CyberKnife
Information for patients receiving intra-cranial (brain) treatment

Hermitage Medical Clinic
A Community Hospital for our Patients’ Needs
Intra-cranial (brain) CyberKnife treatment

This booklet is designed to give you some information on intra-cranial CyberKnife treatment. Intra-cranial CyberKnife treatment is using the CyberKnife to deliver a high dose of radiation, very accurately to a small area of the brain.

Treatment pathway

The intra-cranial treatment pathway is made up of a number of steps from initial consultation through to follow-up. The order and sequence of these appointments is flexible and the time/dates will be discussed with you when you are first contacted.

Once your MRI scan, CT scan and immobilisation session have been completed your treatment is then planned and all the relevant quality assurance checks are performed. The planning and checking process is complex and can take up to two weeks to complete.

More details on what each appointment involves can be found in the booklet ‘CyberKnife: Pre-treatment information for patients’.
Step-by-step

1. Consultation with Radiation Oncologist

2. Planning CT scan

3. Immobilisation session
   (Making treatment mask/shell)

4. MRI scan
   (A blood test may also be required)

5. Treatment delivery
   (Usually 1-5 treatment sessions)

6. Follow-up
   (Usually 4-6 weeks following treatment)
Treatment position

In order to deliver CyberKnife treatment it is very important you are in a comfortable, stable position. For intra-cranial treatment the best way to achieve this is to use a thermoplastic treatment mask/shell. This mask ensures you are in a stable position for treatment and restricts movement, which in turn will help to reduce treatment time. You are able to breathe freely through the mask. The thermoplastic treatment mask will be made during your immobilisation session and will be required for your CT scan and all your treatment sessions.

It is important you are as comfortable as possible; a mattress can be used for you to lie on and a pillow can be placed under your knees to help alleviate pressure on your back. If you have trouble laying on your back or if there is anything the Radiation Therapists can do to help make you more comfortable please mention this to them.

Immobolisation session:

Making the thermoplastic mask / shell

• It can be helpful if you wear loose fitting clothing around your upper body and neck. We ask you to remove any dentures or hearing aids before making the mask.

• The thermoplastic sheet is heated to a moderate temperature to allow the sheet to become permeable and flexible to form your shape.

• We ask you to stay as still as possible, breathe away normally while keeping your jaw and mouth closed.

• The thermoplastic sheet is placed over your face; it will feel like a warm face cloth, it is then stretched to form your shape.
The mask is kept in place while the material cools and hardens, damp paper towels may be used to speed up the cooling process.

Once the material has cooled and hardened the mask is removed and cooled further.

The mask is then refitted and checked. This is an opportunity to mention any areas of discomfort or any changes which can be made to make the mask more comfortable for you.

**Treatment delivery**

The delivery time for intra-cranial treatment is normally around 1 hour. In order to ensure the treatment is always delivered accurately and focused on the treatment area, x-ray images are constantly taken. These are then used to make any adjustments that are required. This means that although you may feel you have moved or you are able to move within the treatment mask there is no need to worry as the CyberKnife robot will account and correct for this. However, as it takes time to correct for movement the more you move the longer the treatment delivery will take, this is why we ask you to try and stay as still as possible throughout the treatment.

You will notice the CyberKnife robot moving around you and stopping at various points to deliver treatment but remember the CyberKnife robot will never touch you. You may also notice the treatment couch moving at various points; this is perfectly normal and is part of the process to ensure the treatment is accurate.

Remember CyberKnife treatment is completely painless.

**More information on CyberKnife treatment can be found in the leaflet ‘CyberKnife: Pre-treatment information for patient’**.
Side-effects
This leaflet discusses short term side-effects which may potentially happen with patient receiving intra-cranial CyberKnife treatment. Due to the nature of CyberKnife treatment side-effects are generally minimal but may happen. Some patients will experience little or no side-effects from treatment. Your Radiation Oncologist and the Radiation Therapists will be happy to answer any questions you may have regarding possible side-effects.

Headaches
You may notice you develop a mild headache or an existing headache becomes worse. If you experience headaches take any medication you would normally take (e.g. paracetamol).

Tiredness and fatigue
Tiredness and fatigue is normal and common. It may continue for a few weeks following treatment. Although you should try to rest when you are tired, light exercise such as a walk can actually help you to feel better. If you require any more information on the management of tiredness and fatigue please speak to one of the Radiation Therapists.

Nausea and vomiting
Mild nausea and some vomiting can occasionally occur following treatment. This is largely dependent on the size of the treatment area and the location. Anti-sickness tablets can be given to help control this.

Seizures
These may occur if you have a history of seizures. It is important that you continue your usual medication during and after your treatment. These side-effects will usually resolve within 3-4 weeks following your treatment. However, if you experience any extreme side-effects such as severe headache, severe nausea/vomiting or increased seizure activity you must contact either the Radiotherapy Department or, if outside working hours, your local emergency department.
Frequently asked questions

Will my hair fall out?
The radiation dose delivered to normal tissue is so low that hair loss is unlikely. However, if the treatment area is located superficially (close to the surface) patchy hair loss can sometimes occur.

Will a get a skin reaction?
Again because the radiation dose received to the skin is low it is unlikely you will experience any skin reaction following treatment.

When will I experience any improvement in my condition or any benefits from my treatment?
The success and potential benefits from CyberKnife treatment is dependent on a number of factors. Your Radiation Oncologist will be happy to discuss this with you.

If I experience a severe headache following my treatment and the Radiotherapy Department is not open who should I contact?
If you experience any severe side-effects following treatment such as severe nausea/vomiting, severe headaches or increased seizure activity you must contact your local emergency department if the Radiotherapy department is closed.

Do I have to stay in hospital for my treatment?
No, unless there is a specific medical reason CyberKnife treatment is delivered on an out-patient basis. Once treatment is finished you are free to go home and continue as normal. Tiredness may be an issue so you may want to consider this when making any arrangements.
If you have any questions about your treatment please call the Radiotherapy Department on

01 - 645 9045

The department is open Monday to Friday, 8.30am - 5pm