Editorials

Integrity in Medicine

IT HAS GENERALLY BEEN ASSUMED by physicians and the public that ours is an honest profession whose integrity has been unquestioned. There is now disturbing reason to believe that this assumption is no longer correct, if indeed it ever was. There have been what to this physician are shocking examples of dishonesty, plagiarism, and outright fabrication of results at some of the most prestigious research institutions in the nation. Robert Petersdorf, president of the Association of American Medical Colleges, is reported to have described to a large audience at a recent meeting of that organization what he termed academic "irregularities" among premedical students seeking admission to medical school and among medical students who are in school. In a total of 952 cases of fraudulent transcripts, unauthentic letters of recommendation, inaccurate and incomplete credentials, and irregular test behavior were found. He went on to express concerns about cheating among students who were already in medical school and then to wonder about the relationships, if any, between this behavior and their subsequent performance in academic research or practice. In any case, it is sad but true that there are physicians in practice who have been found to be dishonest in their billings to third parties for care they may or may not have actually rendered.

All of this is difficult to deal with at any level. It probably has always existed, but, for better or worse, the medical profession is now in the goldfish bowl of public scrutiny. It would be useful to try to do something to counteract this apparent erosion of integrity among physicians. One is reminded of the "ethical physician" campaign in the last century to counteract quackery. Ethical physicians were adequately trained and did not practice quackery, and this was publicized. Physicians who belonged to medical societies were identified as ethical physicians. Ethical is not the right word for today. But perhaps some way could be found to make professional integrity a sine qua non for membership in organized medicine. Something like this could be a powerful counterforce to those who would cheat and corrupt this noble profession.

MSMW

Malignant Pericardial Effusions

THE TIMELY AND EFFECTIVE MANAGEMENT of complications of malignancy consumes the majority of oncologists' time and is more taxing of specialists' clinical skills than are the selection and administration of a well-researched drug regimen for inducing a complete or partial remission. Nevertheless, the medical literature devotes far fewer pages to new insights concerning complications, their diagnosis, and management than to innovative treatment regimens designed to arrest or retard tumor growth. Thus, the review by Buzaid and colleagues in this issue of the journal is a welcome addition to our literature as it summarizes studies addressing the current knowledge of an important complication in neoplasia, that of malignant pericardial effusions. The article is balanced, discusses the clinical setting in which malignant effusions occur, and reviews approaches to the diagnosis and treatment of this potentially life-threatening disorder.

For primary care practitioners who frequently assume responsibility for cancer patients, it is relevant to underscore the fact that malignant pericardial effusions are not rare events. Although almost any neoplasia may be associated with symptomatic pericardial disease, patients with carcinoma of the lung and breast, malignant lymphomas, leukemias, and melanomas are particularly prone to the development of effusions. The authors suggest that as many as 40% of patients with malignancy and pericardial disease have benign disorders of the pericardium. This seldom creates a problem in the differential diagnosis since restrictive pericardial disease with effusion is most commonly associated with radiation therapy to the chest and pericardium, and idiopathic pericarditis is usually associated with a friction rub, chest pain, dyspnea, and fever. This constellation of findings is typical of idiopathic pericarditis and helps to separate it from malignant pericardial effusions, which frequently lack a rub, pain, or fever. The most common symptoms of malignant pericardial effusions are those of dyspnea and cough, which can confuse a clinician, who may attribute these symptoms to the further spread of malignant disease in the lung parenchyma. Since these symptoms can be quite debilitating and, in fact, lead to death when associated with cardiac tamponade, it is important to consider the diagnosis of malignant pericardial effusion in this clinical setting because, once diagnosed, it is easily treated. Although survival may not be extended, the quality of life can be immeasurably improved following successful intervention.

Buzaid and co-workers consider the various therapeutic interventions, discussing their risks and outcome, and coming down on the side of surgical intervention whenever the clinical situation permits. The surgical approach is attractive, for it is brief and effective, albeit from a patient's point of view it may be less desirable than pericardial sclerosis. The cost of the surgical approach surely must exceed that of pericardial sclerosis; furthermore, the discomfort to patients is apt to be greater following the surgical attack than following medical management. Were efficacy clearly better employing the surgical approach, one could easily side with the authors. Nevertheless, since such data are not provided, it is reasonable to agree with the editors of *The Medical Letter,* who give the nod to pericardial sclerosis in such situations.[1] Be that as it may, as the authors point out, if one's colleagues in surgery are particularly skilled using the surgical approach and one lacks the cardiologic backup support, there may be other reasons to select one technique over the other since both have comparable outcomes.

From the surgical standpoint, it seems reasonable to do as little as possible to solve the problem, and here the small window seems to be preferable to the more extensive approach, including perhaps stripping and a general anesthetic. With life being so short and the likelihood of recurrent effusions being small following either the medical or surgical approach, the goal should be to keep the morbidity to its lowest and the patient functioning as long as possible.

It is not likely that more effective treatment strategies will be developed for malignant pericardial effusions in those patients with refractory tumors; the success rate for both the surgical and medical management currently approaches 100%. It is of some interest, though, that the dose of tetracycline recommended for ablating the pleural space[2] is essen-

tially the same as that for ablating the pericardial space, as reviewed by Buzaid and associates. Since the surfaces of the pericardial sac are many times smaller than those of the pleural space, one wonders whether or not too high a dose of tetracycline may be being proposed for ablating the pericardial space. To this point, it is interesting that Shepherd and colleagues recommend 500 mg of tetracycline in 20 ml of a saline solution rather than the 1-gram dose and base their conclusions on the fact that efficacy seems comparable but pain is increased in patients who receive 1 gram of tetracycline.[3] When our pharmacy tested the pH of 1 gram of tetracycline in 20 ml of a saline solution and compared it with that of 500 mg of tetracycline in 20 ml of a saline solution, it was found that the pH for both ranged between 2.5 and 3, which is the range that is thought to be required to induce pericardial sclerosis. Perhaps, therefore, the 500-mg dose is the preferred regimen for pericardial sclerosis.

The management of any chronic disease is a challenge to our profession. Buzaid and colleagues focus our attention on a rather common oncologic problem that frequently goes undiagnosed, particularly when not considered. In the process of reviewing this topic, they have given us some specific guidelines for management. Whether one agrees with me that the medical approach may be the better, or sides with the authors who suggest that the surgical approach is preferred, the real thrust of their article must be kept in focus. It challenges us to be aware of the potential of the problem and to plan immediate interventions to resolve this life-threatening complication.

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Lightning May Strike Twice

THE IDEA TAKES some getting used to at first. Patients with cancer may get into trouble once again, as the clinicopathologic conference in this issue of the JOURNAL so vividly illustrates. Only this time, the problem is not the initially treated tumor, a low-grade astrocytoma here, but a second, more malignant tumor, an osteogenic sarcoma, which arose as a direct result of radiation therapy. What are the risks? In which patients will it develop? What are the radiation doses? How long does it take for a second tumor to manifest itself? and, finally, What happens to the patients? These are some of the pertinent questions one should balance against the curative effects of irradiation on the primary cancer and the prolonged disease-free interval provided by the latent period.

Sarcomas secondary to irradiation constitute a rare albeit serious late effect of radiation therapy, but it is difficult to obtain a quantitative estimation of the risk. Unfortunately, only scattered reliable appraisals are available, but some reasonable calculations are on hand as more than 500 patients with postradiation sarcomas have been reported so far. Among more than 1,200 histologically verified osteogenic sarcomas of bones and soft tissues diagnosed and treated at Memorial Sloan-Kettering Cancer Center, 66 (5.5%) arose as a direct consequence of either external or internal ionizing irradiation.[1] Kim and associates from the same medical center estimate an incidence of 1.3% eight years after chemotherapy and irradiation for Hodgkin's disease.[2] The series reported, however, is small and the follow-up time brief. Mays and co-workers reported a long-term survey of 899 German patients, many of them children, who were treated for tuberculosis and ankylosing spondylitis by repeated injections of the short-lived radium isotope Ra 224: a bone cancer eventually developed in 53 (6%) of the patients.[3] This probably represents the uppermost limit of the estimate since the follow-up time is now at least 30 years.

The most recent large-scale, multi-institutional epidemiologic survey by Tucker and colleagues, which covers more than 9,000 patients treated for childhood cancer by irradiation, provides similar risk projections.[4] This study computes the cumulative mean probability of inducing a malignant bone tumor by therapeutic irradiation at 20 years after therapy to be $5.5\% \pm 2.1\%$. The absolute risk is calculated to be $9.4 \times 10^{-4} \times \text{year}^{-1}$. Naturally, the relative risk ranges widely, but it is the highest for patients with the hereditary form of retinoblastoma and for those with Ewing's sarcoma. The cumulative risk of a secondary sarcoma developing following irradiation for hereditary retinoblastoma at the age of 35 years was 19% (95% confidence interval, 11 to 29) in a series reported from Utrecht, the Netherlands.[5] There are many confounding factors that make interpolation of various radiation sources less than rewarding and not more than a rough approximation. During the first 35 years following exposure to the atomic bomb in Japan, there has been no increase in the incidence of primary malignant bone tumors among the more than 100,000 survivors.[6] These overall estimates by necessity do not quantitate the true risk of postradiation sarcoma, but at least they indicate its order of magnitude.

Most malignant bone tumors occur spontaneously, but on occasion they may develop from other benign tumors and they may follow as a direct consequence of previous radiation therapy. To wit, approximately 5.5% of all osteogenic sarcomas and 15.4% of all malignant fibrous histiocytomas of bone diagnosed and treated at Memorial Sloan-Kettering Cancer Center arose as a result of irradiation.[1,7,8] Postradiation bone sarcomas make up an infrequent but important segment of malignant bone tumors, particularly among adults.[9] These sarcomas represent, together with Paget's sarcomas, the most frequent secondary malignant tumors of bone.[10] It is also fair to say that the number of postradiation tumors will undoubtedly increase especially due to the expected rise in the number of patients who survive longer free of their primary disease but who have to confront this treatment-related disease, "the iatrogenic disease of success."[11]

Most successful treatment approaches in the management of various malignant tumors are multidisciplinary—a combination of radiation therapy, surgery, and adjuvant or even neoadjuvant multiple-drug chemotherapy. Although most patients undergoing such multimodal team management approaches undoubtedly benefit in terms of a prolonged disease-free survival, a shortening of the latent period for the appearance of a second cancer may have to be reckoned with. A heightened risk of postradiation sarcoma under such circumstances is not too farfetched a possibility since patients are likely to live longer.[12,13] There is also the possibility of a