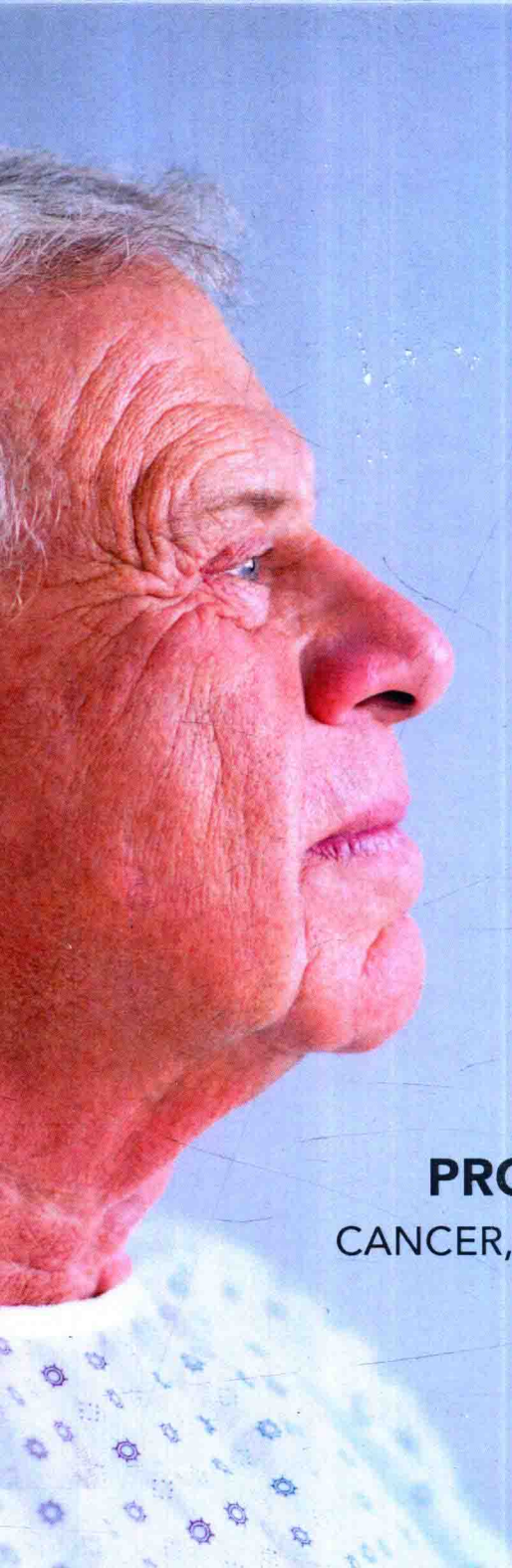

MEDICINE AND BIOMEDICAL SCIENCES IN MODERN HISTORY

A HISTORY OF PROSTATE CANCER

CANCER, MEN AND MEDICINE

HELEN VALIER

Helen Valier

A History of Prostate Cancer

Cancer, Men and Medicine

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Medicine and Biomedical Sciences in Modern History

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The aim of this series is to illuminate the development and impact of medicine and the biomedical sciences in the modern era. The series was founded by the late Professor John Pickstone, and its ambitions reflect his commitment to the integrated study of medicine, science and technology in their contexts. He repeatedly commented that it was a pity that the foundation discipline of the field, for which he popularized the acronym 'HSTM' (History of Science,Technology and Medicine) had been the history of science rather than the history of medicine. His point was that historians of science had too often focused just on scientific ideas and institutions, while historians of medicine always had to consider the understanding, management and meanings of diseases in their socio-economic, cultural, technological and political contexts. In the event, most of the books in the series dealt with medicine and the biomedical sciences, and the changed series title reflects this. However, as the new editors we share Professor Pickstone's enthusiasm for the integrated study of medicine, science and technology, encouraging studies on biomedical science, translational medicine, clinical practice, disease histories, medical technologies, medical specialisms and health policies.

The books in this series will present medicine and biomedical science as crucial features of modern culture, analysing their economic, social and political aspects, while not neglecting their expert content and context. Our authors investigate the uses and consequences of technical knowledge, and how it shaped, and was shaped by, particular economic, social and political structures. In re-launching the Series, we hope to build on its strengths but extend its geographical range beyond Western Europe and North America.

Medicine and Biomedical Sciences in Modern History is intended to supply analysis and stimulate debate. All books are based on searching historical study of topics which are important, not least because they cut across conventional academic boundaries. They should appeal not just to historians, nor just to medical practitioners, scientists and engineers, but to all who are interested in the place of medicine and biomedical sciences in in modern history

More information about this series at
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For my parents, Hilde and Mike Ettrick

Acknowledgments

My interest in the history of cancer began almost fifteen years ago when I was fortunate enough to be included in the Centre for the History of Science, Technology and Medicine (CHSTM) 'Constructing Cancers' project (supported by the Wellcome Trust Programme Grant 068397) led by the late (and very much missed) John Pickstone at the University of Manchester. Members of that original group—especially Carsten Timmermann, Elizabeth Toon, Emm Barnes Johnstone (now of Queen Mary, University of London), and of course John before his untimely death—proved to be great colleagues over the years and I am extremely indebted to all of them for helping me to bring this book together. Thanks too go to the organizers and participants of the project-related workshop 'How Cancer Changed: Expanding the Boundaries of Medical Interventions' held in Paris at the Centre de Recherche Médecine, Sciences, Santé et Société (CERMES) in 2009. Jean-Paul Gaudillière and Ilana Löwy were particularly helpful with their detailed feedback on the paper that I presented there, a paper that would go on to form the basis of the final three chapters of this book.

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history of cancer extend back beyond the 1880s at all. On this side of the Atlantic the support of the members of the Center for Public History (CPH) at the University of Houston have been invaluable. It is through the CPH that I had the opportunity to circulate and present earlier drafts of this book. My particular thanks go to the remarkable head of the CPH, Marty Melosi, as well as to Julie Cohn and Jimmy Schafer for their many smart and extremely helpful criticisms and suggestions for improvements. My philologist colleague Richard Armstrong was kind enough to oversee my attempts to follow the progression of ideas conveyed by some ancient Greek and Latin medical terms, but here as elsewhere in the book any errors and inaccuracies are mine and mine alone.

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CHAPTER 1

Introduction: The Prostate, Cancer, and the Making of Modern Medicine

How can the very old come to define the very new? The ailments that make up a collection of diseases labelled 'cancer' are described in ancient manuscripts, depicted in millennia of human artifice and exposed within prehistoric human remains. As a species we have always lived with malignant tumours and wasting death. Nevertheless, there is something undeniably *modern* about cancer.[1] For over a century, the control of cancer has perhaps been the ultimate test of our medical prowess, a yardstick measuring our incremental control over nature and a testament to our unwavering expectation of longer, healthier lives, unhampered by disease and disability. The capricious and intractable nature of cancer has not, by and large, done much to sink our buoyant confidence in scientific progress but it has introduced a paradox, widely felt if not always acknowledged, that all is not well in our scientific age. The history of cancer in the twentieth century is at one and the same time a story of extraordinary optimism for a future mediated and enhanced through technology and a story of human fear and frailty in the confrontation of nature and technology. Charles Rosenberg described his view of this paradox of modern medicine in his book, *Our Present Complaint*, saying that we have,

> a characteristic disconnect: on the one hand, uncritical faith in the power of the laboratory and the market, on the other a failure to anticipate and respond to the human implications of technical and institutional innovation. And one of those dilemmas grows directly out of our expansive faith in

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> technological solutions to clinical problems; as we are well aware, sickness, pain, disability, and death are not always amenable to clinical intervention. In the late twentieth century, such conflicts are both public policy issues and—inevitably—elements in individual physician–patient relationships.[2]

Understanding and articulating this 'disconnect' as Rosenberg describes it is at the heart of this book. How *did* cancer come to represent our greatest hopes *and* our most cynical fears for and about the biomedical enterprise?

In writing this book I have chosen to focus on just one cancer—prostate cancer—for a number of reasons, but primarily because it is a very common cancer with little said of it by historians and social scientists and one that perfectly exemplifies the paradox described above. The overwhelming focus of the existing historical literature on cancer has been on breast cancer and while this has been in many ways extremely worthwhile in exposing issues of gender inequality, medical and political paternalism, and issues of activism and so on, it does rather beg the question of why prostate cancer is so under-researched. The two cancers are after all in many ways strongly analogous if we consider what they have to say about social, cultural, and medical interpretations of gender, sexuality, and aging. It is my hope that other researchers with interests in these topics might subject prostate cancer to the same kind of detailed, rigorous analysis that has provided breast cancer and breast cancer patients with such a rich social and cultural history. It is not my intention in this book, however, to write a male version of the existing breast cancer literature. The history of prostate cancer has much to offer on its own account—from a sexualized and pathologized account of masculinity appearing in the new scientific age, through to the creation of new spaces in academic medicine after WWII with integration of the (overwhelmingly male) patients of the Veterans Administration (VA), and the rise of activism that interpreted prostate cancer as part of a systematic exclusion of the interests of men and the male patient from mainstream medical attention—this book covers ground only patchily dealt with by existing literature, and, as such, I hope this book with serve as a meaningful contribution to the literature on the history of cancer. To take just one example, the recent controversy over the use of prostate-specific antigen (PSA) testing as a screening tool reveals so much of what is at the heart of Rosenberg's 'complaint'—particularly as it concerns overdiagnosis and overtreatment—and yet that phenomenon too has received little attention from historians and social scientists.

My focus on academic elites in this book leaves it open to (not unreasonable) accusations that it is a kind of 'great man' history of medicine. The many remarkable studies I discovered while working on this project *have* caused me to single out the brilliant work of several individual researchers. In all the ways that matter though, this is not, I think, a hagiography or any kind of history of that narrow type. As I try to make clear throughout the book, the researchers did not make their famous discoveries as feats of virtuosity so much as they were the end results of collaboration between many men and, of course, women, whose work in the wards, clinics, and laboratories made transformational work practicable. That is simply the way science operates, especially as it became more complex in the long twentieth century. As I also try to make clear, the institutional frameworks in which these researchers operated—whether in the availability of careers, funds, space, equipment, or patients—are crucial context. The final part of this brief *mea culpa* such as it is concerns the patient and his lack of voice in this book. This is a regrettable absence, and one I hope that this account by providing a resource for future historical studies on prostate cancer might help to ameliorate. To this end I have, when appropriate, delved into the political, economic, and cultural life of the disease, but there is much to be done if we are to have a history of male cancer as rich and instructive as that for breast cancer in women.

It might seem sensible to have started this study in the nineteenth century when prostate cancer was for the first time becoming widely discussed and debated in the newly forming era of scientific medicine. I decided to go further back than that in an attempt to do some justice to a story as old as humanity—the terrible sufferings of men unable to pass their urine and the efforts of healers who tried to help them. As I describe in Chap. 2, sympathetic and compassionate accounts of these miseries date back thousands of years. That men experienced this painful, life threatening, 'strangury' as a consequence as of their aging was well known to the ancient healers with education enough to record their practices (and more than likely to the many who hadn't and didn't). Doubtless, much of what they described we would now consider to be benign prostatic hypertrophy (another condition ripe for historical analysis), but such was not understood until much later. I have written inclusively in these early chapters of about 'prostatic enlargement', understanding that causes other than cancer were at the root of the symptoms recorded in the annals of medicine.

We can see in the palaeoarchaeological record that cancer has been with us throughout our history but what we mean by the term 'cancer'

has shifted and changed in often confounding ways. The word itself is a Latinized form of the Greek word *karkinos* found in the writings of the Hippocratics, but we might also reasonably claim that the idea of cancer is a much newer phenomenon than that arising from the cellular vision of the body and disease worked out by Rudolf Virchow and his colleagues during the mid-to-late nineteenth century.[3] If I included in this book everything 'cancer' signified in the Hippocratic sense, I would have to write a history of inflammation, a treatise on the soft and hard tumours, and an account of venereal disease, to name but a few things.[4] It is worth the effort, though, I think, to feel back in time and to not just pick up the story on the more familiar ground of ground of nineteenth century laboratory sciences.

Chap. 2 is also a story about anatomy and the changing nature of learned medicine. As the new spirit of autopsy (from the Greek *autopsia*, to see for oneself) permeated the dissecting halls of the great medical schools of the European Scientific Revolution so we get, thanks to Andreas Vesalius in the sixteenth century, the first detailed description of the prostate as an organ involved in reproduction. In the eighteenth century the anatomist Giovanni Battista Morgagni turned anatomy to the study of diseases, looking to locate and analyse lesions in the postmortem body that corresponded with symptoms in life.[5] Morgagni also recognized the prostate and regarded it as an important seat of disease, something likewise taken up by the famous eighteenth century surgeon John Hunter. [6] Old boundaries between physicians and surgeons were breaking down by Hunter's time, and I use his work on the prostate to examine just why and how that was happening. Chap. 2 concludes with a review of 'cancer' as the concept was understood by the mid-to-late nineteenth century, both by laboratory scientists like Rudolf Virchow and by clinicians observing cancer, particularly prostate cancer, in their practice.

Chap. 3 is a study of how issues of cancer and diseases of the prostate were linked to the growth of urology as a surgical specialty. Ancient techniques to relieve urinary problems in men survived relatively intact well into the eighteenth and nineteenth centuries. What had changed a great deal more than the old instruments and practices of surgery by this time though was how diseases treated surgically were coming to be understood and investigated. Once again John Hunter appears in this account because it was he who did so much to place urology on a learned, academic footing particularly with his work on comparative anatomy. Although he himself stopped short of recommending it, Hunter's observations on the role of

the testicles in the function of the prostate encouraged some surgeons to try to use castration as a means of controlling prostatic disease. These operations were highly controversial and it is instructive to look back on the terms and tone of the debates especially as they coincided with moves to craft urology as a recognized surgical specialty at the turn of the nineteenth century.

Although not by any means uniquely American, the push to specialization in the US was particularly rapid as large organizations, including hospitals and universities, looked favourably on the philosophies of scientific management coming out of industry and brought them to their own institutions looking to increase efficiency and increase productivity.[7] One of this group of new specialists was the surgeon Hugh Young whose hugely influential work at Johns Hopkins in the early part of the twentieth century did a great deal to raise the profile of urology even as other surgeons despaired of ever emulating his successes. Young aside, there was an air of gloom within urology during the 1910s and 1920s. By then specialists had become adept at diagnosing prostate cancer even as they were quite fatalistic about what they could then do about it. Some perceived this issue to be one of timing: if general practitioners could be taught to not delay referring patients then they might have more of a chance to intervene. Others still believed that they were doing good by intervening surgically even in advanced cancers and once again we see how debates about restraint and heroic intervention can reveal much about specialties in the making.

Chap. 4 opens with a discussion of the new scientific experimentalism of the mid-to-late nineteenth century, exemplified by the research and writings of Claude Bernard. Along with bacteriology, immunology, and pharmacology, experimental physiology was one of the laboratory sciences underpinning a new style of 'biomedicine' that helped forge a new identity for academic medicine and by extension to professional medicine as a whole. Abraham Flexner's famous report on the state of North American medical education published in 1910 is usually regarded as the turning point in the professionalization of US medical education, but reformers were certainly very active well before then.[8] Decades before Flexner took his tour of the nation's medical schools to collect material for his report, elite physicians had seen reform of medical education as a means to regulate the profession as a whole by tightening and restricting the route into licensed practice. Indeed, Flexner himself made good use of these reform-minded elites when he held up Johns Hopkins School of Medicine—a school itself modelled on the German academic medical system—as an

ideal and a model to be emulated elsewhere. The Flexner report does, though, act as my turning point in this book. The US-focus that began in Chap. 3 continues for the remainder of Chap. 4 and is the exclusive emphasis in the chapters that follow. There is much to be said about prostate cancer beyond the US, of course, and I hope that others will say it. Because the historical literature on this common cancer *is* so small, though, the US demands the attention I give it in this book because of the sheer volume of important work that was done there. The elucidation of the biological nature of prostate cancer and the development of the means to treat and detect it is an overwhelmingly American story.

History is seldom about the new replacing the old,[9] and this is beautifully shown by what happened when the brilliant prodigy of Bernard, Charles-Édouard Brown-Séquard, revealed his glandular theories (and glandular extracts) to the world.[10] Embedded within and emerging from the experimental physiology that academic elites celebrated for the intellectual and cultural capital that it brought to them, Brown-Séquard's work nonetheless found a comfortable place in the 'old-style' medical marketplace in the US. The obvious titillations of testicular extracts and the 'masculine rejuvenation' they promised brought out some of the best (or at least notorious) of that old style, such as the great showman, John R. Brinkley (known across the country as the 'goat-gland doctor'). While organizations like the American Medical Association (AMA) despised and despaired of such charlatanism, testicular extracts show that the old and the new styles of medicine existed cheek-by-jowl well into the 1930s. This was not simply a case of orthodoxy *versus* quackery, however. The quasi-respectable provenance of glandular theories (Brown-Séquard had an impeccable scientific pedigree but he certainly attracted criticism) caused lines of respectability to become blurred. This uneasiness continued as several 'rejuvenating surgeries' came into vogue—vasectomies, testicular implants, and the like. The chapter shows that the American medical marketplace was stubbornly pluralistic well into the interwar period of the twentieth century, something that we would do well to remember when thinking about the rise of the 'patient-consumer' as a phenomenon dating to the (highly politicized) period of 1970s and 1980s medicine.[11]

It perhaps not surprising given this context that early attempts to educate men about problems with their prostate and 'intimate health'—urinary and sexual—were heavily moral in tone. Self-help texts in the early part of the twentieth century encouraged men to seek out practitioners of the (still nascent) specialty of urology as a routine part of their self-care

as they aged. In spite of the often overtly censorious way in which the aetiology of prostate problems was discussed (especially with respect to masturbation), such texts tended to be written with the aim of reducing the shame and secrecy that might prevent men from seeking out appropriate medical advice. Professional interests were also at stake in these efforts—men overcome with embarrassment might well avoid the medical encounter entirely and instead seek out the snake oil salesmen, something that was anathema to a profession so concerned to protect its image and status.

What really transformed the relationship between patients and specialists was another blossoming in the alliance between the laboratory and the bedside, albeit one grounded in the theories of hormones and glands. When a young Canadian physician, Charles Huggins, arrived at the University of Chicago in the 1920s to pursue his interests in experimental physiology, he was part of an as yet still small cadre of academic clinician researchers in the US. At Chicago, Huggins enjoyed purpose-built facilities that brought together laboratories for animal experiments, clinical chemistry (biochemical) laboratories for analysis, and wards supplying 'clinical material' (patients). Huggins would make extensive use of all three kinds of resources in his (Nobel Prize winning) discoveries of the late 1930s and early 1940s that made clear that many kinds of prostate carcinomas depended on hormones for their growth, and that these cancers could, furthermore, be damaged if their hormonal nourishment was disrupted or 'ablated'.

Huggins and his team treated patients, some with very advanced cancer, with a synthetic hormone called diethylstilbestrol (DES) that acted against the testosterones they understood to be fuelling the growth of carcinomas. While often not curative, the therapeutic use of DES resulted in many remarkable changes in how men with prostate cancer experienced their disease. DES was often used to alleviate some of the more painful and troublesome symptoms experienced by men with advanced cancer, and, for many, it changed the course of their disease from an acute to a chronic course. Until Huggins' hormone therapy came into widespread use, urology was almost an entirely instrument-based surgical discipline, and one whose practitioners, while able to intervene in a wide variety of urinary problems, could still do little for patients with symptomatic prostate cancer. Following Huggins, urologists and academic researchers gained a powerful therapeutic tool and an entirely new research strategy. Huggins' obsession with finding methods to quantify his monitoring of