Clinical Training as an Essential Component of Radiology Residency Training

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Over the past 20 years, vascular and interventional radiology (IR) has evolved from a subspecialty that derived the majority of its work from performing specific procedures at the request of various specialists to its current form, which involves a full clinical practice. Despite the fundamental changes in the practice of IR, training at the resident level at most institutions has not changed. As John Kaufman, MD, [1] stated in a recent editorial discussion regarding the current training of future IR practitioners,

> After DR [diagnostic radiology] training, there may be an additional one or two years of dedicated IR training, during which the ever-increasing portfolio of procedures must be mastered. At the same time, the trainee must now acquire the depth and breadth of clinical skills necessary to provide expert clinical care of patients. This is particularly difficult after four years of concentrated diagnostic imaging training during which patient care skills have been de-emphasized or ignored. The products of this educational process are ill-equipped to provide the level of clinical care necessary to compete effectively with the nonradiologist practitioners of image-guided interventions.

Residents in other specialties develop their clinical skills in part through dedicated resident clinics. Radiology residencies have never included resident clinics as a training component and, historically, such clinics would have had no place because radiologists did not see patients in consultation and did not follow patients longitudinally. The modern IR practice does encompass direct patient care apart from the angiography suite, and resident clinics are no longer ill suited for radiology resident training.

In January 2009, the radiology residency program at Maine Medical Center in Portland opened the Vascular and Interventional Radiology Resident Continuity Clinic. The clinic receives patient referrals entirely from other resident clinics (predominantly internal medicine and obstetrics and gynecology). Patients are seen by residents under the supervision of interventional attending radiologists, and consultation and follow-up documentation is completed by the residents. The start-up costs of the clinic were minimal, and the time obligation of interventional attending radiologists has increased only modestly.

Resident experiences in the first year of the clinic have included referrals for peripheral vascular disease, uterine fibroid tumors, and symptomatic pelvic varices. In addition to the maintenance of clinical skills acquired during internship years, a continuity clinic provides residents the opportunity to evaluate and longitudinally manage patients in a fashion similar to their own future practice patterns. Residents who do not plan to pursue interventional subspecialization benefit from the clinical experience as they learn which tests are most appropriate for disease processes, how to evaluate the results in a clinical context, and how to follow patients over time if necessary with imaging. For example, if a patient is referred for suspected hepatocellular carcinoma, a resident under the guidance of an attending radiologist helps determine which initial imaging is most appropriate, coordinates a biopsy if necessary, discusses results and treatment options directly with the patient and family, and follows the patient over time, coordinating future imaging and treatment as indicated.

As has been discussed extensively in *JACR* in recent years, radiologists suffer from poor exposure to both patients and referring clinicians [2-4]. As Gunderman et al [5] stated,

> From the perspective of many important constituents in contemporary health care, radiologists do not shine very brightly. These constituents include patients, other health professionals, and the community at large. As they see things, radiology and radiologists are often all but invisible.

A resident clinic complements the Faces of Radiology campaign [2], as it enhances the contact of radiology residents with patients and other hospital clinicians. A clinic offers the opportunity for radiology residents to establish themselves as clinicians with patients and with other residents in training.

Residents in other specialties are at a point in their training at which they are developing their referral patterns and pathways. Primary care residents and their mentors often are unaware that IR is a viable option to assist them in the care of their patients for a wide variety of disease processes. Many remain encumbered by the historical mindset of the IR pathway of referral for treatment, not consultation and evaluation. Primary care residents who develop as residents referral pathways to IR for their patients likely will maintain this pattern as attending physicians or private practitioners. Building and strengthening

0091-2182/10/$36.00 • DOI 10.1016/j.jacr.2010.02.013

the relationships between IR and primary care at the training level will yield huge dividends for the health and vitality of the subspecialty.

Modern IR is vastly different in scope and practice than a generation ago. However, despite the changes in practice, the training model for residents has altered little over time. An IR resident clinic presents the opportunity to maintain and improve the clinical training of residents and to enhance the exposure of residents to patients and the larger medical community. As Richard Gunderman, MD, PhD, [6] stated,

> Whenever possible, radiologists should carefully attend to the image we cultivate of ourselves and our profession. When opportunities for patient contact present themselves, we should seize them and polish radiology's image.

REFERENCES

1. Kaufman J. Time to decide: specialty, subspecialty, or . . . professional hobby. IR News 2008;Nov-Dec:3-4.
2. Gilliland C. Looking beyond the face of radiology. J Am Coll Radiol 2009;6:459-60.
3. van Geertruyden PH. Protecting our turf: what can you as a resident do? J Am Coll Radiol 2009;6:203-5.
4. van Geertruyden PH. Radiologists and the vanishing white coat. J Am Coll Radiol 2009;6:77-8.
5. Gunderman RB, Davilla J, Shetty S, Galdino G. Visibility matters. J Am Coll Radiol 2005;2:971-4.
6. Gunderman RD. What we most need to see. J Am Coll Radiol 2004;1:67-8.

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