Periodically, the issue of self-referral in medicine receives great attention. It was a topic of considerable discussion several years ago when the relative merits of primary care versus specialty medicine were debated. Advocates of primary care pointed out that the financial rewards accompanying many services might incentivize specialists to over-utilize those procedures that they could provide themselves. Conversely, no such incentive would exist for a primary-care physician for whom a referral for a procedure was financially neutral.

The issue of self-referral is again receiving considerable attention, as evidenced by a recent article concerning medical imaging on the front page of the New York Times (1). The article points out that medical imaging in aggregate is approaching a $100 billion-a-year business and is up nearly 40% in volume since 2000. This increase is attributed in large measure to the migration of these procedures to imaging centers and the private offices of physicians. Accordingly, Medicare payments to physicians for imaging services have shown a cumulative growth of over 50% since 1998. Orthopedic surgeons and neurologists have figured prominently in this process, and even family practitioners have increased their billing for radiology services by 75%. Nevertheless, it is notable that cardiologists have doubled their billings for imaging services since 1998. Clearly, the dramatic advances in medical imaging and their contributions to patient diagnosis and management have been a major driver of the proliferation of these procedures. However, occurring as it has in the setting of migration of the equipment to physician offices, this increase could have a negative impact on hospitals, thus raising questions regarding efficiency, over-utilization, and potential adverse incentives of self-referral.

That the increase in medical imaging procedures raises the issue of self-referral should be no surprise. Several studies have demonstrated that diagnostic imaging services are rendered with greater frequency and at greater cost when performed by non-radiologists using equipment in their offices (2). In fact, data suggest that the bulk of the increased use of imaging has been attributable to physicians who self-refer (3). However, it must be recognized that the provision of diagnostic services by attending physicians has many advantages. Many non-radiologists have gained expertise with the imaging procedures in their specialty and have contributed important research findings to advance the field. These specialists can interpret the imaging tests in the context of physiologic and pathophysiologic knowledge of the organ system involved and can integrate the findings with the clinical variables present in any individual patient. The ability to perform an imaging test at the same time and in the same place as the overall evaluation is also an advantage. Thus, although the potential financial incentives of self-referral cannot be ignored, the practice of rendering diagnostic imaging by knowledgeable attending physicians has considerable rationale.

The general issues surrounding self-referral are particularly relevant in cardiology. Cardiologists frequently serve as attending physicians and in many cases function as primary-care providers for patients with heart disease. In addition, our field has experienced more technological advances than most and has access to a wide array of diagnostic and therapeutic procedures that we can provide to our patients. Thus, we often find ourselves in the position of recommending procedures which we perform, usually with attractive reimbursement. A patient with chest pain is advised to have a stress test, which we perform, leading to an angiogram, which we perform, possibly necessitating a recommendation for percutaneous intervention, which we also perform. In the process, we do good for the patient and do well for ourselves. It is not surprising, therefore, that our colleagues in radiology and cardiac surgery are sometimes uncomfortable with the incentives inherent in self-referral or that insurers and payers are occasionally concerned with the appropriateness of our services.

Despite the foregoing concerns, the current state of cardiology practice is based on solid principles and rationale. Cardiology is virtually uncontested in terms of the degree upon which it depends on physiology, patient history, and physical examination for optimal patient care. The ability to incorporate this information into the evaluation and management of patients is of inestimable value. Likewise, the performance of procedures is enhanced by information on the background of patients. The capacity to provide continuity of care by a single physician is as great an asset in cardiology as in any area of medicine. The efficiency inherent in having a single physician deliver all services is also of value. Thus, in aggregate, the use of referral in cardiology as it is currently practiced has many great advantages.

The issue, therefore, is how to maintain the laudable attributes of cardiology practice while guarding against the undesirable incentives of self-referral. In my opinion, at
least as a first step, we must acknowledge the potential bias that self-referral can introduce into decision making. It seems foolish to me to just deny that self-referral can have any possible influence in decision-making. Many of the choices we make are not black or white but, rather, are in the gray zone. It is certainly possible that the incentives inherent in self-referral can color our decisions, if only with a subconscious bias. Having acknowledged this potential influence, we should proactively take every step possible to avoid it. Involving colleagues in decision-making is an obvious start. This is easily done in conferences. In the absence of conferences, informal discussions or formal consultations could serve the purpose in uncertain cases. We ought to guard against providing services for which we have little experience. We invite criticism if we undertake to perform procedures for which we have had little training, scant experience, or very low volumes. We should avoid obtaining equipment for our offices for which there is little demonstrated need or advantage. Given the emerging shortage of cardiologists, there would seem to be little reason to work hard at generating business.

The recent explosion of medical imaging procedures has again focused attention on the general issue of self-referral in cardiology. Diagnostic imaging has come to play a central role in the management of cardiovascular diseases, and cardiologists have often been responsible for the development and validation of clinical applications. We take pride in the improved level of care that imaging has enabled us to deliver. However, we must remain cognizant of the potential for inappropriate usage inherent in these techniques. The nature of contemporary cardiovascular medicine makes self-referral for imaging and other procedures a natural and advantageous aspect of our practice. It would be tragic if either our application or the perceptions about our application of these procedures resulted in any impediments to their use.

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