

# Prostate High Dose Rate Brachytherapy

Radiotherapy Department  
Lincoln County Hospital  
[www.ulh.nhs.uk](http://www.ulh.nhs.uk)

The aim of this leaflet is to explain what brachytherapy is and the treatment procedure.

## **What is High dose rate (HDR) brachytherapy?**

Brachytherapy is a form of high dose radiation treatment that is used as a boost to external beam pelvic radiotherapy. A radioactive source is moved along small hollow needles in the prostate itself, giving a high radiation dose to the tumour while reducing the dose to the surrounding healthy tissues.

With HDR Brachytherapy a computer-controlled machine called a microSelectron pushes the single radioactive source into the needles for precisely calculated periods of time. Because the computer can control how long this wire remains in each of the needles, the doctors are able to control the radiation dose in different regions of the prostate. The tumour can receive a higher dose without increasing the dose to the rectum.

## **Procedure**

You will be seen by a consultant oncologist as well as a consultant urologist. Both of these doctors will be involved with the brachytherapy treatment.

They will go through the procedure with you and make arrangements for any necessary tests.

A rectal ultrasound scan may be carried out before you start your brachytherapy and the doctor will inform you if this is necessary.

Prior to your brachytherapy you will have an appointment for a brachytherapy assessment with a radiographer who will fully explain the procedure and answer any questions you may have.

You will be advised at the assessment to follow a gas reducing diet for 1 week prior to the brachytherapy procedure and continue this diet until you have finished your external beam radiotherapy.

You will also be given a micro enema to use on the morning before you come to the hospital. The consultant will prescribe antibiotics, plus a medication to help urination following the brachytherapy.

In Lincoln, we have a purpose built brachytherapy suite in the Oncology Centre and both the ultrasound scan (if required) and the brachytherapy are carried out within that suite, usually on a Monday.

The brachytherapy is carried out under a general anaesthetic. After you have been anaesthetised, an ultrasound probe will be inserted into your back passage in order to see your prostate. After thoroughly cleaning the skin between your scrotum and anus, the hollow needles will be guided through the skin into the prostate. There may be 10 to 20 needles. A urinary catheter will also be passed through your penis into your bladder.

When the brachytherapy needles have been positioned the doctors and medical physicists use the ultrasound images to decide the best plan to precisely deliver the radiation. You will be given your treatment when the treatment plan has been calculated and checked.

The microSelectron pushes a single radioactive pellet into each needle in turn and for a controlled amount of time. The pellet "dwells" only along those portions of the needle that are in the prostate gland. The only time there is any radioactivity present is during the treatment.

After the treatment has finished the needles are removed and three permanent non-radioactive gold seeds are placed in the prostate. These are used to ensure accurate treatment on a daily basis when you have your external pelvic radiotherapy.

You are taken to the recovery suite in the operating theatres for complete recovery from the anaesthetic before being transferred to a surgical ward for your overnight stay. The urinary catheter will still be in place until the next day.

You are not radioactive at any time while in your hospital room, or when you are at home. There is never any radiation exposure to your family or to hospital staff. This will be explained further in the brachytherapy assessment.

## **CT scan**

The next appointment after your brachytherapy treatment will be a CT scan to plan your radiotherapy. This will usually be the week following your brachytherapy. The radiotherapy will begin approximately 2 weeks after this CT scan. These dates will be confirmed closer to the actual time.

When you come for the CT appointment in oncology, you will need to have a full bladder and empty rectum. To achieve this we require:

- you will be asked to come to the department and empty your bladder and then drink an amount of water before your scan. The CT radiographers will give more information on the day.
- for you to have used the micro enema. You were given 2 enemas at your pre-op brachytherapy assessment, one will have been used before your brachytherapy. The second is to be used for the CT appointment. You should still use the enema, even if you have emptied your bowels naturally. You need to use the enema at least 1/2 hour BEFORE trying to fill your bladder.

## **Side effects of HDR prostate brachytherapy**

There are a number of side effects which you may experience, to varying degrees, following HDR treatment.

These effects may include:

- Pain and burning sensation when passing urine.
- Pain and temporary swelling of the area between the scrotum and the anus, known as the perineum.
- Bruising of the perineum after the needles have been removed. This will heal normally.
- Blood in the urine and/or blood in sperm.
- Bleeding from the rectum.
- Impotence.
- There may be longer term side effects of narrowing of the tube which carries urine and urinary retention.

Your Consultant will advise you of any side effects that you may experience. If you are worried or anxious about the procedure, please do not hesitate to ask for further help. Please remember that we are here to help you.

The following contact details may be useful:

Dr T Sreenivasan  
Consultant Clinical Oncologist, Lincoln County Hospital  
Secretary Telephone: 01522 572212

Dr M Panades  
Consultant Clinical Oncologist, Lincoln County Hospital  
Secretary Telephone: 01522 572218

Mr Mark  
Consultant Urologist, Lincoln County Hospital  
Secretary Telephone: 01522 573974

Melanie Fisher or Lucy Darby  
Advanced Practitioners, Brachytherapy, Lincoln County Hospital  
Telephone: 01522 572243

Urology Nurse Specialist  
Telephone: 01522 573821

Out of hours in cases of emergency only  
Waddington Ward, Telephone: 01522 572255/57

### **Useful websites:**

[http://www.bbc.co.uk/health/mens\\_health/issues\\_prostate.shtml](http://www.bbc.co.uk/health/mens_health/issues_prostate.shtml)  
[www.cancerbackup.org.uk/Home](http://www.cancerbackup.org.uk/Home)  
[www.cancerhelp.org.uk](http://www.cancerhelp.org.uk)  
[www.cancerresearchuk.org](http://www.cancerresearchuk.org)

