Editor’s comment: “The Anatomy of Surgical Judgment” was written by Rudolph J. Castellani, M.D., in the mid-1980s, after approximately 30 years of experience as a surgeon and shortly before his untimely death, February 8, 1987. His death was likely the reason the article was never published. We thank his family for permission to post it on this website. Sound, mature surgical judgment is one of a surgeon’s most important assets and is well described and discussed in this article, which also contains a number of quotations from the historical literature.

Rudolph Castellani was born September 29, 1926, in Lansing, Michigan to immigrant Italian parents. His father was a tailor. When he was a junior in high school, his mother died of stomach cancer.

Rudy went through the Lansing school system and was valedictorian of his high school graduating class, with a straight-A average. In his senior year he was captain of the football and baseball teams and president of the student council. He earned 12 varsity athletic letters, and at graduation he received the Best Athlete Award, as well as the Latin, English, and Mathematics Awards.

He attended Michigan State University on a football scholarship. His studies there were interrupted by his entry into military service in the U.S. Army for 18 months. He graduated with high honors and attended Wayne University (now Wayne State University) School of Medicine where he graduated second in his class in 1952. He served an internship at Wayne County General Hospital. He accepted an offer for a surgical residency at Detroit’s Receiving Hospital and then turned down a previous offer from the Massachusetts General Hospital because he believed he could get better training at Receiving.

He completed his residency in December 1957 and stayed on for six months in a junior faculty position before going into private surgical practice in Ludington, Michigan. Two years after moving to Ludington he married Maureen Diviney, who had been a nurse he dated at Receiving Hospital. The hospital in Ludington grew into the Memorial Medical Center. Dr. Castellani served several terms as Chief of Staff there and also was Chief of Surgery at Memorial up until the time of his sudden death in February 1987 at age 60. The cause of death was likely an acute neurological event although a cardiac arrhythmia could not be ruled out.

Dr. Castellani wrote an autobiographical novel, Inside the Heart of a Pioneer Cardiac Surgeon, about his time as surgical resident at Receiving Hospital, which is extensively quoted in Volume One of Detroit Surgeons: 300 Hundred Years, on pages 118–121. One of his five sons Rudolph Castellani Jr., graduated from the WSU School of Medicine in 1990 and served a pathology residency at DMC/WSU. He is currently Professor of Pathology at the University of Maryland and Director of the Neuropathology section there.
Working in an arena which almost daily addresses major illness and life-threatening problems, the general surgeon impacts on the lives of others in ways that are virtually pre-ordained. Among the skills and disciplines he must call upon with-in that cauldron of human suffering, none is more important than that which most proclaims him, his surgical judgment. While it is true that technical skills have a special appeal and great importance, they are easier to acquire and, undoubtedly, have less to do with good results. A mature surgeon will judge another, not by his speed or even his dexterity, but by the depth of his judgment and the clarity of the mental processes exercised in his approach to and management of a serious surgical problem. It is not how fast an operation is done that is most important, but that it be judiciously chosen, properly timed, and accurately accomplished. This does not imply that technical skill should be minimized, but that it should not be overemphasized at the expense of the development of judgment. Among surgeons, doing should not be more important than thinking, cutting should not be more important than reading, and operating should not be given more importance than pre and post-op care. There is ample time in a four or five year residency to learn surgical technique, but judgment must grow throughout one’s career. This is the charm of being a surgeon.

Any discussion of surgical judgment is necessarily a general one, for the circumstances that contribute to the development and exercise of judicious action are so complex that a detailed analysis is precluded. To propose to identify those experiences, near and remote, which make a surgeon what he is, would constitute oversimplification. To suggest a course of training that would create a background of personal and professional maturity leading to sound judgment would be presumptuous. This is perhaps why judgment is approached obliquely both in residency programs and in the literature. In fact, the paucity of articles concerning the surgeon’s ability to interpret his observations constitutes the provocation for this paper. If judgment cannot be taught, it can at least be defined and recognized as the surgeon’s best friend. The surgeon should learn to know this friend and, with “its adoption tried, grapple it to his soul with hoops of steel.”

The observations offered here are done so, not with a sense of infallibility or an attitude of crusading idealism, but with the humility of one who has endured thirty years of dealing with a multiplicity of surgical problems, some exhausting, some overwhelming, many insoluble. They come from the career of a general surgeon, humbled by the nobility of the surgical trust and the awareness of the inevitability of human error.

The writer’s appeal is that surgeons forget their successes and remember their poor results, learn to recognize what errors in judgment made the difference, and avoid the pitfall of rationalization.

This is not an easy task, for the awareness of imperfection, in a field which aspires to the ideal of excellence, evokes a certain melancholy which moderates the exhilaration of the surgeon’s finest hours. In the life of a judicious surgeon, the euphoria of achievement is always accompanied by the memory of previous failures. There is no better defense against the ever-present specter of misadventure.

---

1 Shakespeare, Hamlet, act 1, scene III.
The unique aspect in the interaction between surgeon and patient is that it deals not alone with the quality of life, but with life itself. Every surgeon knows that errors in judgment are destructive, not only to the welfare of his patient, but to his own sense of self esteem and inner peace as well. Truth, a devastating force when one is compelled to contemplate his errors, is none the less the avenue to improvement. The natural inclination to avoid addressing one’s mistakes, the ease with which one is able to rationalize his actions in the inexact science and art of medicine, underscores the difficulty with the study and articulation of good judgment. Who in medicine has not hidden behind the veil of patient’s disease? What other craftsman is aided by the natural forces acting on the human organism? Surgeons fail, sometimes, because they get in the way of nature, and they succeed, often, because they merely get out of its way. The surgeon should learn to ignore the accolades of his patients and remember that he does not walk on water! A man cannot learn, who does not admit to ignorance, and a surgeon does not place a high priority on judgment if he does not perceive his mistakes and learn from them.

Surgery itself, incorporating the mystique of heroic invasion of the human body and the opportunity to save lives, tends more to inspire pride than humility. Anyone who has shared a coffee break with surgical residents has been witness to the exhilaration and bravado that often follow a technically successful procedure. That there is a great deal of post-op care yet to be administered and many possibilities for complications does not temper the euphoria. This elated state of mind, this overconfidence, may become a subtly precarious attitude, for when the inevitable awakening comes, a patient may have suffered for the maturation of that surgeon. There is no question that the nature of surgery allows the surgical resident to rise above most of the self doubt that all would-be surgeons experience. This is a mixed blessing, however, because overconfidence creates a barrier to learning and complicates the development of judgment. The effective surgeon is the one who is able to remain confident while still remembering his fallibility, who is able to function in the awareness of previous failure and factors beyond his control. He does not rejoice over good results nor condemn himself for poor results. He remembers both with equanimity.

It is a distressing truism that a surgeon learns infinitely more from his failures than from his successes. This implies that the acquisition of surgical experience is not only difficult, because of the need to own up to mistakes, but also depressing, because of the effect those mistakes have on the lives of other individuals. Whoever accepts his patient’s praise without insight not only loses the opportunity to learn, but becomes dangerous. This expresses itself in the tendency to look at all illness with a surgical bias, to avoid careful evaluation, and to be too quick on the surgical trigger. Sooner or later, every surgeon experiences the thrill of combining thought and action to help or save a life. This is the special experience that only a surgeon can enjoy. But that surgeon will not enhance his stature if he dwells on his success and avoids consideration of his poor results. How honest is the healer who does not recognize, even in his good results, what could have been done better? Who can deal with life and death without trying to be as good as he can be? It matters not that nine out of ten patients have done well. It matters only that the tenth patient, who should have done well, did not. Surgeons entrusted with the immense privilege of operating on living human beings have an obligation to place the patient’s needs before their own, to heal themselves, as it were, through them, to be completely honest in their observations and the formulation of their decisions.

Surgical judgment may be defined simply as the ability to interpret one’s observation of the patient so as to select those courses of action which foster survival, expeditious recovery, or maximum benefit. Metaphorically, the young surgeon might see judgment as a great stallion, fleet, strong, true, guiding his rider toward the pinnacle of destiny, where vision remains clear. By that analogy, he must come to know that training and experience are the skeletal framework of the stallion, honesty is its heart, courage its muscle, compassion its blood, and detachment its integument.

The strength of a surgeon’s ability to observe is a measure of the solidity of his training, and his ability to exercise judicious action is tied to this intellectual skill and to the experience which begins in residency and continues throughout his career. Learning to handle the stress of fatigue and responsibility is an important part of this training, for he is called upon to demonstrate clear
thinking at all hours. If he feels imprisoned by the demands of his calling, he will eventually gain his freedom through the acquisition of competence and love for his work. Like The Prisoner of Chillon, he will have gained that freedom with a sigh:

“My very chains and I grew friends,
so much a long communion tends

to make us what we are.”

It is not enough that the opportunity to learn was continually placed before him, but that, through hard work and conscientious effort, the necessary memory images became chiseled into his consciousness. A love for surgery and an unselfish attitude are prerequisites to the retention of these images, which must be called upon in the operating room, the emergency room, the ICU, and on the wards. The resident who is healthfully attentive to his own mistakes and the errors of others, who is able to selectively edit, retain and combine his experience, is most favorably disposed to the development of good judgment. He is indeed an eclectic, who sees through the eyes of many teachers and calls upon experiences which, though long buried in the shadow of memory, are vivid enough to define his priorities, reinforce his judgment, and sanction his worthiness to be a doctor. Whether his training should be pursued in the university hospital environment, where the opportunity to learn would appear to be more unlimited, is a moot point.

Although surgeons differ widely in training and experience, they are more alike in these than in those very important nebulous qualities which more remarkably separate them, qualities such as honesty, courage, compassion, unselfishness, and detachment. As much as his training and experience, these affect his ability to perceive and conclude, and these, the other anatomic parts of judgment, are determined more by the individual than by the residency.

Honesty is the heart of judgment. The vital beating of that heart pumps blood into the decision making process, and without the nourishment it supplies, the entire basis for discernment dies. The fundament of honesty in the interaction between surgeon and patient is the surgeon’s resolve that a decision be made for the good of the patient only. It is a pure altruistic obligation. Lest this appear to be an oversimplification, let it be remembered that the sanctity of that obligation cannot be threatened by any conflict of interest involving the surgeon’s needs, by any desire for recognition, esteem, or material reward. It cannot be avoided because of fatigue, fear, or personal plans. Is the surgeon positive, in the quiet of his unmonitored reflections, that the surgery will be beneficial, that it is the most judicious option, in his special concern for the patient’s welfare? Has he entertained alternatives to surgery or been focused to a more lucrative course by the gun-barrel vision of his specialty? Is the timing of the surgery for the good of the patient or for the convenience of the surgeon? In short, is the surgeon operating for himself or for his patient? To the extent that he is able to divorce his own needs from those of the patients, his judgment is pure and his maturity established. To the extent that he is able to be guided by honesty at all hours, despite the stress of fatigue and responsibility, he substantiates the patient’s trust, proves his worthiness to serve the suffering, and keeps the heart of judgment beating. To the extent that he is not, he becomes at best a technician filling orders, hopelessly exiled from the greatest rewards of his profession. If Laertes had been a surgeon, Polonius’ advice would have been no less apropos:

“This above all: to thine own self be true,
and it must follow, as the night the day,
thou canst not then be false to any man.”

Courage is the muscle of surgical judgment. It is the inner strength which leads to action, without which delay or indecision cancel out training and experience and negate the surgeon’s greatest skills, efforts, and sacrifices. At no time is courage more important than when a major complication is suspected which requires reoperating a patient who has recently undergone a major procedure. The courageous surgeon must own up to the unhappy event and proceed without delay despite the hesitation of patient, family, or his own nervous system. Again from Shakespeare there is a precedent for a surgeon’s response:

“If it were done when ‘tis done,
then ‘twere well it were done quickly.”

He must accept responsibility, but must not be so self effacing as to be unable to function. He must walk the
tightrope between confidence and humility. The surgeon who is able to treat his own complications as well as those of others is a mature surgeon. He pursues decisions he knows to be correct despite their unpopularity with others, including his colleagues. Good judgment may dictate immediate surgery, avoiding operation or seeking consultation. It is often a more courageous act to avoid surgery and accept the uncertainty of nonintervention than to explore. While it is often true that “one look is worth two finesses”, it is no secret that the scalpel is a double edged sword, capable of cutting its way into disaster and into the surgeon’s repose. Its sharpness was never intended to replace the acuity of painstaking diagnostic investigation. Any surgeon who has been a party to unexpected surprises in the operating room knows the effect on his spirit of errors of judgment that end on the operating table.

Compassion is the blood perfusing the tissues of surgical judgment. It nourishes courage and imparts the strength of decisive action. The surgeon who truly cares about his patient is fortified by this sensitivity. He is not afraid, does not seek expiation for the awesome invasion of a fellow human's body, and his decisions are unencumbered by greed, fear, or the pursuit of personal goals. Compassion, then, enhances the acuity of judgment, expressing itself as an unselfish sensitivity to suffering, defining a special kind of sacred love that energizes the surgeon and rewards his sacrifices. Kindness and concern, love and dedication, are not unique to the medical profession. They are prerequisite to healthy interaction everywhere, but it is a fact of life that good surgery is not possible without them. A surgically minded poet once summarized the essence of care and compassion in the following way:

“And last, not least, in each perplexing case,
know the sweet magic of a cheerful face,
not always smiling, but at least serene
when grief and anguish cloud the anxious scene.
each look, each movement, every word and tone
should tell your patient you are all his own,
not the mere worker, purchased to attend,
but the warm, ready, self-forgetting friend,
whose genial presence in itself combines
The best of tonics, cordials, anodynes.”

Detachment is the integument of surgical judgment. It provides the carapace, the defense against invasion by weakness. It shields the surgeon from guilt and hesitation, when aggressive and heroic measures are called for. It protects him from over-identification when unhappy and formidable courses of action are necessary, as in colostomy, amputations, mutilating cancer operation, and the institution of agonizing adjunctive paraphernalia, suffering for which no patient can be completely prepared. It fosters equanimity, what Osler called “imperturbability”, in times of crisis and patient over-reaction, as well as in the hour of ultimate tragedy. This insulation intensifies the surgeon’s performance in emergency situations, allowing him to remain calm and “think on his feet”. It also displaces the love between patient and surgeon, who does not fear its loss or seek reciprocity. The reward is inherent in the service, made possible by the cool exercise of options through the freedom of detachment.

Unfortunately, other forces, beyond the influence of both patient and surgeon, also affect surgical judgment. Disturbing societal forces, by taking the mandate for decision away from the surgeon, may tend to induce its atrophy. If there is any right inherent in the surgeon’s long period of training, it is the privilege and responsibility of decision-making in regards to surgical problems. However, the stallion of judgment is on the threshold of emasculation by a judicial system which necessitates a defensive posture. It is not wrong that society dictates that one must pay for his mistakes, but in the contingency fee system there is an inequity that borders on cultural insanity. There is no justification for asking a surgeon who loses a patient to pay ten thousand times the fee he receives for saving him. If indeed such a monetary value can be placed on an alleged mistake, then an equal value could justifiably be placed on the successful saving of a patient’s life. If an astronomical judgment can be assigned a surgeon who has a complication, then a comparably ridiculous value should be placed on a successful and uncomplicated operation. To exercise pure judgment in the patient’s behalf, the surgeon must not be at atrocious risk himself. Is it possible for a surgeon to make the correct decision if he is to anticipate the possibility of horrendous litigation? Is it possible for his

5 Author unknown.
judgment to be pure, if he places his family’s security at risk by doing what is best for his patient? Is it possible for him to act in his patient’s best interest if he is to expend mental and emotional energy worrying about his own status and defense? A surgeon is taught to lay down the hours of his life for his patient, and to be compassionate, unselfish, and honest. Then he is forced to fortify his defenses because the system creates an adversary relationship between himself and his patient. He is taught to trust, then forced to be wary of the opportunist. He is taught to love, then forced to hate a system which curtails his freedom to render his best services. He is taught to exercise his best judgment in his patient’s behalf, than compelled to compromise by selecting those options least likely to result in litigation. These unfortunate developments are a lamentable and incongruous accompaniment of the great medical and surgical advances of the last fifty years.

Defensive medicine is not free to grow! If this societal malignancy is not treated, it is likely that future generations will view the usurpation of the surgeon’s freedom to function as one of the manifestations of internal decay that took place in our culture during the twentieth century.

In summary, it is evident that it is not possible to completely elucidate those forces which act on the surgeon from within and from without to foster his ability to exercise good judgment. These forces vary with training, experience, personality, and character. They are strongly influenced by the surgeon’s honesty, sensitivity, inner strength, and his ability to function in a psychic milieu of detached concern. The surgeon who makes the patient’s best interest his special concern, however, is most favorably disposed to show good judgment. It should be emphasized again and again that the patient, who has such great faith that he allows himself to be put to sleep and to be invaded by the surgeon’s knife, is the only hero in the interaction between surgeon, patient, and disease. This fact, and a continuous, uncompromising concern for the patient’s welfare, should throb in the surgeon’s consciousness at all times. The surgeon must give attention. He must give unselfish love. To pride himself on his technical skills, then dexterously carry out unnecessary, erroneous, or wrongly timed surgery is a monument to failure. The only defense against the loss of judgment is that the surgeon keep his patient’s best interests in mind at all times. The surgeon who makes a business of his profession by doing unnecessary surgery will eventually lose what judgment he has and alienate himself from the greatest rewards of his profession. Among these rewards are the intellectual pleasures of surgery, the joy and privilege of service, the exercise of his skills to help another life, and the reward of sacrifice, laying down a part of his life for that of another. As Sir William Osler, calling on Wordsworth, pointed out in Aequanimitas:

“Getting and spending, you may so lay waste your powers that you may find, too late, with hearts given away, that there is no place in your habit-stricken souls for those gentler influences which make life worth living.”

Only the honest surgeon can look into his grateful patient’s eyes and accept thanks for what he knows to have been his absolute best. This sacred interaction, this silent communication is, perhaps, the greatest “gentler influence” of all.

It is an immense privilege to operate on living human beings. The constant awareness of the enormity of that privilege sensitizes the insightful surgeon’s thinking to decisions which prove his worthiness of it. This does, of course, presuppose a commitment to honesty, tireless effort, compassion, and courage. The surgeon who maintains his priorities knows that a legacy of judicious surgery will endure in the lives of his patients and their progeny long after he, himself, and his material rewards have passed into dust.

---

6 Sir William Osler, Aequanimitas with other Addresses, page 7, March 1912.