

Breast Cancer in Canada: Medical Response and Attitudes, 1900–1950

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Most historiography concerning the treatment of breast cancer focuses on the radical mastectomy as the treatment of choice during the first half of the twentieth century. How frequently this surgery was actually used, however, has not been clearly determined. It was feasible only in cases that had been diagnosed early, and many women did not consult their doctors until their disease had progressed significantly. The debate among Canadian physicians, and others, regarding methods of treatment was accompanied by a similar debate over the best diagnostic method. Evidence is suggestive that Canadian physicians differed from their American counterparts in three areas: in not rigidly enforcing one-step surgery, in their willingness to use radium as an adjunct to surgery, and in their challenge to radical mastectomy. The discourse over treatment, diagnosis, and causes of breast cancer took place in a gendered context that involved the role of women in society as well as the function of their bodies.

L'historiographie concernant le traitement du cancer du sein soutient la plupart du temps que les médecins privilégiaient la mastectomie radicale pour traiter ce cancer durant la première moitié du XX^e siècle. On connaît cependant mal la fréquence de ce type d'intervention chirurgicale. Elle n'était possible qu'en cas de dépistage précoce et bon nombre de femmes ne consultaient leur médecin que longtemps après le début de la maladie. Le débat chez les médecins canadiens et des autres au sujet des méthodes de traitement se déroulait parallèlement à un débat semblable sur la meilleure méthode de diagnostic à employer. On sait que les médecins canadiens différaient d'opinion avec leurs homologues américains à trois égards : en ne pratiquant pas de manière rigide la chirurgie en une étape, en utilisant volontiers le radium comme traitement d'appoint à la chirurgie et en contestant la pratique de la mastectomie radicale. Ce discours sur le traitement, le diagnostic et les causes du cancer du sein se déroulait sur fond de débat touchant notamment le rôle des femmes dans la société et la fonction de leurs corps.

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CANCER — the word conjures up images of pain, sometimes mutilation, and too often death, and not a good death.¹ The way in which Canadian physicians responded to and treated breast cancer between 1900 and 1950 was influenced by debates over its treatment, diagnosis, and causes that took place in a gendered social and physical context. While the medical textbooks used in Canadian medical schools, Canadian medical journals, and patient records are major sources for this analysis, the discussion is not an insular one. Canadian physicians read the international literature, much of it reprinted or published in their journals. The textbooks teachers assigned to their medical students were, more often than not, British or American. Neither were Canadians slow to adopt new discoveries.

The years from 1900 to 1950 were significant for the medical profession in Canada. By the turn of the century, regular practitioners had developed professional associations, training in university medical faculties was the norm, and increasingly physicians used the language of science to convince Canadians of medicine's value. In the 1920s Frederick Banting's and Charles Best's "discovery" of insulin made Canadians aware, as nothing else had, of the value of medical research, and by the 1940s the use of antibiotics seemed to confirm the curative push of medicine. While the promises of scientific medicine were impressive, delivery on them was less so and contributed to the tension Canadian physicians experienced in other aspects of their professional lives. For example, many practitioners were uneasy about what they considered their lack of training. Medical competitors still existed and were reminders that not all Canadians had embraced belief in allopathic medicine. Although members of a profession, physicians were spread across a huge land mass and were caring for a relatively small population, both factors leading to a sense of isolation on the part of many outside the major urban centres. Within the profession, there were divisions between specialists and general practitioners. Many believed they were not paid enough for the work they did. Bolstered by the prestige of science, the profession was secure, but the individual practitioner did not always experience that sense of security.² That tension was evident in the responses to breast cancer.

The influence of the medical profession on women's lives also increased significantly in the first half of the century. Through the medical journals read by physicians and the popular literature read by women, practitioners proffered advice about and to women on a wide range of subjects, among them child-rearing, the safety of women's involvement in sport, whom best to marry, and the problem of infertility. Physicians intervened in some of the central experiences of women's lives, such as childbirth and menopause. They presented themselves as experts on breast cancer, putting themselves

1 For a discussion of images of cancer and people's reactions to them, see Susan Sontag, *Illness as Metaphor* (New York: Farrar, Straus and Giroux, 1977).

2 For a more detailed discussion of certainty versus uncertainty in medicine, see Wendy Mitchinson, *Giving Birth in Canada, 1900–1950* (Toronto: University of Toronto Press, 2002), chap. 1, "The Uncertain World of Medicine and Medical Practitioners", pp. 19–46.

forward as the best ones to interpret whether breast lumps or other signs of potential breast cancer were serious enough to pursue and, if so, how.

Much of what we know about the history of breast cancer and its treatment has been generated by the concern regarding cancer rates in recent years, the activism engendered against the radical mastectomy, and the attempt to explain the radical's dominance in breast cancer therapy.³ The literature emerging from that concern, both advocacy and scholarly, generally portrays the medical profession, largely composed of men, as historically antagonistic to women and the radical mastectomy as an example of that antagonism.⁴ While the focus on the gendered dynamic of breast cancer — its cause and treatment — is significant, it is not the only factor to emerge in the literature. Scholars, in particular, have placed breast cancer treatment within both the broader context of modern medical care and the health delivery system and argue that social context and politics framed the disease and its treatment.⁵

3 Globally, 560,000 women died from breast cancer in 1980. See Marilyn Yalom, *A History of the Breast* (New York: Ballantine, 1997), p. 232. In North America in the 1990s, one in eight women would develop breast cancer in their lives; Canadian figures indicated that between 1980 and 1988 the lifetime risk of Canadian women having breast cancer had increased by 15%. Each year in the early 1990s, more than 16,300 Canadian women contracted breast cancer and 5,300 died. For breast cancer rates, see Megan Williams, "Breast Cancer and the Environment", *Canadian Woman Studies*, vol. 14, no. 3 (Summer 1994), p. 7. For lifetime risk, see Rhonda J. Moore, "African-American Women and Breast Cancer: Failures of Biomedicine?", in Diane Weiner, ed., *Preventing and Controlling Cancer in North America: A Cross-cultural Perspective* (Westport, CN: Praeger, 1999), p. 38. Breast cancer was the most frequent cancer, accounting for 33% of cancers in women. See Statistics Canada, *Women in Canada: A Statistical Report*, 2nd ed. (Ottawa: Minister of Supply and Services, 1990), p. 126. It was the leading killer of women among the cancers (*Kitchener-Waterloo Record*, October 19, 1993, p. A1).

4 Earlier literature on breast cancer existed, but it tended to be non-historical, consisting of first-person accounts. The politicization of breast cancer is described in Patricia A. Kaufert's article, "Women, Resistance, and the Breast Cancer Movement", in Margaret Lock and Patricia A. Kaufert, *Pragmatic Women and Body Politics* (Cambridge, UK: Cambridge University Press, 1998), pp. 287–309. For advocacy and scholarly literature, see Sharon Batt, *Patient No More: The Politics of Breast Cancer* (Charlottetown: Gynergy Books, 1994); Rose Kushner, *Why Me?* (Cambridge, MA: The Kensington Press, 1982) and her updated version, *Alternatives* (Cambridge, MA: The Kensington Press, 1984); Anne S. Kasper and Susan J. Ferguson, eds., *Breast Cancer: Society Shapes an Epidemic* (New York: St. Martin's Press, 2000); Ellen Leopold, *A Darker Ribbon: Breast Cancer, Women, and their Doctors in the Twentieth Century* (Boston: Beacon Press, 1998). Liane Clorfene-Casten expresses a conspiratorial view in *Breast Cancer: Poisons, Profits and Prevention* (Monroe, Maine: Common Courage Press, 1996). She does not focus on the women as much as she does on "exposing systems that serve those who stand to profit from the application, sale, administration, and disposal of toxic substances to the detriment of the public health" (p. 9). Pamela Sanders-Goebel disagrees with the emphasis on gender and argues that radical surgery was not linked to gender, but rather to physicians' training to save lives at all costs. In her words, surgeons in particular "tend to treat the disease first and the patient second". See Pamela Sanders-Goebel, "Crisis and Controversy: Historical Patterns in Breast Cancer Surgery", *Canadian Bulletin of Medical History*, vol. 8, no. 1 (1991), pp. 85–86; Robert Proctor, *Cancer Wars: How Politics Shapes What We Know and What We Don't Know* (New York: Basic Books, 1995).

5 See especially Kasper and Ferguson, "Introduction: Living with Breast Cancer", in their *Breast Cancer*, pp. 7–8, 28; Barron H. Lerner, *The Breast Cancer Wars: Hope, Fear, and the Pursuit of a Cure in Twentieth-century America* (Oxford and New York: Oxford University Press, 2001); Leopold, *A Darker Ribbon*.

Recent studies have continued the examination of those themes and added the concept of women's agency, even as patients and sufferers from breast cancer.⁶ To date, most studies have been non-Canadian in focus.⁷

By 1900, other than palliative care, surgery, often in the form of the radical mastectomy, was the treatment of choice among physicians. Nonetheless, we still do not know what percentage of women with breast cancer underwent the radical mastectomy, suggesting that care must be taken in assuming its dominance at the therapeutic level. The focus of the historiography on the radical may reflect later concerns about it and a privileging of heroic medicine rather than the more mundane but more commonly provided palliative care. An examination of the Canadian context makes it clear that the radical did not stand alone. Radiation therapy as an adjunct to surgery was accepted widely in Canada. Governments responded to the health issue represented by cancer, and those efforts focused on the use of radiation diagnosis and therapy. In addition, a few Canadian physicians mounted challenges in mainstream medical journals to the radical mastectomy, reflecting a profession that was willing not only to engage the international literature but also to advance the debate. If some of the historiographical literature on breast cancer is to be believed, both the broad acceptance of radiation and the challenge to the radical would distinguish the Canadian situation from the American. In her study of the United States, Ellen Leopold compares the willingness of Canadian physicians after World War II to accept radiation in combination with less invasive surgery to the unwillingness of American practitioners to do so.⁸ The early experience with radiation may help explain that later acceptance; as Canada's leading historian of radiology, Charles Hayter, points out, government support of radiation diagnosis and therapy was reflective of Canada's greater willingness than existed in the United States to accept more government involvement in health care.⁹ Barron Lerner, in *The Breast Cancer Wars*, also argues that the controversy over the radical (when it emerged) was less heated and began earlier in Canada than in the United States.¹⁰ None of this implies that radiologists, government support of radiation, and questioning of

6 See Lock and Kaufert, "Introduction", in their *Pragmatic Women and Body Politics*, p. 12, and especially Kaufert's article in the collection, "Women, Resistance, and the Breast Cancer Movement", pp. 287–309.

7 Charles Hayter has recently written that "the history of cancer in Canada has remained relatively unexplored". See Hayter, "Cancer: The Worst Scourge of Civilized Mankind", *Canadian Bulletin of Medical History*, vol. 20, no. 2 (2003), p. 252. Patricia Jasen is one historian who has examined some aspects of breast cancer in Canada, but she does so in a tangential way and does not focus on the first half of the twentieth century. See her "Malignant Histories: Psychosomatic Medicine and the Female Cancer Patient in Postwar America", *Canadian Bulletin of Medical History*, vol. 20, no. 2 (2003), pp. 265–298, and "Breast Cancer and the Language of Risk, 1750–1950", *Social History of Medicine*, vol. 15, no. 1 (2002), pp. 17–43. See also Sanders-Goebel, "Crisis and Controversy".

8 Leopold, *A Darker Ribbon*, p. 54.

9 Charles Hayter, "Seeds of Discord: The Politics of Radon Therapy in Canada in the 1930s", *Bulletin of Medical History*, vol. 77, no. 1 (Spring 2003), p. 76.

10 Lerner, *The Breast Cancer Wars*, p. 4.

the radical did not exist in the United States. Canada was a much smaller country, however, and the existence of all three in the Canadian context may have appeared to loom much larger. If Canadians did differ from their American counterparts, it should not be surprising. Even if Canadian medical practice is part of western medicine, it does not necessarily “follow the leader”. Cancer itself was and is a contingent disease, appearing in different guises at different rates in different countries, and within those countries varying depending on gender, race, and class, among other factors.¹¹ Response to cancer, in this case breast cancer, even within a western medical paradigm, can be contingent on locale: place matters. If Canada’s response to breast cancer treatment did ultimately diverge from that of the United States, it is important to examine the early years of breast cancer treatment, before the difference became manifest in a significant way but when the groundwork for the divergence was established.

The treatment offered women, whatever its nature, depended on accurate diagnosis. Physicians, however, did not agree on the best diagnostic method and debated the advantages and disadvantages of clinical examination versus biopsy, revealing a profession that was spirited in its argumentation but also individual practitioners who were more comfortable with the tried and true rather than the “new”, especially when the latter meant relinquishing some control to others. Barbara Clow found a similar dynamic in her excellent study of cancer in Ontario, *Negotiating Disease*. In her words, the medical “discourse revealed deep confusion and deep divisions within the scientific and medical communities”.¹²

Such confusion and division reflected the contingent nature of medical understanding, and nowhere is this more evident than in the gendered discussion about which women were more susceptible to breast cancer. The Canadian medical profession searched for answers in a way that reflected wider societal values. Because breast cancer occurred predominantly in women, physicians looked to women’s bodies as a causal explanation and determined that the improper use or non-use of those bodies accounted for the development of breast cancer. Their concept of use was socially driven, and thus gendered, by the belief that women should have children because their bodies could bear children. But looking to women’s bodies for answers or directions for action was not only a medical perspective. Canadians, both men and women, had long done so. At the turn of the century, they were still debating the strength of women’s bodies to determine whether women should receive higher education and what the nature of that education should be. In the inter-war years they debated the ability of the female body to undergo the demands of elite sport, at the same time overlooking the strength of those bodies in the work place and at home. When women’s bodies were needed during wartime,

11 See Proctor, *Cancer Wars*, pp. 2–4.

12 Barbara Clow, *Negotiating Disease: Power and Cancer Care, 1900–1950* (Montreal and Kingston: McGill-Queen’s University Press, 2001), p. 59.

concerns about their bodily frailty were minimized (not ignored) until the end of the war brought other priorities to the fore.

Women's actions, not just their bodies, were also problematic. Physicians blamed women for not consulting their doctors early enough in the disease, and, where some might see women's agency in this refusal (Clow does for cancer patients in general), doctors did not. Seldom did physicians acknowledge that the reasons for non-compliance on the part of women with breast cancer had gendered elements, such as the meaning of the breast both in the wider society and to the woman personally and the often extreme treatment being offered to women as a way of saving their lives. Neither did they see some women's decision to seek help from alternative caregivers as a rational decision. In making the arguments they did, physicians came close to blaming women for getting cancer and for putting up roadblocks to its cure by not seeking medical assistance soon enough or at all.

Frequency of Breast Cancer and Support for the Radical Mastectomy

The frequency and seriousness of breast cancer pushed physicians to prove themselves through action. Surgery had long been a favoured approach, and by the end of the nineteenth century the Halsted radical mastectomy was the surgery of choice. Yet not all women were suitable "subjects" for the surgery, since it was designed predominantly as a curative procedure, the success of which was dependent on diagnosing the cancer early. Nonetheless, the focus on the radical mastectomy in the medical literature tended to mask that fact. The literature stressed the significance of the surgery and enthusiasm for it grew over time, in part as a consequence of the increased amount of literature on it being published. The discussion that emphasized the urgency to operate sooner rather than later eclipsed concern about the surgery's aftermath, as did the attitude that surgery was the safest action, even when a diagnosis of breast cancer was unclear.

At the turn of the century, after uterine cancer, cancer of the breast was the most common and devastating cancer in women.¹³ Canadian mortality rates were 4.5 per 100,000 in 1914¹⁴ and 13.2 per 100,000 in the early 1920s, which meant that approximately 500 women died from breast cancer in Canada every year.¹⁵ The figures continued to get worse. In 1947 Gordon E. Richards, director of the Ontario Institute of Radiotherapy at the Toronto General Hospital, estimated that in Canada 1,500 deaths per year were attributed to breast cancer, with 6,000 new cases being added to those already known.¹⁶

13 John Davis Hartley, *A System of Gynaecology* (New York: J. B. Flint & Co., 1899), p. 221.

14 *The Public Health Journal*, vol. 16, no. 6 (June 1925), p. 259.

15 *The Public Health Journal*, vol. 16, no. 8 (August 1925), pp. 353, 359.

16 *British Journal of Radiology*, NS 21 (March 1948), p. 109. Richards, hired at the Toronto General Hospital in 1917, was Canada's leading radiologist. In the words of Edward Shorter, he "founded the discipline of radiotherapy in the country as a whole", establishing the Canadian Radiological Society in 1920, which in turn became the Canadian Medical Association's radiology section in 1927. In 1937 Richards organized the Canadian Association of Radiologists. See Edward Shorter, *A Century of Radiology in Toronto* (Toronto: Wall & Emerson, 1995), pp. 10, 18.

Today there are four ways of combatting cancer — surgery, radiation, chemotherapy, and hormone treatment.¹⁷ In the first half of the twentieth century, the first two dominated, with pride of place given to the former. Surgery of all kinds had become safer to perform by the late nineteenth century as a result of the use of anaesthesia and antiseptic techniques and was the dominant approach to care-giving in hospitals. Belief in cancer's localized origin, that it began with one abnormal cell that duplicated and spread centrifugally to surrounding tissues, made surgical removal of the localized point, before it spread, the surest chance for cure.¹⁸ The theory was a seductive one. It explained cancer in a way that allowed physicians to act and patients to understand. The results of surgery could be seen, and surgery appealed to the interventionist philosophy of western medicine.¹⁹

The Halsted radical mastectomy, the favoured surgery for breast cancer that had been detected early and for which there was some hope of “cure”, consisted of removal of the entire breast around the malignancy, the lymph nodes under the arm, and the pectoral muscles under the breast.²⁰ Named after William Halsted (1852–1922), first professor of surgery at Johns Hopkins University, Halsted's radical was a version of the mastectomy that physicians had performed for centuries.²¹ While the theory of cancer's growth (that the growth was localized) had not been proven, Halsted did seem to have better results than most surgeons using similar techniques and offered women an improved chance of “cure” and relief from the symptoms of advanced breast cancer than had been possible previously.²² In the words of A. Stanley Kirkland, a radiologist at the General Public Hospital in Saint

17 Yalom, *A History of the Breast*, p. 228.

18 See Hayter, “Cancer: The Worst Scourge”, pp. 254–255. Clow agrees that the local view dominated in Canada and elsewhere but that other theories such as contagion or systemic origin were put forward (*Negotiating Disease*, pp. 43–45).

19 For the attraction of surgery, see Sanders-Goebel, “Crisis and Controversy”, pp. 83–84.

20 Sanders-Goebel, “Crisis and Controversy”, pp. 77, 82–83. As late as 1968 almost 70% of American women under treatment for breast cancer received Halsted's radical mastectomy. In England the rate was half that (Lerner, *The Breast Cancer Wars*, pp. 4, 132, 134). By 1977 in the United States the rate of the radical had declined to 22%. See James S. Olson, *Bathsheba's Breast: Women, Cancer and History* (Baltimore: Johns Hopkins University Press, 2002), p. 131.

21 For a discussion of breast surgery in the ancient world and after, see Daniël De Moulin, *A Short History of Breast Cancer* (The Hague: Marius Nijhoff, 1983), pp. 8–9, 18–19; for the rise of surgery in the late nineteenth century, see pp. 79–85.

22 In 1894 Halsted reported on 50 cases he had treated. Three had a local recurrence; eight had reappearances in the chest region. This was compared to the usual rate of 60% to 80%. Of the 48 women who had had follow-up evaluation, 19 had died. Admittedly, the time since the surgery was limited, but the results created excitement in the field. Until then, figures had been much worse: a 4.7% survival rate after three years. See James T. Patterson, *The Dread Disease: Cancer and Modern American Culture* (Cambridge, MA: Harvard University Press, 1987), p. 29. See also Sherwin Nuland, “A Very Wide and Deep Dissection” (review of Lerner, *The Breast Cancer Wars*), *New York Review of Books*, vol. 48, no. 14 (September 20, 2001), p. 51; De Moulin, *A Short History of Breast Cancer*, p. 95. Leopold describes the surgical improvements that Halsted introduced — for example, sterile rubber gloves, specially designed surgical tools to curb bleeding, the use of fine silk for sutures, and gentle handling of tissues (*A Darker Ribbon*, pp. 51, 53).

John in 1930, the radical mastectomy was “a monument to the persistence, skill, ingenuity, thought and dexterity of generations of surgeons”.²³

While much has been made in the historiography on breast cancer of the dominance of the radical mastectomy, especially in the United States, there is little discussion of how often it was performed. This was a reflection of the medical literature’s advocacy stance. Medical articles and textbooks are written to show the practitioner and medicine in a positive light. The radical was one of the few treatments for breast cancer engaged in by the regular profession that engendered the rhetoric of cure, and it is thus not surprising that it garnered attention. Determining numbers of surgeries performed, however, is difficult. There is some evidence that general practitioners in private practice in the late nineteenth century performed significant surgery, including mastectomies. The extreme nature of the radical, however, made it problematic (although not impossible) to perform in private practice, and evidence of it being done is not strong.²⁴ As hospitals became more numerous and specialization within medicine increased, the medical literature made it clear where and by whom surgery should be performed — in hospitals and by surgeons. Also breast cancer was not a common complaint in general practice. In describing his interwar country practice in southwestern Ontario, William Victor Johnson noted he saw cancer in a patient perhaps once in three years.²⁵ Neither was Johnson’s practice unusual. In 1947 estimates by one official of the Manitoba Cancer Relief and Research Institute suggested “that the average practitioner saw a cancer of the breast in once in nine years”.²⁶

Hospital practice is a bit more illuminating as to numbers. In the early years of the century, the number of breast amputations per year varied between four and seventeen at the Victoria General Hospital in Halifax. The figures from the interwar period were slightly higher.²⁷ At the University Hospital in Edmonton, a review published in 1941 of 154 cases of breast tumours reported

23 *Canadian Nurse*, vol. 26, no. 5 (May 1930), p. 245.

24 In Jaclyn Duffin’s study of James Langstaff’s late-nineteenth-century practice in Richmond Hill, she determined that between 1850 and 1889 Lanstaff performed 19 mastectomies. By the 1880s he no longer performed them because, in the words of Duffin, “this highly elective procedure was quickly taken over by surgical specialists in the nearby city”. See Jaclyn Duffin, *Langstaff: A Nineteenth-century Medical Life* (Toronto: University of Toronto Press, 1993), pp. 170, 174.

25 Clow, *Negotiating Disease*, pp. 36–37.

26 Quoted in A. D. Kelly, *The Cancer Movement in Canada, 1930–1950* (Toronto: National Cancer Institute of Canada, n.d. [c. 1970]), p. 8.

27 Halifax, Victoria General Hospital, *Annual Reports of the Superintendent* for the years 1900–1901 to 1918–1919 and 1924–1925 to 1929–1930. Ellen Leopold, despite her critical view of the radical, makes the same point: “At Johns Hopkins Hospital in Baltimore, the average number of radical mastectomies carried out each year in the decade ending in 1930 was just 24, exactly the same as it had been twenty years earlier, in the years between 1900 and 1910. In the fifty-year period 1889 to 1939, the number of breast surgeries performed annually at the Presbyterian hospital in New York rose from 6 to 60 but the number of newly diagnosed cases of breast cancer in New York City had risen by 1939 to an estimated 3,000, more than double the figure ten years earlier” (*A Darker Ribbon*, p. 76). Olson argues that, despite the enthusiasm about the radical, only in the late 1920s and 1930s did it become popular (*Bathsheba’s Breast*, p. 72).

that, of 100 malignant cases, 43 per cent underwent a radical mastectomy, 21 per cent had a “simple” mastectomy, and 36 per cent were not operated on because the cancer had progressed too far.²⁸ The statistics do not reflect a large number of radical mastectomies being performed in each hospital, although, given the number of hospitals in Canada, the total could be significant. In a retrospective study of treatment at the Ontario Institute of Radiotherapy between 1933 and 1943, Gordon Richards reported that over 900 cases had undergone the radical.²⁹ While the study reveals increasing numbers over time, given the rate of breast cancer, it also suggests that many women with breast cancer still did not undergo a radical mastectomy. Yet this fact is not often mentioned in the medical literature. The rhetoric of cure is part of the reason, as is the tendency of the literature to focus on physicians “acting” in a heroic way.

The urgency of diagnosing cancer early and operating quickly permeated the medical literature. Nowhere is this urgency more prominent than in the work of James Bell, professor of clinical surgery at McGill University and surgeon to the Royal Victoria Hospital in Montreal. In 1900 Bell described his approach to a woman presenting herself before him with a breast lump.

A simple incision will detect a cyst or a chronic abscess, but if the simple incision does not make the diagnosis clear, I do not hesitate to advise the removal of the whole breast, with the understanding, that if a microscopic examination shows evidence of cancer, a more extensive dissection will follow within a few days. And if in serious doubt, I do not hesitate to recommend as wide a removal as if I were certain of the diagnosis, even though the microscope may subsequently show that disease is not malignant.³⁰

The consequences of cancer were so serious, Bell believed, that, even before a definitive diagnosis, the breast should be removed. If the post-operative diagnosis proved Bell wrong, then so be it — better to be safe than sorry. In safety, uncertainty became uncontrollable.

Survival was the benchmark of surgical success. Yet not all women survived. One turn-of-the-century Canadian medical text pointed out that surgery had a mortality rate of 3 to 10 per cent. Nonetheless, since the author believed surgery offered the only hope for women with breast cancer, he considered the risk worth taking.³¹ Certainly Bell did not see the surgery as dangerous. For him, the radical mastectomy was a “well conducted operative

28 *Alberta Medical Bulletin*, vol. 6, no. 3 (July 1941), p. 12.

29 *British Journal of Radiology*, NS 21 (March 1948), p. 118.

30 *Montreal Medical Journal*, vol. 29, no. 11 (November 1900), p. 815. See also the experience of T. A. Patrick in C. J. Houston and C. Stuart Houston (compilers) *Pioneer of Vision: The Reminiscences of T. A. Patrick, M.D.* (Saskatoon: Western Producer Prairie Books, 1980), p. 42.

31 R. W. Garrett, *Textbook of Medical and Surgical Gynaecology* (Kingston, 1897), p. 399. Halsted and his students performed radical mastectomies on 878 women between 1889 and 1931. Fifty-six of these women died as a result of surgical complications (Leopold, *A Darker Ribbon*, pp. 54, 63).

treatment in the ordinary run of cases”.³² He did not see breast removal as an issue, and neither did many others. The 1901 annual report of the Royal Victoria Hospital in Montreal revealed that breast amputations had occurred for the following conditions: multiple cysts of the breast, cystic adenoma of breast, multiple abscesses of breast, and fibroma of the breast, as well as cancer.³³

Removal of the breast was not even the worst of it. Bell noted that in some cases “portions of the bony wall of the chest have been removed”, although he admitted, “[T]here is a limit to this procedure, and it can never be either very safe or very satisfactory.” He was willing to push the limits, however, and argued that at times the arm should be amputated, even while recognizing that general practitioners were reluctant to agree. He asked that surgeons not close their minds if it was the only way to save the patient’s life. Nowhere did he suggest that there might be too dear a cost to be paid for life and comforted himself and others by stating that, although the recurrence of breast cancer was high after breast removal, “enormous advances have been made during the last quarter of the century, in the knowledge of what we may call the natural history of cancer, and of its surgical treatment”.³⁴

Few physicians accepted Bell’s extreme views on surgery, but Halsted’s radical did remain the conventional “curative” approach throughout the interwar period and beyond, and enthusiasm for it remained high. In a paper read before the Canadian Medical Association meeting in Ottawa in 1924, Frederick Etherinton, a Kingston physician, commented, “Because the mass is small and perhaps apparently local there should be no curtailing the extent of the operation.”³⁵ A. T. Brazin, professor of surgery at McGill, worried about the dangers of such teaching: “There is apparently a class of surgeons who in their desire to ‘play safe’ in the problem of cancer of breast, mutilate and remove every breast which shows a chronic lesion.” But he also saw problems in being too hesitant, leaving the patient under “suspended sentence” until a definite diagnosis was made.³⁶ How he expected physicians to wend their way through the two extremes was unclear. He simply pointed out the problem, leaving each reader to establish his own place of certainty.

32 *Montreal Medical Journal*, vol. 29, no. 11 (November 1900), p. 812.

33 McGill University Archives, *Annual Report of the Royal Victoria Hospital, Montreal, Year ending December 1901*, pp. 61–62.

34 *Montreal Medical Journal*, vol. 29, no. 11 (November 1900), pp. 812–817.

35 *Canadian Medical Association Journal*, vol. 14, no. 10 (October 1924), p. 917. See also *Nova Scotia Medical Bulletin*, vol. 7 (1928), p. 149, and vol. 16, no. 10 (October 1938), p. 681; *University of Toronto Medical Journal*, vol. 5, no. 7 (May 1928), p. 206; *University of Western Ontario Quarterly*, vol. 8, no. 4 (1938), p. 167; *Canadian Medical Association Journal*, vol. 30, no. 1 (January 1934), pp. 24, 28, and vol. 52, no. 1 (January 1945), p. 18. One scholar has described the situation as “a seeming paradox in which the largest operations were used for the smallest breast cancers”. See Barron Lerner, “Inventing a Curable Disease: Historic Perspectives on Breast Cancer”, in Kasper and Ferguson, eds., *Breast Cancer*, p. 31.

36 *Canadian Medical Association Journal*, vol. 14, no. 10 (October 1924), p. 918.

Not only did the sense of urgency continue into the middle of the century, but so did the consequences of that sense — that it was better to be safe than sorry. Indeed, both attitudes were accentuated as more Canadian literature on breast cancer was published, reflecting the increased confidence of the profession and the greater number of surgeries being done as a result of hospital expansion. Concern for precancerous conditions was expressed,³⁷ and treating the breast as guilty until proven innocent was emphasized. Neither theme was surprising. If cancer cure was possible only with early detection, then the idea of heading off its development by treating precancerous conditions in an aggressive way became part of preventive medicine. Rejecting one authority's suggestion that non-operative procedures for the treatment of benign lesions of the breast were possible, Alexander Primrose, dean of medicine at the University of Toronto, endorsed the motto, "Any lump in a woman's breast is better out than in."³⁸ Of course, the "better safe than sorry" approach could lead to unnecessary surgery. Harold Burrows, in his 1923 *Mistakes and Accidents of Surgery*, recalled errors made in removing breasts and then discovering that the condition was non-cancerous. But his response was that "such a mistake is not likely to cost the patient her life, although the error is unfortunate for the patient and disquieting to the physician".³⁹ The stakes were high, and better that a woman lose her breast unnecessarily than for physicians to be too cautious. For the woman the situation was, as Burrows put it, "unfortunate". Such women were the casualties of the war against cancer.

In the first half of the century, breast cancer mortality rates were high among Canadian women. Consequently, physicians became increasingly focused on treatment, one avenue of which had long been surgery. The acceptance of the localized theory of cancer's origin and development confirmed them in that choice. Thus medical theory did affect practice, even though the localized theory remained unproven. Within the surgical approach, Halsted's radical mastectomy took pride of place in the medical literature, but we cannot assume that it dominated actual therapy. Certainly, the figures from private

37 For precancerous conditions, see Harold Burrows, *Mistakes and Accidents of Surgery* (Toronto: McClelland & Stewart, 1923), pp. 402–403; *Canadian Medical Association Journal*, vol. 12, no. 9 (September 1922), p. 665; vol. 32 (April 1935), p. 384; *Manitoba Medical Review*, vol. 14, no. 4 (April 1934), p. 8; *Nova Scotia Medical Bulletin*, vol. 13, no. 9 (September 1934), p. 509; *University of Western Ontario Quarterly*, vol. 18, no. 1 (January 1948), p. 33. For further examples, see Kitchener-Waterloo Hospital, Mrs. Anna Ferrer, patient no. 56, admitted January 5, 1943; Montreal General Hospital, Mrs. Rachel Kirkby, patient no. 4744, admitted July 17, 1945, discharged July 31, 1945; Public Archives of Nova Scotia, Victoria General Hospital Records, RG 25 Series B, Section IV, vol. 10, 1920–1922, Operating Room Ledger. All patient names have been changed.

38 *University of Toronto Medical Journal*, vol. 1, no. 5 (April 1924), pp. 8–9. See also *Canadian Medical Association Journal*, vol. 14, no. 10 (October 1924), p. 917, and vol. 40, no. 3 (March 1939), p. 229; *Nova Scotia Medical Bulletin*, vol. 7 (1928), p. 249; *University of Western Ontario Quarterly*, vol. 8, no. 4 (1938), p. 167.

39 Burrows, *Mistakes and Accidents of Surgery*, p. 76. For another example, see Clow, *Negotiating Disease*, p. 28.

practitioners and hospitals do not indicate huge numbers of radical surgeries being performed, although numbers were increasing and, taken as a whole, were not insignificant. Nevertheless, the radical mastectomy was designed as a response to breast cancer in its early stages and, as a result, was not a possible treatment for many women.

Within the medical literature, there was great support for the radical in Canada. In the early years of the century, Canadian physicians reported performing the surgery, with James Bell pushing its limits beyond what even Halsted advocated at the time. The assumed survival of the patient won out over any other consideration. Delay could kill, and, if aggressive response to the suggestion of cancer turned out to be unnecessary, at least a life had not been lost, “only” a breast. Of course, we do not know how many lives were saved or even prolonged. Similar themes extended into and intensified in the interwar period and later. Conservative treatment, which in medicine had traditionally meant limiting intervention and conserving as much of the body as possible, had undergone a significant change in meaning in the fight against breast cancer. Waiting to see how breast cancer developed was unacceptable. Waiting for precancerous conditions to develop was unacceptable. Patients benefited from surgery’s successes, but paid the price for its failures — not just failure in stopping the cancer but in the consequences of mis-diagnosis and unnecessary surgery.

Radiation and the Challenge to Radical Surgery

While the radical mastectomy remained the dominant approach to breast cancer, at least as reflected in the medical literature, x-ray and radium, first introduced as diagnostic tools, became therapeutic aids to surgery. They also permitted a challenge to the radical and engendered considerable debate that reflected both the openness of the profession and the defensiveness of individual practitioners about their own area of expertise. While some historians have characterized the entire period of 1900 to 1950 as being “relatively constant” in terms of cancer treatment,⁴⁰ some physicians at the time acknowledged that between the wars radiation treatment emerged as an “incursion” into the surgical treatment of breast cancer.⁴¹

X-rays were discovered in 1895 by Wilhelm Conrad Roentgen (1845–1923), and within a year the international press was reporting their therapeutic use for breast cancer. Certainly Canadian physicians were not slow to realize the opportunities provided by x-rays. In 1902 Dr. James Third of Kingston used radiation to treat breast cancer recurrences, and the Canadian Medical Association devoted a session to radiation therapy at its annual meeting.⁴²

40 Clow, *Negotiating Disease*, p. xvii.

41 *Canadian Medical Association Journal*, vol. 30, no. 1 (January 1934), p. 24.

42 Charles R. R. Hayter, Gunes N. Ege, and Peter J. Fitzpatrick, “Rays of Hope: The Establishment of Radiation Oncology in Canada, 1895–1976”, in John E. Aldrich and Brian C. Lentle, eds., *A New Kind of Ray: The Radiological Sciences in Canada, 1895–1995* (Vancouver: Canadian Association of Radiologists, 1995), pp. 46–47.

Radium was discovered in 1898, used as a therapeutic for cancer in 1901, and first applied in Canada by Dr. Edmund King of Toronto to treat cancer of the tongue in 1909. However, the physician who most advocated the use of radium therapy was Toronto's Dr. William Atkins. He opened his own clinic, the Radium Institute of Toronto, wrote numerous articles on radium, and in 1916 became the first president of the American Radium Society.⁴³

By the early 1920s confidence with respect to radium's value had solidified. The most significant example of this was government involvement in running radiation therapy clinics. The federal government's commitment to health care had increased because of lessons learned during World War I and the failure to respond well during the influenza epidemic immediately after the war. In particular, this commitment was reflected in the establishment of government-supported venereal disease clinics across the country after the war and the creation of the federal Department of Health in 1919. Provincial governments were equally active and focused on radiation's potential for treatment of cancer. Quebec took the lead with the purchase of radium in 1922 for the Institut du Radium to be established at the Université de Montréal. One of the commonest cancers treated was breast cancer. Nova Scotia, Saskatchewan, Manitoba, and Ontario followed Quebec's example.⁴⁴ The Committee on Cancer of the Canadian Medical Association reported in 1933 that clinics for diagnosis and radium facilities were available in eight provinces, all supported by public monies.⁴⁵ By 1947 there were 55 x-ray and 33 radium treatment centres in Canada.⁴⁶

With the support of government, radiation therapy's position appeared assured. But how often was radiation used? Annual reports of the Victoria General Hospital in Halifax indicate that in 1929–1930 there were 220 radium treatments given, but none was for breast cancer. The hospital administered 792 x-ray treatments, with 101 being for carcinoma of the breast. In 1932–1933 there were 270 radium treatments and 1,000 x-ray treatments given, with 3 and 193 for breast cancer respectively. For the next decade and a half, radium treatment declined overall, and very few breast cancer patients received it. X-ray treatment revealed a different story. In 1933–1934 there were 1,304 treatments; by 1939–1940 there were 8,136; and by 1948–1949

43 Charles Hayter, *An Element of Hope: Radium and the Response to Cancer in Canada, 1900–1940* (Montreal and Kingston: McGill-Queen's University Press, 2005), pp. 16–20. For other provinces, see Hayter, "To the Relief of Malignant Diseases of the Poor: The Acquisition of Radium for Halifax, 1916–1926", *Journal of the Royal Nova Scotia Historical Society*, vol. 1 (1998), p. 131; Shorter, *A Century of Radiology*, p. 34; Ernesta A. McCulloch, *The Ontario Cancer Institute: Successes and Reverses at Sherburne Street* (Montreal and Kingston: McGill-Queen's University Press, 2003), p. 4.

44 For a detailed study of the institute, see Charles Hayter, "Tarnished Adornment: The Troubled History of Quebec's Institut du Radium", *Canadian Bulletin of Medical History*, vol. 20, no. 2 (2003), pp. 343–366, "To the relief of malignant diseases of the poor", pp. 130–134, and "Seeds of Discord", p. 76; Clow, *Negotiating Disease*, pp. 144–145, 150–151.

45 Kelly, *The Cancer Movement in Canada*, pp. 8–10. For details of Saskatchewan, Ontario, British Columbia, Alberta, Quebec, New Brunswick, and Nova Scotia, see pp. 17–19.

46 Hayter *et al.*, "Rays of Hope", p. 50.

there were 14,288 treatments. Of these, 232, 2,442, and 3,194 respectively were for breast cancer.⁴⁷

Radiotherapy had a certain cachet. Physicians understood surgery, but radiotherapy opened a whole new world whose limits were unknown, and many seemed impressed. Gordon Richards argued that post-operative radiation decreased breast cancer recurrences by 25 per cent.⁴⁸ Others, too, supported its value as an adjunct to surgery.⁴⁹ Increasingly, the challenge went out that surgery should not stand alone. In 1948 Richards acknowledged that the radical mastectomy was “when *properly performed*, ... one of the most perfect procedures in the whole field of operative surgery”. It had reached its limits, however, and it was not always “properly performed”. He pointed out that the 1,189 cases at the Ontario Institute of Radiotherapy between 1933 and 1943 who had undergone post-operative radiation “were operated upon by over thirty different surgeons, whose average five-year survivals ranged all the way from a high of 77 per cent to a low of 17 per cent”. Such a variety in outcome was the norm, not the exception. Too often, surgical survival rates were based on results in “highly specialized surgical clinics”, and Richards estimated that figures would be much lower if all hospitals and all surgeons involved were taken into account. He reminded his readers that the connection between survival rate and a specific therapy, or any therapy, was not straightforward. Even with no treatment, there was a survival rate.⁵⁰

Surgeons were not always pleased about sharing the limelight. Over time, they had established themselves in the profession as heroic figures of medicine. Certainly the Halsted procedure was heroic surgery. Radiation, even as an aid to surgery, challenged the image (and at times the reality) of the surgeon being in charge. In Montreal, surgeons opposed the Institut du Radium and its assertive self-publicity, feeling threatened by any suggestion that radiotherapy might obviate the need for surgery in cancer patients and remove patients from them for even benign disorders.⁵¹ In 1928 E. A. Keenleyside, while expressing his support for the use of x-ray and radium in inoperable cases of breast cancer, made clear he was not convinced of their use as prophylactic treatment — he felt the jury was still out on the efficacy of x-ray and radium

47 Based on the *Annual Reports of the Superintendent*, Victoria General Hospital, Halifax, for the respective years.

48 Shorter, *A Century of Radiology*, p. 37.

49 *Canadian Nurse*, vol. 26, no. 5 (May 1930), p. 246. See also Victoria General Hospital, Halifax, patient no. 174, register no. 1655, Mrs. Amy Sullivan, admitted April 1, 1937, discharged April 20, 1937; *Canadian Medical Association Journal*, vol. 28, no. 6 (June 1933), pp. 603–604; vol. 43, no. 6 (December 1940), p. 581; vol. 51, no. 1 (January 1945), p. 18; *Nova Scotia Medical Bulletin*, vol. 7 (1928), p. 251; vol. 13, no. 9 (September 1934), p. 510; vol. 14, no. 3 (March 1935), p. 127; vol. 15, no. 11 (November 1936), p. 615; vol. 25, no. 3 (March 1946), p. 74; *University of Western Ontario Quarterly*, vol. 8, no. 4 (1938), p. 169; *Modern Medicine of Canada*, vol. 3, no. 1 (January 1948), p. 23; *Alberta Medical Bulletin*, vol. 14, no. 4 (October 1949), p. 4.

50 *British Journal of Radiology*, NS 21 (March 1948), pp. 109–111, 117.

51 Hayter, “Tarnished Adornment”, pp. 343–366.

in killing cancer cells.⁵² In 1939 Halifax physician J. G. MacDougall asserted that, in the hands of a good surgeon, radiation either before or after surgery was not necessary.⁵³ Surgery could stand alone. Increasingly, however, it did not.

While radiotherapy never dominated breast cancer treatment, during the interwar period and into the middle of the century it allowed some to lessen the emphasis on surgery as a “stand alone” cure. It also allowed challenges to the premises underlying the radical mastectomy. In the international literature on breast cancer of the 1930s, radiation use raised questions about surgery’s efficacy.⁵⁴ Canadian physicians were well aware of these challenges, and some took part in discussions supporting them, while others were at the forefront of mounting significant challenges themselves.

In England, radiation treatment for breast cancer had become increasingly popular. In 1924 the surgeons at St. Bartholomew’s Hospital in London had begun using “buried radium needles” rather than surgery, and the results were significant. Tumours were eliminated altogether or reduced to a size that could either be treated again using radium or “excised locally”.⁵⁵ Other British physicians followed their lead and by the late 1940s were urging an end to the radical.⁵⁶ More significantly for the purposes of this discussion, a seminal article written by Geoffrey Keynes, assistant surgeon at St. Bartholomew’s Hospital, appeared in the 1934 *Canadian Medical Association Journal*. In it, Keynes queried the necessity for Halsted’s radical mastectomy and suggested that, in early growths of cancer, the radical operation could be avoided with the use of radiation.⁵⁷

Some Canadian physicians did more than read about such challenges; they supported them. While significantly influenced by the surgical thrust of the American medical profession, Canadian physicians had cultural ties with Britain and some had had their own post-graduate experiences overseas, and their alignment could not be predicted or generalized. In the same year as Keynes’s article appeared in the *Canadian Medical Association Journal*, J. A. Gunn, associate professor of clinical surgery from the University of Mani-

52 *University of Toronto Medical Journal*, vol. 5, no. 7 (May 1928), p. 207. See also quotation by surgeon George Wilson in Clow, *Negotiating Disease*, p. 55.

53 *Canadian Medical Association Journal*, vol. 40, no. 6 (June 1939), p. 567.

54 Lerner, *The Breast Cancer Wars*, pp. 33–37; Leopold, *A Darker Ribbon*, p. 88; Batt, *Patient No More*, p. 58; De Moulin, *A Short History of Breast Cancer*, pp. 100–102.

55 *Acto Radiologica*, vol. 10, no. 2 (1929), pp. 393, 397. In 1937 Keynes repeated the findings in the *Annals of Surgery* and threw down the gauntlet, pointing out that “most surgeons who have taken the trouble to follow up their patients after performing the radical operation for cancer of the breast are, indeed, gravely dissatisfied with the results”. See *Annals of Surgery*, vol. 106 (October 1937), pp. 625–627. Lerner notes the performance of Keynes in 1937 at the American Surgical Association in *The Breast Cancer Wars*, p. 33.

56 Olson, *Bathsheba’s Breast*, pp. 90–92; Lerner, *The Breast Cancer Wars*, p. 35.

57 *Canadian Medical Association Journal*, vol. 30, no. 1 (January 1934), pp. 24, 28. Keynes believed that by the 1920s radiation had emerged as an “incursion” into the surgical treatment of breast cancer.

toba, wrote, “I regard the use of radium alone, as a substitute for operation, as occupying a hopeful position, and I now offer patients the choice between operation (with radium) and treatment by radium alone.... At the same time I tell them that if they have the gambling instinct they will probably prefer the radium alone, although its results have not yet been fully tested.”⁵⁸ If proven over time, radiation would limit the mutilation of breasts.

In 1944 Vera Peters, a young radiologist at the Ontario Institute of Radiotherapy, published an article in which she expressed strong support for radiation as an adjunct to surgery but also noted that, for breast cancers deemed inoperable and incurable, deep radiation could either make a tumour disappear or reduce its size.⁵⁹ What was not public at the time was that after the mid-1930s Peters had begun to use alternative treatment to the radical — a lumpectomy followed by local radiation — on many women who had refused a mastectomy or whose cancers were considered too advanced for surgery. She followed patient histories, comparing them with those who had had mastectomies (of any kind), and eventually discovered no difference in outcome. Indeed, in some cases women who had undergone less invasive surgery lived longer.⁶⁰ While her findings and the publication of them were in the future, her work in the 1930s and 1940s reflects the willingness of some Canadian physicians not to follow medical orthodoxy as represented by the radical. The work that Peters and others were doing at the Ontario Institute of Radiotherapy under the directorship of Gordon Richards laid the groundwork for an eventual challenge to the radical mastectomy. That challenge was also aided by the good relations of radiologists at the Institute with the surgeons at Toronto General Hospital and access to a significant number of their own case histories.⁶¹

Canadian physicians were aware of other problems with the radical. Despite the argument of optimists that breast cancer was one of the cancers that could be treated and cured,⁶² the mortality rate did not seem to be declining. In 1934 Montreal physician E. M. Eberts noted there was no statistical proof that the results of the radical mastectomy were any better than they had been 20 years previously.⁶³ In 1949 N. E. McKinnon of the Department of Epidemiology and Biometrics at the University of Toronto made clear that unchanging mortality rates challenged the assumption that early

58 *Manitoba Medical Review*, vol. 14, no. 9 (September 1934), p. 4.

59 *Canadian Medical Association Journal*, vol. 51 (October 1944), pp. 335–336, 339, 343.

60 Batt, *Patient No More*, p. 60. In the 1960s, when Peters presented her findings in the United States, they were rejected — she was a “foreigner”, a radiologist, and a woman (Lerner, *The Breast Cancer Wars*, pp. 7, 132–133).

61 *Surgery, Gynecology and Obstetrics*, vol. 96, no. 5 (1953), p. 514; Shorter, *A Century of Radiology*, p. 53.

62 *Saturday Night*, vol. 49 (December 9, 1933), p. 28.

63 *Canadian Medical Association Journal*, vol. 31, no. 1 (January 1934), p. 9.

diagnosis and treatment increased the chance of survival.⁶⁴ In addition, accurate survival rates were difficult to determine. As Gordon Richards argued, they tended to be based on technologically advanced clinics with superior surgeons, cases that did not reflect the norm of treatment. As Toronto physician R. M. Janes also pointed out, survival rates “failed to take into account comfort and happiness during the period of survival, [or] the degree of discomfort associated with treatment, etc.”⁶⁵

The discussion of the limits of the radical mastectomy in Canadian medical journals and the work being done by Canadian researchers reminds us of the dynamic involvement of Canadian medical professionals in medicine. Although the work of Canadian physicians and radiologists is generally overlooked in surveys of western medicine, they were not “also rans”.⁶⁶ Practitioners reading Canadian medical journals could keep up with the latest trends and challenges in the field of breast cancer treatment. Even more significantly, some took part in the debate on the efficacy of the radical. Canadian researchers made clear that, based on Canadian case records, radiation as an adjunct to surgery saved lives to a significant degree. Some even accepted the idea that radiation as treatment could offer an alternative to the radical mastectomy. Supporters of radiation were not the only ones questioning the radical, however. By the interwar years, it was becoming clear that the radical mastectomy had gone as far as it could. Survival rates had not changed significantly and, for a profession that judged itself on the basis of statistical improvement, that result was not good enough.

Diagnosis

While some physicians were challenging the radical, others were more concerned about better diagnostic techniques, in part to limit unnecessary surgery. The debate over old and new techniques revealed a profession grappling with change, with some individuals accepting the promises of technology and others being more wary.

Clinical diagnosis was the oldest and most familiar diagnostic tool. Based on sight and touch, it was and had been the bedrock of medical diagnosis for centuries and depended on the physician knowing both the signs of disease

64 *Canadian Journal of Public Health*, vol. 40, no. 6 (June 1949), pp. 261, 263. For a discussion of McKinnon, see Lerner, *The Breast Cancer Wars*, pp. 101–102. Another Canadian, Ian MacDonald, who worked at St. Vincent’s Hospital in Los Angeles, made a similar argument somewhat later (Olson, *Bathsheba’s Breast*, p. 104).

65 *Canadian Medical Association Journal*, vol. 62, no. 1 (January 1950), pp. 17, 19.

66 Joan Austoker traces some of the challenges to the radical mastectomy but does not recognize the work of Vera Peters or acknowledge that Neil McKinnon was a Canadian. Jane Austoker, “‘The Treatment of Choice’: Breast Cancer Surgery, 1860–1985”, *Bulletin for the Society of the Social History of Medicine*, vol. 37 (December 1985), pp. 100–107. In their book on the history of radiation in North America, the Brechers also overlook work done by Canadians. See Ruth Brecher and Edward Brecher, *The Rays: A History of Radiology in the United States and Canada* (Baltimore: Williams and Wilkins, 1969).

and his patient. General practitioners actually saw few cases of breast cancer. Nevertheless, in the early years of the century they would have been able to diagnose breast cancer more easily than later became the case, because many women presented themselves so far along in the disease that the signs were clear. As concern about breast cancer increased after World War I, diagnosis became more difficult than it had been. More aware of the importance of early diagnosis, women were visiting their physicians earlier in their disease when the signs of cancer were less clear.⁶⁷ Complicating the situation was the need to be aware of precancerous conditions. The age of the woman was also an issue, with breast symptoms in women over the age of 40 being particularly suspect.⁶⁸ A physician needed to consider all these various factors before making a diagnosis, but what weight to give to each was uncertain, especially as the interpretation of factors kept changing. By mid-century some physicians argued that chronic cystic mastitis, which had long been deemed precancerous, rarely changed into a malignant condition.⁶⁹ Uncertainty, coupled with the greater urgency about breast cancer in the later years, was an understandable reason why many physicians were thankful for any additional means to clarify a clinical examination.

If clinical diagnosis was the traditional method, biopsy was newer, and as such evoked debate within the profession. Biopsy consisted of two types. A quick frozen biopsy (developed in the late nineteenth century) occurred in a surgical setting where the surgeon, after removing a section of the tumour, waited in the operating room for the pathological diagnosis before proceeding. The procedure resulted in one-step surgery, a situation in which the patient would enter the operating room not knowing whether she would awaken with both breasts or not. Historians have suggested the “frozen section” increased the surgeon’s prestige as it placed him in control and also relieved him from facing the patient with a definite diagnosis of cancer until after the breast had been removed.⁷⁰ A second form of biopsy was more detailed and resulted in two-step surgery. A tissue sample was taken, perhaps at the instigation of the family physician and even by him, the sample sent to a laboratory for analysis, and the results reported some time later. If surgery was indicated, it would be scheduled. Such a process gave the patient time to accept the idea of having cancer, if that indeed was what the biopsy showed. She would undergo surgery knowing what would happen. It allowed for

67 See *Canadian Medical Association Journal*, vol. 31, no. 1 (July 1934), p. 9; volume 37, no. 6 (December 1937), p. 557.

68 See Burrows, *Mistakes and Accidents of Surgery*, pp. 402–403; *Manitoba Medical Review*, vol. 14, no. 4 (April 1934), p. 8; *Nova Scotia Medical Bulletin*, vol. 13, no. 9 (September 1934), p. 509.

69 *University of Western Ontario Quarterly*, vol. 18, no. 1 (January 1948), p. 33.

70 Lerner, *The Breast Cancer Wars*, p. 28; Leopold, *A Darker Ribbon*, p. 124. Yet not all surgeons or physicians used this procedure. For agreement about biopsy occurring while a patient was in the operating room, see *Manitoba Medical Review*, vol. 14, no. 4 (April 1934), p. 8. Clow, in *Negotiating Disease*, does not distinguish between the two types of biopsy (see p. 52).

more careful biopsies without the pressure of a surgical timetable. In the latter decades of the twentieth century, patient advocates supported the two-step procedure as it seemed centred more on the patient, but it did not emerge as a significant issue in the medical literature in the first half of the century.

How many of each type of biopsy were done is unclear. In large hospitals, with sophisticated pathology labs available, frozen sections were possible, but not all women had access to such hospitals. Certainly the use of some form of biopsy was increasing, largely as a consequence of the availability of centralized biopsy services in some parts of the country, the expansion of hospitals, and the pressure on them to provide the most modern diagnostic procedures possible. In 1938, 69 per cent of the patients in Ontario cancer clinics had undergone some kind of biopsy.⁷¹

Not all physicians were enthusiastic about biopsy. Robert Aronwitz argues that in the early years of the century pathological diagnosis was “less than perfect” and that taking a tissue sample was an invasive procedure.⁷² Both factors might have caused concern, but there is little evidence of it in the medical literature on breast cancer. Criticism of the biopsy emerged between the wars in a reflection of and reaction to the fact that more were being done. Some physicians worried about the emphasis on “accessory aids to diagnosis” rather than the development of effective clinical diagnosis.⁷³ In 1924 Alexander Primrose argued that, not only was a “quick section” potentially dangerous in spreading the cancer, but it was also unreliable since it did not let the physician know whether there was cancer beyond the section being tested.⁷⁴ Others pointed out that the science of medicine as represented by biopsy was fallible in the form of false positives and negatives.⁷⁵ N. E. McKinnon agreed and blamed the wider medical culture of cancer phobia for influencing pathological diagnosis:

Not only is the diagnosis one of opinion; when treatment is made dependent on the pathological report, it is sometimes one of forced opinion. The pressure of circumstances is then, as everyone knows, for “Cancer” or “Not Cancer”. Pos-

71 Clow, *Negotiating Disease*, p. 134. Clow uses the word “only” to describe this percentage.

72 Robert Aronwitz, “Do Not Delay: Breast Cancer and Time, 1900–1970”, *Milbank Quarterly*, vol. 79, no. 3 (2001), pp. 366–367.

73 *Nova Scotia Medical Bulletin*, vol. 13 (October 1934), pp. 513–514.

74 *University of Toronto Medical Journal*, vol. 1, no. 5 (April 1924), pp. 9–10. Surgeons were warned to avoid as much handling of the breast as possible in the clinical examination and to do a biopsy in such a way as to lessen disturbance of the suspected cancer, even to the point of a “simple mastectomy”. See *Nova Scotia Medical Bulletin*, vol. 25, no. 3 (March 1946), p. 77; see also Burrows, *Mistakes and Accidents of Surgery*, p. 75; *Canadian Medical Association Journal*, vol. 14, no. 10 (October 1924), p. 921; *Nova Scotia Medical Bulletin*, vol. 15, no. 11 (November 1936), p. 614.

75 *Alberta Medical Bulletin*, vol. 6, no. 3 (July 1941), p. 12. Clow cites Canadian pathologist William Deadman as acknowledging that 10% of tissue samples (in general) that underwent analysis posed significant diagnostic problems for the best pathologist (*Negotiating Disease*, p. 27).

sibly surrounded by the conviction, though not always convinced himself, that early and complete treatment is of supreme importance in malignancy, the pathologist can hardly fail to give the patient the full benefit of any doubt even in his own mind. “False positives” will thus inevitably be included under these circumstances. It could be that the dominance of the concept of the supreme importance of early treatment has created a circle of events from which it is difficult to become disentangled.⁷⁶

Scientific diagnosis was contingent.

The advent of biopsy did not do away with clinical diagnosis. After all, a physician’s examination had to turn up some clinical evidence before he would advise a biopsy. In some circumstances a biopsy seemed redundant — the diagnosis was obvious. Of course, the circumstances varied from physician to physician and patient to patient. Some practitioners remained attached to clinical diagnosis even when faced with an opposing tissue diagnosis. Such opinion was a commitment to the experience of medical practice, rather than its theory, a divide that concerned many practitioners.⁷⁷ Alexander Primrose reported one case in which the clinical diagnosis was cancer and the breast removed. The pathologist reported chronic mastitis without malignancy. However, the nodes were subsequently found cancerous, and later examination of the breast confirmed it. Primrose did not discount biopsy, nor did he privilege it; for cases in which malignancy seemed unlikely and when a pathologist was on hand, it was insurance against a faulty clinical diagnosis.⁷⁸

Some surgeons were extraordinarily confident in their ability to diagnose cancer on the spot.⁷⁹ As J. G. MacDougall of Halifax pointed out, however, clinical diagnosis, even in an incision form, was only as good as the physician who performed it:

The gross section method ... should never be employed by any one who is not thoroughly familiar with the gross pathological features which differentiate the malignant lump from the benign. He who has a sense of responsibility and is conscious of his limitations will not subject his patient to the hazards of a wrong diagnosis and the possibility of doing a limited operation where it should be radical, or on the other hand to the mutilation of the breast where no more than the removal of an innocent lump is necessary.⁸⁰

⁷⁶ *Canadian Journal of Public Health*, vol. 40, no. 6 (June 1949), p. 262.

⁷⁷ For more discussion on dominance of theory over practice, see Mitchinson, *Giving Birth in Canada*, pp. 25–26, and “H. B. Atlee on Obstetrics and Gynaecology: A Representative and Singular Voice in 20th Century Canadian Medicine”, *Acadiensis*, vol. 32, no. 2 (Spring 2003), pp. 1–28.

⁷⁸ *University of Toronto Medical Journal*, vol. 1, no. 5 (April 1924), pp. 9–10. See also *Nova Scotia Medical Bulletin*, vol. 7 (1928), p. 249.

⁷⁹ Harry Oxorn, *H. B. Atlee, M.D.: A Biography* (Hantsport, NS: Lancelot Press, 1983), p. 129.

⁸⁰ *Canadian Medical Association Journal*, vol. 40, no. 6 (June 1939), p. 569. See also *University of Toronto Medical Journal*, vol. 1, no. 5 (April 1924), pp. 8–9.

The tone of this warning was such to separate “the men from the boys”, but how effective would such a warning be? How many physicians would know what their limitations were and, in knowing them, admit them? Yet many were aware of the chances for misdiagnosis. As Max Cutler reminded his colleagues, “[F]ew surgeons have escaped the embarrassment of regarding as benign a small, localized and encapsulated growth accompanied by none of the classical clinical signs of cancer only to find cancer on microscopic examination.”⁸¹

Clinical examination and biopsy were not the only means of diagnosis. Radiology diagnosis existed as well.⁸² It is interesting that, in the specific literature on breast cancer, radiology diagnosis was not mentioned often, perhaps because those writing on breast cancer were usually surgeons who saw biopsy as “infringing” on their area of expertise. It was an obvious challenge to surgeons in that it involved what they traditionally did — cutting — but took away their control of the diagnosis based on what they cut. Radiology diagnosis was less prevalent, was more removed, and always took place before patient and surgeon came together in an operating theatre and thus did not carry the same challenge as biopsy.

The discussion of diagnosis is an example of debate within a profession that has often been depicted as monolithic.⁸³ It focused on an older method (clinical examination), which depended on both the physician’s skill in observation and his past experience, and a newer method (biopsy), which depended on the physician to provide a tissue sample. Biopsy removed “final” diagnosis from the attending physician or surgeon. Clinical diagnosis dominated the early years because radiation diagnosis and biopsy were newer and facilities to perform them were not as common as they later became. Clinical diagnosis was also easier for advanced than for early breast cancer, and the medical literature of the time suggested that many women did not seek medical help until their cancer was well advanced, a situation that shifted in the interwar period. As well, more literature on breast cancer was being published by the 1920s, and physicians were being told of additional factors to take into account when making a diagnosis. As clinical diagnosis became more complicated and its certainty threatened, tissue and, to a lesser extent, radiation diagnosis took on increasing importance. The discussion of diagnosis also raised the fallibility of science or certain aspects of it. Science was contingent; it had the aura of certainty, but the experience of biopsy’s false negatives and false positives reminded physicians, if indeed they needed reminding, that there was no certainty in medicine. McKinnon’s description of the pressures on pathologists, in an environment that stressed the importance of early diagnosis of cancer, revealed the human element that could influence the interpretation of a specific diagnostic method.

81 *Canadian Medical Association Journal*, vol. 32 (April 1935), p. 387.

82 Clow, *Negotiating Disease*, p. 50.

83 Clow makes the same point in her general study of cancer.

Who Gets Breast Cancer: Causes and Risks

The medical understanding of which women were more susceptible to breast cancer also influenced diagnostic interpretation. Patricia Jasen argues with respect to breast cancer that [t]he concept of cancer risk ... was historically seldom separated from ideas about women's essential nature" and that "during the first half of the twentieth century, the discussion of cancer risk would move towards a closer emphasis on the natural pathology of the breast and a de-emphasis on factors originating 'outside' the body such as the dangers of civilization ... or the impact of trauma".⁸⁴ But the literature Canadian physicians were reading and writing focused not only on the essential nature of women but also on their actions. In turn, their actions were very much linked to questions about "civilization" and its creation — the modern woman about whom physicians, along with many Canadians, seemed concerned. Unlike Jasen, Clow argues that physicians and lay people privileged the central role of trauma in cancer causation.⁸⁵ Yet the number of women who developed breast cancer could not all have been injured by outside forces. What is clear in the medical literature is that the trauma did not have to originate outside the body. It could happen as a result of the body itself and its use or misuse.

Much of the medical literature in the early years of the century reflected the belief that breast cancer was somehow inherent in the female body, a belief with a long lineage going back to Hippocrates, who saw a connection between the end of menstruation and the origin of breast cancer.⁸⁶ Regarding a 1912 study of cancer in Ontario, John Joseph Cassidy reported the belief by some that cancer was especially liable to attack parts of the body "which have survived their usefulness", among which were the breasts of women after menopause.⁸⁷ This belief reflected what could be termed a functional theory of health. As long as parts of the body were being used as they were designed to be, they would remain healthy. Once they were no longer in use, they were prone to disease. Such a notion reflected the rather negative image society held of older women. No longer able to conceive, they were less than they had been. As Cassidy pointed out, however, if non-functioning of organs produced cancer, then there should be much more evidence of cancer in the reproductive system of older women — that is, all older women should be prone to it.

84 Jasen, "Breast Cancer and the Language of Risk", p. 35. Jasen traces the issue of risk discussion to before the 1950s when some commentators argue that it began. As the following discussion indicates, my research supports Jasen. See also *Canadian Medical Association Journal*, vol. 32 (April 1935), p. 386. Factors of risk place the patient, in this case the woman, "into a liminal state of being at risk — of being, suddenly, neither healthy nor ill". See Tina Posner, "What's in a Smear? Cervical Screening, Medical Signs and Metaphors", *Science as Culture*, vol. 2 (1991), p. 185.

85 Clow, *Negotiating Disease*, p. 58.

86 Yalom, *A History of the Breast*, p. 207; De Moulin, *A Short History of Breast Cancer*, p. 37.

87 *Canadian Journal of Medicine and Surgery*, vol. 35, no. 4 (April 1914), pp. 198–199.

Such awareness did not stop others from continuing to pursue the functional theory,⁸⁸ which seemed to become stronger in subsequent decades. In part, it reflected the increasing number of studies being done to determine who was at risk. More statistical information was being generated with a multitude of correlations attached, which were given credence by the fact that they had been measured in the first place.⁸⁹ In the 1928 *University of Toronto Medical Journal*, E. A. Keenleyside noted that breast cancer was a disease of women much more so than men (80:1) “owing to ... [the breast’s] periodical functional activity, and to the greater incidence of disease of other kinds in the female breast.... Eighty percent of women who are the subjects of mammary carcinoma have been married, and at least 70 percent of these have borne children.” The most common age was between 40 and 45.⁹⁰

Keenleyside’s point would lead the reader to assume that marriage and childbearing were somehow related to breast cancer. Yet most women married and had children, and most of those women did not suffer from breast cancer. Keenleyside’s statistics are not incorrect, but they are evidence of correlations, not cause-and-effect relationships. Indeed, in 1934 the relationship between marriage and cancer posited by Keenleyside with such statistical assurance came under scrutiny. It was not marriage *per se* that was the crucial factor, but fertility. Women giving birth to fewer children or none at all were more likely to develop breast cancer.⁹¹ The point here is not to suggest that Keenleyside’s work was representative of leading research; it was not. But his use of the latest literature and the way he presented it kept the functional theory before his readers. They could be excused for concluding that women whose bodies had not met or were not able to meet their reproductive potential had problems. The functional theory appealed to cultural values of the time. It also contained an element of truth in that the etiology of breast cancer is, in part, linked to breast use.

Keenleyside’s reference to the breast’s “periodical functional activity” was an acknowledgement of breastfeeding as a causative factor. For some, the way in which a woman breastfed was the issue. In 1936 Margaret I. Brady, a registered nurse with the Child Welfare Association of Montreal, quoted an American public health official that “certain countries, such as Japan and Italy, where sustained breast-feeding of infants is the rule, have conspicu-

88 See Charles C. Choyce, “Diseases of the Breast”, in Thomas Watts Eden and Cuthbert Lockyer, eds., *The New System of Gynecology, Volume 3* (Toronto: The Macmillan Co., 1917), p. 24.

89 See Mary Poovey’s ideas on measurement as described in Margaret Morganroth Guellette, “Menopause as Magic Marker: Discursive Consolidation in the United States, and Strategies for Cultural Combat”, in Paul A. Komesaroff *et al.*, eds., *Reinterpreting Menopause: Cultural and Philosophical Issues* (New York: Routledge, 1997), p. 180.

90 *University of Toronto Medical Journal*, vol. 5, no. 7 (May 1928), p. 203. See also vol. 10, no. 1 (November 1932), p. 50.

91 *Nova Scotia Medical Bulletin*, vol. 13, no. 9 (September 1934), p. 505; De Moulin, *A Short History of Breast Cancer*, p. 38. Nuns and other celibates even today have high rates of breast cancer. This is linked to not having been pregnant or having borne children.

ously low mortality from cancer of the breast".⁹² For others, breastfeeding was part of a broader lifestyle factor. M. A. R. Young of Lamont Hospital in Alberta noted that breast cancer was very rare in Ukrainian-Canadian women and posited a racial and hereditary dimension. Culture, too, was a factor; Ukrainian women tended to nurse their children for longer periods of time than was usual for most women in Canada. Neither did Ukrainian women seem as susceptible to "civilizing" trends as other women. They did not wear corsets, brassieres, or other breast supports. They worked outdoors in the garden and fields. They were more "natural" women.⁹³ The portrait was of a stereotypical peasant woman, hardly what most Canadian women wanted to be or what most in society would see as the epitome of Canadian womanhood. Nonetheless, the leading women's magazine of the time, *Chatelaine*, noted the significance of loose clothing in cancer prevention in its November 1945 issue.⁹⁴

The issues raised by Brady and Young reflected wider societal concerns. Breastfeeding was declining, and experts, recognizing its value in ensuring the health of infants, were trying to encourage women to breastfeed and to do so longer. The cancer argument was simply another reason that supported physicians' endorsement — breastfeeding was good not only for the infant but also for the woman herself. At the same time, however, many physicians were touting infant formulas, so women often received mixed messages on feeding their infants.⁹⁵ Young's description of the Ukrainian woman as more "natural" than the Canadian also enveloped concerns about the "civilizing" aspects of modernity that seemed to be challenging the traditional role of women, such as their increased participation in the labour force, the declining birth rate, and the sense of increased sexual engagement of younger women.

In the 1930s some physicians began to perceive a link between the female hormone estrogen and breast cancer. While disturbing, the linkage was at least confirmation of some tenuous cause and effect and helped to offset the sense of uncertainty in the medical literature.⁹⁶ The Canadian Medical Association was neither convinced nor concerned. In 1938 it published a manual on cancer in which it maintained, "[T]here is no danger in the use of oestrogenic hormones in practice, since large doses over a longer period of time are necessary to produce a tumour."⁹⁷ Careful physicians were drawing different

92 *Canadian Public Health Journal*, vol. 27, no. 3 (March 1936), p. 120.

93 *Canadian Medical Association Journal*, vol. 40, no. 5 (May 1939), pp. 476–478.

94 *Chatelaine*, November 1945, p. 40.

95 See Katherine Arnup, *Education for Motherhood: Advice for Mothers in Twentieth-century Canada* (Toronto: University of Toronto Press, 1994), especially pp. 96–102.

96 See Charles Herbert Best and Norman Burke Taylor, *The Physiological Basis of Medical Practice: A University of Toronto Text in Applied Physiology* (Baltimore: William Wood, 1937), p. 1175; *Canadian Medical Association Journal*, vol. 37, no. 3 (September 1937), p. 236; vol. 44, no. 1 (January 1941), p. 1; *University of Western Ontario Quarterly*, vol. 8, no. 4 (1938), p. 169.

97 Quoted in Clow, *Negotiating Disease*, p. 47. See also *University of Western Ontario Quarterly*, vol. 10, no. 2 (January 1940), pp. 77–79.

conclusions, however. James H. Darragh, writing in the 1946 *McGill Medical Journal*, advised caution, agreeing with those who recommended against giving estrogen to women with high rates of family breast or genital cancer. Studies confirmed that such women were particularly susceptible to cancer following estrogen therapy at menopause, and physicians warned one another about the problem.⁹⁸ But how did the linkage between menopause, estrogen, and cancer work? The age at which women developed breast cancer suggested that the end of reproductive life was somehow a factor. Yet the estrogen linkage to cancer seemed to negate the menopause line of demarcation since menopause was, in part, the consequence of estrogen loss. The link suggested that breast cancer was a delayed disease, or one with a long incubation.⁹⁹ Unclear was why some women were more susceptible to the presence of estrogen than others.

The discussion of which women were more at risk for breast cancer intertwined sex and gender in the focus on the body (its inherent nature and use) and reminds us that separation of the two is a convenient construct. Physicians believed women's bodies had a physiological use, but, in seeing this potential use as a necessity, they were expressing wider societal concerns about women's role in society. Such concerns intensified after World War I when modernity and women's responses to it seemed a visible challenge to traditional gender identity, and they emerged in the discussion of breast cancer through the listing of factors apparently linked to it. The linkages were not ones of cause and effect, however, although the attempts of physicians to explore them often created that impression. Physicians argued that it was healthy for women to adopt traditional gender roles, but, for many, those gender roles were in part biologically determined. Overlooked was the literature on cervical and uterine cancer, which noted that women who adopted traditional gender roles, that is, women who did give birth and had more children, tended to develop these cancers. Being female itself seemed problematic for health. Not knowing which women were at risk and why was frustrating, and that uncertainty underlay and indeed drove the discussions of risk factors. Compelled by the measure of cancer's attack, physicians speculated on why some women developed it and others did not, and so adopted a functional determinist (sexed) and gendered view of the body. Breasts after menopause no longer served a physiological function (breast-

98 *McGill Medical Journal*, vol. 15, no. 3 (October 1946), pp. 247–248. For a discussion of heredity, see Proctor, *Cancer Wars*, pp. 219–221, 237; Sigismund Peller, *Cancer Research Since 1900* (New York: Philosophical Society, 1979), pp. xiii–xiv; *Canadian Medical Association Journal*, vol. 50, no. 3 (March 1948), p. 253; *Alberta Medical Bulletin*, vol. 15, no. 1 (January 1950), p. 15; Donald Campbell and Mabel A. Shannon, *Gynaecology for Nurses* (Philadelphia: F. A. Davis, 1946), pp. 48–49; *Modern Medicine of Canada*, vol. 4, no. 4 (April 1949), p. 22. According to Clow, educators “dismissed and derided” popular belief in the hereditary nature of cancer, but she acknowledges that practising physicians did not (*Negotiating Disease*, pp. 39, 46).

99 Similarly, doctors linked breast cancer to lack of fertility and lack of or improper breastfeeding, but cancer did not seem to develop during the years when fertility and breastfeeding were of moment.

feeding) and, as a result, presented a danger. Especially at risk were women whose breasts either had never been used physiologically or had not been used properly. In not having children, in not breastfeeding or not doing so long enough, women had misused their bodies, the implication being that women were, in some respects, responsible for their disease. The victim was blamed.¹⁰⁰

Recalcitrant Women

If physicians were frustrated by the difficulty of assessing cancer risk, the seeming unwillingness of many women to cooperate in medical efforts to help them frustrated them even more. Those in the medical profession fighting cancer assured one another and their colleagues that cancer could be beaten if it was caught early enough. The assumption was that women would go to their doctors, who would then advise their patients as to care. But as surgeons were particularly aware, many women with breast cancer did not do so, or did so only reluctantly and after much delay. There were many reasons for women's reluctance, including the attitudes of their general practitioners, their self-identity based on their bodies or on societal attitudes, and even rejection of what physicians had to offer.

The medical literature did acknowledge that not all physicians took their responsibilities as seriously as they should. In part, this realization reflected a divide between surgeons and general practitioners. In the early years of the century, the former complained that the latter often ignored early symptoms and erred on the side of caution in awaiting developments, thus making the surgical option less viable.¹⁰¹ Such accusations provided surgeons with an explanation of why surgery failed or was not possible.

These concerns intensified in the interwar period and later as the stability of mortality rates begged explanation. W. F. Gillespie from Edmonton told of a 37-year-old woman whose mother had died from breast cancer and who had discovered a lump in her own breast. Gillespie's attitude was to wait and have the patient return in two months. When the woman did so, there were three small lumps. Because of the woman's fears about breast cancer, a biopsy was done; one of the lumps was found to be cancerous, and radical surgery followed.¹⁰² Noteworthy is that the patient prodded the physician to

100 For more on blaming the victim, see Leopold, *A Darker Ribbon*, pp. 30–32, 109. Physicians criticized actions that they believed led to higher rates of specific cancers in men, but the nature of the criticisms made were gendered not sexed. See Clow, *Negotiating Disease*, p. 13.

101 See *Montreal Medical Journal*, vol. 29, no. 11 (November 1900), p. 814; *The Canada Lancet*, vol. 43, no. 4 (May 1909), p. 177; *The Public Health Journal*, vol. 6, no. 6 (June 1915), p. 290. This criticism of general practitioners occurred for all cancers and reflected the tension between surgeons or specialists and the front-line family physician. For tension between general practitioners and surgeons, see Clow, *Negotiating Disease*, p. 28; Leopold, *A Darker Ribbon*, pp. 57–60; Patterson, *The Dread Disease*, pp. 68–69, 100–102.

102 *Canadian Medical Association Journal*, vol. 37, no. 6 (December 1937), p. 557.

perform the biopsy. But Gillespie's delay is understandable. As already noted, general practitioners did not see many cases of breast cancer; women in the interwar period were seeing their doctors earlier in their disease and thus it was more difficult to diagnose. As well, general practitioners "knew" their patients as individuals about whom they cared and may have been reluctant to admit immediately the likelihood of a deadly cancer. We must also recognize that, while physicians such as Gillespie may have delayed, surgeons' complaints had a rhetorical tone, a mantra to explain their lack of success in lessening the mortality rates from breast cancer.¹⁰³

While the authors of medical literature complained about practitioners' delay, they were more incensed by the delay on the part of women themselves. Early in the century, James Bell believed there were two explanations — dread of surgery and modesty.¹⁰⁴ Neither should have been surprising. In breast cancer treatment the breast was expendable, but the breast is not just "any" part of the body.¹⁰⁵ The North American culture of the first half of the twentieth century emphasized women's breasts as central to their identification as women, and the breast has long held deep meaning in western culture — as a source of life in providing milk to an infant and as a source of sexual and emotional bonding with a partner. Society has endowed it with the essence of womanliness, of sexual identity.

How individual women viewed their breasts probably differed from woman to woman. Women were certainly aware of their breasts and sensitive to changes in them; they usually found the lumps that, more often than not, formed the first sign of cancer. Describing a fearful episode she experienced in 1910, Lucy Maud Montgomery wrote in her diary, "One Friday night ... I was lying awake in my old room in Cavendish. I was drowsy and comfortable and on the point of falling asleep when I happened to put my hand on my left breast. To my intense horror I felt in it a small 'kernel' seemingly about the size of a pea." Her response was not to go to her local doctor. The "kernel" was to be her "horrible secret" not to be shared except with those who did not know her.¹⁰⁶ Montgomery's fear was not unusual. Doctors, frustrated by the

103 See *Canadian Medical Association Journal*, vol. 31, no. 1 (July 1934), p. 9. For further complaints about the apathy of general practitioners, see *The Public Health Journal*, vol. 16, no. 8 (August 1925), p. 360; *Canadian Medical Association Journal*, vol. 14, no. 10 (October 1924), p. 921; vol. 31, no. 1 (July 1934), p. 9; *Nova Scotia Medical Bulletin*, vol. 13, no. 9 (September 1934), p. 510; vol. 14, no. 3 (March 1935), p. 127, vol. 14, no. 4 (April 1935), p. 182; *Canadian Public Health Journal*, vol. 27, no. 3 (March 1936), p. 120;

104 *Montreal Medical Journal*, vol. 29, no. 11 (November 1900), pp. 814, 817.

105 Iris Marion Young, *Throwing Like a Girl and Other Essays in Feminist Philosophy and Social Theory* (Bloomington and Indianapolis: Indiana University Press, 1990), pp. 203–204; Yalom, *A History of the Breast*.

106 Mary Rubio and Elizabeth Waterson, eds., *The Selected Journals of L. M. Montgomery, Volume 2: 1910–1921* (Toronto: Oxford University Press, 1987), pp. 240–241. See also Linda Sue Heuser, "A Content Analysis of Emotion Words Used in Mass Media Periodicals and Professional Journals to Describe Women's Emotional Reactions to Breast Cancer" (PhD dissertation, University of Oregon, 1989), pp. 15, 13.

reluctance of women to consult them in the early stages of breast cancer, both recognized women's emotional reaction to the disease and blamed it for the delay in seeking medical assistance. Women such as Montgomery could not help but know what surgical treatment for cancer entailed. For every woman who underwent such surgery, many more would have heard about it, and their hesitancy in seeing a physician, perhaps to have their worst fears confirmed, is understandable. They needed time to absorb the possibility of cancer and to deal with the immediate response of fear.

Little changed in the middle part of the century. Women who discovered lumps in their breasts were not always seeking help immediately.¹⁰⁷ The mortality statistics of breast cancer, even after surgery, were becoming better known, and the offer of the exchange of a breast for life was one that women could reject as chimera. While not expressing that awareness, the medical literature did acknowledge, as Bell had done earlier, that the "mutilating" aspects of the mastectomy accounted for women's fear of breast cancer and their reluctance to undergo a breast examination.¹⁰⁸ Nevertheless, some physicians comforted themselves with the notion that, once cancer was diagnosed, women faced actual treatment with "peace of mind ... little disturbed by positive biopsy and radical mastectomy".¹⁰⁹ Such sentiments were more likely a defence mechanism on the part of physicians than an accurate perception of women's mental equilibrium.

Modesty was the second factor raised by Bell. The ideology of womanhood dominating the culture in the early years of the century emphasized how the modesty and respectability of women went hand in hand. Recognizing this, some medical instructors still taught childbirth using a wooden mannikin and warned their students not to expose a woman's body to view.¹¹⁰ Even as such attitudes lost support among physicians, women remained hesitant to expose themselves to a "stranger". The societal reflection of modesty in the early years was the dress women wore — essentially covering them from view (even though suggesting the shape of the body beneath the clothing). There may have been some "loosening up" with respect to surface appearances after World War I, but that did not necessarily translate into an easier acceptance of male medical intervention with respect

107 See Victoria General Hospital, Halifax, surgical department, patient no. 290, register no. 207, Mrs. Rachel Fitzroy, admitted November 11, 1920, discharged December 6, 1920; patient no. 258, register no. 1619, Mrs. Martha MacDonald, admitted September 24, 1921, discharged December 1, 1921; patient no. 670, register no. 607, Angie Carrothers, admitted November 21, 1930, discharged November 27, 1930; patient no. 1574, register no. 1655, Mrs. Amy Sullivan, admitted April 1, 1937, discharged April 20, 1937; *Nova Scotia Medical Bulletin*, vol. 14, no. 6 (June 1935), p. 309.

108 See *Canadian Medical Association Journal*, vol. 31, no. 1 (July 1934), p. 9; vol. 40, no. 3 (March 1939), p. 232.

109 *Canadian Medical Association Journal*, vol. 52, no. 1 (January 1945), p. 15. Vera Peters expressed the same concern about radiation. See *Canadian Medical Association Journal*, vol. 51 (October 1944), p. 339.

110 Oxorn, *H. B. Atlee, M.D.*, p. 200.

to women's bodies. Even today, many women prefer to see a female rather than a male physician.

Some surgeons recognized that women were uncomfortable with having their breasts examined.¹¹¹ Others did not. In 1934 E. M. Eberts described how to examine the breasts of a patient; the sexual overtones, of which Eberts seemed unaware, are striking, as is the objectification of the woman's body:

The patient, stripped to the waist, should be examined in a sitting position in a good light. Inspection should be first from in front.... One should then stand behind the patient and observe the relative fullness of the breasts from above; and passing the hand over the shoulder, manipulate and draw out the nipples, noting any difference in pliability or degree of prominence when erect.... Then [roll] the base of the nipple between the thumb and forefinger.¹¹²

The body is a cultural representative of who and what women are. Women might well have felt hesitant about undergoing the examination Eberts described. Given that breast cancer tended to strike older rather than younger women, most of the women coming to see their physicians about potential breast cancer in the interwar period and after would have been born in the late Victorian or at the latest in the early Edwardian period. Their formative years would have socialized them into norms of behaviour that might appear old-fashioned and out of step with the kinds of responses medical practitioners expected.

Physicians mentioned other factors to explain why women delayed consulting them, such as a desire to protect their friends from worry, a reaction that W. H. B. Aikins recognized as “praiseworthy, but short-sighted”.¹¹³ Others referred to ignorance, denial, and pragmatic considerations such as finances or family responsibilities.¹¹⁴ These reasons were shared by men with cancer as well, although they were often experienced in a gendered way. The cost of treatment was one such factor since women, whether married or single, had less access to money than men. Certainly the desire to protect their families from worry and to continue taking care of their households were more than just “praiseworthy”. The ideology of the good wife and mother was of a woman who put her husband and children before her own needs. In both pre-Freudian and Freudian terms, selflessness was the hallmark of a mature adult woman.

111 Clow, *Negotiating Disease*, p. 97.

112 *Canadian Medical Association Journal*, vol. 31, no. 1 (July 1934), p. 10.

113 *Canadian Practitioner*, vol. 47, no. 9 (September 1922), p. 387.

114 Clow, *Negotiating Disease*, p. 6; David E. Shepherd, “First in Fear and Dread: Cancer Control in Saskatchewan, the First Decade — 1929–1939”, *Canadian Bulletin of Medical History*, vol. 20, no. 2 (2003), p. 336; *Canadian Medical Association Journal*, vol. 43, no. 6 (December 1940), p. 580; *Alberta Medical Bulletin*, vol. 14, no. 4 (October 1949), p. 4.

In their work, Margaret Lock and Patricia A. Kaufert accept Foucault's knowledge/power conflation that legitimated "biomedical knowledge as scientific and rational", but point out that "an uncritical reception of its truth claims by ... individuals cannot be assumed".¹¹⁵ Not all women "bought" the medical model of breast cancer, and, even when they did, they determined when they would seek help. Mrs. Martha MacDonald had discovered a breast lump seven years before she entered the Victoria General Hospital in Halifax in 1921. Only when "she ... noticed that the skin over the growth was becoming inflamed and that an ulcer was forming and later a slight discharge began to ooze from it" did she seek medical help. Similarly, Mrs. Amy Sullivan, age 65, a housewife, entered the same hospital on April 1, 1937. According to her patient record, she had "first noticed the lump in December 1935" but generally had had no pain. Only when the size of the lump increased (to the size of a grapefruit) did she decide to do anything about it.¹¹⁶ We know very little about women's concept of health or how they looked at their bodies, but these two women clearly had a sense of when they would or could no longer ignore what was happening to them. For Mrs. Sullivan, the size of the tumour finally prompted her, and for Mrs. MacDonald it was the ulceration. Some women may willingly have coped with their symptoms and not offset possible future developments in their disease with immediate and expensive treatment that might force them to face mutilating surgery and their own mortality. Women did have a choice, and to reject is a choice.

More upsetting to physicians than women's delay in coming to them (for whatever reason) was women seeking out alternative treatment. Even though L. M. Montgomery refused to go to her own doctor, she did write to a physician writer of a medical column in one of the Montreal newspapers, who assured her that "the little kernel in your breast is not cancer and my advice is to leave it completely alone".¹¹⁷ Her use of a popular doctor's column hints at the existence of alternative sources of "health" care that women could use. Early in the century, women writing to local newspapers asked each other for cures for breast lumps. The daily press also advertised "quack" cancer cures. Others placed their confidence in Christian Science.¹¹⁸

115 Lock and Kaufert, eds., *Pragmatic Women*, pp. 18–19.

116 Victoria General Hospital, Halifax, patient no. 258, register no. 1619, surgical department, Mrs. Martha MacDonald, admitted September 24, 1921, discharged December 1, 1921; patient no. 1572, register no. 1655, Mrs. Amy Sullivan, admitted April 1, 1937, discharged April 20, 1937. For a discussion on women deciding when to go to a physician, see Wendy Mitchinson, "Problematic Bodies and Agency: Women Patients in Canada, 1900–1950", in Franca Iacovetta and Wendy Mitchinson, eds., *On the Case: Explorations in Social History* (Toronto: University of Toronto Press, 1998), pp. 242–265. Clow suggests that, for some individuals, "health included some degree of alteration in bodily form or function". She argues that pain "marked the dividing line between innocuous conditions and disease" (*Negotiating Disease*, pp. 7–8).

117 Rubio and Waterson, eds., *The Selected Journals of L. M. Montgomery*, pp. 240–241.

118 See Norah L. Lewis, "Goose Grease and Turpentine: Mother Treats the Family Illnesses", *Prairie Forum*, vol. 15, no. 1 (Spring 1990), p. 80; *Canadian Practitioner and Review*, vol. 38, no. 1 (January 1913), p. 4; Clow, *Negotiating Disease*, p. 30.

Time did not lessen Canadians' willingness to seek out alternative cures. Clow wonderfully describes why Canadians might have sought "alternative" cancer healers who practised in the interwar period and afterward — aversion to traditional or conventional treatment, a distrust of physicians, a desire for choice, and the fact that many had the money to seek alternatives. They may have heard positive evaluations of alternative treatments through the press or from friends, or they might have already had a positive experience with non-conventional medicine. Alternative practitioners seemed able to offset the harsh symptoms of cancer through pain management. Not everyone had faith in what allopathic physicians told them; neither were all physicians particularly forthcoming with the truth to their patients.¹¹⁹ Avoidance of surgery was also an attraction.

The seriousness of breast cancer meant that physicians were desperate to find something to offer women. In the radical mastectomy they believed they had a cure, but it could only be successful if women came to them early in the disease. There was only a limited window of opportunity. Physicians were aware of some of the reasons women delayed. Some in the profession acknowledged that not all physicians were sensitive to the urgency underlying cancer symptoms. The divide seemed to break along surgeon/practitioner lines but also in terms of modern practitioners versus those seen as slower and more aligned to an older way of proceeding. While the problems within the profession were acknowledged, however, the focus was on the delay on the part of women; if women did not consult a physician, it did not matter what kind of physician he was. Physicians understood the fear of surgery and recognized the extreme nature of the mastectomy, although few admitted the significance of the body part they were removing. Modesty was an issue, but how could a woman risk her life for modesty? Yet, for women, modesty was very much part of their social identity as respectable women, and years of socialization could not be overcome easily. Gender was clearly at work. Breast cancer put the needs of the body at odds with the demands of society to put others first. As well, case records hint at different ways of looking at the body and its health, and some women's actions or non-action can be interpreted as claiming ownership over their bodies. Women had agency to choose who would help them; all the reasons listed by physicians for women delaying consulting them were the same reasons that women consulted those working outside medical orthodoxy.

Conclusion

The historiography on breast cancer has focused on the radical mastectomy, but in looking at breast cancer within the Canadian context for the first half of the twentieth century, it becomes clear that we do not know how many women actually underwent this surgery. Even its strongest supporters admitted it was of limited use except for breast cancer caught early. Nevertheless,

119 Clow, *Negotiating Disease*, p. 29.

the medical literature of the time centred its discussion on the radical (as did the later historiography), in part because of surgeons' desire to emphasize positive action in face of a deadly disease. There was less consensus about the use of radiation as therapy, even though strong advocates of it emerged early, and in later years government support was provided to cancer clinics, the focus of which was to provide radiation diagnosis and therapy. A new divide emerged within the profession between radiologists and surgeons, but when cooperation did occur, it led to radiation being recognized as an adjunct to surgery. Radiation therapy also encouraged international challenges to the efficacy of the radical itself. In Canada, radiation clinics provided access to a Canadian research data base to investigate when radiation could best be used. Access to radiation also allowed practitioners to offer their patients an alternative to the radical — either radiation alone or modified surgery with radiation — although it would appear that not many did so. Questioning of the radical also came from those who pointed out that survival statistics did not warrant faith in its efficacy. By mid-century such challenges had not come to dominate the literature, but they certainly prepared the ground for the critics who emerged in subsequent decades and exposed a profession in which internal debates and resistance were possible.

If the radical or even radiation was to achieve its potential, early diagnosis was essential, but physicians did not agree on which diagnostic method was best. Some division on this issue was between those holding onto the skill of the trained and experienced practitioner (clinical diagnosis) and those adopting what could be seen as the preciseness and "objectivity" of the laboratory (biopsy). The former represented the art of medicine, the latter its science. Of course, the divide was not absolute; most practitioners used both, allowing their clinical diagnosis to determine whether a biopsy or radiological diagnosis was needed.

Expanding diagnostic methods was part of the drive to establish medical/scientific certainty, as was the medical discussion of which women developed breast cancer. In the interwar years and beyond, studies of women with breast cancer were more numerous and focused on the co-relationships between breast cancer and certain biological and lifestyle factors. While many of these connections could not be interpreted as cause-and-effect relationships, they both reflected and confirmed preconceptions about gender roles in society and so made "sense". The functional theory of breast cancer in a non-scientific usage was prevalent in these years and became even stronger over time, perhaps because of concern that women were challenging accepted gender roles and in so doing rejecting the potential of their bodies. Even more than implicating changing social roles, however, the studies on the relationship between estrogen and breast cancer suggested femaleness itself was a problem.

Physicians' writings on why too many women delayed consulting their doctors also revealed the gendered nature of women's lives. Doctors believed, however, that women's concerns about the integrity of their bodies

and about family, friends, and finances were negligible when compared to surviving breast cancer. As a result, underlying the medical concern about delay was a tone of frustration on the part of many physicians. From their perspective, their patients, in this case women, did not act according to medical rationality, and indeed many women did not. Lives of individuals were (and are) complex, and the health of the body was only one part, albeit an important one. Neither were all physicians acting according to medical rationality. Surgeons at times accused general practitioners of not being caught up in the urgency and significance of early diagnosis. The breast had to be seen as guilty until proven innocent. General practitioners, however, could only diagnose the patients who came to them, and often patients did so when the cancer was advanced and the skills offered by surgeons were of little moment. In addition, not all women chose to consult physicians. Many Canadians were not as attached to medical orthodoxy as physicians would have liked. The decision of many women with breast cancer to seek alternative care was an indication of the lack of medical hegemony.

For both doctors who treated breast cancer and the women who had it, the situation at mid-century had changed greatly from that at the turn of the century. Doctors were much more aware of breast cancer due to the increased professional literature available. In the early years of the century, many of the women seen by family doctors had advanced breast cancer and physicians had little difficulty in recognizing it. As a result of the publicity given cancer after World War I, with its message of the importance of early detection, women came to their doctors earlier in their disease, and the signs were more difficult to detect. Fortunately, better diagnostic aids had emerged to add to clinical diagnosis. For many general practitioners, this development could mean being forced to send their patients elsewhere for “conclusive” diagnosis. Nevertheless, the general practitioner was still the physician who saw the patient first and dealt with her aftercare. He was the one who would present his patient with treatment options. In 1900 treatment was largely palliative and focused on pain management, with some surgery being done on those with early detected cancer. By 1950 changes in treatment had occurred. More surgery was performed, but how much is unclear. Radiotherapy had increased significantly, both as an adjunct to surgery and as a treatment for those for whom surgery was not an option. As well, physicians had a much more developed support system in the emergence of cancer clinics in hospitals and government-assisted diagnostic and therapeutic radiation clinics.

For women with breast cancer, the situation had altered as well. The barrage of literature on cancer meant that more women were diagnosed earlier and lived with the knowledge of having cancer longer. If they delayed consulting a physician early in their disease, the literature of the later period, which was difficult to ignore, made it clear they were in part to blame if their treatment was unsuccessful. In some respects, treatment had changed with radiation becoming a possibility. Those having combined surgical/radiation

treatment had to live with the side-effects of both. However, the curative treatment of choice — the radical mastectomy — had not changed. Despite some challenges to it, these did not usurp its dominance. Thus women who feared they had breast cancer were aware of what was in store for them. Indeed, their experience had become more alienating. Whereas early in the century a woman might have seen only her general practitioner, by mid-century in her search for a cure she was visiting a number of different physicians and professionals, most of them strangers to her. And what was the result of those changes? Despite earlier detection, the predominant “curative” treatment had not improved survival rates significantly.