

Trigeminal Neuralgia

Neuralgia is a pain that arises from a malfunction of the pain signalling system. In the innervation area, there are no other disorders (sensation, motor skills of the muscles). It is an intense seizure pain, most often affecting the 2nd and 3rd branches of the trigeminal and lasts for a short time ("whip pain").

Most often it occurs in patients over 40 years of age. Usually, the pain is triggered by touching the *trigger point*, often triggers such as chewing, brushing teeth, talking, cold or touch stimulus of the face can often be detected. Seizures can be in quick succession (*status neuralgicus*). Neuralgia tends to have seasonal exacerbations (spring, autumn).

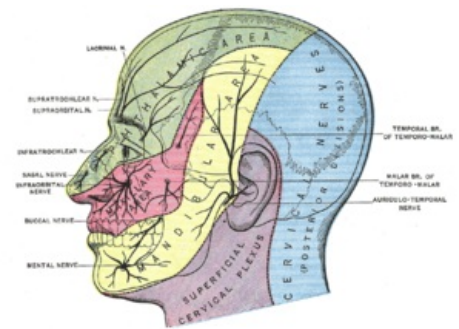
Diagnostic criteria of primary neuralgia N. V.

A. Paroxysmal attacks of facial pain lasting a few seconds and less than 2 minutes.
B. Pain has at least 4 of the following characteristics: <ul style="list-style-type: none">■ Localization on some branches of the n. V;■ Sudden, intense, sharp, superficial, stabbing, burning pains;■ Great intensity of pain;■ Pain can be triggered from trigger zones or by some activities such as brushing teeth, chewing...;■ Between individual paroxysms, the patient is asymptomatic.
C. Normal neurological findings.
D. Attacks on individual patients are stereotypically repeated.
E. By all available methods, other causes of facial pain were excluded.

Etiology

The etiology of neuralgia is not very clear, apparently involving the action of two components:

- **Peripheral factor** – Demyelination in the central segment of the trigeminal root – arises, for example, by compression of the root by a catheter, tumor, or MS;
- **Central factor** – Impaired inhibition in the trigeminal nucleus is not sufficiently studied.



Sensory areas of the head, showing the general distribution of the three divisions of the fifth nerve. (Modified from Testut.)

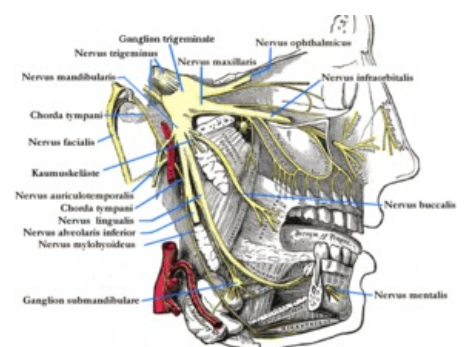
Therapy

Conservative therapy

The basis is carbamazepine, but its effect gradually decreases. If carbamazepine works, this confirms the diagnosis of neuralgia.

In the treatment of pain, the application of anesthetics or analgesics is also applied.

Hydantoins, baclofen and gabapentin, as well as some psychopharmaceuticals, such as sedatives or antipsychotics, may be partially effective.



Nervus trigeminus and its branches

Surgical therapy

Peripheral performance

Alcoholization and rolls of trigeminal outputs have only a short-term effect and can lead to an inconsolable anaesthesia Dolorosa, they are not considered correct.

Puncture performances

In the area of ggl. trigeminale Gasseri and the central root of trigeminal.

- Outpatient procedures in neuroleptanalgesia are well tolerated (even in the elderly, in patients with MS).
- Transbuccal puncture into the *cavum Meckeli* area (the space where the ggl. lies) through *the foramen ovale* (under skiascopy control).

We perform -

- **Retrogasser thermolysis (RGT)** - In the root of the trigeminal we stimulate with an electrode and find out

which fibers cause neuralgia and thermally coagulate them.

- In the 1st branch, there is a risk of neuroparalytic keratitis.
- **Instillation of glycerol into cavum Meckeli** (glycerol radiculolysis = GR) – uses mild neurotoxic action of glycerol -
 - We strain the cavum with contrast and then replace it with glycerol, and let it act for 30 minutes.
 - Within a week the neuralgia will subside, but there may be painful dysesthesia
- **Microcompression of the gasser ganglion** – Introduce a thin catheter with a balloon into the cavum, and inflate it during compression, the patient has intense pain, which subsides.

CNS performances

- **Microvascular decompression of trigeminal root (MVD)**
 - The first procedure that solves neuralgia in part causally – removes vascular compression (the most common cause of demyelination).
 - In CA, a small suboccipital trepanation is made, we penetrate into the bridge angle and separate the compressing vessel from the trigemine with a plastic insert (it is in 80% SCA – *A. cerebelli sup.*)
 - The effect is long-lasting, and does not affect the sense of smell
- **Trigeminal core disposal** – gamma knife

Secondary neuralgia N. V

It arises as a result of affections in the ENT area (chronic sinusitis), in tooth attacks, temporomandibular joint, after infection with Herpes zoster in the face (often affects the I branch, not receding within 4 weeks after acute zoster). The pains tend to be more permanent and of lower intensity than with primary neuralgia. In neurological findings, we often find a sensitivity disorder in some branch *n. V* or alteration of the corneal and masseter reflex.

Diagnosis – ENT examination (including X-ray of the paranasal sinuses), dental examination (including a panoramic image of the jaw).

Treatment – Elimination of the cause (if possible), drugs and their dosage are similar to those of primary neuralgia.

Links

Related articles

- Trigeminal neuralgia/PGS
- Trigeminal nerve involvement/PGS/Diagnostics
- Headaches
- Facial hemispasm
- Facial nerve palsy
- Olfactory disorders
- Differential diagnosis of swallowing disorders
- Trigeminal/PGS neuralgia (VPL)
- Headaches/PGS (VPL)

Resources

- BENEŠ, Jiří. *Studijní materiály* [online]. ©2007. [cit. 2010]. <<http://www.jirben.wz.cz/>>.

External links

- Neuralgie trigeminu (CZ wikipedia)
- Trigeminal neuralgia (EN wikipedia)

Literature used

- ZEMAN, Miroslav. *Speciální chirurgie*. 2. edition. Galén, 2004. 575 pp. ISBN 80-7262-260-9.