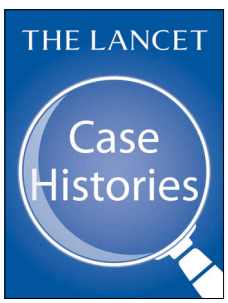
Case histories
Prostate cancer



Adrian Roots

For more on **Case histories** see **Comment** *Lancet* 2016; **387:** 211 and **Perspectives** *Lancet* 2018; **392:** 545

For much of human history men have not, typically, lived long enough to die from prostate cancer. Descriptions of terminal dribbling, urinary retention, and the signs of bony metastases can be found in case records from many times and places, but patients and practitioners seem to have regarded them as the price to be paid for surviving into middle age and beyond. Surgeons occasionally tried to ease their patients' suffering with catheterisation—one unnamed British patient in the early 19th century was catheterised almost 7000 times—or dilating the prostate with a probe. Both procedures were painful and potentially dangerous, and neither offered more than temporary relief.

A new frame for these symptoms, and a new sense of the pathology beneath them, emerged in the extraordinary transformations of European life in the 19th century. The great demographic transition associated with industrialisation increased average life expectancy, and with it the incidence and cultural visibility of many chronic diseases, especially cancer. Physicians gained a new role in monitoring and maintaining collective health in industrial society, while the rising status and power of surgery encouraged patients and practitioners alike to see heroic cutting as a definitive kind of cure for all kinds of diseases.

As late-19th-century physicians began to frame prostate cancer as a distinct form of the disease, they encountered the practical problems of treatment. Digital rectal examination offered the most direct route to diagnosis, but a reliable sense of "feel" could be acquired only through extensive experience. Surgeons who went after the prostate found themselves operating on a walnut-sized nugget of tissue, deep in the pelvis, surrounded by vital organs and vessels. Needle biopsy, developed in the 1920s, enabled more precise diagnosis and staging—especially with the Gleason scale for histological grading, devised by the American pathologist Donald Gleason at the Minneapolis VA Medical Center in 1966. But even complete surgical removal of a cancerous prostate, with its attendant risks and long-term side-effects, did not provide a consistently effective cure.

In the late 1960s, Richard J Ablin, then a young researcher at the University of Buffalo in upstate New York, set out to investigate the immunology of the prostate. He found no specific markers for cancer, but he did identify a prostate-specific antigen (PSA), present in the blood, which rose as the prostate became enlarged. Another team at Buffalo developed an assay for PSA, patented in 1984, which within a few years had become one of the most widely used screening techniques for any cancer. Why was the PSA assay taken up so rapidly? Ablin has argued that, following a series of screening programmes for breast cancer in the 1970s, PSA met a growing public demand for a campaign against a disease widely seen as the male equivalent. The historian Helen Valier also notes a broader socio-political context in which late-20th-century health-care systems emphasised population screening and prevention over the treatment of disease. Insurance companies and pharmaceutical companies rushed to capitalise on the emerging market in drugs for "pre-cancerous" patients, particularly after the US Food and Drug Administration licensed the PSA assay for population screening in 1994.

The past decade has witnessed deep controversy over the value of the PSA assay. In a 2010 *New York Times* op-ed and a 2014 book, Ablin himself called the current state of PSA screening "a hugely expensive public health disaster". In his view, indiscriminate use of the assay has led to overdiagnosis and use of radical treatments with serious side-effects in cases where watchful waiting would be more appropriate. Valier concurs, noting that the results of several international studies have offered a mixed view of the value of PSA screening. These concerns have led researchers to look again at the genetic and immunological markers of prostate cancer, and the possibilities for different approaches to localised and metastatic disease. The therapeutic landscape is changing: docetaxel, licensed in 1995, has been followed by several new drugs, along with intravenous radiotherapy, proton beam therapy, and androgen-deprivation therapy. But the high cost of new treatments, different levels of evidence for different therapies, and the wide range of options—from watchful waiting to radical prostatectomy—present practitioners and patients alike with difficult decisions.

Richard Barnett
richard@richardbarnettwriter.com

Further reading

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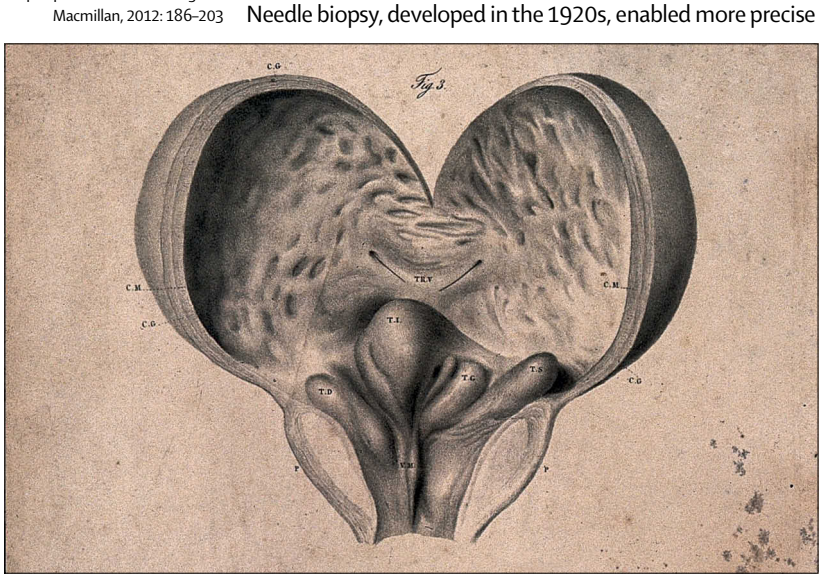

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