

## **INTRODUCTION**

As part of the preparation for Radiation Therapy to the Prostate, your Radiation Oncologist has recommended that you have gold markers implanted into the prostate gland.

This leaflet will explain why we use gold markers (known as fiducial markers), the procedure and aftercare. It includes sections about the treatment procedure and the side effects, which may occur with this sort of treatment. If you need further advice please do not hesitate to ask.

## **WHY USE MARKERS?**

Markers are permanently placed into the Prostate as preparation for your Radiation Therapy. Their use allows us to:

- Ensure we can target the prostate with great accuracy
  - Reduce the amount of healthy tissue around the prostate that receives the same dose as the prostate. This may help
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## **WHEN AND HOW ARE THE MARKERS USED?**

The markers, the prostate gland and other organs are clearly seen on the CT scan which we use to plan your Radiation Therapy. Before each treatment we will take images of your pelvis from the front and the side.

These markers tell us the exact position of the prostate gland, which is normally not visible on plain x ray images. This allows us to fine tune the position of the treating beams each day, before we treat you.

The measurements and any adjustments are done by the Radiation Therapists from outside the room. The checking process takes only a minute or so and you should lie still and breathe normally throughout as treatment will be given immediately afterwards. You may notice that the table you are lying on moves slightly just before we treat you. This is the fine tuning and known as Image Guided Radiotherapy.

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Restart Warfarin at your usual dosage the day after the procedure. If in doubt or you have any concerns, please check with the Medical Staff at UPMC Whitfield Cancer Centre.

## **WHAT TO EXPECT WHEN YOU ATTEND THE APPOINTMENT**

You may drive yourself here and home again following the procedure unless it becomes necessary to administer sedation or an anaesthetic, in which case you should not drive for the first 24 hours following the procedure.

Prior to the procedure it is necessary to start a short course of antibiotics; this will be discussed with you.

As it is important to have an empty rectum at the time of the implant, you will be asked to take only clear fluids for 24 hours before the procedure and to use a suppository the night before the procedure, and an enema

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to reduce side effects during treatment and in the long term; see 'Radiotherapy to the Prostate' leaflet.

The markers are very small; just 3mms long, and made of gold. Three markers are used and it requires a short visit to the Department prior to your planning scan. They are implanted into the prostate at least one week before the planning scan to allow them to settle in place.

The markers are small and cause no problems once they are in position. They do not interfere with treatment and you should be unaware of their presence. It is safe to have MRI scans and they do not interfere with airport security scanners.

#### **PRE-OPERATIVE ASSESSMENT**

About one week before the procedure the majority of people will be asked to attend a pre-operative assessment in the Cancer Centre. Please bring a list of your medications with you. The assessment takes about 30-40 minutes.

#### **MEDICATION TAKEN TO THIN THE BLOOD**

It is imperative for you to make us aware if you are taking blood thinning medications including Aspirin, Warfarin, Plavix, Eliquis, Xarelto or similar. Aspirin or Warfarin should be stopped 72 hours before the procedure unless your oncology doctor advises against it.

immediately prior to the procedure. This is important in order to get a clear view of the prostate via the rectum, using a rectal ultrasound probe.

Patients are admitted on the day of the procedure having fasted from midnight the night before. There will be a preparatory interview done by the Ward Nursing Staff and the enema will be administered one to two hours prior to going to Theatre.

After the enema, the genital area and the area around the anus should be thoroughly cleaned with Savlon wash as directed by the Nurse. After drying the area

completely, an anaesthetic skin patch will be applied to the area of skin between the anus and the scrotum and this should be held in place with a pair of clean underpants.

The procedure is very similar to a prostate biopsy. Usually we use only a local anaesthetic. If you had a lot of discomfort with the biopsy, your doctor may offer you sedation which makes you drowsy but is not an anaesthetic. If you have sedation you are not able to drive for 24 hours after the procedure.

For the procedure itself, you will lie on a theatre table equipped with stirrups to hold your legs up and apart. The anaesthetic patch will be removed and a final cleansing of the area undertaken. A rectal ultrasound probe, supported on a stand attached to the theatre bed, will be inserted into your rectum, and some preliminary imaging and

The side effects that can occur include urinary infection or systemic infection (Septicaemia), temporary and usually mild local pain or discomfort and bleeding into the urine, stools and/or semen. The symptoms of septicaemia are similar to flu: a high temperature or feeling feverish, fast heart beat and fast breathing. The symptoms usually develop quickly and can progress quickly.

The use of antibiotics helps to reduce the risk of infection though occasionally the infection may still occur in spite of this. It is important to take all the antibiotics we give you and seek help if you feel unwell.

The symptoms of urine infection are: pain or burning when you pass urine, passing urine urgently and frequently, smelly urine or feeling feverish or unwell. Simple pain

## FIDUCIAL MARKERS



measurement of the prostate will be undertaken.

Following this imaging, two specific points are chosen as the needle entry points and will be further anaesthetised with small local anaesthetic injections. There will be a brief sharp pain with the needle followed by a short stinging sensation. After that only mild pressure should be felt as the gold seeds are placed. The procedure is likely to take approximately 15 minutes. You will return to the ward but can leave soon afterwards following assessment.

#### **WHAT TO EXPECT FOLLOWING THE PROCEDURE?**

This procedure is generally well tolerated with few side effects. The overall risks are lower than for the prostate biopsy. Major complications are rare.

medication should relieve any pain that might occur; Nurofen will be prescribed.

Bleeding that does occur usually is not heavy and settles over a few days. You do not need to do anything about the bleeding as long as it is not heavy. Drinking extra water will help to clear any bleeding and minimise discomfort.

If the bleeding is heavy please contact the Cancer Centre. In the unlikely event that you are unable to pass urine you should seek urgent medical attention.

If you develop any of these symptoms during the week after the procedure this requires urgent medical attention.

