Establishing Surveillance Clinics: The Road to Success

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ABSTRACT

Interventional radiology interacts with all medical disciplines and historically has not had a patient base of its own. The specialty has depended upon referrals for procedures (often complex) and not referrals for the global management of the disease process or patient. Because of this, when referrers develop catheter-based skills, referrals to interventional radiology drop and competition for primary care physician referrals increase; a double strike. To compete, interventional radiology needs to offer clinical services to the primary care physician. One way to compete is by establishing particular disease surveillance programs. Below we discuss in detail the process of establishing surveillance clinics, which one worked for us, and the expected outcomes of these clinics.

KEYWORDS: Interventional radiology, referrals, surveillance program, aneurysm screening

Objectives: Upon completion of this article, the reader should (1) understand the importance of direct patient referrals and learn methods to change referral patterns of primary care physicians and (2) gain knowledge on how to establish surveillance programs within their diagnostic and interventional practices and the importance of working closely with their non-interventional radiology partners in establishing the clinics.

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For interventional radiology to prosper, it needs to compete with established traditional medical practices. Competing effectively should result in increasing referrals, performing more desirable vascular procedures, and establishing a patient base for future referrals and procedures. The bottom line? Growth. We have effectively competed and improved our referral base by establishing outreach programs in the form of specialty clinics. These are surveillance programs with office visits, which help us build a patient referral base geared toward

a common disease entity. We have established two programs, which have been successful, and are working on a third outreach program. Our first program was an abdominal aortic aneurysm-screening clinic (discussed in detail below); the second, a carotid stenosis clinic (staffed by a stroke neurologist, neurosurgeon, and an interventional radiologist); and our third program, a peripheral arterial disease surveillance clinic for local podiatrists, is in development. They require little additional effort and have blended seamlessly into our existing office practice.

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Below is information on our first surveillance program: the Abdominal Aneurysm Clinic (AC).

BACKGROUND

We have been treating aortic aneurysms for more than 11 years; our early abdominal aortic aneurysms (AAA) were treated with homemade devices manufactured in our hospital and sterilized with gas. Nowadays, we use industry-manufactured devices. Initially, our involvement was limited to the procedure itself. The surgeon received the patient consultation, performed the workup, and enlisted our services for endoluminal grafts (ELG) sizing and device placement. Once treated, the patient was managed almost completely by the surgeon with little assistance by the interventional radiologist. We quickly realized that our surgeons had little expertise in imaging follow-up of patients treated with ELGs. After an open surgical procedure, long-term patient surveillance is often not necessary and some ELG patients were treated in a similar fashion. We now know that ELG patients require lifelong surveillance. Furthermore, physicians following these patients should have expertise with cross-sectional imaging. In addition, knowledge of device migration, leak appearances, and treatment options other than open surgical repair are desirable. The interventional radiologist is trained in diagnostic and interventional radiology and is the appropriate expert for ELG patient follow-up. We assumed this role over time.

This limited working relationship with referring surgeons was at one time adequate. However, being last on the referral chain is risky. We were invisible to the patient for the most part, and our value to the surgeon was limited to device sizing and implantation. Once device manufacturers trained technicians to help surgeons with device sizing and implantation, our expertise became less important. To stay involved with the treatment of aneurysms we had to move up the referral chain and become involved earlier in patient care. That meant receiving direct referrals from primary care physicians (PCPs). To understand how we were able to do this, we'll discuss the process of patient imaging and follow-up that our community adopted before we offered the AC. A lack of follow-up continuity opened a door for interventional radiology to become involved earlier in the decision process and management of patients with AAAs.

OPPORTUNITY KNOCKS

Most patients with untreated AAAs are followed by their PCP. When the aneurysm is discovered, the patient usually receives little counseling as to the natural history of the aneurysm. Furthermore, treatment options other than surgical repair are not discussed in detail with the patient. A surgical referral is made when the aneurysm reaches a critical size. Before this time the PCP orders

imaging studies (usually ultrasound) for aneurysm monitoring. When the aneurysm approaches treatment size, the PCP chooses the specialist for patient referral. Historically, this has been to cardiothoracic, vascular, or general surgery despite the fact that interventional radiologists are experts in endovascular procedures including AAA repair (this referral bias predates the development of ELGs and is entrenched in most medical communities). On the surface this system appears adequate for patient care. However, our ultrasound colleagues report that many patients are scheduled haphazardly and with inappropriate imaging intervals. They also report regular instances of several years without imaging follow-up because patients missed an exam or their PCP failed to act on the findings. From this apparent breakdown in patient follow-up we were able to advance our status on the referral chain. We did this by offering to follow and schedule all patients with AAAs for appropriate imaging surveillance; we also offered patient and family education including the natural history of the disease and AAA treatment options. The AC is discussed in greater detail later.

COMPETITION FOR AAAs

With the blurring of traditional turf boundaries, PCPs now have a variety of trained specialists ready to treat their patients. All endovascular specialists, including vascular and cardiovascular surgeons, cardiologists, and radiologists, will look to capture their share of the market. Physicians from these subspecialties will likely become involved in AAA screening programs, and the astute endovascular specialist will direct patients with positive screens into their own practice. Those on the end of the referral chain will be bypassed. The Intersocietal Commission for the Accreditation of Vascular Laboratories (ICAVL), the major accreditation organization for both surgery and cardiology vascular laboratories, has recently announced an accreditation program for AAA screening.¹ It seems clear that surgery and cardiology have great interests in identifying and controlling patients with AAAs.

Although the competition for ELG procedures is intensifying, the development of interventional radiology clinics and offices has effectively changed referral patterns at several sites around the country, including ours. Seeing and following patients requires a clinical mechanism including a "front door" (office or clinic), in which patients can be referred to, and nursing and clerical support. These requirements are detailed further in the American College of Radiology Practice Guideline for Interventional Clinical Practice.²

We have long-term experience with an interventional radiology outpatient practice. We employed our first physician extender (a physician's assistant) 16 years ago and now employ six full-time advanced practice nurses (APNs). We rent medical office space and run a half-day office practice Monday through Friday, seeing

on average 50 patients per week. We also employ a full-time receptionist/secretary for clerical support. Medical records are stored onsite and evaluation and management billing is generated. Typically, a patient is referred to us for leg pain or other medical conditions, and a history and physical examination are performed. Preprocedural studies and laboratories are ordered and the patient is scheduled for a procedure if indicated. At the same time, patient and family education is performed. In establishing the AC, we simply referred patients to our outpatient office for evaluation, patient education, and appropriate follow-up or AAA treatment.

THE ANEURYSM CLINIC

The importance of the clinic to PCPs is appropriate aneurysm surveillance, and the primary importance of the AC to interventional radiology is the control of patients. This control allows us to develop a referral base for ELGs; we now have occasion to direct surgical cases to selected physicians. Patient recruitment is facilitated by the fact that many AAAs are first discovered in the radiology department. At inception we held discussions with several PCPs to determine their willingness to refer to such a clinic. The results were encouraging and we pursued the idea, initially using cases identified in our ultrasound department. We now have all of the radiologists in our group notifying us if they find an aneurysm on any imaging study.

All patients with aneurysms are considered for enrollment in the clinic regardless of the aneurysm size or patient age and regardless of whether the aneurysm is newly discovered or is being seen in follow-up. Focal ectasia is also considered of interest and is referred for follow-up.

In general, we do not pursue cases where surgeons or cardiologists order the ultrasound or other imaging study, as in our city those physician groups do not refer to our aneurysm clinic. However, this is site-specific and may not be the rule in your locale. At the time of aneurysm discovery, the radiologist contacts the ordering physician and the mechanics of the AC are explained. Some PCPs prefer that we call them first on all patients with an aneurysm; others are comfortable with an automatic referral to the AC on their patients who have an aneurysm.

Our coordinator for the clinic is an APN; she is given the patient's name, the size of the aneurysm, and the name of the referring physician. Once given the go-ahead, the APN contacts the patient to arrange for an initial visit to the clinic. During that visit, an APN and an interventional radiology physician see the patient and complete a history and physical examination. The natural history of the disease is explained to the patient including causes and risk factors such as smoking, hypertension, and gender and family tendency toward AAA. Furthermore, they are told that any first-degree relative over the

age of 50 should strongly consider aneurysm screening. Warning symptoms of acute aneurysm expansion or rupture are discussed including what action to take if symptoms should occur. Indications for treatment along with treatment options are discussed including surgery and ELG placement. We then arrange for future follow-up imaging, and their next ultrasound appointment is entered on the clinic schedule. Ultrasound is most commonly used for follow-up because it is inexpensive and lacks radiation. Computed tomography is reserved for aneurysms that are not well seen with ultrasound or where aneurysmal disease extends into the iliac arteries.

When the patient returns for follow-up ultrasound, their name appears on the clinic schedule. The APNs in the clinic confirm that the exam has been completed, obtain a preliminary reading, and contact the referring physician's office with the size of the aneurysm. In addition, the patient is told of the findings and is questioned to determine if they are symptomatic, and future follow-up is scheduled. An APN or interventional radiology physician will not see the patient again until their aneurysm reaches 4.5 cm in diameter or unless the aneurysm rapidly expands.

Ultrasound follow-up is arranged at 6-month intervals until the aneurysm is confirmed to be stable (stability defined as less than 3 mm growth over a 6-month period) and for aneurysms with diameters greater than 4.5 cm. For all others, ultrasound is arranged at yearly intervals. Once the aneurysm reaches 4.5 cm in size, the patient is automatically scheduled for a repeat office visit. They are considered a candidate for treatment once the aneurysm reaches 5.0 cm, demonstrates rapid growth, or becomes symptomatic. Rapid growth is defined as a diameter increase of greater than 1 cm per year.³

It is important that referring PCPs understand that an ELG will be considered in most cases and that we will be the ones performing the graft placement. We ask if they have a preference for a particular surgeon or treatment hospital and any other requests. We have found that most prefer that the interventional radiologist choose the surgeon and let the insurance company dictate the hospital of treatment.

RESULTS

The most recent review showed that 100 patients were referred to the clinic during the first 24 months of the AC (June 30, 2003 to June 30, 2005). PCPs referred 92, surgeons referred four, and four were sent by other medical specialists. Aneurysm sizes varied from 2.6 cm (focal ectasia) to 7.3 cm. Referrals have been increasing at a greater pace over the past year.

Twenty-six patients initially enrolled in the AC currently do not participate in the clinic. Eleven patients elected to be followed by their PCP, two expired, and 11 have been treated. Two other patients are no longer

followed because it has been determined that their aneurysms will not receive invasive therapy. Of the 11 patients treated for aneurysms, seven underwent ELG placement and three were referred to surgeons for open repair. Of all untreated patients followed in the clinic as of July 1, 2005, 21 have AAAs that are greater than 4 cm in diameter.

One year prior to starting the AC, interventional radiology physicians ordered no ultrasounds for the diagnosis or surveillance of aneurysms. During the first 24 months of the AC, interventional radiology physicians ordered 7.7% of those ultrasounds that diagnosed new AAAs. In the first and second years of the clinic, interventional radiologists ordered 14% and 36% of the ultrasounds, respectively, for the surveillance of AAAs. During these 24 months, 17 of 39 (44%) of the newly diagnosed AAAs found in ultrasound were referred to the interventional radiology clinic, and 26 of the 96 (27%) patient seen in the ultrasound department for routine AAA follow-up were referred to the AC.

Out of 32 PCPs contacted regarding the AC, 31 have referred at least one patient to the clinic and only one PCP has declined. A few have indicated that they would like some or all of their patients to be followed by the clinic. Six nonvascular medical and surgical subspecialists have also been contacted. Five were interested in having their patients seen in the AC, and one cardiologist in solo practice was not interested in referring his patient.

As the aneurysms in patients seen in our clinic mature and enlarge, we expect to perform more and more ELG procedures. The total number of ELGs that we are placing has clearly been increasing over the past 2 years. Our impression is that a substantial portion of the increase is directly related to the clinic, although we have not yet performed the numerical analysis. We also believe that some of the increase is due to a secondary benefit of the clinic in getting our name out as a group that follows and treats aneurysms.

We have begun the same process targeted toward carotid disease, and initial indications suggest that this approach will likely be very successful.

DISCUSSION

Developing a patient base is vital to maintaining vascular procedures and generating elective cases. The screening or specialty clinics have worked well for us in that regard. Changing referral patterns is challenging, especially when the disease entity is historically managed with surgery such as AAAs. Simply offering to see patients is usually not enough. PCPs are overburdened and need more than a diagnostic study. Ideally, they would like to refer a patient for complete care of their disease. The AC is a unique way in which to develop referrals in an acceptable manner. By using what we are best known

for, our diagnostic skills, we can leverage our expertise into changing referral patterns and historical biases.

We are succeeding with AAAs and carotid stenosis and are continuing on to direct referrals from podiatry, again all based upon screening programs. One thing in common to all three clinics is that the portal of entry is via noninvasive imaging. Developing referrals usually starts with providing a service. For example, one early way we bolstered PCP referrals for vascular disease was to convince PCPs that we needed to see some of their patients in the office before the angiogram (patients with renal insufficiency, patients with atypical symptoms, and so on). Once we established a referral pattern, it became easier to direct other patients to our office before elective procedures. We now require that all patients scheduled for elective angiography be seen in our clinic ahead of time. The specialty clinic is one way to start a referral pattern, and furthermore, if you screen, survey, treat, and follow patients, then you are considered a clinician and not a technician.

The direct benefit to patients and their families is important. The clinic provides a facility where education takes place and appropriate surveillance and follow-up can be scheduled. Many patients have expressed gratitude following the initial clinic visit and appreciate knowing more about their disease.

Working closely with imaging colleagues enhances patient enrollment into these clinics; a joint effort between imager and interventionalist has been effective in strengthening our presence among PCPs. The interventional radiologist, as a member of radiology, is in a unique position to take advantage of a large volume of imaging studies. By the second year of the AC, the interventional radiologists were ordering 36% of the aneurysm ultrasound follow-ups, thereby following a large portion of the patients with known AAAs. The joint American College of Radiology–Society of Interventional Radiology *Practice Guideline for Interventional Clinical Practice* anticipates using the resources of the radiology department to identify patients who may benefit from interventional radiology procedures. The AC puts this vision into practice and gives us access to patients we would otherwise lose to other specialties. This advantage is even more important as other specialists become proficient with endovascular techniques.

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