Stereotactic Radiosurgery (SRS) for Brain Metastases

Information for patients

Northern Centre for Cancer Care
Freeman Hospital
Introduction

This leaflet has been written to give you general information about Stereotactic RadioSurgery (SRS) for the treatment of brain metastases, and answer some of the questions you may have about possible effects of the treatment.

We hope you will find this helpful. If you have any further questions relating to your treatment, please do not hesitate to ask your stereotactic radiographer or your oncologist at the Northern Centre for Cancer Care (NCCC).

Our team approach

Before offering you this treatment, your case will have been discussed by a number of specialists in the multidisciplinary team. This will always include your own oncologist (who manages your primary tumour) and another oncologist who specialises in SRS treatment. Other specialists include neuro-surgeons, neuro-radiologists and a stereotactic radiographer, who you will meet and they will keep you fully informed.

Your consultant oncologist will be in overall charge of your care, but you will meet many members of the team during your planning and treatment. We will all work together to give you the best possible standard of care.

What are brain metastases?

Brain metastases occur when cancer cells from a primary tumour in the body move through the blood stream to the brain and start to grow, producing a secondary tumour. It is possible to have one or more brain metastases.

How are brain metastases treated?

There are a number of factors that have to be taken into consideration before deciding the best treatment choice for you. These are:

- The number and size of your brain metastases
- How fit and well you are
- The control of your primary cancer

The treatment options for brain metastases include:

- **Stereotactic Radiosurgery (SRS)**

  SRS uses focussed smaller x-ray beams. This treatment is usually given in a single treatment or occasionally several treatment sessions, dependent on the size of the tumour.
  This treatment is used for patients who are not fit enough for surgery or cannot be operated on due to the location or number of metastases in the brain.
  SRS can be given alone or combined with whole brain radiotherapy.
• Surgical Resection:

This is an operation to remove the tumour. It is used for metastases that are close to the surface of the brain making the tumour easier to remove. It is important that patients have a good level of fitness for this procedure and that their cancer elsewhere in their body is under control.

• Whole Brain Radiotherapy (WBRT)

Radiotherapy is the use of X-rays to treat tumours. Standard WBRT is used to treat the whole of the brain and is given over five or ten daily treatments. This treatment is the most common form of radiotherapy treatment, as it can treat any size and number of brain metastases in the brain.

Stereotactic Radiosurgery (SRS) - What does it involve?

Pre-Treatment visits

Preparing for your treatment involves a number of steps. The first step may require you to have a Magnetic Resonance scan (MRI) to check the size and number of brain metastases. This can be in addition to any MRI scans previously taken.

You will then need to have a special mask or mould made that ensures your head is perfectly still for the planning and delivery of treatment. This will involve you visiting the Mould Room (See attached Mould Room information)

Once your mask has been made you will have a computerised tomography (CT scan) wearing the mask. This involves the radiographers or mould room technician positioning the mask on you. You will then have a CT scan which is painless and will take approx 15 minutes. The scan enables us to accurately define the shape of your head for the planning calculations.

Sometimes we may need to give an injection with the CT scan to highlight the areas we intend to treat better; this is given into a vein in your hand or arm. The radiographers will discuss this with you if it is necessary.

It is important that we have both sets of scan images (CT and MRI) to decide exactly where we need to target the SRS treatment.

Throughout this process the stereotactic radiographer will be present to answer any additional questions you may have.

Producing your treatment plan

Before you start your treatment, the SRS team will select the best way to treat your metastasis and design an individual plan for you. They will use all of the information from your scans and tests. All of your imaging information will be entered in to a planning computer
The neuro-radiologist and oncologist will identify the area that we need to target with treatment and will also outline sensitive structures that we want to avoid treating (Such as the eye nerves and the brain stem). The SRS team will then design your individual plan and select the best way to treat your metastasis.

**When will I start my treatment?**

Treatment will start around 1-2 weeks after your planning visit. On rare occasions we may need to make small changes to your treatment plan. If this is necessary the start of treatment may be delayed slightly.

**Treatment Preparation – Steroid Medication (Dexamethasone)**

As SRS is given in a single treatment there is a risk of swelling within the area being treated. Therefore, steroid medication is used to reduce the risk of this. The tablets used are called dexamethasone.

Some patients with brain metastases will have been started on steroids when they were diagnosed. If this is the case then we may advise you to increase the dose of steroid on the day(s) of treatment and the day after. We will provide any steroid medication for you prior to your treatment appointment and discuss the dosage with you.

**Treatment delivery**

When you arrive in the department the stereotactic radiographer or team member will come and greet you and explain the treatment to you.

You will have your SRS treatment on a machine called a linear accelerator. This is a type of x-ray machine. The staff that operate these machines are called therapy radiographers.

In the treatment room you will be asked to lie on the treatment couch where your mask and a frame will be placed over you. The frame has special markers placed on it. It helps us reproduce the same position as you were when you had your planning CT scan.

You will feel the couch move as we place you in the correct position. When the radiographers are confident with the treatment set up, they will leave the room and the treatment will start. You will be closely monitored by the staff using CCTV cameras at all times.

The machine will move around you at different intervals, the radiographers may come in the room to re-position the machine for different beams. They will keep you informed of what is going on throughout the treatment.

The treatment will take between 20 – 30 minutes. It is painless and you should feel no different immediately after treatment delivery.
Effects of Treatment

Immediately and up to one month:

You can go home after your treatment and take your steroid medication as directed. We recommend that you take it easy for a couple of days as some people can feel tired for a day or two.

- **Headaches**: This can be a side effect from the treatment and can be settled with simple pain killers (e.g. paracetamol) if this continues then contact us as occasionally patients may need steroid medication a little longer due to the swelling caused by radiosurgery.

- **Seizures** (Fit): There is a small risk of this occurring after your SRS treatment. However, this is most common in patients who have seizures in the past.

- **Hair loss**: Some patients who have metastases close to the surface of their brain can temporarily lose a small amount of hair over the treatment area.

Long term effects

**Radionecrosis**:

Rarely, a complication can occur called radionecrosis. This is where the part of the brain that was treated with radiosurgery is damaged and this can cause severe brain swelling. Usually this can be treated with prolonged courses of steroid medication. But occasionally patients need an operation to remove the damaged area of the brain. Sometimes this can cause a permanent problem. However, the risk of this happening is small.

Follow Up

The stereotactic radiographer will contact you at home a couple of days after your treatment. If you are worried about your treatment side effects then we may arrange for you to come back to the department to be seen by our team.

You will then be referred back to the original team who look after your primary cancer and be seen 4-6 weeks after completion of your treatment. You will be monitored regularly to check your progress. If new brain abnormalities appear it is possible you could be referred for further radio surgery treatment.
Useful contact telephone numbers:

Who to contact if there is a problem?
During the planning stage/prior to the treatment: **Stereotactic radiographer: 0191 2448718 (9.00am – 5.00pm)**

After the treatment contact the SRS team’s secretary:
**0191 2138471 or 0191 2138469 (9.00am-4.00pm)**

If there is an urgent problem within the first week, then contact the wards at NCCC at any time on:
**Ward 34: 0191 2137034**
**Ward 35: 0191 2137035**

Alternatively call the Freeman Hospital main switchboard on **0191 233 6161** and ask to be put through to ward 34 or 35

**Newcastle upon Tyne Hospitals NHS Trust:**
Main switchboard: 0191 2336161
[www.newcastle-hospitals.org.uk](http://www.newcastle-hospitals.org.uk)

**Northern Centre for Cancer Care**
**Macmillan Information and Support Centre**
Direct line: 0191 2138611 (voicemail service if out of hours)
Open Monday to Friday from 9.00am to 4.30pm

**Macmillan Cancer Support**
Freephone 0808 808 0000
[www.macmillan.org.uk](http://www.macmillan.org.uk)

**Maggies Centre (Newcastle)**
0191 2336600
e-mail [newcastle@maggiescentres.org](mailto:newcastle@maggiescentres.org)

**The Patient Advice and Liaison Service (PALS)**
Can offer on-the-spot advice and information about the NHS. You can contact them on freephone 0800 032 02 02 or e-mail [northoftynepals@nhct.nhs.uk](mailto:northoftynepals@nhct.nhs.uk)

If you would like further information about health conditions and treatment options, you may wish to visit the NHS Choices website at [www.nhs.uk](http://www.nhs.uk). On this website there is an information prescription generator [www.nhs.uk/ips](http://www.nhs.uk/ips) which brings together a wealth of approved patient information from the NHS and charity partners which you may find helpful.

For other support services, please use the following link to NCCC’s webpage in order to access a directory of support groups, organisations and useful contacts.
[http://www.newcastle-hospitals.org.uk/services/cancer_more-support-for-you.aspx](http://www.newcastle-hospitals.org.uk/services/cancer_more-support-for-you.aspx)

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