Critical Appraisal of the Technical Practice Model for Interventional Radiology

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ABSTRACT

It is clear that interventional radiology contributes substantially to the status of radiology departments in the hospital as well as in the community. Experience has shown that clinical management is the key to well-reimbursed procedure volume and increased referrals for those services. Additionally, it allows the opportunity for interventionalists to participate in technological changes that we can envision right now, which could have significant impact on the management of numerous diseases. If treatment is “clearly indicated,” then the interventionalist has an obligation to present that opinion to the patient and to implement that care if the patient desires. Interventional radiologists have recognized that clinical care requires service to the patient first and foremost.

KEYWORDS: Therapeutic intervention, physician-patient relationship, referral

Objectives: Upon completion of this article, the reader will understand the drawbacks inherent in the technical practice model of procedural medicine versus the clinical practice model.

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The dedication and devotion of surgeons to patient care helped to establish surgery as a mainstream medical profession long ago.¹ We can imagine some scenarios if surgery had never developed a clinical practice base but continued to serve as a technical specialty, performing operations at the behest of physicians.^{2,3}

For a hypothetical scenario, consider a patient with acute cholecystitis. That patient would be evaluated by their primary care doctor. When the diagnosis was made, the primary care doctor might call the hospital operating room and book a patient for surgery. That patient might arrive for surgery on the day they are

scheduled, be introduced to the surgeon immediately prior to the operation, undergo the surgery, then be admitted to the hospital to their internist. The internist would make rounds on the patient, discharge the patient, and manage all follow-up care. Although this scenario may seem extreme, it is very analogous to the way interventional radiologists practiced until very recently. Although this may seem to be a favorable mode of practice, the fact that the interventionalists receive significantly more money for the procedure than the internists receive for evaluation and management is not lost on the referring doctors. Therefore, other specialists

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would be very likely to try to learn procedures and perform them as well.⁴ Thus, we see that the practice model of the interventionalist performing procedures or the surgeon performing surgery strictly as technicians is not viable over the long term. The surgeons accepted this and accommodated the need for clinical care. Interventionalists over the last 5 years have been doing the same.

Non-interventional radiology partners do not have strong incentives to support interventional radiology as a specialty. Often, they need convincing that this requires support of staffing, space, and other resources for clinical patient management. However, it is clear that interventional radiology contributes substantially to the status of radiology departments in the hospital as well as in the community. Additionally, our experience has shown that clinical management is the key to not only forestalling losses in well-reimbursed procedure volume but actually increasing referrals for those services. Additionally, it allows the opportunity for interventionalists to participate in technological changes that we can envision right now, which could have significant impact on the management of numerous diseases. For example, the applications of gene therapy are not completely appreciated, but many of the envisioned or the potential applications can be administered by interventional radiologists.

Also, non-interventional radiologists would be advised to look at the overall reimbursement of having a clinical interventional radiology service line as part of their radiology practice. That is, they should not focus on the reimbursement for evaluation and management services, which is not high. They should examine the ancillary imaging generated by an office-based practice, which can be significant, as well as the reimbursement from procedures that are generated by the clinic. Also, an ambulatory office, which may be a new concept for non-interventional radiologists, can support new service lines and new procedures such as varicose vein evaluation and treatment. These procedures can often subsidize the clinical office practice so that it is profitable in and of itself for practice. This does not even begin to consider ancillary imaging or procedures that require hospitalization.

For those who have looked at the data, it is clear that clinical practice in interventional radiology can provide substantial return on investment even in the short term. One group of six radiologists in a radiology practice in a 317-bed hospital reports that they performed 160,000 examinations annually.⁵ Once they established a clinical interventional radiology practice, they generated 626 relative value units (RVUs) for evaluation and management services in the first year. This increased to over 2000 by the second year. Additionally, the interventionalists generated an additional 40,000 RVUs from procedures and non-evaluation and management services. Finally, they generated over 500

RVUs in the first year by ordering diagnostic imaging studies in their practice. Although there is some question as to whether this practice constitutes a violation of self-referral, the question is not clear and most practices think that this should be allowed and is legal.

A similar experience was presented by Dr. Brad Fricke at a recent SIR meeting.⁶ In Dr. Fricke's group, 714 patient encounters were done by the interventionalists over a 6-month period in the office. Out of these encounters more than 500 imaging tests were ordered, or roughly 700% of patient encounters generated imaging tests. These included magnetic resonance images (MRIs), computed tomography (CT) scans, and nuclear medicine tests. Additionally, they performed 731 interventional procedures during that period. Over 6 months, the office practice generated 856 imaging RVUs, 1500 evaluation and management RVUs, and 7254 procedural RVUs.

These are all compelling reasons for interventionalists and noninterventionalists alike to embrace clinical patient management as an integral part of providing therapeutic interventional services. However, we have not addressed the most important reason—improving patient care. There is simply no way for other practitioners, even vascular medicine or vascular surgery specialists, to understand the indications for our procedures or the complications and outcomes associated with them. They do not have the experience or the background.

Patient care is improved by interventionalists being involved in evaluation, treatment planning, and follow-up care for the services for which they are the experts. Patient care is optimized in this way. The technical practice model usually entails a form of abandonment of the patient. That is, the interventionalist performs a therapeutic intervention and then walks away from the patient, never to see them again and never to know whether the procedure worked or whether they had a complication and an adverse outcome. This is unconscionable. The treating physician has a moral/ethical/legal obligation to the patient. Interventional radiologists have accepted this lack of contact with the patient because they have developed out of a diagnostic specialty (radiology), which historically has not communicated test results with patients directly but rather with the ordering doctors.^{7,8} The courts, and society, have long recognized that a physician-patient relationship exists when radiologists perform diagnostic tests.⁹ Recently, it has become more common for radiologists to communicate test results directly with the patient in addition to the ordering physician, such as, for example, for screening mammography.^{10,11} However, in general a diagnostic specialist like a radiologist or pathologist has historically had very limited physician-patient relationship or obligation.¹² This is not so for the interventionalist. Most interventionalists previously felt that their

main obligation was to the referring doctor.¹² They felt that the referring doctor was responsible for following up on their reports and for taking care of patients after their treatment. Often, interventionalists would defer to the referring doctor on management plans without question. This approach, developed by radiologists to please the referring doctor, is related to the diagnostic radiologist's role in the hospital, which is to serve the community of referring physicians. Many interventionalists would express concerns that offending or disagreeing with the referring doctor might jeopardize other referrals. This is certainly a blatant conflict of interest in that no physician should put their own financial or professional self-interest ahead of a patient's health or welfare. If a physician has established a physician-patient relationship with a patient, they have a moral and legal obligation to treat that patient to the best of their ability, regardless of political or financial implications for themselves.

Interventionalists prioritizing referral sources higher than the value of their physician-patient relationship is unethical.¹³⁻¹⁶ As stated in the American Medical Association Code of Ethics, "A physician shall, while caring for a patient, regard responsibility to the patient as paramount . . . under no circumstances may physicians place their own financial interests above the welfare of their patients . . . if a conflict develops between the physicians financial interest and the physician's responsibilities to the patient, the conflict must be resolved to the patient's benefit."¹⁷

There are potential medical and legal ramifications of practicing in a technical mode as well. Many interventionalists will perform a diagnostic test but not perform the therapeutic intervention without approval or direction from the referring doctor. In fact, a clear majority of participants in a recent Society of Interventional Radiology advanced aortoiliacs intervention workshop stated that they would break scrub during a procedure to "ask permission" to perform an iliac angioplasty or stent placement for a lesion in which they felt that angioplasty or stenting was "clearly indicated." A conflict exists when the treating physician disagrees with the management. Often, in the past, if the interventionalists felt that they didn't have "permission" from the referring doctor, they would not implement the care. That is wrong! Certainly, negotiating back and forth with a referring doctor over a debatable treatment is warranted. However, if the treatment is truly "clearly indicated," then the interventionalist has an obligation to present that opinion to the patient and to implement that care if the patient desires. Often in the past, interventionalists were reluctant to even discuss their opinion with the patient, deferring this discussion to the referring doctor. This was really the manifestation of the clinical practice model, where the interventionalist, who had established a physician-patient relationship, did not

implement care that might be in the patient's best interest because they were instructed not to by a third party, the referring doctor.

We are aware of no interventionalist who has been sued for not delivering care that might have benefited the patient. It is likely that this issue is not apparent to malpractice attorneys and patients alike. Indeed, if one were to consult the vascular surgeon in a malpractice case, they would clearly think that the radiologist acted appropriately in deferring to the treatment plan of the vascular surgeon, for example. However, there are some examples in medical malpractice cases that illustrate the potential pitfalls of interventionalist practicing in the technical model. In one, a radiologist was not only sued for civil damages but also was brought to a grand jury to consider criminal charges.¹⁸ In this example, which parallels closely scenarios that routinely occurred in interventional radiology in the past, a 40-year-old man with flank pain was seen in an emergency room and a consulting urologist recommended an intravenous pyelogram (IVP). The radiologist suggested that CT scans were state of the art for evaluation of potential urinary tract calculi and suggested that the CT scan be done. The urologist reminded the radiologist that he was in charge of patient care and "insisted" on the IVP. The radiologist, who reported that he was concerned about his referrals, complied with the request.¹⁸ The patient had an allergic reaction to contrast and died. The radiologist was sued, and the plaintiff's radiology expert said, "The radiologist was a board-certified professional who was responsible for making independent judgments and was not a 'mere technologist' doing what was ordered by somebody else."¹⁸ The witness also said, "The defendant radiologist was required to protect the health and welfare of the patient by providing what he knew to be the best possible medical care, even if it would result in a loss of good will and possible referrals from the urologist." That statement is consistent with the American Medical Association (AMA)'s position¹⁷ and is also consistent with common sense. In addition to a civil suit, the state's attorney asked the grand jury to indict the radiologist for manslaughter, but the grand jury declined to do so.¹⁸ Interventionalists should take heed of this example. Not only is it unethical, and against community standards, for a doctor to provide suboptimal care at the request of another doctor, there are some that believe that it could be criminal.

It is recognized that the physician-patient relationship is based on trust and is a relationship in which the physician acts as a professional in the best interest of the patient.^{13,19} This trust has often been considered a sacred covenant, bestowed by society upon those lucky enough to be able to serve as physicians.²⁰⁻²² Doctors are required to act primarily in the best interest of their patients. One issue that often comes up is that the referring doctors for other specialists "own" the patients.

It is important to note that the AMA Code of Ethics recognize patient autonomy as do general medical ethics.^{13,17} No one owns patients! Patients are autonomous. Patients are entitled to receive explanation and understand the full spectrum of potential treatments for their illness. They then can choose counsel and pick the treatment according to their wishes. If the referring doctor objects, the interventionalist is nevertheless *obliged* to the patient and *must* implement care according to the patient's wishes. The referring doctor certainly may request to see the patient in the office again if notified of the plan ahead of time and may even want to sit down with the interventionalist and discuss it. Often, treatments are not clear-cut and are controversial. In these situations, discussion and debate certainly benefit the patient. When the treatment plan is clear-cut, the disease is commonly seen and the indications are clear; the interventionalist should stand by their patient and always remember that they are working to help the patient.

The historical bias of interventionalists toward working for the referring physician may certainly be understood in the context of the genesis of interventional radiology out of diagnostic radiology, a hospital-based specialty that generally serves the referring community. Given the current panoply of treatment options available for interventionalists and the migration of diagnostic work in large part toward MRI, CT, and ultrasound, interventionalists today recognize that the substance of their subspecialty consists of therapeutic interventions and therefore that their specialty is inherently one that involves a longitudinal physician-patient relationship. Interventionalists need to be involved in treatment plan development and in following patients to ensure that the offered therapies help these patients. Interventional radiologists have recognized that clinical care requires service to the patient first and foremost. This is the crux of the clinical patient care issue. It matters many times more than having physician assistants, vascular institutes, admitting privilege, writing prescriptions, and so on. All of those are secondary and offshoots of having the correct patient care mindset.

REFERENCES

1. Ackerknecht EH. From barber-surgeon to modern doctor. *Bull Hist Med* 1984;58:545-553
2. Barnett MC. The barber-surgeons of York. *Med Hist* 1968;12:19-30
3. Richter J. The barber-surgeons. *Surgery* 1951;30:1049-1061
4. Ring EJ, Kerlan RK Jr. Clinical responsibility in interventional radiology. *Radiology* 1983;147:285
5. Sichlau MJ, et al. The economic impact on a general radiology group from establishing a dedicated interventional radiology service. *J Vasc Interv Radiol* 2004;15:S175. Abstract
6. McGraw JK, Fricke B, et al. Prospective evaluation of imaging and interventional procedures generated by an outpatient IR office. *J Vasc Interv Radiol* 2004;15:S175. Abstract
7. Sherman RS. The roentgenologist as a consultant. *Radiology* 1966;87:147-148. Abstract
8. Sherman RS. Whom do we serve? *Radiology* 1966;87:1125. Abstract
9. Berlin L. The radiologist: doctor's doctor or patient's doctor. *AJR Am J Roentgenol* 1977;128:702
10. American College of Radiology. ACR standards for the performance of screening mammography. In: Standards. Reston, VA: American College of Radiology; 1990. Abstract
11. Berlin L. Communicating findings of radiologic examinations: whither goest the radiologist's duty? *AJR Am J Roentgenol* 2002;178:809-815
12. Sprunt WH. Whom do we serve?. *Radiology* 1966;87:1125. Abstract
13. Cassel CK. The patient-physician covenant: an affirmation of Asklepios. *Conn Med* 1996;60:291-293
14. Crawshaw R, Rogers DE, Pellegrino ED, et al. Patient-physician covenant. *JAMA* 1995;273:1553
15. Pellegrino ED. Nonabandonment: an old obligation revisited. *Ann Intern Med* 1995;122:377-378
16. Quill TE, Cassel CK. Nonabandonment: a central obligation for physicians. *Ann Intern Med* 1995;122:368-374
17. American Medical Association Council on Ethical and Judicial Affairs. Code of Medical Ethics: Current Opinions with Annotations. Chicago: American Medical Association; 2002. Abstract
18. Eisenberg RL, Berlin L. When does malpractice become manslaughter? *AJR Am J Roentgenol* 2002;179:331-335
19. Chervenak FA, McCullough LB. The moral foundation of medical leadership: the professional virtues of the physician as fiduciary of the patient. *Am J Obstet Gynecol* 2001;184:875-879
20. Bailey JE. Asklepios: ancient hero of medical caring. *Ann Intern Med* 1996;124:257-263
21. Harley D. James Hart of Northampton and the Calvinist critique of priest-physicians: an unpublished polemic of the early 1620s. *Med Hist* 1998;42:362-386
22. Rawcliffe C. God, mammon and the physician: medicine in England before the college. *J R Coll Physicians Lond* 2000;34:266-272