Presidential Address: What a Neurosurgeon Ought to Be

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It is with a certain degree of humility and a high degree of temerity that I embark upon this Presidential Address at this assembled gathering of distinguished people at the 22nd Annual Meeting of the Congress of Neurological Surgeons. It was following many painful weeks, nay months, that I finally arrived at the title and substance of this address. The title may appear somewhat awesome and certainly presumptuous, but in no way do I wish to inflict upon any of you either sensation. More so, I would hope to stimulate each and all of you to reflect upon your careers as neurological surgeons in relation to the past, the present, and possibly a somewhat kaleidoscopic view of what the future should hold for each of us.

The era of modern neurosurgery has been said by many to have begun with Macewen, following his treatise on "Pyogenic Infective Diseases of the Brain and Spinal Cord" in 1893 (2), and with the appointment of Sir Victor Horsley as surgeon to the National Hospital for the Paralysed and Epileptic in Queen Square in 1896. Following this, great strides were made, and during those early formative years of the specialty, many reflective thoughts were issued by the giants of the emerging specialty, notably Cushing, Dandy, Stookey, and Sachs to name but a few. In those early years the neurosurgeons more or less were delivered from the bellies of the general surgeons. Training was by preceptorship and not by formally structured residency programs. Advances in techniques and diagnostic methods were slow and painful, and certainly, in the earliest years, were guided primarily by the medical neurologist. The surgeon then was, in effect, but a tool in the hands of the neurologist. As the budding specialty progressed, neurosurgeons rapidly developed neurological skills which led them naturally to the development of their own departments. This fostered the development of the more surgical types of diagnostic tests such as ventriculography, pneumoencephalography, and angiography to supplement the classic neurological examinations.

Cushing, in his Presidential Address at the 49th Annual Meeting of the American Neurological Association in Boston in May, 1923, said: "Unquestionably, if the future neurologic surgeon is to do the thing properly, his training will demand a longer preparation than that needed for any medical speciality—and not many will have the industry, the patience, or the intellectual gifts combined with the manual dexterity, necessary to

see it through" (1). This then, was the first foundation upon which future generations of neurosurgeons were to build their experience and their maturity. Formal residency programs began to replace preceptorships in the late thirties in order to better allow for this formally structured training.

Just what kind of a person is the present day neurological surgeon? First, he must be a physician who has been attracted by the disciplines relating to the nervous system in its broadest sense. Secondly, he must be a physician who feels the need for a continuing inquiry into the surgical treatment of diseases of the nervous system. The cut of his jib must be bent to the demanding disciplines of the most complicated body system.

Cushing, in that same Presidential Address before the American Neurological Association in 1923, said: "Traditionally the surgeon is cut from a different piece of cloth than the physician and, because of the time-consuming and fatiguing nature of the manual work he is called on to perform, his intellectual attitude toward his activities tends to be on a lower plane than the physician's; so at least they give us to understand. Admittedly such an attitude is likely to be held by those who either do their work to order or who largely limit themselves to the cut and dried procedures of an established sort, which require little preliminary study and have a fairly certain outcome. But in a new and difficult field like ours this is an impossible attitude if we are to make any significant advances and are to hold the confidence of our fellows" (1).

What has brought us to the field of neurological surgery and disorders of the nervous system? It has not necessarily been the glory or the shortness of the work day nor the financial renumeration, for all of us might have achieved greater heights in other fields of endeavor not necessarily related to medicine and at less cost in energy and time. What then has lured us to this special area? Obviously the basic substrate has been an intense interest and curiosity regarding the nervous system, a complex but singly functioning unit. There are those among us who originally felt that medical neurology was their area of preference, but who at some point in their training period felt that perhaps the surgeon's hand could effect more direct remedies upon many of the disorders of the nervous system. All of us have been stimulated by a teacher during our medical school careers, or our internships, or early residency years. This particular teacher obviously had been stimulated by his forebears and in turn carried the torch of inquiry to yet another individual. This has been the basic groundwork, if you will, of the continuing development of the speciality.

Returning to the question "What kind of a person is a neurosurgeon?". I have attempted, in the preceding comments, to identify the groundwork for his basic native inquisitiveness. The second point I would like to enlarge is that of the peculiar trait of every neurosurgeon to develop a compelling

self-discipline and a continuing desire to self-evaluate his level of competence and performance. Cushing, in the previously quoted comments, alluded to this when he contended that the surgeon is traditionally cut from a different piece of cloth. My personal opinion is that the weave of the cloth making the body of the neurosurgical cloak is ever so tightly interwoven with strong internal desire on the part of the neurosurgeon to excel. How then does this internal discipline come about during the formative training years?

Obviously the training of the modern day neurosurgical resident must result in an extremely thorough understanding of the form and function of the nervous system as well as its pathological states. This dictates then that he must have formal training in fundamental surgical principles, neuroanatomy, neurology, neurophysiology, neuropathology, neuroradiology, and an exhaustive experience in surgical judgment and operative techniques. Much of this early foundation is in the form of didactic and formal exposures to these basic sciences. This knowledge may be gleaned in conferences with his chief of service, the faculty of the neurosurgical department, and also in a continuing program of self-education, directed by the faculty of the neurosurgical department in which he is training, but executed through the individual's own personal discipline which requires him to always seek out the basic answers to questions that arise. During these formative months and years, he should then develop, at times by example and on other occasions through internal discipline, a sense of direction and a scale of value judgments which, when crystallized, allow the development of what we commonly refer to as judgment and surgical maturity. His chief of service and peers, both at resident and faculty levels, must exemplify this same internal discipline and drive for new information and continued excellence, lest by their laziness or indifference they set a poor example for the budding neurological surgeon.

During these formative years of training, the resident at all levels of training is under close scrutiny by his chief of service, his senior residents, and the faculty of the department. The scrutiny of his teachers and fellow residents in his first exposure to "peer review" for the career which he has chosen. Like it or not, he learns to accept constructively the criticism of his chief. His chief, by example, teaches him judgment and compassion during the many months and years of exposure to the various disease entities and pathological conditions encountered. I believe that the faculty of such a training program must instill in the individual trainee the following basic traits: (1) compassion for his fellow man; (2) a burning drive to gain new knowledge; (3) the faculty for maintaining a level and cool head during times of momentous decision; (4) the desire to self-evaluate one's knowledge and skills.

Assuming that we all as teachers have fulfilled the above criteria in the training of a neurological surgeon, where then do the practicing neurosurgeon's responsibilities lie as he enters the threshold of practice, be it in an academic or nonacademic environment? His medical responsibilities are to his patient primarily. I will not at this point enlarge further upon the Hippocratic Oath or the ethical and moral responsibilities of the physician to his patient, other than to say that without a moral and ethical approach to every individual patient there is no honest compassionate practice of medicine. The era of needless surgical procedures has all but passed. Yet, unfortunately, there are still those surgeons who would shade the picture just a wee bit if things were going a bit slow. Fortunately, these men are in the minority and are fast found out by their colleagues—a form of peer review.

The neurosurgeon above all must be honest unto himself. He must ask himself the questions: Is my judgment in the best interest of the patient? Is this procedure, be it diagnostic or surgical, indicated? Am I operating too many discs or discs that otherwise might get well with a few more days of conservative therapy? Is my surgery and my knowledge abreast of current information and current procedures? This is, in its purest form, self-discipline, an internal review of one's worth.

What should the neurosurgeon's responsibilities be to his hospital? Should he practice in an array of hospitals within the community or should he attempt to establish a primary or base unit? To the new neurosurgeon, practice will begin slowly and he is sorely tempted to affiliate himself with the staffs of several or many hospitals in order to make a living. But he will soon find himself bogged down in the performance of his daily activities in two to four hospitals, sometimes at a great distance from each other, and will find that he spends most of his time in transportation between hospitals, giving relatively little of his time to the care of his patients. What of the neurosurgical emergency that arises in a postoperative patient in the middle of the night in a small community hospital with no house staff and an inadequately trained general nursing staff? What then of his moral, ethical, and legal responsibilities? Would it not have been better for him to have established a base hospital initially, holding to the basic tenets that a base hospital and a slowly developing practice, which is respected by his colleagues, is better than an itinerant milk route with which he gives service to many but good care to only a few? Pressures will be brought to bear against the emerging neurosurgeon to affiliate himself with this or that hospital under the guise of statements such as, "We want a complete hospital and your services are sorely needed," or "We feel we are best equipped to handle your specific problem." At this point he should seriously look at each of these hospitals and say to himself "Why hasn't this particular hospital

been able to develop a neurosurgical unit or center prior to my arrival in town?" "Why haven't other neurosurgeons in practice in this community affiliated themselves or made this their primary base hospital?" Perhaps he would have been much better off to have begun his practice, if at least temporarily, in association with an older established neurosurgeon. If he is primarily concerned with the establishment of a reputable practice and assurance of acceptance in the community, he must seriously consider these many facets of the situation.

The budding neurosurgeon must be willing to accept the socioeconomic responsibilities that go with practice in this modern day. He must be willing to serve on hospital committees such as tissue audit committees, medical record audit committees, utilization committees, peer review committees, and credential committees if he is to improve not only his base hospital but his practice of medicine as well. It is only by continually resurveying our hospitals and our practices that we may upgrade them and change that which is outmoded or outdated.

Lastly, he must continue his role as an educator, for he has been educated by those who preceded him and, in turn, must accept eagerly and willingly the responsibility to aid in the education of those behind him, be they nurses, interns, residents in other specialties, or neurosurgical residents.

And now I should like to turn to the responsibilities of the individual in one specific area, namely the type of practice the individual will conduct. Most of us began the practice of neurological surgery through the referral of emergency room patients and by sympathetic referring physicians. The young neurosurgeon may find himself virtually in the role of a pure medical neurologist. He may eventually become involved in conducting neurological evaluations to the exclusion of this surgical practice. If he is not careful and wary he can easily become overly involved in the ever engulfing area of medicolegal evaluations. I personally have seen respected colleagues in various communities become thus involved and known as plaintiff witnesses to the detriment and exclusion of their surgical practices.

Each of us must continually assess and reassess our ethical performance and the type of practice we are conducting. "Am I doing too many discs? Am I doing questionably indicated procedures, diagnostic or surgical? Is the balance of my practice in proper perspective? Does it parallel other neurosurgeons of my vintage and comparable practice settings in various areas or communities across the country?" He must ask himself "Am I keeping abreast of the specialty and, in general, with newer developments in the study of the nervous system? Am I willingly accepting peer review by partners, associates, or colleagues? He must ask himself "Am I as good a neurosurgeon as I was when I finished my training program? Am I better or am I worse?"

If we are the same or less well informed, then we have not kept abreast, and certainly the opportunities for continuing education in 1972 are plenty. These opportunities for continuing education are available at the local, state, regional, and national levels. Become involved. Make it a point to attend at least two national meetings a year. Attend a postgraduate course. Brush up in an area in which you are deficient or in a new area in which you wish to further develop yourself. The complete neurosurgeon should be one then who is well informed and abreast of the developments in his specialty, both in practice and in surgical procedures. He should not be content to continue doing just his routine disc and head injury surgery with an occasional tumor or an occasional aneurysm.

We are all being reminded from time to time, both locally and at the state and national levels, that perhaps we are training too many neurosurgeons. Is this really true? If we look at the figures, with only 8000 brain tumors in the United States each year, and approximately 1800 board certified neurological surgeons and an additional 400 to 500 noncertified neurological surgeons, what would the division of labor be? What are we doing about the quarter of a million strokes that are occurring each year? Why aren't neurosurgeons taking more interest in the vascular surgery of strokes, of carotid lesions, rather than relegating it to the area of the general surgeon or vascular surgeon? What of the thousands of peripheral nerve lesions that are being attended by orthopedic surgeons and general surgeons? Practically all of the basic work in cerebrovascular disease and peripheral nerve surgery has evolved from the efforts of neurological surgeons. Possibly these are not as remunerative as some of the other cases, but our skills are needed here even more so.

It is certainly easier to hospitalize a patient for diagnostic studies rather than take just a few more minutes for a detailed and decent history and examination. The neurosurgeon who only does one or two brain tumors or aneurysms or an occasional cerebellopontine angle tumor should be referring these to a larger center or surgeon of more experience. This is not to say that he is not capable and competent. It is only to say that with this minimal exposure perhaps a better job can be done by an individual or a group with greater experience, whose techniques have been kept more abreast of the times. I am sure this latter comment will generate much discussion and comment, but I hope that if it does nothing more it will stimulate each of us to ask ourselves "What am I doing in my practice today, and how can I better my practice, my standards, my level of care?"

This then is the whole neurosurgeon. He may ask himself "What am I, who am I?" Hopefully he will maintain honesty with himself, intellectually, ethically, and morally. Who is he? He is the kind of man that each of us would like to have operate upon us to care for us if we were ill. Are you

this kind of neurosurgeon? Do you hold the confidence of your fellows, your colleagues, your peers? Are you really cut from a different piece of cloth, or is your fabric growing dim and threadbare?

I know you better. Do I know me better?

REFERENCES

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2. Macewen, W. Pyogenic Infective Diseases of the Brain and Spinal Cord. Meningitis, Abscess of Brain, Infective Sinus Thrombosis. xxiv, 354 pp. J. Maclehose & Sons, Glasgow, 1893.