

FEATURE

Homage to M. Vera Peters, MD

Joan Reinhardt-Reiss, MS, and Sarah S. Donaldson, MD



Stanford University Medical Center, Stanford, California

Received Dec 30, 2014. Accepted for publication Dec 31, 2014.

Few physicians have created a major impact in multiple areas of professional life. However, Dr Vera Peters (Fig. 1) is one who not only excelled in medicine and radiation oncology but also served as a mentor for many physician investigators and was an especially effective role model for female physicians.

She was the doyenne of Hodgkin lymphoma, a disease considered fatal until she began to use extended field radiation to uninvolved nodal stations. Furthermore, when radical mastectomy was the sole option for women with breast cancer, she advocated for lumpectomy and radiation, common components of clinical practice today. Her extraordinary clinical ability and infinite intellectual curiosity enabled her to advance existing procedures and create new cancer treatments (1, 2).

Her strength of character, determination, and tenacity were all attributes that led to her eminence in radiation oncology. She possessed extraordinary clinical skills and a kind manner that enabled her to ascend rapidly and without hindrance despite formidable barriers. Without question, she demonstrated a path from which decades of female radiation oncologists have profited (Fig. 2). It is striking how Vera Peters spent her life paving the way for women to retain their femininity and be cured of their cancer while simultaneously influencing a multitude of young students and trainees.

Mildred Vera Peters was born in a rural area outside Toronto in 1911, the fifth and youngest child in a poor cattle-farming family. Her father died suddenly, so the children assumed major responsibilities. At age 11, she milked cows at 4 AM and drove a tractor, all before the school day began.

Her mother, Rebecca, a teacher, emphasized the importance of excellent grades and higher education. The

rural neighbors were baffled by these priorities because major schooling was deemed unnecessary in the agricultural world. The Peters siblings all completed university except brother Charles, who left school to manage the farm. After obtaining excellent high school grades, Vera Peters enrolled in the University of Toronto Medical School. The 6-year program was costly, and although she worked summers, her teacher-sisters and farmer-brother pooled their resources to cover her medical school expenses (3).

Peters developed a major interest in radiation oncology after hearing fascinating lectures from the chief of Radiology, Dr Gordon Richards. An innovative researcher and practitioner, Richards is sometimes called the father of radiation therapy in Canada (1).

Before Peters' medical school graduation, her mother, Rebecca, was diagnosed with breast cancer and underwent a Halstead mastectomy. When her breast cancer recurred, Richards used an avant-garde treatment, a cotton vest implanted with radium needles. Sadly, the therapy was unsuccessful, and Rebecca succumbed to the disease. This tragedy had a major impact on Vera Peters' decision to train with Gordon Richards as a radiation oncologist.

When her residency ended, she joined Richards' staff at the Ontario Institute of Radiotherapy of Toronto General Hospital. Although she cared for many cancer patients, Peters became dedicated to advancing treatments for both breast cancer and Hodgkin disease.

The earliest use of radiation therapy in Hodgkin disease is credited to the Swiss radiotherapist René Gilbert. In 1939, he reported long-term survival rates for certain selected patients. Like Gilbert, Gordon Richards and Vera Peters determined that radiation therapy was pivotal for both the clinically involved lymph nodes and the adjacent

Reprint requests to: Sarah S. Donaldson, MD, Stanford University Medical Center, 875 Blake Wilbur Drive, Stanford, CA 94305-5847. Tel: (650) 723-6195; E-mail: sarah2@stanford.edu

Conflict of interest: none.



Fig. 1. Vera Peters (1911-1994), a pioneer in research on Hodgkin disease and breast cancer, and role model for many physician investigators.

nodes suspected of harboring disease. Richards had purchased a 400-kilowatt X-ray unit, considered to be state of the art and the first such machine in North America. With this technology, higher radiation doses could be safely delivered without incurring skin damage. Richards believed that some Hodgkin patients were cured, because they were alive 10 years after treatment. He asked Peters to review the records of all their Hodgkin lymphoma cases.

After a full day of assessing and treating cancer patients, Vera Peters arrived home for the sacrosanct family dinner prepared by the resident housekeeper. Vera's young daughters discussed their day, husband Ken talked about his time as a vice-principal, and Vera fully connected with her family. After dinner, the girls did homework, and Ken worked on projects. Vera then began her clinical odyssey, fueled by coffee, cigarettes, and the occasional power nap. She plotted each patient's data on large graph paper that covered her dining room table, using the "computer tools" of that era: slide rule and adding machine. After 2 years of late nights, she declared, "I had demonstrated... through Dr Richards' experience... that Hodgkin's disease had a potential for cure."

In 1949, Vera Peters submitted her report to the Toronto General Hospital staff. A pathologist confirmed each Hodgkin disease diagnosis. Peters concluded: "The overall five year survival rate of 51% and the ten year survival rate of 35% in this series is considerably better

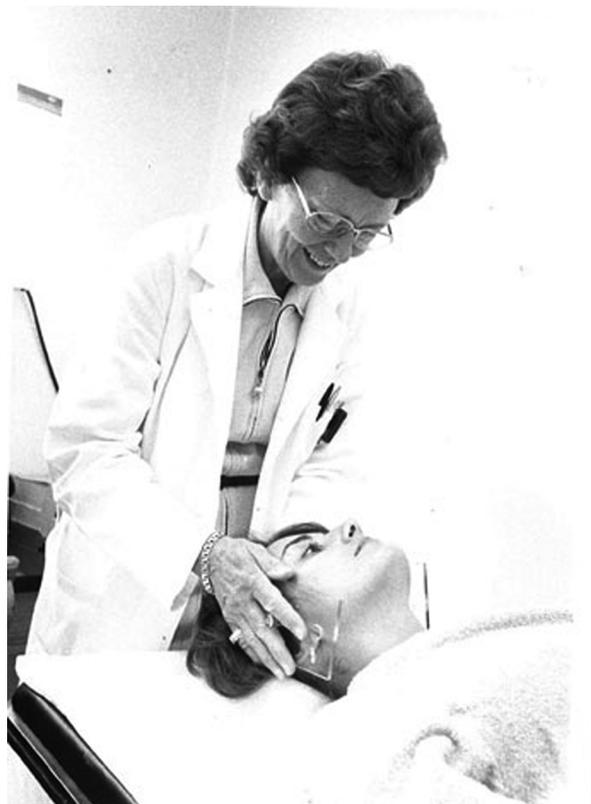


Fig. 2. Dr Vera Peters, an extraordinary clinician.

than any other survival rate reported in the literature to date."

A pale Gordon Richards attended in a wheelchair and felt a surge of pride as his protégée presented their pioneering results. Vera Peters was to continue alone, because the ailing Gordon Richards died shortly thereafter of leukemia, a common disease of radiologists in that radium-exposed era.

The Canadian Medical Association rejected her retrospective Hodgkin disease study when the editors claimed that there were "too many tables." This classic study was accepted in 1950 by the *American Journal of Roentgenology and Radiation Therapy* (4) and affirmed the potentially curative role of radiation therapy subject to the stage of the disease.

Vera Peters was nervous when she delivered her first international paper on irradiation results and Hodgkin disease in Mexico City (5). In the 1956 audience sat the brilliant young Dr Henry Kaplan, new chair of the Radiology Department at Stanford University. He recognized her genius, and during the next decades he proceeded to build on and expand her work. Henry Kaplan added sophisticated techniques that dramatically increased the survival rate of Hodgkin disease patients.

A landmark event occurred in 1965 with the first international Hodgkin disease conference. The proceedings were convened in Paris by Dr Maurice Tubiana, chief of the Radiation Department at the Institut Gustave Roussy, who recognized the need for a multidisciplinary approach.

Renowned specialists in hematology, surgery, medical oncology, and radiation therapy attended. Peters updated her work and included data from numerous patients with advanced Hodgkin disease who were 35% disease-free after 10 years. From this conference, interdisciplinary collaboration followed, and thanks to Kaplan's brilliant research and results, a new emphasis on randomized studies arose.

From the time of her mother's death, Vera had an interest in alternatives to radical mastectomy. In 1948, Gordon Richards published a paper about radiation treatment in breast cancer (6). Five years later, Vera Peters began by systematically categorizing the stages of breast cancer and treatment options without mastectomy. She never forgot her mother's pain and always understood the distress that women described from the disfigurement caused by radical mastectomy. Vera Peters also involved her patients in treatment decisions; a rather heretical approach at the time.

In a classic 1976 paper, "Cutting the Gordian knot in early breast cancer" (7), Peters poetically stated the analogous relationship between Alexander the Great slicing his sword through the fabled knot and the new modalities in breast cancer, meaning lumpectomy and radiation. Her "knot" was the overuse of mastectomy.

She detailed her 30-year study that involved hundreds of lumpectomy patients and an equal number of matched control individuals where excision and minimal radiation were compared with the prevailing radical mastectomy and increased radiation. When survival years and absence of recurrence were measured, the results were equal or slightly better with her minimalist approach. Peters concluded, "Prophylactic radiation and prophylactic mastectomy

could, with few exceptions, be eliminated in early breast cancer." In spite of her data, mastectomy remained the dominant breast cancer treatment, even when the disease was in an early stage.

Peters was adored by patients. Her quiet, understated manner belied her greatness as a researcher and a clinician. In the early years, she entered a stern medical world, which often doubted the ability of women to excel. Her epic list of publications, globetrotting lectures, and prestigious awards create a historical record of achievement. Physicians the world over admired her extraordinary abilities as a clinician. Gillian Thomas, a Toronto radiation oncologist, stated, "She left her footprints in the snow for us to follow."

References

1. Jacobs CD. *Henry Kaplan and the story of Hodgkin's Disease*. Stanford: Stanford University Press; 2010. pp. 103-110.
2. Shorter E. *A Century of Radiology in Toronto*. Toronto: Wells & Emerson Inc.; 1995.
3. In 1983, Charlotte DeCroes Jacobs, MD, conducted a lengthy interview with Vera Peters and has generously shared that valuable material.
4. Peters MV. A study of survivals in Hodgkin's disease treated by irradiation. *Am J Roentgenol* 1950;63:299.
5. Peters MV, Middlemiss KC. A study of Hodgkin's disease treated by irradiation. *Am J Roentgenol Radium Ther Nucl Med* 1958;79:114-121 (Presented at the 8th International Congress of Radiology, July 27, 1956, Mexico City).
6. Richards GE. A study of some of the factors which determine success or failure in treatment. *Br J Radiol* 1948;21:109.
7. Peters, MV. Cutting the Gordian knot in early breast cancer. Presented at the annual meeting of the Royal College of Physicians and Surgeons, Winnipeg, January 24, 1975.