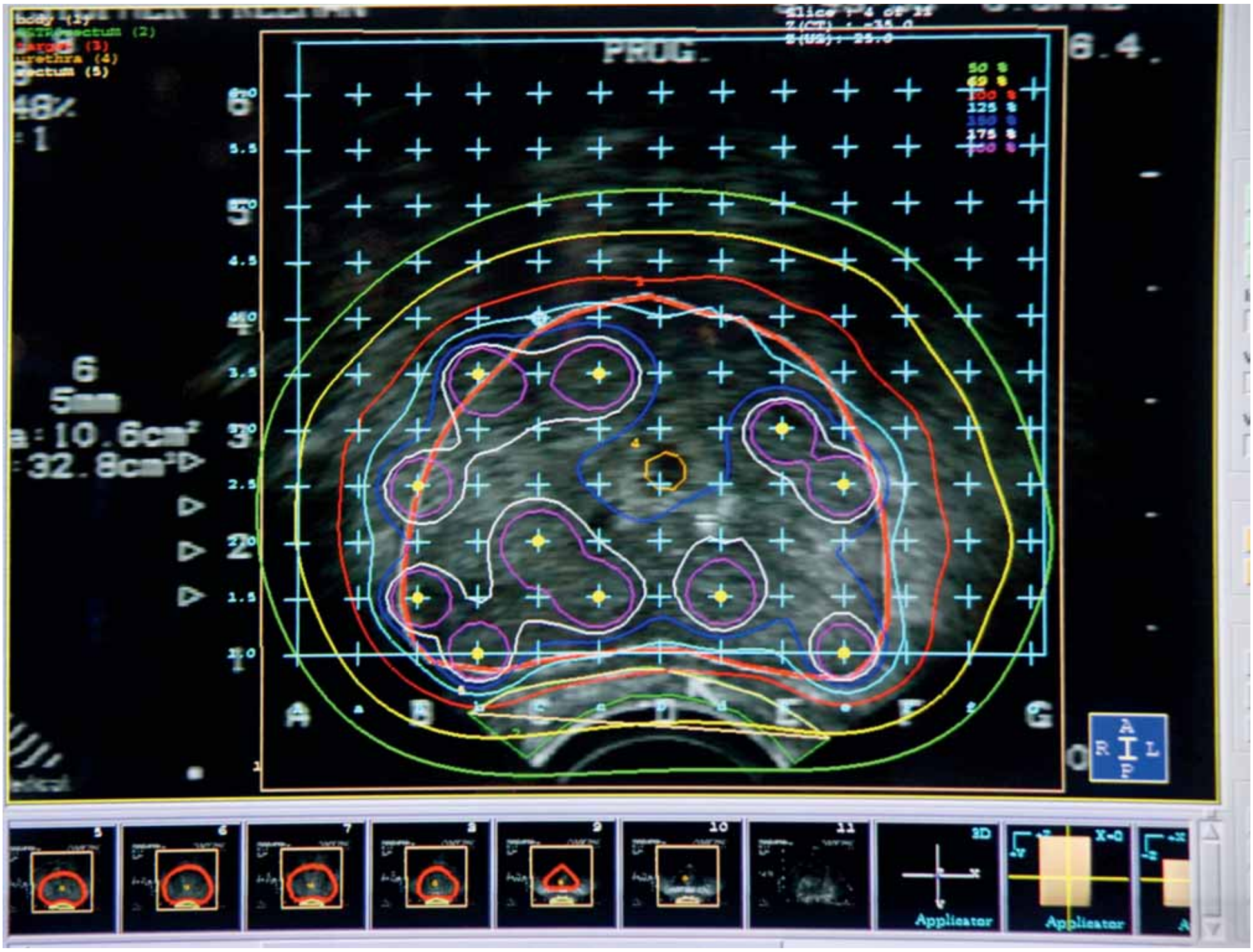

PART 2

Treatment options for prostate cancer

With so many therapy options for prostate cancer, it is a challenge to find the best treatment for each patient.

ASSOCIATE PROFESSOR PHILLIP STRICKER

THERE are many treatment options for localised or locally advanced prostate cancer making it very difficult for patients to choose the best treatment for them.

Newly diagnosed patients faced with selecting a treatment must consider a myriad of factors including limited evidence regarding treatment efficacy, the risk of potential side effects, recommendations from physicians, family, and friends, economic circumstances, prior medical care experiences, and emotional feelings about a cancer diagnosis.

The key factors that should be taken into consideration are:

- Tumour factors.
- Prostate factors.
- Local factors.
- Patient factors.
- Institution factors.
- Other factors.

Tumour factors

There are seven tumour factors that need to be considered when deciding the most appropriate treatment for a patient.

These are the clinical stage, the PSA level, the Gleason score, the cancer site, the extent of the cancer, the presence of perineural invasion and the likelihood of the tumour penetrating the capsule.

Tumour factors significantly influence treatment choice. For example, nerve-sparing prostatectomy should only be considered in patients where the cancer is almost certainly contained within the prostate or, at worse, has only minimal extension outside the prostate.

On the other hand, brachytherapy seed implant should only be considered when the PSA is less than 10ng/mL, the Gleason score is less than 8 and the clinical stage is less than T2b.

High-dose rate brachytherapy in combination with external beam radiotherapy should be considered in cases where surgery is highly unlikely to be curative, such as in patients with extensive cancers, a high Gleason score and a PSA above 20ng/mL, where there is a high likelihood of cancer penetrating through the capsule or if the cancer is located at the apex of the prostate, which is difficult to cure surgically.

Image modulated conformal radiotherapy is particularly useful with extensive cancers, allowing the delivery of high doses of radiotherapy to areas such as the seminal vesicles with relatively minimal damage to surrounding tissues.

Minimally invasive (laparoscopic or robot-assisted laparoscopic) surgery may be less effective for very extensive cancers due to the increased difficulty in achieving a negative margin and performing a full

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lymph gland dissection.

Hormone therapy should be considered where the cancer is extensive, particularly when there is a T4 tumour or where the PSA is greater than 100ng/mL.

High intensity focused ultrasound, which is still relatively experimental, is best reserved as a treatment option for lower stage, lower grade tumours in older patients where the consequences of inadequate tumour eradication are less significant.

Active surveillance should be considered in less aggressive, microscopic tumours particularly in older patients where the Gleason score is 3+3 or at worst 3+4 and where the number of positive cores is limited, provided there has been adequate sampling of the prostate by a saturation-type biopsy.

Prostate factors

The size and shape of the prostate as well as urinary symptoms may influence decisions about treatment. Urinary symptoms include obstruction, irritative symptoms and prostatitis.

A very large prostate may not be suitable for seed therapy or high- dose rate brachytherapy or high intensity focused ultrasound.

A patient with severe urinary obstruction may not be suitable for radiotherapy treatment until the obstruction is alleviated.

If a patient has severe urinary frequency it may be wise to avoid radical prostatectomy because of the increased risk of incontinence after surgery.

Prostatitis is usually an indication a patient is unsuitable for seed therapy.

High rates of calcification make high intensity focused ultrasound and seed therapy more difficult.

A large middle lobe of the prostate also makes seed therapy and minimally invasive surgery more difficult.

Local factors

Local factors that may influence choice of treatment include previous surgery, previous radiotherapy and pelvic anatomy such as its shape, the presence of a previous fractured pelvis or patient obesity.

Previous surgery, such as bowel surgery or laparoscopic hernia surgery, may make further surgery to treat prostate cancer more difficult. Extensive abdominal adhesions from previous abdominal operations can make robotic transperitoneal surgery and laparoscopic surgery particularly difficult.

Patients who have undergone previous radiotherapy are ineligible for further radiotherapy to that same area.

For extremely obese patients it may be safer to choose either a non-surgical option or a minimally invasive surgical option.

If a patient has a history of a severe pelvic fracture it may be wise to avoid surgery.

In patients who have ulcerative colitis of the rectum, high intensity focused ultrasound and radiotherapy should be avoided.

Similarly, radiotherapy should be avoided if possible in patients on long-term warfarin therapy because radiation proctitis could lead to severe bleeding.

The age of the patient and his life expectancy, family history of longevity, comorbidities, medications, and the presence of obesity will have a profound effect on therapy choice.

Patient factors

The patient factors can broadly be categorised into sexual, urinary, bowel, general health, and personality factors.

Sexual

The patient's current relationship and the importance he places on sexual potency are important factors in deciding on the most appropriate treatment.

His preparedness to use sexual aids is also an important factor.

A man wishing to choose the treatment with the lowest chance of sexual side effects would select either low-dose rate brachytherapy or nerve-sparing prostatectomy performed by a surgeon experienced in the technique.

Urinary

Current urinary and irritative symptoms as well as a patient's attitude toward incontinence may have a bearing on his treatment. If a patient has a particular fear of incontinence he should opt for therapies other than surgery to minimise this risk.

Bowel

A history of previous bowel surgery or the presence of an underlying bowel disorder such as ulcerative colitis, Crohn's disease or irritable bowel syndrome can have a major bearing on a patient's treatment decision.

If he is particularly fearful of long-term bowel side effects such as faecal incontinence he should avoid most radiotherapy options.

General health

The age of the patient and his life expectancy, family history of longevity, comorbidities, medications, and the presence of obesity will have a profound effect on therapy choice.

If the patient has a life expectancy of less than 10 years and has a relatively slow growing tumour, active surveillance is a viable option. If he has unstable cardiovascular disease, he would do better to consider less invasive treatment options and aim to avoid hormone therapy.

Personality

A patient's personality will affect his ultimate choice of treatment.

Whether he is the worrying type or the accepting type, whether he is a person who needs to make a joint decision with the doctor or he prefers to leave the decision to the doctor, whether he just "wants it out" or has a fear of surgery, whether he is a pragmatic type or has unrealistic expectations of his life expectancy, whether he is conservative or an early adopter of new technology, will all influence his decision about the most appropriate treatment for him.

Institutional factors

The availability of technologies and local expertise will influence the choice of treatment.

The expertise of the institution is far more important than the technology used in order to achieve optimal results in terms of cure, continence and potency.

In this setting, it is probably more important to ask your institution or surgeon about their experience and results.

In general, outcomes of surgery can be assessed by the positive margin rate, continence and potency rates of patients treated by individual surgeons.

In most high-volume units the average positive surgical margin rate for T2 tumours is less than 10%, for T3 tumours it is 20-40%.

Continence rates after 12 months should be greater than 90% and potency rate for patients undergoing bilateral nerve-sparing procedures particularly in younger patients should be over 80%.

The availability of technologies and the patient's willingness and ability to travel will also influence treatment choice.

Some of the newer treatments such as robot-assisted surgery, image modulated conformal radiotherapy or Cyberknife radiosurgery may be difficult to access, making other options preferable.

Other factors

Other factors that may influence a patient's treatment choices include geographical location, previous experience with cancer, family history, cultural factors, finances, and work commitments.

For example, a man whose father died of prostate cancer at a young age will often choose early and aggressive treatment. A person who is self-employed may choose a treatment with a quicker recovery such as minimally invasive surgery, or seeds, or even high intensity focused ultrasound.

Conclusion

In the absence of a gold standard of therapy for localised prostate cancer, we should provide patients with access to accurate, unbiased and evidence-based information.

A detailed knowledge of the treatment options — their benefits and risks, and what they involve in terms of time, cost and outcomes will help GPs advise their prostate cancer patients weigh up the various options and assist them in achieving their optimal outcome.

Associate Professor Phillip Stricker is chairman of the department of urology at St Vincent's Hospital, Sydney, director of the St Vincent's Prostate Cancer Centre and is an inaugural director of the Prostate Cancer Foundation of Australia.

Tailoring Treatment

1. **Nerve-sparing radical prostatectomy** is ideal for a younger, conservative type of patient with normal erections possibly experiencing urinary obstruction who has a low-volume and high-grade tumour. This is best performed by a surgeon experienced in nerve-sparing techniques.

2. **Radical prostatectomy without nerve sparing** is ideal for a conservative patient of any age who a life expectancy of greater than 10 years, has poorer erections, is less concerned about his future potency and "wants it out". This is particularly appropriate for a higher-grade, higher-volume tumour.

3. **Image modulated conformal radiotherapy** is ideal for patients who require radiotherapy where a higher dose needs to be delivered. This is particularly useful in patients with locally advanced prostate cancer where the seminal vesicles are involved and where there is minimal urinary obstruction.

4. **Standard conformal radiotherapy** is ideal for patients aged 65 or over or with comorbidities that make surgery inadvisable, who are obese or against surgery and have a life expectancy of greater than 10 years.

5. **Brachytherapy with seeds** is ideal for middle-aged and older patients who have a fear of surgery, who are potent and anxious to retain their potency. They should have a low-volume, low-grade tumour in a small prostate with no urinary obstruction. Obesity is not a problem with this therapy.

6. **High-dose rate brachytherapy** is ideal for patients of any age without urinary obstruction who prefer not to have surgery and who have high-volume, high-grade disease, preferably not involving the seminal vesicles. It is also suitable for patients who have comorbidities that make surgery inadvisable or who are particularly obese, making surgery difficult.

7. **Minimally invasive (robotic or pure laparoscopic surgery)** is ideal for patients with localised prostate cancer (low to intermediate grade). It is particularly suited to those people wishing to get back to work quickly. Best results are by surgeons experienced in the technology. Robotic surgery is suitable for obese patients and patients who have previously undergone laparoscopic hernia repair with mesh.

8. **High intensity focused ultrasound.** While still regarded as experimental, this therapy is suitable for older patients with less extensive cancers who are prepared to accept less-trialled newer technology. It is particularly suitable for those patients who may otherwise be eligible for active surveillance but are too anxious to opt for no treatment. The patient should have a small prostate (even with a previous TURP) operation and a PSA preferably less than 10ng/mL, but certainly less than 20ng/mL. It may also be used as a treatment option after failed radiotherapy.

Resources

- Andrology Australia: www.andrologyaustralia.org
- The Cancer Council of Australia: www.cancer.org.au
- The Cancer Council of NSW: www.cancercouncil.com.au
- The Lions Men's Health website: www.prostatehealth.org.au
- The National Cancer Institute: www.cancer.gov/cancertopics/factsheet
- National Comprehensive Cancer Network: www.nccn.org
- Prostate Cancer Foundation of Australia: www.prostate.org.au
- The Urological Society of Australia: www.urosoc.org.au
- The St Vincent's Prostate Cancer Centre: www.prostate.com.au

Further reading

- *Prostate Cancer for the General Practitioner Edition 2*: www.prostate.com.au
- *Your Guide to Prostate Cancer* (Prem Rashid): www.prostate.org.au
- *A Guide for People with Cancer, Their Families and Friends*: www.cancercouncil.com.au
- *Localised Prostate Cancer — A Guide for Men and their Families*: www.cancer.org.au

Don't miss the special GP edition of the DVD *So how do you choose?* on prostate cancer treatments, produced by Professor Phillip Stricker, with this week's issue of *Australian Doctor*.