Point of View

Challenges in Critical Care: Technology or Compassion?

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"It is a common error to think that the more a doctor sees, the greater his experiences and the more he knows."

Sir William Osler

The events of which I write occurred several years ago and would be all but forgotten except that the questions they raised will not go away. This is a matter-of-fact story with memories that are deposited deep in a cerebral bank which are, on occasion, withdrawn and returned again for safe keeping.

I remember Casey as a tender child. I can't quite tell whether it was force of personality or the fact that he was irresistibly affectionate that attracted him to me. Overall, he was not unlike all the other children we see in the pediatric critical care unit. Not to imply that this little person was generic in any case, but he was at least no different in acuity and disease process that what we are used to. Casey was almost four years old, had Hurler's syndrome and his entire life consisted of hospitalizations for treatment of worsening respiratory distress. His mental handicap left him unable to properly communicate his wants and needs, but those who knew him understood. He was clearly tired but remained courageous. Daily rounds consisted of the reiteration of a problem list that remained unchanged for days, and "status quo" was the terminology commonly used as the days progressed. We were quick to discuss the pathophysiology of the patient's disease, but evaded the most important topic because we lacked the courage to seek full knowledge of Casey's life. On many occasions I observed otherwise rational, intelligent individuals extolling the virtues of bringing in more consultants and increasing the level of technological support, for no other reason than to do something. The dreadful irony of the whole thing was that I began to establish a relationship with the family and the child, while simultaneously encouraging the proliferation of layers of science and technology that would serve no purpose other than to isolate the patient and family further from each other and me. Something clearly was wrong. I was either afraid of the patient and his family or the disease itself. Over the course of several weeks Casey deteriorated, and the family struggled with hopes and disappointments that rocked them from side to side, until they could no longer stand strong. Details aside, it was agreed to let Casey die. He was made comfortable with morphine and was in his mothers arms when he died. That day signalled a time for reflection, one of many that have and will continue to come as I mature.

I had entered this situation with a conviction that displayed uncertainty and a degree of trepidation. I am happy to report that every now and again, I have a burst of soul searching that allows me to tread a righteous path again. It became clear that there is a need for a balance between what I call "High Tech" and "High Touch". There is a sea-saw that rests upon the patient, one side with "High Tech",

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the other with "High Touch". As the patient gets sicker, the balance tips in favour of "high tech" and "high touch" falls away. Perhaps we would all agree that there should be a balance between the two. But it is too easy to push "high tech" and avoid "high touch". Time seems to be a major factor and there isn't enough of it to go around. Interestingly enough, this year brings to light the human side of medicine sparked by a cinematic stimulus *(The Doctor).* Medicine is not such a cut-and-dried affair that it is not uninhibited by fads and fashions. It is fashionable these days to comment or perhaps to lament about the way physicians look at their own approach to "high tech" and "high touch". A general awareness has emerged that physicians must be more caring. Looking back, I think that we have always been, but our focus has been blurred. There is so much to know of the human conditions and we understand so little. However, the human spirit accepts challenge and there appears to be alternatives for those daring enough to pursue them.

The goal of critical care medicine since its inception in the 1960's has been the surveillance and support of vital system functions in critically ill and injured people and their eventual restoration to health.

The concept of monitoring at frequent intervals such signs as heart and respiratory rate, skin color and breath sounds and applying mechanical assistance to breathing first appeared between 1890 and 1910 in Germany and the United States. Thoracic surgeons promoted most of these advances. The management of airway obstruction using orotracheal tubes and tracheostomy tubes first appeared in the late 1800's but did not gain attention until the polio epidemic in Europe and North America from the 1920's to the 1950's. The use of the first practical ventilator first appeared in 1929 when Philip Drinker, an engineer, and Doctors Louis Shaw and Charles McKhann worked on the first mass produced ventilators called the "iron lung". A pediatrician, James Wilson, in 1932 developed a box ventilator in which four children could enter. This was probably the first evidence of an attempt to cohort and support pediatric patients with vital organ failure. Throughout the 1930's, physicians and nurses identified a need for special units in the United States for polio patients of all ages with respiratory failure who needed to be managed with ventilators and tracheostomies. From 1950 to 1952, the polio epidemic set the tone for the establishment of respiratory units both in Europe and the United States. The Danes in Copenhagen established intensive care areas for patients with tracheostomies who were manually ventilated by medical students working in shifts. With the discovery of the Salk vaccine, the polio virus virtually disappeared, removing the need for comprehensive support for paralyzed patients who were ventilator dependant.

Florence Nightingale described the advantages of assembling all the critically injured patients into one separate area during the Crimean War (1854-1856). It wasn't until 70 years later that Dandy, a neurosurgeon at Johns Hopkins, organized the first peace time intensive care unit. As technology progressed, the iron lungs were seen in 1955 for the first time at Massachusetts General Hospital where patients were placed in large intensive care units, sometimes 50 at a time.

Anaesthesiology also played a prominent role in the evolution of modern critical care units. The early intensive care units frequently were recovery room extensions in which anaesthesiologists provided airway and cardiopulmonary care to sick postoperative patients and the occasional medical patients with status asthmaticus or coma from drug overdose.

The establishment of these early intensive care units had an apparently favorable impact

on mortality and morbidity, especially that associated with acute respiratory failure. Conditions other than primary cardiopulmonary failure appeared in significant numbers, necessitating the growth of critical care units across the country.

In the 1960's surgeons expanded their scope of operations in patients and their ability to treat trauma patients. More sophisticated and intensive postoperative care for these patients became necessary. The development of sophisticated critical care units was underway.

In the evolution of critical care, the emphasis has been on technology and practices of care, rather than on the patient-physician relationship. This may be due in part to the fact that in a critical care unit the curing of disease is not a realistic goal. The very most that can be done, is a reversal of an acute physiologic abnormality and to "buy time". If the therapy works, then the body mounts its own attack and the patient is cured somewhere other than in the critical care unit.

Medicine is infatuated with advanced technology. We continually strive to have the very latest, the very best monitoring systems available for our use in a critical care setting. As with any computer, antiquation is the norm shortly after the installation. We rush out to buy the "upgrades", feeling inadequate with technology that only a few months back, we couldn't live without. As technology changes, so do the patients. Hospitalized patients today are generally more ill than in previous years yet have shorter length of stays. We attack disease with a fervor that is unprecedented: antibiotic regimens, multiple vasopressor, combinations of afterload reducers and multiple consultants. Disease today, is much too complex to be managed by a simple recipe of do's and don'ts. But although medicine is supposed to be a science, there is certainly a great deal of experimentation that takes place. Nobody is at his best everyday. And that includes those who call themselves physicians. Despite our best intentions, we have on occasions, made either small or large errors in our practice. Although medicine is supposed to be a science, there is certainly a great deal of experimentation that takes place, which in itself is prone to error. To think that physicians are far from the common road travelled, is to bask in the realm of idealism. This very human character which we possess is however, not readily accepted by our patients and their families, and yes, by our own colleagues at times. The feeling that lives are at stake lends credence that error is unacceptable. However, there must be a degree of realism in the approach to the difficult patient.

Challenges in critical medicine continue to center around technological, pharmacological and physiological advancement. Every life ends the same way. Even heros die. And the thing that strikes me the most is the way we try to rush the ending. It isn't the goal that is so important, but rather the process. We pick and choose the way want to live our life, but we have no say in how we end it. So it seems fitting that I spend time reflecting on the process of living, rather than on the process of dying. There can be no better time to talk about life, than when we are alive.

Some people have, on occasion, detected in me a small bit of cynicism which asserts itself in times of confusion. Do we treat disease or patients? Uncertainty shapes the decisions made by physicians daily. Yes, there are often decisions made based on bona fide, documented test results or a good physical examination. But for the most part, the approach to the disease process is one of defense. Modern medicine may be pointed in the wrong direction by focusing on treating the disease, rather than addressing the suffering it sometimes causes the patient. Physicians are not more or less honest than other persons, but the structure of the subject imposes a demand

for adherence to a set of rigid rules that keeps the structure intact. Physicians must see symptoms in context of the patient's whole life and person.

From the patient's perspective there has to be a better way to die or even live. From the very first time that the patient comes in contact with the health profession, he begins to feel out of control.

It became evident to me that there had to be a balance between the patient's comfort level in knowing that technology is helping with more accurate monitoring and diagnosis and that the patient trusts and relies on the physician for care.

We need to think honestly when using "high tech" as to its purpose: necessity or convenience. My relationship with Casey and his parents evolved from a realization that we can't take time for granted and we must underscore "high touch". Letting Casey die without suffering or watching the sick child heal and live bring the same rewards only if we put "high touch" and "high tech" in balance.

Medicine is like a book. I sit back and read the dialogue and for the most part I like what I read. This message is thus not about pride but humility. The brain is more than a repository of knowledge and memories. It serves as a guiding light for the heart. By always enacting "high touch" and appropriately limiting "high tech", my heart and mind can be one.