PATIENT
INFORMATION

Gamma knife stereotactic radiosurgery for trigeminal neuralgia

This leaflet is for people who are considering gamma knife radiosurgery for trigeminal neuralgia. It explains the procedure, its advantages and risks, and aims to answer the main questions you're likely to have. There is a separate general guide to gamma knife radiosurgery which explains the procedure in more detail. For a copy of this, or if you have any additional questions, please speak to your doctor or another member of the gamma knife team.

What is trigeminal neuralgia?

Trigeminal neuralgia is a condition affecting a nerve in the face. It causes an intense stabbing, burning or electric shock type of facial pain. The pain usually lasts a few seconds and can come and go over time. Some people with mild symptoms get better without any treatment but most people have repeated episodes of severe pain.

What is gamma knife radiosurgery?

Gamma knife radiosurgery uses a beam of radiation to treat conditions affecting the brain, head and neck. It does not use a knife but is a non-invasive treatment that does not need any skin incision.

The aim of gamma knife treatment for trigeminal neuralgia is to deaden your trigeminal nerve to help reduce your pain. A focused beam of radiation is aimed at the trigeminal nerve at the point where it leaves the brain.

The benefits of gamma knife radiosurgery

The accuracy of the gamma knife radiosurgery system enables a high dose of radiation to be focused on a very precise area. This means one treatment is generally all that is needed.

One of the major benefits of gamma knife radiosurgery is that it is non-invasive. Other benefits include the following:

- There is no incision. This means you won't need to shave your head and you'll have no scars to heal. It also avoids the risks that can be associated with open surgery, such as bleeding and infection.
- You're unlikely to have hair loss or nausea.
- The procedure is relatively painless and in most cases a general anaesthetic isn't needed.
- We find that most people get back to their normal activities in a day or two (compared to two to six weeks of recovery time with conventional brain surgery).

Gamma knife radiosurgery usually has minimum complications. Indirect comparisons suggest it produces fewer complications than other treatment techniques.

What are the alternatives to gamma knife surgery?

There are a number of different options for treating trigeminal neuralgia. In most cases the pain can be treated with medicines. Other alternatives include invasive procedures, such as glycerol injections into the trigeminal nerve in your head; radiofrequency treatment, which heats up the nerve; or balloon microcompression to squash the nerve. Open surgery to do a procedure called microvascular decompression is also an option. Your doctor will discuss the alternatives with you.

About the gamma knife procedure

There are several steps to the procedure which will all be done in one day. Generally you will be admitted to the hospital the night before or on the morning of your gamma knife radiosurgery. You will be asked not to eat or drink anything for four hours before your procedure (unless you have diabetes). You will also be asked to wash your hair. You may be given medicine to help you to relax.

Before the surgery can take place, you'll have a lightweight head frame fitted. This is used to pinpoint the area to be treated by the gamma knife. A local anaesthetic will be injected in four places into your scalp where the frame will be fixed with screws. These injections may be painful but will only last for a few seconds. The frame will stay attached to your head for the whole procedure.

To find the exact position of the area that needs to be treated, you will need to have a magnetic resonance imaging (MRI) scan. A neuro-radiologist (a doctor who specialises in using imaging methods on the brain), physicist and your doctor will plan the optimal dose of radiation and the most precise way of targeting it to the relevant area.

You will return to the gamma knife unit where you'll be carefully positioned on the couch so that your head remains completely still. The gamma knife procedure involves one exposure to the radiation. This will take around 25 to 50 minutes. You will be able to talk to our staff through a microphone in the gamma knife machine throughout the procedure.

Recovering from gamma knife radiosurgery

Once the procedure is finished, you will have the head frame removed and you can go back to rest in your room. When the frame is taken off you may have slight bleeding from the points where it was held in place. You may also feel sick or have a headache but this shouldn't last for more than a few hours. Most people stay overnight in the hospital after gamma knife radiosurgery. Depending on your general health, you should be able to get back to your normal activities the day after treatment.

Follow-up

You will have a follow-up appointment approximately eight weeks after gamma knife surgery.

Some people get pain relief immediately after the gamma knife radiosurgery. The majority of patients are still pain free three years after the procedure. You may continue to have pain for several months. If this is the case you should continue to take your previous pain medicines.

What are the risks?

As with every procedure, there are some risks associated with gamma knife surgery. In order to make an informed decision and give your consent, you need to be aware of the possible side effects of this procedure.

Only a small minority of patients experience side effects after gamma knife surgery for trigeminal neuralgia. These can include facial numbness and, for a few people, the pain may get worse or they may have new pain.

We have not included the chance of these happening as this is specific to you and differs for every person. Your doctor will talk about the potential risks and side effects of gamma knife radiosurgery depending on your individual circumstances.

Contact

If you have any questions or need further information, please contact your doctor, or the gamma knife centre Monday to Friday, between 9.00am and 5.30pm.

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Further information

The Trigeminal Neuralgia Association UK provides information and support for patients.

w: tna.org.uk
t: 01883 370214
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