Advances in Cancer Surgery

Edited by
JOHN S. NAJARIAN, M.D.
JOHN P. DELANEY, M.D.

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Preface

This volume was developed from a Continuing Education Course sponsored by the Surgery Department of the University of Minnesota. It is the third in a series of such books The Editors experienced some difficulty selecting a short title which would be representative of the contents. Although the material is oriented toward the general surgeon, many of the subjects fall in the realm of the oncologist, whatever his parent discipline. Malignancies of the gastrointestinal tract, liver, biliary tract and pancreas were not included because they had been dealt with in preceding courses.

The introductory paper by Robert Good was presented as the annual E. Starr Judd Lecture. It provides an exciting survey of frontiers in cancer management and of the many areas where basic sciences interface with clinical practice.

The first group of papers deals with the Principles of Cancer Treatment, including recent developments in chemotherapy, radiotherapy and immunotherapy. The second section discusses lymphomas, with special emphasis on the surgeon's role in diagnosis and treatment. The third series of papers covers malignancies of the head and neck. The fourth part of the book outlines current diagnosis and management of cutaneous malignancies, melanoma, squamous and basal cell carcinoma. The next section deals with intrathoracic malignancies, primary and metastatic. The sixth division is a series of discussions on the pathology and management of sarcomas. The next group of nine papers encompasses various aspects of breast cancer. Finally, there is a series of chapters dealing with miscellaneous topics: surgical techniques, pediatric malignancies and the problems of testicular and ovarian masses.

Included in the book are a number of panel discussions which were recorded during the course. These appear essentially as spontaneously presented although some editing was done to convert the spoken statements into acceptable written versions.

John S. Najarian, M.D.
John P. Delaney, M.D.

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E. Starr Judd Lecture

Progress Toward the Conquest of Cancer

Robert A. Good, Ph.D., M.D.

It is indeed a pleasure for me to return home to address my many friends on the occasion of the E. Starr Judd Lecture. This lecture has always been a highlight in our academic year. It reflects the extraordinary influence which the surgical discipline in Minnesota has contributed to the development of academic vigor. I am proud to stand here as a surgeon for the occasion. I would like to think seriously with you on the progress and potentialities of the Conquest of Cancer Program.

An amazing coincidence of forces in 1971 — strong lay leadership, with a scientific conviction that the time was ripe for acceleration of effort, bipartisan Congressional support, together with Presidential support — launched the Conquest of Cancer Program. The program was launched with great expectations and a very high, perhaps too high, public profile. Four years later we may be seeing adverse consequences of this high public profile. It has become popular in television shows, newspapers, news magazines, especially from New York and Washington, to raise questions and doubts about the wisdom and propriety of a program which will attempt to conquer a disease as difficult and complex as cancer by "throwing money at it." The management of the funds provided by Congress has been questioned, the preparedness of a segment of medical science to accept the challenge of cancer has been doubted and the strategy of the inquiry being developed has been challenged. Some critics cite data revealing that in the face of four years of a conquest of cancer effort, we have seen no relief from cancer,

Robert A. Good, Ph.D., M.D., President and Director, Memorial Sloan-Kettering Institute for Cancer Research, N.Y.

but have instead seen evidence that the disease is advancing. We have heard loud cries that the program is a failure. Concern that perhaps cancer, like life itself, cannot be understood or controlled has been put forth. Still others insist that the battle has been going badly and that something urgent must be done to revamp our strategy so that deaths from cancer can be reduced and the upward trend of this awful disease reversed. It has been pointed out repeatedly that major killer cancers still occur indiscriminately — even the two First Ladies of our land have been attacked — and there is little or nothing we can do about it.

A recent editorial in the *New York Times* likened the Conquest of Cancer Program to the awful war in Vietnam. We were admonished that those involved in the war on cancer keep seeing a light at the end of the tunnel when no such light exists. The argument was that, like the war in Vietnam, great sums of money are being spent and the light is not getting brighter nor is the end of the tunnel closer.

Even leading scientists like Nobel laureate James D. Watson have been highly critical of the Conquest of Cancer Program. Indeed, Watson has said in his most generous mood that we must be careful not to bite the hand that feeds us — too much. Terms like "boondoggle," "disaster" and "foolishness" have been used to describe the Conquest of Cancer Program. Some scientists have warned that support for cancer research diverts funds which could and should be used for other endeavors that may have greater likelihood of success. Such examples as research on hypertension, heart disease, arthritis, allergy and hematologic disorders have been cited. I have heard still others say that increased support and increased autonomy in management of the National Cancer Institute will ruin the NIH. This possibility has been considered alarming because the NIH has contributed much to the development of biomedical research and as a consequence has helped to place American biomedical research in a position of leadership throughout the world.

I do take the criticisms seriously. Although time will not permit me to develop my arguments sufficiently to meet all of these challenges, I would like to say to all of them, Bosh! The criticisms, however, are too serious and have too wide a representation to be dealt with in any offhand manner. I will

still say bosh! — that is my way, but then I will try to view the entire issue in a broader perspective and thus attempt to develop an appropriate defense. In this vein, I wish to present a few arguments and explanations and proceed to the important business of showing that the whole effort is appropriate and timely, that great strides *are* being made. I will also try to visualize through rational projections what must be taken as hopeful evidence that we will conquer cancer. By conquer, I mean we will develop the capacity to treat effectively cancers which do occur and to have effective means for prevention of most cancer.

The Scientific Criticism

First let us consider the scientific criticism. We must understand the nature of scientific inquiry because science itself is a process in which criticism stands at the core. Scientists basically work from creative impulses. After having developed a good idea we use all our resources to gather information as favorable as possible to support those impulses. We try to guard against our enthusiasm by using appropriate and sometimes elaborate controls. But in reality, we must rely on and expect our fellow scientists to attack and criticize our findings with a callousness which will reject or establish their reproducibility. An hypothesis or theory which is truly valuable as a scientific instrument is one which is refutable with the proper experiment or test. Thus criticism is vital to science. Indeed, as has probably been shown in the workings of the best democratic systems and represented in two-party parliamentary functions, it is ultimately of value to all human endeavor. Nonetheless, overt destructive criticism is not always the best route to constructive political action, witness the choice of bipartisan efforts in very sensitive times. I feel certain, however, that the Conquest of Cancer Program has to date been strengthened by the criticisms of the scientists. I have seen the processes of review of science in the cancer program improved by those criticisms. I believe more money is appropriately being delegated to scientist-initiated, peer-reviewed grant-in-aid research than might have been so distributed without the criticisms. The contractual approach to research has been improved. Most of us have

cheered as contracts are in large measure being reserved for needs of the program which are so well defined that they can appropriately be contracted right now. The strident voices have helped us and should help us to make useful adjustments, avoid wastefulness and develop our support for the best and most contributory science. We must not, however, allow the criticisms of peers to make us lose our head of steam or cause us to deviate from our goal. Criticism should facilitate and improve the effort. It must not make us lose faith in such a noble program or downgrade it prematurely.

The Economic Perspective

I am no expert in economic matters, but I consider the issues so straightforward that they can be addressed even by one as inexpert as I am. The basic facts are these. Cancer as a disease represents an awful threat to each of us. Every American *must* face the issue of cancer because cancer is facing each of us directly. When we talk of 700,000 Americans being attacked by cancer each year, we are not speaking of a distant battlefield in Vietnam. For one in four of us this battlefield will occur within our own bodies. It is nothing like a Vietnam war with far distant battlegrounds and confused and complex issues. Cancer is a problem for us, our families, our closest friends. For 375,000 Americans *each year*, unless science can change the odds, this means untimely death from a disease we can recognize and define. It means death from a disease that often destroys us in most demeaning and sometimes humiliating ways. Cancer is called by some the second leading killer, but our fears, hate and loathing of this disease for its *manner* of killing reflect our recognition of cancer as the leading medical problem of the Western world.

To fight cancer, so immediate and abhorrent to us, we have, through our government, been supporting scientific inquiry on cancer for 53 years. Our government investment from the time the first grant was made in 1922 (to the Department of Public Health at Harvard University) until yesterday has involved an aggregate investment only slightly greater than that required to put that last big space satellite into orbit — between $3.5 and $4 billion. This includes all of the money spent by the National

Cancer Institute since it was established in 1937 and the entire presidentially led Conquest of Cancer Program over the past four years. By American standards, this is not a huge undertaking or a huge investment. I think the real question: "Are we taking the problem seriously enough?" could be raised. There is no doubt that we as a nation can and must afford, at least, an investment of the magnitude of the task undertaken. Since in reality we have devoted only relatively small proportions of our resources to this vital struggle, this should be the strongest argument that funds must not be diverted from other biomedical research. Support for research on other diseases and for the basic science necessary to establish a strong technology and to develop the disciplines of chemistry, physics, mathematics, statistics, biochemistry, botany, biology, molecular biology, microbiology and virology so that cancer and other biomedical problems can be addressed with a science adequate to the needs must not be diverted. We are not throwing too much money at cancer. My question is whether we are making sufficient funds available to do the job as rapidly as is possible with our present and potential scientific bases. From what I have seen I rather doubt that we are.

During the four years of the increasing support for the Conquest of Cancer Program we have seen a carefully graded increase of funding so that another essential question — "Is the money being spent wisely?" — can be answered affirmatively. This question deserves careful consideration from scientists, from the public and from Congress supporting this program. Partly because of the careful attention given to the program by the scientists, Congress and the public, partly because of the gradual building and partly because of sound leadership from the start, the Conquest of Cancer Program represents sound science from which we rightfully can expect so much. Support for major Cancer Centers has been kept low and has been only enough to let them get started. Only as their science has developed so that it competes through peer review have substantial funds been provided for these Centers. I believe this to be a healthy approach and one that assures that this major and difficult scientific problem will be addressed with the best possible science that can be mustered. The Cancer Centers are not havens or ivory towers free from review or criticism; they