

## **Prostate Brachytherapy**

### **Patient Information Sheet for transperineal permanent implantation of radioactive seeds into the prostate for Prostate cancer**

#### **Steps in your treatment programme**

1. Diagnosis of prostate cancer by transrectal ultrasound and biopsy
2. Oncologist and urologist assessment including urinary flow study
3. Consent for volume study and implant
4. Volume study at Urology Associates
5. ECG (if over 60) at Urology Associates
6. Brachytherapy implant at Forte Health
7. 1 month post implant CT prostate at St George's Cancer Care Centre
8. 6 week appointment
9. 3 month with a PSA blood test
10. 6 month with a PSA blood test
11. 12 month with a PSA blood test

**At each appointment you will be seen by either an Urologist or an Oncologist. These appointments will be alternated between each specialist.**

#### **Purpose**

The purpose of this procedure is to treat you with implantation of radioactive iodine<sup>125</sup> seeds into the prostate with the aim of curing your prostate cancer. The advantage of using this technique when compared to external beam radiation is that it delivers a much higher dose of radiation to the prostate and takes less time to do so. The implant technique produces similar cure rates to surgery or external beam radiation therapy. The implant is done by a radiation oncologist and specialist consultant urologist as a combined procedure.

#### **Pre-implant investigations**

Before the implant procedure can go ahead, some preliminary investigations must be undertaken. These include a transrectal ultrasound measurement of the prostate (volumetry). Only after this has been completed and the results assessed, can confirmation of the suitability of the brachytherapy implant be made. (A CT scan may also be required.)

The CT scan study takes about 20 minutes. Please empty your bladder before the scan. No other preparation is required. This appointment will be made for you and request form posted to you.

## **Transrectal ultrasound / Volume study**

This study is the first step in preparing for the implant. It is performed to determine whether an implant is technically feasible and to provide a model of your prostate for the radiation planning.

The ultrasound pictures record the shape and size of your prostate and these are analysed by a computer which produces a 3 dimensional reconstruction. This then allows the calculation of the optimal seed distribution and needle placement in the prostate.

The ultrasound study is performed using an ultrasound probe in the lower rectum.

The ultrasound study takes between 30 and 60 minutes and afterwards you will be discharged home. No anaesthesia is given and you will be able to drive home if you wish.

## **Pre-implant medication**

### **Doxazosin**

As there will be some swelling and bruising after the implant passing water can become more difficult. To help with the passage of urine a medication called Dosan (doxazosin) will be started one week prior to surgery, the surgeon will give you a prescription for doxazosin, 2 mg per night for the first two nights, then 4 mg per night which will continue for three months after your brachytherapy. This medication relaxes the muscle of the urethra and bladder allowing for improved stream and more complete emptying of the bladder.

### **Side effects of doxazosin**

This may include dizziness or light headedness, stuffiness in the nasal region and tiredness. If light-headedness occurs, either sit or lie down immediately until the sensation goes away. The dose may need to be lowered or the drug stopped if any of these symptoms are severe.

If severe symptoms persist call your Urologist.

## **WHAT HAPPENS ON THE DAY OF THE IMPLANTATION?**

### **Procedure:**

The brachytherapy implantation will be performed at Forte Health Operating Theatre under general anaesthetic.

You will be advised when to come to hospital, this is usually on the day of surgery. On arrival to the ward the staff will show you to your bed and guide you through what is required prior to your implantation.

**You must not have anything to eat or drink from midnight the evening prior to implantation.** You should bring all your own medications with you to hospital.

***Please inform your surgeon if you are taking any (blood thinning) anti-coagulant medication (e.g. Warfarin or Aspirin).***

This operation is performed under general anaesthesia. The anaesthetist will discuss this with you prior to the operation. This usually occurs in your hospital room pre-operatively.

The implantation procedure usually takes between one and one and half hours. During this procedure the tiny seeds (smaller than a grain of rice) are placed in the prostate via needles. These needles pass through the skin in the area between the scrotum and

anus (perineum) and the accuracy of their replacement is controlled by an ultrasound in the rectum. Once the needles have been accurately placed, they are carefully withdrawn, leaving the seeds in place in the prostate. After the procedure, a period of time will be spent in the recovery ward, following which you will be taken back to your room. Normally you will go home later in the afternoon once you have passed urine.

### **Urinary Symptoms**

Usually a catheter is not required after the brachytherapy implant, although occasionally one will be left in the bladder if there is blood in the urine. It is normal to experience some side effects. You may experience some difficulty passing urine, burning when passing urine, small amounts of blood or small blood clots. This usually resolves in one or two days. You may need to pass urine more frequently and you may have a strong urge to pass urine. You may also experience some difficulty in emptying your bladder. These symptoms of urgency and frequency may continue for several months. You will be prescribed doxazosin to minimise these symptoms. Should this be a major problem after discharge and you cannot pass urine, ring Urology Associates on 355 5129. In this situation a catheter may need to be placed.

### **POST IMPLANT**

#### **Activity**

Avoid heavy lifting or straining for the first few days after the implant. Avoid jogging or cycling for 4 weeks. Occasionally vigorous activity may cause some blood loss in the urine. This will not affect your implant. You will be unable to drive for 24 hours.

#### **Medication**

The following medications can improve these symptoms and you will be given a prescription with your admission forms.

1. **Doxazosin**, as discussed in previous sections, is to continue at 4mg per night. This allows for improved stream and complete emptying of bladder. Because the radiation treatment extends over 4 to 6 months, **most men need to remain on doxazosin for at least 6 months** and one in four men will still be on it at 12 months.
2. **Ciprofloxacin 500mg** (antibiotic), 1 tablet twice a day for 10 days starting after implantation.
3. **Diclofenac 75 mg 1 tablet twice a day with food** (for pain and burning with urination), 1 tablet morning and night for 1 month from hospital. Take longer if burning persists. Some patients benefit from taking this for several months or longer.
4. **Ural 1 sachet** in a glass of water 3 to 4 times a day. This reduces the acidity in the urine and helps if there is burning when passing urine. Continue as long as any burning persists.  
In addition a specific post brachytherapy diet may help minimise your urinary symptoms.

## **Radiation Side Effects**

It is common to have some bruising in the area around the implant, and a feeling of fullness when you sit down. This usually settles over the next week but may persist longer.

Approximately 1-2 weeks after the implant, it is normal to experience symptoms from the radiation. The symptoms can include frequency, burning, urgency and a poor stream and are generally at their worst 4-6 weeks after the implant. They then usually settle over a period of four to six months but can take longer in a small number of patients.

If you drink too little, i.e. <1500 ml per day, you may experience more discomfort when passing urine, have more trouble starting and poor flow.

If you drink too much, i.e. > 2500 ml per day, then you are likely to pass urine frequently and get up often at night.

Incontinence may rarely occur (5%) following brachytherapy.

Impotence may occur in up to 40% of men having this treatment. It will often respond to oral agents, such as Viagra.

## **Radiation Safety**

The radioactive iodine seeds are surgically implanted directly into your prostate gland. Most of the radiation emitted by the seeds will be absorbed by your body. In addition, the strength of the seeds decreases with time, the activity reducing by 50% every 2 months, however, some precautions should be taken to ensure that those around you are protected from unnecessary radiation exposure. The principles of radiation safety that you need to understand are:

### **Distance**

Radiation decreases rapidly with distance from your body, so that no significant dose levels can be detected at a distance greater than 1 metre.

### **Time**

The amount of radiation received increases the longer a person spends in close contact with you. A person will receive very little radiation during short periods of direct or close contact. Consequently, you cannot harm anyone by briefly hugging, kissing, shaking hands, or being in the same room with them.

### **Children**

For peace of mind, as infants are more sensitive to radiation and because the small amount of radiation that can be detected is essentially located in the area just above your pelvic bone, it is recommended that you should not nurse young children on your lap or sit close to them for long periods of time during the first 2 months after implantation.

### **Family**

You may sleep in the same bed as your partner (provided she is not pregnant or possibly pregnant). Sexual intercourse, using a condom, may be resumed when you are ready after the implant. Initial ejaculations may be uncomfortable and your semen may be discoloured dark brown or black or red. This is normal and is a result of bleeding that may have occurred during the implant. After 2 months it is not necessary to wear a condom. It is extremely rare for a seed to be released into the ejaculate.

## **Pregnant Women**

If your partner or a close family member sharing your living accommodation is pregnant (or possibly pregnant), extra precautions are necessary, such as, in the case of your partner, using separate beds until the baby is born. You should avoid close contact with pregnant women for extended periods of time during the first two months after implantation. As noted above, brief contact is permissible (for example, hugging, kissing) but for longer periods maintain a distance of at least 1 metre.

## **Daily Activities**

You may resume normal activities in a few days (for example work, shopping and church) without the risk of harmful radiation exposure to those around you (provided you keep in mind the time and distance precautions). The radioactive material that is emitting radiation is contained in a sealed capsule (seed), so the radioactivity does not circulate in your blood, urine, or any body fluids. Therefore you cannot contaminate anyone or anything. Linen, clothing, tableware and dishes may be used by other persons without any special precautions. Your bodily wastes (urine and stool) are not radioactive.

## **Seed Loss**

After the implant procedure it is possible to lose some of the seeds through urination. It is possible to pass seeds for some while, but it is unlikely after the first 1-2 days.

## **Radiation Information Card**

Before you leave hospital you will be given a card indicating the date of your implant and the number and strength of the radioactive seeds. Put this in your wallet and carry it with you for 12 months after the implant. This information may be required if you were admitted to hospital with a sudden illness or injuries from an accident or needed to undergo abdominal or pelvic surgery. (If you are advised to have an operation on your prostate, even several years after the implantation, you must inform your surgeon so that he can obtain advice about disposal of any seeds that are removed.)

Some very sensitive security monitors can detect the low levels of radiation emitted by your body in the first months after implantation, for example, such monitors are now more frequently in use in airports. If you trigger such an alarm, show this card.

In the unlikely event that you die in the first 12 months following the implantation, cremation of your body can be hazardous (because of the risks of contamination and because of the potential residual radioactivity in the ashes).

## **Summary of radiation safety guidelines**

1. You cannot harm anyone by briefly hugging, kissing, shaking hands, or being in the same room with them.
2. No significant dose levels can be detected at a distance greater than 1 metre from your body.
3. You should not nurse young children on your lap or sit close to them for long periods of time during the first 2 months after implantation.
4. You should avoid close contact with pregnant (or possibly pregnant) women for extended periods of time during the first 2 months after implantation.
5. You cannot contaminate anyone or anything with radioactive material.
6. Carry your information card with you for 12 months after the implant.

### **Follow up**

One month after the implant you will be asked to return to St George's Cancer Care Centre for a CT prostate x-ray. The CT scan will enable us to determine the exact position of each seed in the prostate and therefore check that the amount of radiation throughout the entire gland is adequate.

### **Appointments**

After your implant, it is important to have regular check-ups to monitor the prostate cancer treatment and take care of any problems that might arise. Follow-up will be with your Oncologist and your Urologist. A follow-up schedule will be outlined prior to your surgery. Your 3 month, 6 month and one year follow up visit will always include a PSA blood test and may include a rectal examination of the prostate (DRE).

### **PSA**

The PSA blood test (along with the DRE) is the primary means of following the course of the cancer. The typical PSA course is for the level to gradually decrease over 1-2 years.

There is no absolute number that you need to reach. While it is true that patients who reach levels less than 1.0 ng/ml do well, there are many patients with steady levels between 1 and 4.

The important factor is that once the PSA reaches its low point (the nadir) that it stays there. Often when it reaches the nadir, the values will fluctuate slightly around this number. This is normal. If the PSA level should increase from previous levels, we like to repeat it approximately every month to establish a pattern. A judgement about the course of the cancer is rarely made with fewer than 3 consecutive readings.

Please note that approximately 25% of the patients have a jump in their PSA readings between 9 months and two years. We are not certain why this occurs. It is often associated with some symptoms of urinary frequency, urgency and slight pain. Please let us know if this occurs so that you can be assessed and prescribed medication if needed. If this occurs, the PSA is usually done at one-month intervals and symptoms treated.

### **Post implant procedures**

#### **TURP**

A transurethral resection of the prostate (TURP) is a technique to relieve urinary obstructive symptoms. It requires removing some prostate tissue. We generally recommend that this NOT be done any time after the implant if at all possible. TURP after the implant has been associated with a high risk of urinary incontinence. We generally recommend that medications be attempted first.

If a TURP is recommended to you then we would appreciate knowing about it and discussing it with you and your doctor.

#### **Cystoscopy**

Cystoscopy is a procedure to look into the bladder. It is performed with either a flexible or hard scope. While not as traumatic to the urethra as a TURP, occasionally the urethra can be irritated and slow to heal. We generally do not recommend it be performed during the first 6 months after the implant.

## **Colonoscopy**

Colonoscopy is a procedure to examine the rectum and colon. Many patients will have this procedure done as a part of their routine health care. It may also be done if any bleeding from the rectum occurs (rare) as a result of the implant. We generally do not recommend it be performed during the first 6 months after the implant. A biopsy of the rectal wall should never be taken without this being discussed with your urologist or oncologist.

## **Appendix 3 – Post Brachytherapy Diet**

A regular diet is recommended unless you are on a special diet for other reasons. Some foods and liquids, such as those listed below, can be slightly irritating to the bladder, causing increased frequency of urination, discomfort and slower stream. Generally, it is not necessary to eliminate these foods from the diet but you may wish to decrease the amount, particularly if you are having a lot of symptoms. It is generally a good idea to keep the bowel movements soft. Metamucil works well.

### **Foods that may cause bladder irritation:**

Alcoholic beverages	Carbonated beverages
Apples	Chillies / spicy food
Apple juices	Tomatoes
Plums	Vinegar/pickles
Strawberries	Vitamin B Complex
Chocolate	Vitamin C
Citrus fruits/drinks	Peaches
Coffee, including decaf	Pineapple
Grapes + juice	
Guava	