


Understanding Trigeminal Neuralgia



What is Trigeminal neuralgia?

Trigeminal neuralgia (TN) is severe facial pain that can come and go unpredictably in sudden shock-like attacks. The pain may only last for a few seconds, but there can be many stabs of pain in quick succession which can last for several minutes. It may be described as a stabbing, burning, excruciating, shooting, extremely strong pain. There can be long periods of no pain between spasms and sometimes there may be months or years of no pain. It is a chronic disorder of the trigeminal nerve (or 5th cranial nerve).

The Trigeminal Nerve has three branches (or divisions):

- The upper branch (Ophthalmic) which runs above the eye, forehead and front of the head.
- The middle branch (Maxillary) which runs through the cheek, upper jaw, teeth and gums, side of the nose.
- The lower branch (Mandibular) which runs through the lower jaw, teeth and gums.

TN can involve one or more branches and most often, the middle and lower branches are affected. It is more common on the right side of the face.

Trigeminal neuralgia can affect an estimated 8 people in 100,000. Almost twice as many women are affected than men. It becomes more common with age, usually affecting people over 50 years old, but some cases have been reported in young adults. It is very rare among children and it is not thought to be hereditary.

Symptoms

Classic TN symptoms include

- Spasms of sharp, stabbing pain, which can be often described as like a jolt of lightning.
- The pain is confined in the area served by the branches of the TN nerve: lower jaw, upper jaw, cheek, eye and forehead. The pain may include one, two or all three branches of the TN nerve.
- Pain is almost always on one side of the face, most commonly the right-hand side.
- The pain is usually triggered by a light touch on the face, movements of the face (and therefore mouth), touching the side of the nose, or a light breeze. Trigger points are usually around the nose and lip.
- The pain might disappear by itself for weeks, even months, and then return.
- Atypical TN
- Symptoms include:
 - Aching, burning pain, mainly in the cheek, upper jaw and sometimes lower jaw. It is less likely to happen in the eye and forehead.
 - A trigger point is more difficult to define than in typical TN.
 - Sometimes, after a long period, classical TN can also be accompanied with atypical TN. This leads to a combination of the sharp, electric shock-like pain plus the dull aching pain.

Living with trigeminal neuralgia can be very difficult. You may feel like avoiding activities such as washing, shaving or eating, in order to try to prevent the pain from coming on.

Causes

The causes of TN are still an area for debate among the medical professionals. It is often believed that the deterioration of the protective outer covering of the nerve (Myelin) allows the transmission of abnormal messages of pain.

The damage of the protective outer coating of the nerve is often a result of pressure from blood vessels or arteries, tumours, Multiple Sclerosis, injury to the nerve, consequences of shingles, or just the ageing process.

This damage causes the nerve to malfunction and send messages of intense pain to the brain in response to a ‘trigger’ on the area of the face.

Diagnosis

If your symptoms suggest that you have trigeminal neuralgia your GP will need to examine your face to find out exactly which parts are painful. They may also need to rule out several other conditions that can cause severe pain in your face, such as severe tooth decay and infection of your sinuses (the small, air-filled cavities inside your cheekbones and forehead).

You may also visit a dentist, a GP or an Ear-Nose-Throat specialist, and then if TN is suspected, you will be referred to a neurologist. He will perform some neurological tests to rule out or discover other diseases. He will also ask you to precisely describe your pain. In order to confirm a diagnosis of neuralgia you may need to have a magnetic resonance imaging (MRI) scan.

MRI (magnetic resonance imaging) scan

This is used to build up a detailed picture of areas of your body. It is similar to a CT scan, but uses magnetic radio waves instead of x-rays. The scan will last for about 30 minutes and during the scan you will be asked to lie very still on a couch inside a long tube. It is painless but loud which can make the scan uncomfortable, and some people feel a bit claustrophobic during the scan. You will be given earplugs or headphones for the noise.

Some people may be given an injection of dye into a vein in the arm, but this usually does not cause any discomfort.

Consent

It is important before you have any treatment, that your doctor explains to you what the treatment involves and the aims of the treatment, giving you full information of your treatment. You will usually be asked to sign a consent form saying that you give your permission for the hospital staff to give you the treatment. No medical treatment can be given without your consent.

Treatment

Anticonvulsants

If you have TN, your doctor will first prescribe a type of medicine called an anticonvulsant. These can help relieve or numb the pain in your face as normal painkillers such as paracetamol are not effective in treating TN. Although anticonvulsant medicines are usually used to treat epilepsy, they can be effective in treating TN because they calm down nerve impulses.

Patients need to understand that these medications do not work like normal pain killers: you need to maintain a therapeutic level of medication in your blood for effective relief for the pain. Regular blood tests are needed, in order to check the medication level in your blood. Taking medication irregularly is not effective. To avoid severe side effects, the medication is increased or decreased slowly, according to your doctor's advice. After the patient is pain free for about three to six weeks, the medication is then slowly tapered. Abrupt withdrawal can lead to serious side effects. Always maintain good communication with your doctor when you are under medical treatment: it will allow him to find the right treatment and the right dose you need to stop the severe attacks of pain.

Most commonly used anticonvulsants are:

carbamazepine (Tegretol); oxcarbazepine (Trileptal); baclofen (Lioresal); gabapentin (Neurontin); phenytoin (Dilantin, Epanutin). Treatment can also include antidepressants such as amitriptyline.

In some cases, anticonvulsants can cause several side effects i.e:

- drowsiness,
- dizziness, and
- nausea and vomiting.

Anticonvulsants have also been linked to an increased risk of thoughts of self-harm or suicide. Therefore, you may be closely monitored if you are prescribed one.

If you are of Asian descent (i.e. Han Chinese or of a Thai origin) you may need to have a blood test before you can take carbamazepine. This is because carbamazepine can cause a severe rash in people with a particular genetic type. Most people with this type of gene originate from Asia.

It is also possible for anticonvulsants for TN to stop working over

time because they are only effective in numbing the pain and not stopping the cause of it. If this occurs you may be referred for specialist treatment.

You may also be referred for specialist treatment for TN if:

- you have pain in your face between spasms of TN,
- any of your senses are affected,
- anticonvulsants are not effective in controlling your pain,
- anticonvulsants cause you to experience severe side effects, or you are under 40 years of age.

You may receive specialist treatment for TN from a neurologist (a specialist in conditions of the central nervous system), a specialist in treating pain, or a neurosurgeon (an expert in surgery of the brain and nervous system).

The Gamma Knife (Stereotactic Radiosurgery)

Stereotactic Radiosurgery is delivered using a machine called the Gamma Knife. This is not actually a knife and your skull will not be opened during the treatment. The Gamma Knife, with advanced imaging and three dimensional planning, allows treatment to be delivered through multiple, very narrow beams of gamma radiation, with a high degree of accuracy to a small defined area of the nerve.

As no surgical incision is required, some of the risks of open brain surgery, such as haemorrhage or infection, are reduced or avoided. With over 400,000 patients treated worldwide to date the Gamma Knife is not a new technology. To receive your treatment you will require a lightweight head frame



to be attached to your head using four pins. This prevents your head from moving during treatment and so ensures that the beams of radiation are targeted precisely at the right area.

Selection of patients for Gamma Knife surgery involves a multidisciplinary team of neurosurgeons, clinical oncologists and other specialists. Selection is made on the basis of a diagnostic examination, imaging studies, tissue diagnosis and the patient's general health and age. Patients may be eligible for Gamma Knife treatment even if they have previously had open brain surgery.

Surgery

If anticonvulsants do not ease your pain or if they cause severe side effects, your GP may suggest that you have surgery. You will need to be referred to a neurosurgeon with experience in TN.

The aim of surgery for trigeminal neuralgia is to either stop your blood vessels from putting pressure on the trigeminal nerve, or to damage the nerve just enough to stop it from malfunctioning. There are several operations that can achieve these aims. Your surgeon should fully explain the options with you.

Microvascular decompression (MVD)

In most cases, the most effective operation for trigeminal neuralgia is an operation called microvascular decompression. This operation releases the pressure of blood vessels that are pressing on the trigeminal nerve.

During MVD surgery, your surgeon will move away all blood vessels or arteries compressing the nerve. It requires a general anesthetic, and a minimum stay of one week in hospital. Numbness in the face

is extremely rare. After an MVD, 95% of patients have immediate relief, and about 70% are still pain free 10 years later.

For most people, MVD surgery is very effective in easing the pain of trigeminal neuralgia. However, the operation can sometimes cause complications including damage to your hearing in one ear, facial weakness, and double vision.

Other types of surgery for trigeminal neuralgia

Other types of surgery that you may have for trigeminal neuralgia are outlined briefly below.

- Nerve block - where anaesthetic is injected into your cheek.
- Cryotherapy - where the trigeminal nerve is frozen using chemicals.
- Alcohol injections - which are given into the ends of your nerves to numb your pain.
- Glycerol injection - which is injected where the three branches of the trigeminal nerve join.
- Neurectomy - a procedure where the ends of your nerves are cut.
- Peripheral radiofrequency, thermocoagulation or rhizotomy - where heat is used to damage the nerve endings.
- Balloon compression - where a tiny balloon is inflated over the trigeminal nerve in order to relieve pressure.
- Electric current - where an electric current is used to numb the trigeminal nerve.

Self help

Neuralgia can sometimes be triggered or made worse by a number of different things. You may be able to ease the pain of neuralgia by trying to avoid these triggers as much as possible.

Avoid wind and draughts

You may find that your pain is triggered by wind or even by a draught in a room. If this is the case, avoid sitting near open windows or the source of air conditioning and wear a scarf wrapped around your face during windy weather.

Be wary of heat and cold

Anything that is hot or cold may trigger your pain, so try not to eat or drink anything that is either very hot or very cold. You could also try using a straw to drink warm or cold drinks in order to help prevent the liquid from coming into contact with the painful areas of your mouth.

Please do not hesitate to contact Nova Healthcare for any more information, support and advice.

Nova Healthcare

Bexley Wing,
St James's Institute of Oncology
Beckett St,
Leeds, LS9 7TF
Tel: 0113 206 7751 or 0113 206 7735

www.novahealthcare.co.uk

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Trigeminal Neuralgia Association UK

The Trigeminal Neuralgia Association UK is a support group for people suffering from this severely painful neurological condition. The aim of the TNA UK is to offer support and encouragement to TN patients, their families and friends, and their information pack has details about the medical and surgical treatments available. It also contains information about the drugs used to control the pain and details of any advances being made in the management of this excruciatingly painful and debilitating condition.

For more information please contact:

Trigeminal Neuralgia Association UK

PO Box 234, Oxted, Surrey RH8 8BE

Tel: 01883 370214 www.tna.org.uk



Nova Healthcare
Level 4
Bexley Wing
St James's Institute of Oncology
Beckett Street
Leeds LS9 7TF

Tel: 0113 206 7735 or 0113 206 7751

Email: contact@novahealthcare.co.uk

www.novahealthcare.co.uk

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