a very positive

PERIPHERAL VASCULAR ORDER FORM


MetroHeart & Vascular

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Peripheral Vascular Order Form

Order Date

Referring Physician

Ref. Physician Phone

Ref. Physician Fax

Ordering Physician Signature

Patient Information – Please fill out completely

Patient Name** (Last, First)

Patient's Date of Birth**

M F

Home Phone

Work Phone / Cell

Patient's Weight**

Patient's Height**

Address

Insurance

City, ST ZIP Code

AIM Auth if needed

Testing Information

Diagnosis / Reason for Testing

Interpreter Needed: Yes No Language Needed:

Consultation Only: Yes No Urgent Non-Urgent Test Only Test With Consult

Testing Desired: Urgent (0-48 hrs) Non-Urgent (>48hrs)

Carotid Doppler ABI (ankle brachial index) LAS (Lower Arterial Study) Other:

Venous Duplex choose one: Unilateral Bilateral Choose Extremity:

Ulcer present Wound present If Yes, how long?

Do you participate in a wound clinic?

Recent PVI testing? ABI

ABI: R: L:

result:

Appointment Information

Appointment Date and Time

Cardiologist

Larry Diaz, M.D. • John A. Key, D.O. • Barbara Karenko, D.O. • Paul J. Kovack, D.O. • Jihad A. Mustapha, M.D.
Matthew W. Sevenoma, D.O. • Eric T. Walchak, D.O. • Paul Albright, PA-C • Bill Shell, PA-C • Brady Peterson, PA-C

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experience for the attendees and the volunteers. A positive patient experience is the best and most affordable form of advertisement.

We also arrange local community seminars to provide educational talks given by physicians, geared toward the layperson. Community members can attend and ask vascular specialists general questions regarding PAD. These informal sessions provide an atmosphere where the vascular specialist is in a nonclinical area. Our experience is that patients feel very comfortable in these small groups and ask many questions. Logic tells us that they leave these sessions and speak to their friends and relatives about PAD.

Take advantage of opportunities to speak with the media about PAD and CLI. PAD Awareness Month (September) is a great time to do this. Another opportune time to speak to the media is after national human-interest stories emerge regarding well-known individuals with PAD or amputation due to CLI.

We work closely with our Community Service Liaison and local hospital foundation to promote awareness and fundraising geared toward patient awareness and education. A recent 5K event devoted to our Amputation Prevention Program was very successful and reached a wide audience.

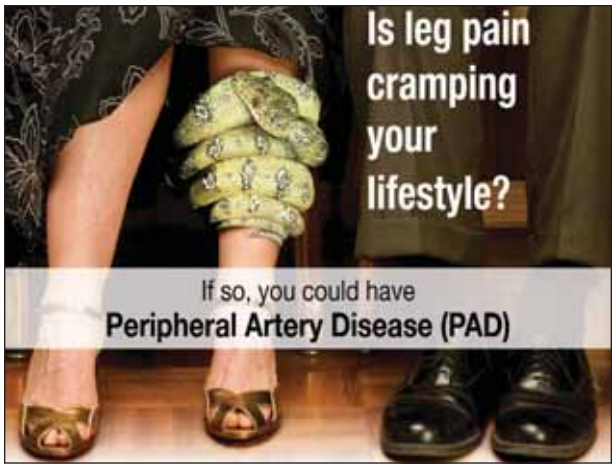

Figure 1. Example of an advertisement created with our institution to raise patient awareness of PAD.

SUMMARY

All of the described techniques have been met with a great deal of success in our institution. By implementing the different strategies, we were able to streamline our patient referrals, screening, and treatment. Using streamlined systems to identify, treat, and follow-up with our PAD patients, we were able to increase our PAD volume tremendously. Based on our own referral numbers, our patient population has grown steadily to more than fourfold since 2008. Through our program, many patients have been diagnosed and treated early, thereby avoiding amputation. These patients, who otherwise might have faced amputation down the road, are now walking their daughters down the aisle and chasing their grandchildren around the yard. ■

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