

It takes just a couple of hours and patients are usually home for tea. This is brachytherapy, or high precision radiotherapy, an increasingly popular way to tackle prostate cancer, which uses localised radiation to destroy prostate tumour cells.

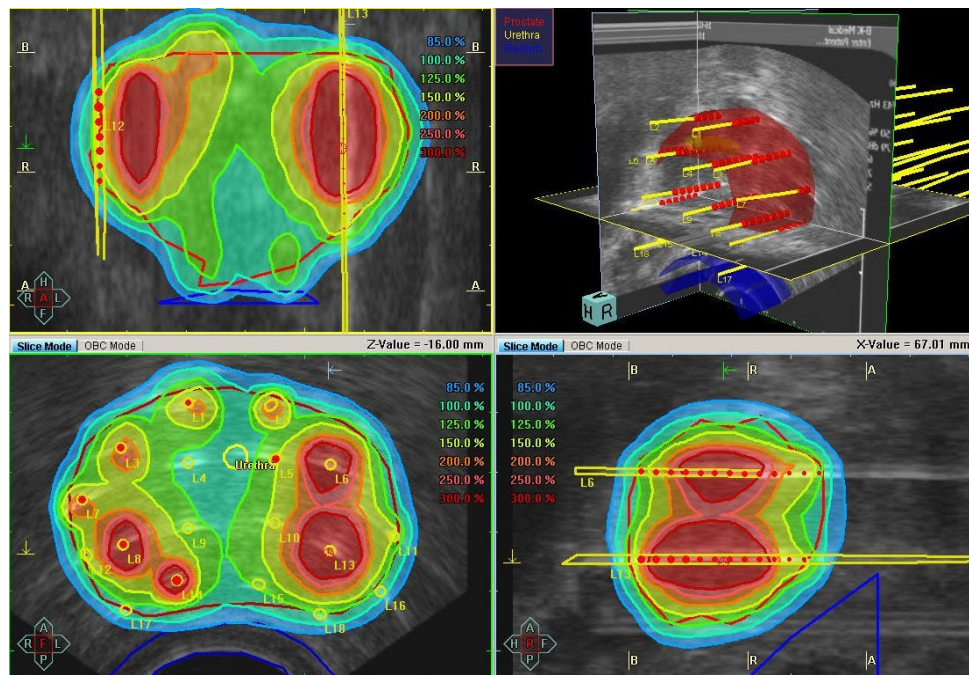
Brachytherapy: Targeted Radiotherapy

There are two types of prostate brachytherapy. Prostate seed therapy is suitable for cancers which have not spread beyond the prostate and which are classed as early stage or low risk. 60-80 seeds, about the size of a grain of rice, are inserted into the prostate. Computers determine the correct position for each seed. Manual or robotic techniques ensure that they are precisely placed to kill the cancerous tissue. Once in place they deliver radiation slowly to the prostate cancer cells over a number of months and then become inactive. The high dose 'pellet' therapy is used for men whose cancer has not spread beyond the gland but who are classed as intermediate or high risk, because of high PSA levels or other factors. It is used alongside external radiotherapy. A computer defines the target areas in the prostate, and a radioactive pellet is driven by a specialized device to bring the radiation to the cancer cells. Unlike seed therapy, the high dose pellet is removed after the treatment session. Both techniques allow the radiation dose to be delivered to the prostate whilst sparing the surrounding tissues.

Patient centered treatment options

Christof Kastner, consultant urologist at Addenbrooke's Hospital, Cambridge, who with colleagues in the Brachytherapy Team – Andrew Doble, Simon Russell, and Professor Robert Thomas has been offering brachytherapy for four years, says that in recent years, the technology has improved significantly. "Imaging and planning of the treatment are now much more sophisticated and we can implant the seeds in one session rather than two," he says. "What is very important is that the modern software we are using allows us to plan and see where we are placing the seeds. The computer provides us with a virtual three dimensional image of the prostate.

We can see exactly where the prostate is and we can plan where to insert the needles so the radioactive seeds create a treatment area only around the prostate and not healthy tissue." A second major development of the equipment used is that the actual insertion of the seeds is optimised and assisted by robotic technology, making positioning much more accurate. "We are thus able to avoid risk areas like the bladder base, pelvic floor and the urethra and as a result the risk of side effects like urinary symptoms, incontinence and erectile dysfunction are much lower. Brachytherapy is now an important therapy for people with low to intermediate risk, and low volume disease. It has a potential of lower side effects than surgery, one of the main alternative treatments, although for some men, of course, surgery will be more appropriate." "The big bonus of brachytherapy is that it is a day case procedure. Patients have the therapy in the morning and go home later the same day. Most take a week off work, but we operated on a member of staff here on a Friday, and he was back working the following Tuesday. Patients do prefer day case treatments," says Dr James Wylie, Clinical Oncologist, Christie Hospital, Manchester. "We have performed about 1,000 of these procedures, we have found that the risk of incontinence is very low, less than one per cent, and the risk of impotence is about 30 per cent, compared to around 50 per cent in surgery."



Both prostate solutions accurately profile radiation doses and needle positions within the patient. Radiation dose can be seen covering the prostate whilst avoiding the surrounding organs.

Dr Jonathan Briers vice president of medical affairs for Nucletron, a world leader in radiation oncology including brachytherapy, says the precise and targeted approach his company has developed allows a physician to concentrate a high dose of radiation in a smaller area, minimising damage to nearby, healthy body tissues and organs. "In prostate cancer, brachytherapy using seeds is increasingly recognised as a standard in earlier stage, localised disease. The same applies to intermediate risk disease with the so-called HDR (High Dose Rate) brachytherapy for prostate cancer," he says "The results of many clinical studies have indicated that brachytherapy achieves prostate cancer cure rates similar to surgery or external beam radiation, but with generally less side effects in terms of disturbance of bowel, bladder and erectile function. The overall treatment duration and recovery from brachytherapy are usually short, which helps patients get back to their usual lives and routine quickly. As with all treatments, no single approach is right for everybody.

At Nucletron, we believe it's important that doctors, patients and their families have information available on the various options to help them make the appropriate treatment choices."

*For more information, please visit
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