

### ‘ . . . and Do No Harm.’

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*During my 20-year evolution with this new specialty, I have been unable to emotionally detach from my patients, and recently I have begun to explore, with the help of my coauthors, the adaptive mechanisms that permit continued survival.—G.B.H.*

Doctors are trained to heal, not to harm. When, in the course of medical practice, the condition of a patient worsens instead of improves after a doctor has intervened, strong emotions, including sorrow, remorse, and anger, can be evoked on both sides of the doctor-patient relationship. However, in pursuit of healing patients, doctors often forget the wisdom of the oft-maligned aphorism, “physician, heal thyself.” After a medical tragedy occurs, most doctors turn their introspection not on their emotions, but on their knowledge. Instead of coping with the grief that naturally arises over the injury or loss of a patient during a procedure, many physicians intellectualize the tragic experience and focus their attention solely on the details of the medical procedure (1–3). They, like myself (G.B.H.), search for a tangible procedural mistake that can be corrected to ensure that the same tragedy will not occur again. Showing emotion runs counter to the conventional wisdom that doctors should behave like objective medical scientists in clinical settings, but unless doctors learn to cope with their own grief in a natural way, they may emotionally injure themselves and their families (4).

In surgical fields in which the stakes are highest, so too are the risks of the occurrence of clinical tragedies. Interventional neuroradiology has had its share of triumphs and failures during its short history. Spawned by neurosurgery and adopted by radiology, interventional neuroradiology has led to the development of new materials, methods, and training for the treatment of

complex neurovascular disease. Although endovascular approaches have often resulted in profound advances, there is very little mention of the occasional devastating failures.

In medical school, doctors are introduced to general guidelines to assist patients and families through catastrophic illness and death. Unfortunately, there has been a paucity of training for constructive transition through grief experienced by the physician when a devastating outcome occurs in a patient (5, 6). A common belief is that the physician, in maintaining an objective and scientific approach to patient care, is insulated from the emotions attached to the suffering of the patient and family (7, 8). The ability to intellectualize the process of disease and the complications associated with treatment are often viewed as desirable and can lead to further scientific advancement. It is also thought that the young practitioner who is less experienced and unable to detach from the emotional impact of tragedy may, over time, become better able to cope with failure and thus avoid feelings of grief, guilt, and shame resulting from involvement in a catastrophic outcome.

To begin with, not all poor outcomes from complex surgery are emotionally tragic. If, for example, a patient were brought into a hospital suffering from an immediately life-threatening condition such as an intracranial hemorrhage, a surgeon’s failed attempt to save the patient’s life would be unfortunate and sad, but not tragic. Surviving emotionally is less difficult when a patient’s death results from what Charles Bosk, in *Forgive and Remember: Managing Medical Failure*, terms “expected failure” (1). “Patients who are hopelessly ill with terminal diseases fall into this category. What happens to these patients . . . could not have been otherwise” (1).

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**Index terms:** Patient-physician communications; Interventional neuroradiology, complications of; Iatrogenic disease or disorder; Special reports

AJNR 16:1–5, Jan 1995 0195-6108/95/1601-0001 © American Society of Neuroradiology

The patient's family are generally prepared to cope with the loss of their loved one, who may have been languishing in pain for years with symptoms of a terminal illness. In these circumstances, a physician will attempt to treat a patient despite the likelihood of a poor outcome. Statements such as "no one else could have done it better" and "the patient would have been worse off without treatment" can salve the physician's conscience through rationalization. The physician failed in an attempt to save a patient's life but did not lose a life that could have continued much longer without treatment.

Unlike emergency medicine or oncology, interventional neuroradiology usually treats cases in which diseases, although dangerous in the long term, are not immediately life threatening. Patients often arrive at a neuroradiologist's office on their own two feet, with few outward symptoms of disease, and sometimes leave the hospital permanently injured or dead. These are the outcomes that are truly tragic, both for the patient's family, which is emotionally unprepared to cope with the loss of an asymptomatic loved one, and for the physician, who may feel that his actions instead of the disease killed the patient. Instead of saving lives already lost to disease, doctors may feel they have lost—their own hands—the lives entrusted to them.

The strong emotions that can well up within a physician during medical tragedy are perhaps best expressed by personal example, based on an actual case:

It was 10 years ago when I met with the patient and her husband. They were both in their 30s, and she had recently recovered from a large hemorrhage caused by a 2-cm arteriovenous malformation in the right basal ganglia. I described the natural history of arteriovenous malformations and the therapeutic options, including surgery, embolization, and stereotactic radiosurgery. Our gamma knife unit at that time had an effective target area of 1 cm. I proposed a treatment option of embolization to reduce the size of the arteriovenous malformation followed by gamma knife therapy for the residual portion. We also discussed the uncertainty of the outcome and the risks of each procedure. The patient and her husband were very optimistic and wanted to proceed as quickly as possible.

The treatment went very well, with what we estimated to be a substantial reduction in the portion of the arteriovenous malformation supplied by the lenticulostriate arteries. There was a residual arteriovenous malformation supplied by perforating branches through the insular cortex that we could not treat. There was some discussion of whether to per-

form a final angiogram, because we could no longer treat the lesion, and a set of films would be performed for the gamma knife treatment. We decided to proceed and performed one more injection with the patient still anticoagulated and our complex catheters still in place in the feeding arteries to the arteriovenous malformation. Within moments after the injection, she cried out with pain, and as I tried to comfort her, she asked for her husband and told me she was dying. We treated her vigorously with medical therapy, and the neurosurgeon examined her repeatedly as she progressed to coma and pupillary dilatation. She was pronounced brain dead a short time later. Then I helped her husband prepare the papers for organ donation and subsequent funeral arrangements. During this time I tried to comfort him, and he tried to comfort his young son who also was grief stricken. I eventually helped prepare her body for transport so he could take her home. During this interaction I tried to function as a "professional" and help the family in the transition through shock and grief, *but I did not know what to do with my own emotions.*

I felt a lancelike pain that would drive to the very center of my soul and carry with it feelings of guilt, shame, inadequacy, anguish, and sorrow. I retreated to my office and felt a great sadness, and as my eyes filled with tears I said: "I am not supposed to kill my patients." I can remember the events as if they occurred yesterday. I reviewed her films and the sequence of events again and again until I located what I believed to be the source of hemorrhage and why the procedure caused it. I would try not to miss something like this again!—G.B.H.

Unfortunately, there are other possible causes for catastrophe, and we cannot control everything or foresee all possible complications. The systematic identification and prevention of further similar events is one method of compensation and self-forgiveness, but it is probably only a partial solution. Intellectualization and searching for procedural mistakes instead of accepting and working through the grief that is concomitant with human tragedy can, in the long run, only add to the physician's woes. Losing a patient is analogous to the death of a relative, friend, or other loved one, in that the doctor-patient relationship rests on a strong foundation of trust. Thus, failure to sort out the emotions elicited during a medical tragedy may prove detrimental to a physician's own emotional health.

The mourning process is a human adaptive advantage that allows "maximum survival characteristics." In his article "A Model of Mourning," Mardi Horowitz, the noted psychiatrist, separates the normal psychodynamic grieving

process into several cognitive and emotional phases (9). The first stage is that of emotional outcry, in which the griever recognizes the death or serious injury of a loved one and sees the tragic event as a threat to long-formed schemas about that loved one. Denial of emotional content and implications of the tragic event and a general emotional numbing process characterize the second step. The third phase, which individuals reach at widely differing intervals, includes the intrusion of ideas and pangs of emotion while the schema of other is being reworked. Some of the important cognitive processes of this phase come in response to personal feelings of guilt that "I could have done something more": alarms, searching, and undoing actions. The final phase of mourning brings the grieving process to a close. It allows the individual to be committed to a new relationship with the loved one or the loved one's memory.

Doctors, because of the nature of their medical education and career, are prone to get "stalled" at various points along the normal mourning process and apply intellectual questions instead of emotional ones. Many surgeons and other physicians apparently harness cognitive elements from the second and third phases of Horowitz's standard model: undoing actions and reliving past events so that they may focus attention and adaptive effort on a procedure, or on their own perceived errors, instead of facing the emotional truths of responsibility and grief. A doctor can retrospectively turn any action into a mistake because of the "too lateness of medicine," which leads to statements such as, "it wasn't a mistake then, but it is one now" (3). But as doctors deny themselves the luxury of human fallibility, they call into question the validity of their own judgments, a validity in which they must be confident to function effectively as healers. Intellectual soul searching is not a long-term cure or substitute for the evolution through grief.

Physicians often look most intently at the procedure instead of the outcome, because a procedure can be changed in the future, but a tragic outcome is unalterable. Because doctors are medical problem solvers, it is only natural that they should want to focus their attention on a perceived problem or mistake instead of on their own grief. Because they often fail to complete the mourning process—thus failing to release the emotion of the situation and attain

catharsis—doctors put themselves through undue and superhuman stress.

Scientific objectivity is valuable, but so is the ability to empathize with patients and their families. Teachers and mentors, in medical school and what follows, are usually like most physicians—hard and objective, not warm and "fuzzy." The medical student and fledgling doctor interpret this to mean that they are mutually exclusive. These apparently polar abilities are *not* opposites, but the skill required to do both must be learned and nurtured. Too few of us have had that training, and precious few teach it. Unless the physician learns to do both, occupational burnout becomes likely.

To determine the experiences of other physicians who have had to deal with tragic surgical outcomes, we prepared a questionnaire on grieving within the medical profession and surveyed doctors attending the Sixth Annual Interventional Neuroradiology Morbidity and Mortality Conference in August 1993. One of the most disturbing results of this survey was that fully 68% of the pollees answered "no" to the question, "In your opinion, were the emotional aspects that you experienced from patient loss or suffering adequately addressed in your medical training?" Of those who responded that their medical training had adequately prepared them for grief, a plurality cited that "observing senior physicians interacting with grieving families" was a significant part of that training. Meanwhile, of those who felt that their medical education did not adequately address the issue of patient loss-related grief, many felt that observing senior physicians would have helped them, and an even greater number responded that "discussing grief with experienced physicians" would have been beneficial to them. From these data and from personal experience, it seems safe to say that medical curricula and/or residency programs, in general, need to incorporate more counseling and training in the sensitive but essential area of physician grief.

Peer and professional counseling for physicians coping with tragic outcomes promises to give grieving doctors a forum in which they may express their emotions freely, without having to fear that private self-recriminations can be turned into evidence for public malpractice suits. The fear of disclosure can potentially create a barrier to effective communication and transition through the phases of recovery (4). Colleagues may fear interactions with the pa-

tient and family because all physicians of record may be subsequently involved in litigation. If the physician seeks the aid of a psychiatrist, there will be subsequent difficulties when applying for staff privileges at a new hospital or when trying to obtain insurance for death or disability.

The doctor-patient relationship has become increasingly complex as subspecialists divide the patient into so many organ systems or body parts. Medicine has an apparent phobia for all things associated with the term *medicolegal*. Nevertheless, the evolution of the doctor-patient relationship has become a legal contract to provide the best possible care for the patient, and it extends to support of the patient's family, especially when major complications arise (10). Part of the responsibility has become incorporated into informed consent. The doctor-patient relationship now involves more than trust. The consent process requires preliminary disclosure to establish risk/benefit assessments before performing a procedure (11-13).

Informed consent is a contract in which the physician and patient or legal guardian agree to proceed with the described treatment or test. It is usually accompanied by a description of the disease and its natural history, an explanation of alternative procedures, an estimate of potential risks of the proposed procedure, and a comparison with those alternatives. This is also accompanied by questions and answers and a review of preceding diagnostic tests and clinical information. In theory a contract is "a legally enforceable agreement between two or more parties."

The informed-consent process may alleviate a portion of the legal burden, but it often does very little for the emotional impact. The patient is not merely a shopper, and the physician is not a salesperson. There is a moral burden to offer the best available therapy, and this may include investigational therapies in which the final outcome data are still incomplete. So when the patient and family arrive at the center of excellence, there is a preexisting bias that the outcome will most likely be favorable. This is the place that medical miracles are made routinely, and therefore, it is where a loved one should be entrusted for care. It is where the rules of conduct are taught to the next generation of physicians, and what safer place could there be? So what happens when the physicians fail and the end result is catastrophic? Why didn't they make a miracle for us? What did they do wrong?

Were the alleged skills and expertise not truly present or somehow not given? These are questions asked not only by the family but by the physician, who is human and not always able to be perfect. The physician may also relive these events while in deposition.

Several possibilities exist for improving on the current situation of physicians' grief repression. In its ideal form as a dynamic interaction between physician and patient, in which the two come together as a team to fight the patient's disease, the informed-consent process offers potential relief for the physician from some of the emotional burden of a bad outcome. The *esprit de corps* characteristic of an ideal doctor-patient partnership can be approached through informed consent only if the patient is made fully aware of all the possible outcomes, benefits, and risks of a given procedure and comes to understand those concepts at approximately the same emotional level, so that the doctor is seen neither as a miracle worker nor as a vendor of medical services, but as an individual committed to providing the best care humanly possible (12, 14). This idea must strike home not only for the patient, but also for the physician. Peer therapy and discussion groups would allow the expression of grief and reinforce the concept that all doctors can do is their best, and that, regardless of this effort, some patients will be lost.

Perfectionism is a disease rampant within the medical profession. Contrary to what many doctors believe, grieving is useful and necessary; its denial or repression serves only to feed the physician's inner anxiety, undermine the doctor's personal and professional self-views, and in the long term proves damaging to the doctor's own emotional health. Doctors, for their own well-being and not out of perceived selfishness, must strive to ensure that not only the patient, but also the doctor, will survive the treatment.

### Acknowledgments

We thank Robert Crowell, MD, Christopher F. Dowd, MD, Van V. Halbach, MD, Randall T. Higashida, MD, Mardi J. Horowitz, MD, Joseph A. Horton, MD, Michael W. McDermott, MD, Ms Ann Neely Natale, Ms Lori McLeese Simos, and Ms Chellene Wood for their help in the preparation of this manuscript.

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