

Trigeminal neuralgia

Trigeminal neuralgia is a rather rare disease with between 4 and 40 new cases – depending on the study quoted – per 100,000 persons each year. The disease usually affects people aged 40 and older and strikes 1.5 times as many women as men.

Patients with trigeminal neuralgia typically experience attacks of intense pain lasting for several seconds on one side of the face. The pain usually occurs in response to "triggers" such as cold, heat, chewing, talking or touching the affected area. During these pain attacks some patients tend to distort the affected half of the face. For this reason the disease is also known as "tic dolooureux" (painful tic).

The pain typically occurs on one side of the face. The intense pain results from irritation of the sensitive part of the facial nerve (trigeminal nerve), which is found on each side of the face and divides into three branches:

- N. ophthalmicus (ophthalmic nerve)
Responsible for the sensitivity of the forehead and eyelids.
- N. maxillaris (maxillary nerve)
Responsible for the sensitivity of the region between the eyes and the upper lip.
- N. mandibularis (mandibular nerve)
Responsible for the sensitivity of the lower lip and the region between the lower jaw and the neck.

Frequently, only one or two of the three branches is affected with the result that the typical pain associated with this disease occurs only in the areas innervated by these branches.

The causes of trigeminal neuralgia are many and varied:

Depending on whether a cause can be found for the patient's symptoms, doctors speak of symptomatic or idiopathic (i.e. unexplained) trigeminal neuralgia. Symptomatic trigeminal neuralgia can be caused, for example, by multiple sclerosis, acoustic neuroma, stroke or a vascular deformity in the brainstem.

In some cases compression of the acoustic nerve by an adjoining vessel – usually the superior cerebral artery or the anterior inferior cerebral artery – is found near the origin of the acoustic nerve in the brainstem.

Trigeminal neuralgia often responds favorably to treatment with anticonvulsants or muscle relaxants such as phenytoin, carbamazepine, baclofen, etc.

In patients who do not respond to drug treatment, consideration may be given to surgical or – in occasional cases – stereotactic radiation treatment. The type of treatment chosen depends on the cause of the trigeminal neuralgia.

If a surgical approach is envisaged, the surgeons must decide whether the patient is a candidate for microvascular decompression of the nerve via the Janetta procedure. In this operation the offending vessel is moved away from the acoustic nerve to relieve the pressure. If this procedure is contraindicated for some reason, e.g. a greatly elevated surgical risk due to the patient's other diseases, percutaneous thermocoagulation of the gasserian ganglion may be an option. In this procedure the conduction of pain to the nerve is interrupted.

During the Janetta procedure, which is performed with the patient in a sitting or recumbent position, a retromastoid access to the cerebellopontine angle with a diameter of about 3 cm is created. This access is limited on top by the transverse sinus and on the side by the sigmoid sinus, which drains the venous blood out of the skull.

Via this access the trigeminal nerve can be exposed and examined with the aid of a surgical microscope. The area where the nerve leaves the brainstem is visualized during this procedure.

After the nerve root is exposed, the vessel compressing the nerves is dissected away from the nerves and mobilized to the extent that a piece of autologous muscle can be interposed (placed between the vessel and nerve) as a spacer. If necessary, a piece of Teflon or a gelatin sponge can be used instead of a piece of muscle.

Following neurovascular decompression the access is closed.

The patient can already be mobilized on the day after the operation. In general patients remain in hospital for 6 days after this procedure.

If patients are selected meticulously for this procedure, the primary success rate is very high at 98%, whereas 82% are free of pain and 16% report less pain. The success rate 10 years after the operation is given as 67%. In cases where the patient's symptoms recur, the possibility of a second operation should be discussed, especially if a genuine nerve-vessel conflict was noted during the first operation.