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A Biography of Cancer

Riveting Pulizter-winner Tells the History and Science of Cancer

Oh, cancer. A quarter of us will get it in our lifetimes and that number is growing. *The Emperor of All Maladies* is a biography of this terrible disease. It begins with the first record of cancer in ancient Egypt and takes the reader through a millennium of attempts to treat the monster.

Most of the treatments were utter disasters. Of all the humors Hippocrates used to describe illness, the black bile of cancer was the only one that didn't actually exist. Medieval attempts in the age of bloodletting naturally failed. “If a tool fell on the blood-soiled floor,” Mukherjee writes, “it was dusted off and inserted back into the pocket—or into the body of the patient on the operating table.”

It was in the late 1800s that cancers were first surgically removed. This too went terribly wrong, with doctors cutting away much more than cancer in an attempt to get ahead of the disease before it spread. Alas, these “radical mastectomies” were a failure: if the cancer was to metastasize, the patients died anyway and if it wasn't, the radical mastectomy was unnecessary. What may have seemed like a good idea in 1890 continued well into the 1950s.

The age of radical surgery ended as the age of chemotherapy began. And again when chemo only worked for some, doctors responded with the strategy "more is better." The quest was to see how much cancer they could kill without killing the patient. A doctor by the name of Bezwoda had stunning results with patients that he'd doused with lethal quantities of toxins. The patients were given bone marrow transfusions to survive the poisons. But his results couldn't be duplicated. Most who survived this gruesome treatment got a cancer from the chemo drugs they'd been treated with—and the second time around it was far deadlier. Bezwoda was proven a fraud in 1999.

Thus it wasn't until two millennia had passed that doctors began to make real progress in the war on cancer. Instead of grasping blindly for a cure, the scientists began to unravel the genome and understand cancer at a cellular level.

Even if he hadn't won a Pulitzer for *The Emperor of All Maladies,* it would be appropriate to be jealous of Siddhartha Mukherjee. The man is an oncologist but from the way he writes you'd think he had a creative writing degree. “Medicine begins with storytelling,” he says. “Patients tell stories to describe illness; doctors tell stories to understand it. Science tells its own story to explain diseases.” Despite more science education than I received in my seventh grade biology class, *The Emperor of All Maladies* is never a dry read. The doctors and scientists are more than historical figures, he describes their character, appearance, and whether they clashed with their bosses or found a magical synergy with their lab partners.

The stories have a setting, too. The cheerful clinic where Farber sought a cure for leukemia had whirring carousels, an electric toy train—and scores of dying children. Mukherjee describes it

“Disney World fused with Cancerland.” Contrast this with the lab where Thad Dryja searched for the gene that caused eye cancer. Nicknamed “the Eyeball,” Murkherjee writes, “With its proud display of nineteenth-century eyeglasses and lenses in lacquered wooden vitrines, [it] was almost self-indulgently anachronistic.” Despite covering two thousand years of research, Mukherjee masterfully gives just enough detail to make the characters and settings real.

Equally important, the stories are put in their historical context. The rise and fall of lung cancer is tied to the excesses of the tobacco industry. The AIDs movement to get experimental treatments for dying patients is tied to the demand from patients for more radical chemotherapies. In 1995 Brian Druker suspects he's found a cure for a rare form of leukemia, but the pharmaceutical company that owns the research doesn't think the clinical trials will be worth their expense. He vows to find a chemist to make it, or, in the worst case, make it in his own basement. In 1984 Barry Marshall thought he'd found the cause behind gastritis and a particular stomach cancer. But with his grants in jeopardy, his experiment stalled, and no ethical way to give gastritis to healthy volunteers, he ate the pre-cancerous bacteria himself.

Cancer has a reputation for the cure that kills and many wonder if it would be better to just stay home and die in peace. Indeed, in *The Emperor of All Maladies*, author Siddhartha Mukherjee tells that in early chemo wards there were high fences to keep the patients from jumping off the roof to end their misery. Early chemo drugs were so toxic that on average patients vomited twelve times a day.

How did we reach a place where doctors decided to treat an illness with a cocktail of poisons? What kind of sickness inspires such a response? *The Emperor of All Maladies* is the answer to that question.