Cancer’s story

A Columbia University researcher chronicles where our fight against cancer has taken us.

REVIEW BY CHARLES R. MEYER, M.D.

Disease is a person. Like an uninvited party guest, it enters unbidden into a patient’s life, sometimes with subtle introductions, sometimes with brash announcements. It confronts its victims in a very personal way, starting a dialogue that can go on for years. The patient gets to know this guest intimately, sampling his character and then reacting to his fury and calculating how to rid him from his or her life. So it’s not inappropriate to call a history of a disease like cancer a “biography,” which Columbia University cancer clinician/researcher Siddhartha Mukherjee does in his book The Emperor of All Maladies: A Biography of Cancer.

Like the tales of most diseases, the story of cancer is an odyssey of discovery that involves physicians and researchers meandering among known medical knowledge and, with sagacity and serendipity, pushing understanding and treatment of the disease toward greater refinement. Mukherjee reaches back to the age of Galen, when physicians thrashed among the humors to find a coherent explanation for tumors and struggled to find options to treat them, when “the idea of surgical removal of cancer as a curative treatment was entertained only in the most extreme circumstances. When medicines and operations failed … [they employed] an intricate series of bleeding and purging rituals to squeeze the humors out of the body as if it were an overfilled, heavy sponge.”

Few improvements on leeches and purging were made until anesthesia’s advent and Lister’s antisepsis revelations in the mid-19th century unleashed surgeons to tackle the excision of cancers in all corners of the body. And excise they did, cutting ever-widening swaths around tumors. The guru of this approach was Johns Hopkins surgeon William Halsted, who in 1882 devised and promoted the radical mastectomy as the operation to treat breast cancer. Despite the fact that “the superiority of radical surgery in ’curing’ cancer still stood on shaky ground,” Halsted’s doctrine of “radicalism” ruled cancer therapy for decades, “fossilizing into dogma,” according to one historian.

Even as Halsted’s radical surgery dominated thinking, others were searching for the “magic bullet” described by physician Paul Ehrlich that might take cancer treatment out of the hands of surgeons. The first bullet ironically emanated from the battlefields of World War I, when doctors treating victims of mustard gas noticed patients’ precipitous drop in blood counts. This observation led to the first use of nitrogen mustard for treatment of lymphoma in 1942. In steady succession, 6-mercaptopurine, antifolate drugs and cisplatin were thrown at cancers, in hopes of striking the right balance between toxicity and therapy.

Yet all these efforts seemed like a game of blind darts, never targeting a known property of cancer. They were blunt tools at best. With the advent of tamoxifen, which aimed at the newly discovered estrogen receptors on breast tumors, cancer therapy entered the era of designer drugs. At the same time, the concept of adjuvant chemotherapy that targeted undetectable tumor cells was born. Mukherjee calls these “brave new paradigms of treatment, [which] had thus arisen out of the ashes of old paradigms, Halsted’s fantasy of attacking early-stage cancers was reborn as adjuvant therapy. Ehrlich’s ‘magic bullet’ for cancer was reincarnated as antihormone therapy for breast and prostate cancer.” The discovery of the genetic basis of cancer and oncopgenes triggered therapies pinpointing DNA-based cancer etiologies, thus catapulting current day oncology into refined strategies undreamed of by early researchers. We abandoned earlier approaches that directed therapy at cancer’s two known deficits—local occurrences that can be removed and rapidly growing cells that can be killed by meds that target them.

Mukherjee weaves story after story of discoveries and developments in the treatment of cancer with those about the power and the politics necessary to keep the research advancing. His heroine in this battle was socialite Mary Lasker, who devoted much of her life to promoting cancer research through what became the American Cancer Society. Among the “fiery activists” pushing these campaigns, Mary Lasker was “its nucleating force, its queen bee,” according to Mukherjee.

In a mere and masterful 470 pages, Mukherjee has sketched the first years of cancer’s life. It’s not dead, so its story continues. MM

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