New Technologies in Medicine

IT IS A PRIVILEGE TO PRACTICE MEDICINE in these times; the explosion of new technologies over the last 50 years has fueled unprecedented advances in medical care, giving physicians better tools for diagnosis, therapeutic interventions, and therapeutic monitoring. Coming from Nigeria, a developing country where medicine is mostly still practiced as it was at mid-20th century, my medical experience in the United States has been stimulating. Practicing medicine in this country can be immensely gratifying, given the convenience, certainty, and precision afforded by the many facilities available.

Perhaps in no specialty is this more obvious than in critical care medicine, where hemodynamic and respiratory parameters can be continuously monitored using invasive and noninvasive equipment. Sophisticated tests and computerized imaging techniques now yield information on physical and even metabolic derangements. Gene therapy and precisely targeted drugs are becoming commonplace. Minimally invasive surgery, robot-assisted surgery, and percutaneous procedures continually find new applications. Most organ system functions now have effective extra corporeal support systems. The list goes on, and the options available to physicians seem almost limitless at times.

Exciting as these new technologies are, they come at a price. Health care costs continue to increase, yet this has not reduced demand for health services. Both cost and demand may in part be driven by the diagnostic and treatment possibilities increasingly made available through new technologies.

Technology also brings with it the potential for misuse and overuse. Some new technologies have not been unequivocally shown to improve patient outcomes, and some may have actually increased morbidity and mortality. Physicians can err through lack of familiarity with the technical details of use, erroneous data interpretation, poor recognition of the limitations of different equipment, or by failing to recognize when our actions become deleterious, or when we cross the line into futile therapy. The temptation to apply yet one more test, procedure, or technique can lead us to violate the Hippocratic caution, “First, do no harm.”

Another pitfall is the overreliance on technology, which can depersonalize medical practice by diverting our attention away from the patient. Today a physician could spend an entire day caring for patients without once laying a hand on any of them. Portable imaging techniques and rapidly returned laboratory tests have usurped the clinical examination and further alienated physicians from their patients. We often forget that for patients and their families, the best physician is rarely the one with all the latest technology. It is usually the one who takes time to carefully examine the patient, discuss the treatment plan, or simply holds a patient’s hand to allay his or her fears and anxieties.

To some extent, these same issues have always faced physicians. As much as I appreciate the ways in which technology can enhance my and others’ ability to care for patients, we must remain aware that technology also represents a source of “noise” in the patient-physician relationship. Let us remember that our patients are fellow human beings in distress.

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