



Sowing the Seeds of Surgical Oncology

Jatin P. Shah, MD, PhD(Hon), DSc(Hon), FACS, FRCS(Hon), FDSRCS(Hon), FRCSDS(Hon), FRCSI(Hon), FRACS(Hon)

Memorial Sloan Kettering Cancer Center, New York, NY

Some of the oldest mentions of cancer and its surgical treatment appear in the Egyptian papyri, with treatment of breast cancer using cautery destruction described about 1600 BC. The only cancers diagnosed in those times were the visible ones, on the skin and the breast, because no means existed to diagnose other “internal” cancers. Hippocrates, Celsus, and Galen (AD 100–200) did mention surgery for breast cancer, and Leonidas (AD 500) was the first to perform a mastectomy with cautery.¹

Not much happened in the subsequent millenium, until John Hunter, considered by many to be the father of surgery, introduced surgical procedures for treatment of diseases in the seventeenth century. Rapid progress occurred in the nineteenth century on both sides of the Atlantic with the introduction of several “new operations” by numerous trail-blazing surgeons such as Theodore Billroth and his trainees, Theodore Kocher and Franciszek Jawdynski, to name a few in Europe, and Samuel Gross, J. Marion Syms, Solis Cohen, Charles Mayo, George Crile, and others in the United States. Nearly all of these men were general surgeons.

The availability of general anesthesia in the first half of the nineteenth century, the later introduction of aseptic techniques by Lister, the availability of blood transfusions in the early part of the twentieth century, and the introduction of antibiotics in the post-World War II era gave a great boost to surgery in general and cancer surgery in particular. However, William Stewart Halsted is credited as the Father of cancer surgery in the United States. Halsted

described the anatomic basis and technique of radical mastectomy for breast cancer, which remained in vogue for nearly 75 years. George Crile is credited for introducing the need for systematic clearance of cervical lymph nodes and for describing an operation called radical neck dissection. That operation also remained the standard of care for neck metastases for more than 75 years. Newer operations were developed for cancers of the stomach, esophagus, colon, bladder, and prostate.

Consonant with this rapid growth in surgery, discovery of x-rays by Roentgen and radium by Madame Curie opened new avenues for treatment of cancer. In the early part of the twentieth century, many surgeons interested in cancer surgery were also trained and involved in using radium and x-rays in treating cancer.

After the establishment of Memorial Hospital, the first dedicated cancer hospital, in New York for treatment of cancer and allied diseases, centralization of cancer treatment began to develop. James Ewing, a pathologist, was appointed as the General Director of the Hospital. It was his vision to foster surgery as the mainstay of cancer treatment, and he sensed the need to strengthen the specialty of surgical oncology by developing several subspecialties, with the establishment of the Head and Neck Service in 1914, the first subspecialty surgical service at Memorial Hospital.

The rapid growth of surgery in the treatment of cancer at the turn of the nineteenth century was dampened a bit with increasing use of radium and x-rays for cancer treatment in the first half of the twentieth century. However, dismayed by the poor results from radiotherapy, general surgeons interested in cancer continued to introduce increasingly radical specialized operations for cancer, particularly in the Post Second World War era. The commando operation for oral cancer (removing intraoral cancer, mandible and cervical lymphnodes) popularized by Hayes Martin of New York and pelvic exenteration for cervical cancer (removing

uterus, urinary bladder, and rectum) introduced by Alexander Brunschwig of Chicago stand out among the radical operations with improved outcomes.

General surgeons were increasingly interested in these radical operations for cancer, and many of them came for training to Memorial Hospital in New York, considered to be a “mecca” for advanced training in cancer surgery. Many other institutions in the United States, such as the Mayo Clinic, Lahey Clinic, and Cleveland Clinic, among others, also offered training in cancer surgery. These general surgeons trained in cancer surgery called themselves “cancer surgeons” and were considered a cut above the community general surgeon because of their expertise in performing radical surgery for cancer. A large number of surgeons, not only from the United States, but from all parts of the world came to Memorial Hospital for training. The “alumni group” was enlarging.

To recognize the vision of James Ewing and to honor him, Dr. William Stewart MacComb, then an assistant surgeon in the Head and Neck Service working with Dr. Hayes Martin at Memorial Hospital, took the lead and was joined by several others, most of whom were Memorial graduates, to establish the James Ewing Society in 1940.² This was largely an alumni society of cancer surgeons and a few non-surgeons, nearly all of whom were trained at Memorial Hospital. The annual cancer symposia of the James Ewing Society were the most intellectual meetings presenting state-of-the-art approaches to the treatment of cancer for the next three decades.

With the introduction of nitrogen mustard in the post-war era and the later introduction of other chemotherapeutic agents, initially for leukemias and lymphomas, but later for solid tumors, a new speciality was emerging among internal medicine physicians who became involved in the treatment of cancer, initially cancer of the hematopoietic system and later solid tumors. These “chemotherapists” called themselves “oncologists,” and for a time, this term was misinterpreted by the general public, leading them to think of an oncologist as an “overall cancer specialist.” Later, the term “oncologist” was modified to be more precise, and these nonsurgical physicians largely involved in the treatment of cancer with systemic therapies were called “medical oncologists.” Concurrently with this, the field of radiation therapy also was advancing, with the development of new technologies realizing the potential of combining radiotherapy with surgery. The radiotherapists also changed their identity in the 1970s, calling themselves “radiation oncologists.” Therefore, in this rapidly evolving specialty of oncology, where does the cancer surgeon of the twentieth century fit? How do these cancer surgeons identify themselves and

distinguish themselves from the community general surgeon? Membership in the James Ewing Society was an unofficial recognition of such a qualification. But most members of the Ewing Society were alumni of Memorial Hospital. Furthermore, numerous other institutions in the country were giving similar or equally good training in cancer surgery such as the M D Anderson Hospital, Mayo Clinic, Cleveland Clinic, Roswell Park Institute, Johns Hopkins, and many others. Several departments of surgery in major university centers also were training good cancer surgeons. Thus, a need arose to coin a name for the specialty of cancer surgery (surgical oncology) and to form a national body, with provision of regular conferences for these cancer surgeons to present their research work and exchange experiences and expertise.

Because the specialties of medical oncology and radiation oncology already were well-established, the name “surgical oncology” was a natural. However, much debate occurred among members of the James Ewing Society and nonmembers who were surgical oncologists trained elsewhere regarding the establishment of two societies with the same goal and purpose, namely, fostering the specialty of surgical oncology. The vision, wisdom, and counsel of three prominent cancer surgeons in the 1970s, Harvey Baker of Seattle, Edward Scanlon of Chicago, and Murray Copeland of Houston, eventually led to a change in name for the James Ewing Society to the “Society of Surgical Oncology” (SSO) in 1975, with the aims of encompassing ALL surgeons trained in cancer surgery (surgical oncology) and advancing the field of surgical oncology. The name of Dr. Ewing was recognized by creating the “The James Ewing Foundation” of the SSO.

The vision of Dr. William MacComb, who saw the need to establish a society of surgical oncologists in 1940, has come to fruition and has stood the test of time. The seed of such a society has grown to a robust tree, which currently has come to bear fruit 80 years later, with the SSO emerging as the strongest global multidisciplinary society of surgical oncologists promoting and fostering research, education, and advances in patient care.

REFERENCES

- Lawrence W. History of surgical oncology. In: Norton JA, et al. (eds) *Surgery*. Springer, New York, NY, 2008.
- Balch CM. Special article celebrating SSO 80th anniversary: William Stewart MacComb—The father of the Society of Surgical Oncology (SSO) and a pioneering surgical oncologist. *Ann Surg Oncol* 2020. <https://doi.org/10.1245/s10434-020-08340-w>.

Publisher’s Note Springer Nature remains neutral with regard to jurisdictional claims in published maps and institutional affiliations.