University College Hospital

Treating prostate cancer with Image-Guided Radiotherapy (IGRT)

Radiotherapy Department
Patient information series

No 32
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020 3447 3711 (Direct line)
020 3456 7890 ext 73711/bleep 1458
0845 155 5000 ext 73711/bleep 1458

We will try our best to meet your needs.
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Introduction
This booklet has been written for men who have been referred for image-guided radiotherapy treatment (IGRT) to the prostate using fiducial markers (gold seeds). The booklet explains:

• What is IGRT?
• Why IGRT may be suitable for you
• What IGRT involves
• What you can expect
• Are there any risks involved?

We understand that this is a daunting time for patients. You may feel that you have been given lots of information about what needs to be done in a short period of time. We hope this booklet answers some of your questions. If you still have any questions or concerns, please let your doctor or specialist nurse know. They are here for you and are in the best position to help and advise you.
What is image-guided radiotherapy (IGRT)?

Radiotherapy is a treatment for prostate cancer. The prostate gland normally moves by small amounts within the pelvis and can be in a slightly different position every day. We are investigating methods that allow the doctors and radiographers to know the exact position of your prostate before each treatment so that they can centre the beams of radiotherapy accurately onto the prostate gland.

To attempt to improve the accuracy of your radiotherapy treatment we are introducing a new procedure. It is called image guided radiotherapy (IGRT) with fiducial markers (gold seeds) for prostate cancer. This involves the insertion of very small gold seeds into the prostate gland. Each day when you have your radiotherapy treatment, these seeds are identified using a variety of imaging techniques. We can track the seeds movement, and therefore the movement of the prostate gland. This allows the radiographers treating you to position the radiotherapy beams accurately onto the prostate gland, by making small adjustments to the radiotherapy treatment couch before every treatment.

This technique has been tested and used in other cancer centres in the UK and around the world.

Why may IGRT be suitable for me?

IGRT may be suitable for you because:

- You have prostate cancer that is due to be treated with radiotherapy.
- You do not have any contra-indications as to why the seeds could not be inserted into your prostate gland.

IGRT is an optional procedure and should you wish to decline it, your radiotherapy treatment will continue in the same way. You will receive the same dose of radiotherapy, and length of course of external beam radiotherapy as has been discussed with you by your doctor.
What does IGRT involve?
If you choose to have radiotherapy treatment for your prostate cancer using IGRT with fiducial markers (gold seeds), your first appointment will be to have the seeds inserted into your prostate gland.

The gold seeds can be inserted into your prostate gland by two different methods:

• As an additional procedure during the needle insertion if you are having High Dose Rate (HDR) Brachytherapy before external beam radiotherapy.

• As a day care procedure using a local anaesthetic when you attend for a trans-rectal ultrasound scanning before external beam radiotherapy alone.

Consent
You will need to give your written consent to confirm that you understand the risks of this procedure and agree to have it done.

You will have the opportunity to talk to your doctor or nurse about any concerns you have, any potential risks involved, and how it will be done.

Preparation before the seed insertion procedure
Before you undergo the seed insertion procedure you should let the doctor or nurse know of any of the following:

• If you have allergies to any medications, including anaesthetics.

• If you are taking any medications, particularly antibiotics or anticoagulants (including aspirin, warfarin, clopidogrel and Plavix®).

• If you have or have ever had bleeding problems.

• If you have an artificial heart valve.
If you are taking any medications to thin the blood you must let us know as you will have to stop taking them before the seed insertion.

**If you are taking aspirin you must stop taking it for seven days before the seed insertion.**

**If you are taking warfarin, you will need to stop taking it for five days before the seed insertion.**

**If you are on clopidigrel (Plavix®), you will need to stop taking it for ten days before the seed insertion.**

Please continue to take all your other medications.

**Having gold seeds inserted if you are having HDR Brachytherapy**

If you are having High Dose Rate (HDR) brachytherapy, you will have a general anaesthetic before this procedure starts. Three gold seeds will be inserted into your prostate gland just before the HDR needles are inserted. This will prolong the overall HDR procedure by up to 30 minutes. However it will not affect the HDR treatment and you will not be aware of the additional insertion of the gold seeds. About 15 minutes before the HDR needle insertion, you will be given an antibiotic injection to prevent any risk of infection. You will also be given a seven day course of antibiotic tablets (ciprofloxacin) to take after the procedure.

During the procedure, a transrectal ultrasound probe is covered in gel and inserted into your rectum. This will create an image of the prostate to allow the seeds to be inserted into the different areas of the prostate. The seeds are inserted using a very fine needle. They are inserted into each end of the prostate and the middle (three in total).

**After the procedure**

If you are having HDR brachytherapy you should not experience any additional discomfort from this procedure than expected from the HDR needle insertion. You will need to take antibiotics for seven days after the procedure to prevent the risk of any infection.
Having gold seeds inserted as a day case

You will have an initial consultation with your clinical oncologist to discuss your radiotherapy treatment options. If you choose to have the gold seeds, you will be given a prescription for seven days of antibiotic tablets (usually Ciproxin®). You will need to start taking the antibiotics 24 hours before your seed insertion.

If you are having a day case transrectal ultrasound, the gold seeds are inserted into your prostate gland two weeks before your radiotherapy planning scan. Once in the examination room you will be asked to take off your trousers and pants and asked to lie on your left hand side with your knees tucked against your chest. If you find this position difficult let the doctor know before the procedure.

During the procedure, the transrectal ultrasound probe is covered in gel and inserted into your rectum. This will create an image of the prostate to allow the seeds to be inserted into the different areas of the prostate. A very fine needle is passed down the length of the probe and an anaesthetic liquid is injected into the small space around the prostate itself. You should feel no more than a small stinging sensation whilst this liquid is injected and it helps to reduce any discomfort you may experience during the procedure.

The seeds are inserted using a very fine needle. They are inserted into each end of the prostate and the middle (three in total). The whole procedure takes around 10 minutes from start to finish.

You may feel a dull pressure as the needle is inserted, you may also feel pressure in the rectum while the ultrasound probe is in place. There may also be a brief, sharp pain as the needle is inserted into the prostate gland.
Special instructions after the procedure

If you are having day case transrectal ultrasound, you will be asked to avoid strenuous activities for about four hours.

You should also avoid heavy lifting, cycling and core strength gym activity for three days afterwards. Otherwise, you can resume all normal activities and can go back to work the next day.

You may experience some mild pain in the rectal area for one to two days after the procedure. If you do, mild painkillers should be adequate to help alleviate any pain. In order to avoid having to strain your bowels, you should eat plenty of fruit and vegetables and drink one to two litres of fluid a day. You should also drink plenty of non-alcoholic fluids whilst there is blood in your urine.

Please remember to avoid alcohol for the rest of the day after the seed insertion as this interacts with the suppository given at the end of the seed insertion.

It is best not to travel abroad for 48 hours after the seed insertion.

We advise patients to avoid sexual activity for one week after the seed insertion. This is to help reduce the risk of infection.

You will need to take antibiotics for seven days after the procedure to prevent the risk of any infection, even if you feel quite well.
Risk of infection
Because the seed insertion needle passes through the rectum and into the prostate, there is a small risk of infection. This is why we are so careful to prepare you with antibiotics and use them during the procedure, and why you should continue taking the ones you have been prescribed until you finish the course. Even if you feel well and have no symptoms of infection.

A small percentage of patients may become unwell within a few days of the seed insertion, despite these precautions. If you experience any of the following symptoms, please go to your local accident and emergency department:

• Your pain increases.
• You feel unwell or shivery.
• You have a fever higher than 38 °C (100.4 °F).
• You are unable to urinate within eight hours.
• You start to pass large clots of blood.
• You have persistent bleeding.

Should you need to visit your nearest accident and emergency (A&E) department please tell the staff that they must contact UCLH, and ask the operator to bleep the on-call Oncology Specialist Registrar

The number for UCLH is: 020 3456 7890 or 0845 155 5000
What are the risks?
The seed insertion has a small risk of causing problems such as:

Blood in the semen (sperm)
It is common to see blood in your semen following the procedure and this can sometimes last up to six weeks. You may prefer to use a condom during sex during this period. Many men find that blood in the semen is the last side effect to clear.

Blood in the urine
Almost everyone will notice some blood in their urine. The first time you pass water, following the seed insertion, your urine may be quite red, and may even contain a small clot. You may continue to see some blood in your urine for up to five days following the procedure. Occasionally it can last for up to two weeks, but it should settle on its own.

If the amount of blood increases, you should contact the hospital.

Bleeding from the rectum
Because the seed insertion needle is pushed through the wall of the rectum during the procedure, you may experience a small amount of bleeding, and possibly some small clots, when you open your bowels in the first couple of days after the seed insertion. This is nothing to worry about. Very rarely (less than 1 per cent risk) patients can experience heavy bleeding and large clots from the rectum.

If this happens to you, you will need urgent medical attention.
Call UCLH immediately on 020 3456 7890 and ask the operator to bleep the on-call oncology registrar, or call an ambulance.
Try to keep lying flat while you wait.

Difficulty passing urine
Rarely (less than 1 per cent of patients), you may experience difficulty emptying your bladder. If this happens you will need to have a catheter (urine tube) inserted. Please contact us before you get too uncomfortable.
An allergic reaction to the medications
Such as the anaesthetic, used during the procedure (less than 0.1 per cent risk).

Seed movement
There is a risk that movement of the seeds will mean that we cannot use them to image your prostate as planned.

Seed loss
There is a potential risk of the seeds becoming displaced and being passed in your urine.

Infection
This is more common in men who have undiagnosed prostatitis. Usually, taking antibiotic medication before the biopsy prevents an infection from developing.

Key points to remember
• If you have any signs or symptoms of infection such as temperatures, shivers, shakes or burning on passing water you should seek medical attention urgently.

• Tell the doctor or nurse if you are allergic to any medication or take any medications to thin your blood (especially warfarin or clopidrogel).

• You will take antibiotics for seven days after the procedure.

• Expect some bleeding in your water, back passage and semen for up to six weeks. You will need to drink plenty of fluids in the days following to help clear this up.

• If you are unable to pass water following the procedure please attend your nearest accident and emergency department. (This happens to approximately one in 50 men).
Useful contact numbers
If you have any further questions or concerns about image-guided radiotherapy treatment please contact:

**Brachytherapy Radiographer**
Eleanor Gill
Direct telephone:  020 3447 3782
Switchboard:   020 3456 7890
bleep 1128
Email:    eleanor.armstrong@uclh.nhs.uk

**Macmillan Information and Support Radiographer**
Mark Williams
Direct telephone:  020 3447 3711
Main switchboard:  0845 155 5000
ext 73711
bleep 1458
Alternative switchboard:  020 3456 7890
ext 73711
bleep 1458
Email:    mark.williams@uclh.nhs.uk

**Dr Payne’s Secretary**
Direct telephone:  020 3447 9105

**Dr Mitra’s Secretary**
Direct telephone:  020 3447 9090
Space for notes and questions