THE EVOLUTION OF SURGICAL ONCOLOGY

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THE PRESIDENTIAL ADDRESS IS AN OPPORTUNITY to repeat things already said, to a sympathetic audience, and with no risk of immediate rebuttal. My topic is controversial, but this organization is already well rehearsed to hear a talk on surgical oncology. Dr. Arthur James suggested some specialized activity in this area, in his 1971 presidential address. In 1974, Dr. Robert Schweitzer devoted his address to the topic at hand and Dr. Alfred Ketcham, in the same year, gave the presidential address of The Society of Head and Neck Surgeons on the same subject. This concentration of attention suggests that perhaps its time has arrived.

The delineation of specialized, surgical activity in cancer is such a natural development that it should have occurred a long time ago. It should not have needed a concentrated effort on anyone's part, but rather it would have evolved naturally at an earlier time, unless it were retarded by other considerations.

It was not so long ago that the surgeons were virtually the only ones who treated cancer; the treatment of malignant tumors was a major concern of the surgeon, almost from the beginning. When x rays were found to affect tumors, the surgeons were among the first to adopt this new modality. Dr. Hayes Martin, a member of the James Ewing Society and initiator of the Society of Head and Neck Surgeons, spent much of his early career doing clinical research in radiation therapy. Dr. George Pack was a student of James Ewing and one of the great tumor surgeons. It is of some interest that Dr. Pack was board-certified in x-ray therapy, but not in surgery.

Modern chemotherapy, which began during the Second World War, marked the turning point of surgical domination in tumor treatment. There were some surgeons who readily accepted chemotherapy and, in general, they were the same ones who had believed in immunotherapy and had accepted such treatment methods as Coley's toxin. But there were other skilled surgeons who felt uncomfortable in this environment. Radiation, chemicals, and immune stimulation were not part of a general surgical training program. In the beginning, the interested cancer surgeon just grew up with these nonoperative treatment methods, but all too quickly, advances in knowledge in each of these areas demanded a concentration of time and effort that the average surgeon was unwilling to give. In the first place, he was happier and more comfortable in the operating room than he was on the wards, worrying about toxic reactions. In addition, the heads of the surgical programs in the academic centers were unconvinced that cancer surgery was an evolving specialty. It was felt that all surgeons should have a broadly based training and, in a certain sense, the general surgeon should remain a generalist. The concept was fostered that every good general surgeon would be a good cancer surgeon. The training programs in these centers, however, were limited to the operative management of the cancer patient and teaching on the overall care of the cancer patient was almost nonexistent. It was frequently said that there was more to surgery than cutting but, as far as cancer was concerned, the non-cutting aspects were ignored.

Another factor in the indifference to cancer surgery was the failure of the cancer surgeon to make his presence felt at the policy-making levels. I distinguish here between the surgeon doing cancer surgery and the cancer surgeon. The former was a skilled, intelligent surgeon, who had diverse interests in surgery. He performed well in the operating room and frequently developed new or improved opera-

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tions for cancer as well as for inflammatory conditions and trauma.

The cancer surgeon on the other hand, believed that the care of the cancer patient required a fulltime effort. The care of the patient after his discharge from the hospital was a continuing concern, and efforts at rehabilitation and preoccupation with the quality of survival were time consuming. Whether from lack of interest or lack of time, he was less concerned with trauma and inflammation. I think it is fair to say, however, that this early cancer surgeon exerted little, if any, influence in academic circles. Until recent years there were very few cancer surgeons who served as medical school department chairmen, or who were members of the American Surgical Association or the Society of University Surgeons. The reasons for this are not completely clear, for some of these men were surgical giants; however, they were few in number and, in general, were indifferent to academic recognition. The overwhelming majority of these early cancer surgeons in the United States were students of James Ewing and were affiliated with the Memorial Hospital. When the final records are written, James Ewing may well be remembered more as a teacher than a pathologist. It is he, more than any other man, who can be said to be the founder of surgical oncology in this country.

This was the situation at the time when my professional career began. Dr. Ewing and his students dominated the field of surgical oncology, and they were men who were experts in all the treatment modalities affecting cancer. But many of these activities rapidly became more complex, and it was difficult for one man to do all of them well. Radiotherapy became a full time specialty; the surgeon and diagnostic radiologist began to withdraw.

Some men, well trained in surgery, elected to continue as radiotherapists; others, prominent in radiotherapy, continued as surgeons. Shortly thereafter, the nonoperative management of advanced cancer evolved into the specialty of medical oncology. Immunotherapy was not, at that time, sufficiently developed to demand full time concentration, but it gradually has become respectable. Members of the James Ewing Society played prominent roles in all these developments; the names of Coley, Pack, Martin, MacComb, Stein, Farrow, Blady, Sharpe, Copeland, and many others, readily come to mind. It was indeed a crazy, mixed-up world.

But order followed chaos, and a new arrangement quickly began to come into focus in the 1950's. Medical oncology, radiation oncology, pediatric oncology, and gynecologic oncology are all now firmly established, recognized, and accepted. It was at this same time that surgical oncology was conceived, but its gestation period is only now ending.

Paralleling the developments in the oncological subspecialties, new cancer centers began to develop. Dr. R. Lee Clark surrounded himself with men of vision, some of whom had been students of James Ewing, and starting with a couple of army barracks, gradually built the M.D. Anderson Hospital. The Roswell Park and Ellis Fischell Cancer Centers, and the National Cancer Institute quickly came into prominence. Graduates of the Memorial Hospital training program left New York to affiliate with institutions in other cities. Their sound grounding in the fundamentals of cancer care, and their determination to concentrate on cancer patients, helped stimulate the acceptance of a recognized subspecialty in surgical oncology.

As time has passed, new leaders from these multiple institutions have broadened their base to include chemotherapy and immunotherapy as an integral part of the overall surgical care of the cancer patient. The process has now come to full circle, and surgical oncologists are again largely doing what they were doing 25 years ago. This development serves only to emphasize the wisdom of Dr. Ewing, who fostered the concept of total involvement in patient care.

It is difficult to define precisely what a surgical oncologist is, but Lord Kelvin wrote: "When you can measure what you are speaking about and express it in numbers, you know something about it." I shall therefore try to quantify my thoughts on surgical oncology.

At least one-half of being a surgical oncologist is being a good operating surgeon. A sound, basic and prolonged training in general surgery is essential. The surgeon who does not operate well will not command the respect of his peers and will not be accepted as a resource to complement the other disciplines in the overall care of the patient. The difference between the best and the worst is not all that great, but there comes a time when one man can successfully perform a difficult procedure and another man cannot. Resectability of a given cancer is sometimes a state of mind

of the surgeon and limited technical ability should not influence the decision. As Dr. Pack said: "The concept that surgical technique is unimportant is a myth, perpetuated by surgeons who are not good technicians."

The second half of the qualifications of a surgical oncologist is found in the fields of radiotherapy and chemoimmunotherapy. A training exposure to the x-ray treatment of tumors is essential to anyone expecting to provide optimal surgical care to patients with a wide variety of cancers. Its advantages and drawbacks are important, but even more important is a sound knowledge of its potential to complement the surgical treatment with planned pre- or postoperative irradiation. Consideration of x-ray therapy solely for surgical failures is no longer acceptable.

Chemoimmunotherapy was accepted by surgeons from the very beginning. Important contributions were made by surgeons in the early days, but as time passed, they played a lesser role. I have often reflected on the decline of nonoperative management of cancer by surgeons, and searching for the reasons is like putting one's finger on a piece of mercury. Nonetheless, I would like to discuss this with you briefly, since I think it is important to us.

One of the factors undoubtedly has been the emergence of medical oncology, but not surgical oncology, as an identifiable, recognized specialty. As the number of drugs increased and the various combinations and methods of administration grew, the need for a full time specialist to develop and evaluate new treatment programs became apparent. The chemotherapist was designed to fill that need. Some surgeons followed this route for awhile, but the rôle was too demanding of time and energy, so that nothing was left for the operative management. Faced with an either/or situation, the surgeon returned fulltime to the operating room, leaving the nonoperative management totally in the hands of the radiotherapist and the medical oncologist.

At about that same time, the concept was fostered that the surgeon had cut through the entire body of the cancer patient, into the mattress of the operating table and therefore, he had nothing more to offer in improving the results of cancer care. The future belonged first to the chemotherapist and a little later, to the immunotherapist. The surgeon became progressively less involved in the nonoperative treatment and surgical training programs became operating training programs. The relative lack of involvement of cancer surgeons at policy-making levels in the teaching institutions was disturbing.

I suppose this all represents growing pains, but it is little wonder that antagonism developed between surgical and medical oncologists. I find it difficult to put myself in the place of the medical oncologist, but having been a part of this transition period on the surgical side, I have some impressions which I hope are more right than wrong. I realize they suffer from generalization.

The surgical oncologist was unwilling to be a fulltime chemotherapist and was unacceptable as a parttime one. As time passed, new drugs were made available only to the medical oncologists, and there was constant pressure to regiment patient treatment into protocol study programs. Drugs were made available to those outside of these structured programs, long after their value had been demonstrated and the drug shortage relieved. The surgeon became annoyed, suspicious of reported results, and refused to become involved in any way. The surgical oncologist found it difficult to accept protocol studies, and drug evaluation where treatment was continued after failure of improvement seemed apparent. The medical oncologist felt that his surgical counterpart was afraid to give drugs in large doses for long intervals. If I may oversimplify a little further, it seemed that the medical oncologist looked upon drug evaluation as the first priority, and objective measurements as the sole criteria. The surgical oncologist was less scientific, more concerned with the quality of survival and was willing to accept subjective improvement as a part of the evaluation of treatment.

About 10 years ago, as I recall, the friction came to the surface and there was some heated discussion, which found its way in the public press. This is history now, and the only detailed recollection I have of this incident is Dr. David Karnofsky's statement that all the progress in medicine has come from men who have done too much.

Recently, there has been an increasing recognition on all sides, that this adversary relationship is harmful and must stop. There is also a growing awareness that surgical oncology must be a part of any major cancer program, if the program is to succeed. One problem that remains is the means of identifying the surgical oncologist. The radiation

oncologist, the medical oncologist, and the gynecological oncologist are all easily recognized. In programs requiring multidisciplinary involvement, the surgical oncologist has suffered from a lack of identity. A part of this stems from an earlier time, when all surgeons were surgical oncologists, and surgical management was operative management. No longer can the surgical oncologist be created by appointment; he must be trained and trained well, and continuously retrained in the nonoperative treatment of cancer patients. He probably will not want to participate in the early stages of development of new drugs. He may wish to share in the management of disseminated cancer with other disciplines. He will want to foster a team approach in developing programs designed to improve the results of curable cancer. It is obvious that the optimal care of the cancer patient is becoming a life-long task, involving the determination of genetic predisposition, the identification of high risk groups, multidisciplinary treatment, postoperative adjuvant therapy, and life-long followup. The era of the episodic management of the cancer patient is coming to an end. There will be those who will lament the further fragmentation of surgery and will oppose the identification of the surgical oncologist. There is a definite appeal to this "generalist" concept, but it has not supplied an answer to this important problem. If I may borrow a phrase, if the cancer patient is not treated by the surgical oncologist, he will be treated by some other oncologist.

The failure of delineation of surgical oncology has had some important side effects in education and training programs. I will briefly mention here the area of nursing care of the cancer patient. The recognition of the need for specialized nursing care has resulted in extra training and permanent assignment of nurses to emergency rooms, coronary units, dialysis programs, intensive care units, psychiatric units, etc. On the other hand, general duty nurses are rotated among general surgical floors where cancer patients are intermingled. Nurses often feel uncomfortable in such a situation and in some hospitals where nurses regularly inject insulin, antibiotics and a host of other drugs, they are reluctant or forbidden to mix and inject chemotherapy. A concentrated area of cancer care would clearly make for better nursing care, a better education program, and more efficient utilization of the surgeon's time. Oncology nurses's training programs are available and the surgical oncologist will welcome their graduates.

Clearly, the time has arrived for identifying the surgical oncologist. In a recent survey of the Medical Schools in the United States, 32 institutions were found to have a division of surgical oncology and another 11 were committed to developing one. Forty-three schools do not have one and there was no reply from 12. This is a remarkable change from just a few years ago. In addition, resolutions supporting the identification of the surgical oncologist have been passed by the James Ewing Society, The Society of Head and Neck Surgeons, The American College of Surgeons, The American Radium Society, and The American Association for Cancer Education. If the time has arrived, then some organization will be needed to represent surgical oncology. It seems so logical and so natural that the James Ewing Society should be that organization. A proposed amendment is before you to effect this change.

I have tried in this address to outline the developments leading to this proposal. This will be an important decision. But these are exciting times in our field and I am happy to have been part of them. Most of all, I am honored that this distinguished membership has allowed me to serve as its president during this past year. It is an experience that I shall never forget and I thank you sincerely.