Headaches/PGS (VPL)

Diagnostics

Anamnesis

- **Headache localization** – unilateral or bilateral, occipital, frontal, directions of radiation from the back of the head forward, concentrated;
- **Nature of pain** – dull, stabbing, astringent (in neuralgia), sudden, strongest (arachnoid);
- **Course** – acute × chronic, recurrent, intensifying, whether it occurred for the first time in life;
- **Provocative factors** – endogenous (conflicts, stress, premenstrual period), exogenous (sudden weather changes, cold, noise, television, inappropriate posture at work);
- **Pain-relieving factors** – getting out into the fresh air, removing some stimuli, coffee, ...;
- **Accompanying symptoms** – nausea and vomiting, aura, visual disorders (scotomas, ...), neurological outages, severe cold, purulent rhinitis/sinusitis, fever, ...;
- **Familial predisposition** – common in functional headaches;
- **Drugs used** – analgesics, side effects of some drugs (e.g., analgesics, antirheumatics, nitrates, antiarrhythmics, progestogens, estrogens, ergot alkaloids, calcium channel blockers, benzodiazepines, barbiturates, muscle relaxants, corticoids, hypolipidemics, cardiac glycosides, bromocriptine, diuretics, carbamazepine, pentoxifylline, phenytoin, rifampicin, metronidazole, griseofulvin, ...);
- **Current diagnostics and therapy** – especially with chronic headaches, the patient usually already experienced a number of examinations and treatment experiments with different effects

Physical examination

- Examination of ***BLOOD PRESSURE***;
- Examination of ***CERVICAL SPINE***;
  - **Local or pseudoradical cervical spine syndrome** (with paravertebral muscle spasms and/or tendon attachment dysfunction) – especially with **tension headache**;
- ***PALPATION***;
  - Of nerve outputs in the face – suspicion of **sinusitis**;
  - Of the facial surface – suspicion of **trigeminal neuralgia** (n. V);
- Neurological findings in suspected **intracranial expansion**;
- ***CAROTID AUSCULTATION*** – suspected **cerebral blood flow disorder**;
- ***PRESSURE ON EYEBALLS*** – suspected **glaucoma attack** (if possible, measure intraocular pressure, or refer to an ophthalmologist).

Theofylin for oral use

Laboratory examination

If there is a clear suspicion, we will perform targeted laboratory tests to rule out other causes. At least a blood count (CBC), sedimentation (FW), or CRP, urine diagnostic strip.

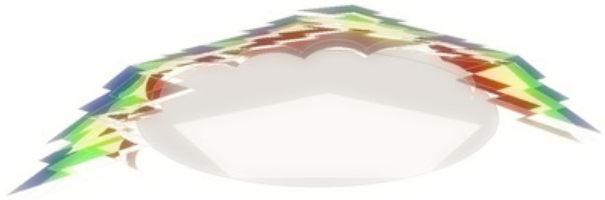
Diferencial diagnostics

First of all, we distinguish between acute and chronic headaches.

- Differential diagnosis **of acute headache**.
  1. **Acute subarachnoid hemorrhage –** *Unbearably intense pain in the whole head, occiput or together. Often accompanied by neck stiffness, positive meningeal signs – Kernig's sign, Laségue's sign, with impaired consciousness, unilateral symptoms and ocular muscle palsy. Th.:* ***if suspected, immediate referral for hospitalization – preferably to a neurosurgical center****, otherwise to a local hospital.*
  2. **Migraine** – *See below and in the article (embedded)* Migraine/PGS (VPL).
  3. **Arteritis temporalis** – *Occurs in elderly patients. Characterized by progressively increasing unilateral stabbing headaches over several days unresponsive to treatment with conventional analgesics with visual disturbances, with the arteria temporalis often palpable as a thickened non-pulsatile cord. Sedimentation (FW) is increased. Dg. and Th.: glucocorticoids.*
  4. **Neuropathic cranial nerve pain** – A*cute unilateral headache with double vision without neck stiffness, usually in the context of diabetic polyneuropathy. Th.: refer for further investigation to a specialist – neurologist.*
- Differencial diagnostics **of chronic primary (functional) headaches**

- 1. **Migraine**
  2. **Tension headache**
  3. **Combined headache** (migraine and tension headache)
  4. **Cluster headache** (Bing-Horton headache)
- **Symptomatic headaches**

1. **Extracerebral aetiology**
   - ENT disease such as sinusitis;
   - infections – accompanying e.g. influenza, febrile illnesses;
   - hypertension or hypotension;
   - in connection with C-spine difficulties (acceleration trauma, pseudoradicular C-spine syndrome);
   - metabolic etiology – hypoglycemia,...;
   - eye diseases – glaucoma, visual defects (myopia,...);
   - neuralgia – neuralgia of the trigeminal nerves,...;
   - immunological aetiology – arteritis temporalis,...
2. **Cerebral aetiology**
   - Pharmacological – nitrates, hormonal contraceptives, other drugs...;
   - st.p. craniocerebral trauma;
   - vascular aetiology;
     - st.p. stroke;
     - st.p. intracerebral hemorrhage;
     - st.p. venous sinus thrombosis;
   - infection (inflammation);
     - st.p. meningitis;
     - st.p. encephalitis;
     - st.p. brain abscess;
   - intracranial expansion;
   - pseudotumor cerebri.



Migraine with aura

Individual units

Migraine

Clinical picture

It is a disease characterized by **intermittent attacks** of headache **with vegetative accompaniment**. It presents as a seizure-like, often **unilateral** pain with **photophobia** and **phonophobia**, accompanied by **nausea**, often with **visual disturbances**, when the neurological examination is otherwise normal, often preceded by an aura. The pain lasts for hours to days, with a peak after 1-2 hours.

- Frequency may be **several times a week or monthly**, sometimes only **sporadically**.
- The prevalence in the population is about **3%**, the incidence **in women is three times more frequent** than in men.

Repeated similar attacks in personal medical history are characteristic, often also a **family burden**.

Clinical picture:

- In the morning, throbbing pain in the middle of the head is accompanied by nausea to vomiting, photophobia and hypersensitivity to sounds.
- Occasionally preceded by a dysphoric or euphoric prodromal phase or vegetative symptoms such as sweating, diarrhoea, tachycardia, or other neurological focal symptoms.
- In 20% it starts with visual manifestations (flashes of light or shimmering scotomas).

Etiology of migraine:

- idiopathic;
- persistent poorly managed stress, exertion, travel (changes in rhythm and wakefulness), fear;
- withdrawal from stress (so-called "weekend" migraine);
- hormonal contraceptives, menstruation;
- chocolate, cheese, alcohol;
- touch-trigger zones.

Dividing

Migraine is distinguished by:

- **without aura** (85–90%),
- **with aura** (10–15%) – neurological symptoms such as ***scotomas, sensory disturbances, hemianopsia, dysphasia, dizziness, ataxia, hemiparesis***.

CAVE: special cases – so-called **basilar migraine, retinal migraine, ophthalmoplegic migraine**.

Diagnostics

- Detailed anamnesis, careful physical examination (neurological disorders),

- in case of ambiguity – to a neurologist, CT scan (to exclude intracranial expansion).

Therapy

- **Acute therapy** – provide protection from irritation – stay in a dark quiet room.
  - therapy for **mild seizures**:
    - antiemetics:
      - **metoclopramide** 10–20 mg p.o., repeat after 15-30 min;
      - **domperidone** 10 mg (children), 20–30 mg (adults);
    - analgetics:
      - **Acetylsalicylic acid** (ASA) 500 mg p.o. (effervescent tbl., possibly i.v.);
      - **paracetamol** 500–1000 mg p.o. event. supp.;
      - **ibuprofenum** 400–600 mg p.o. (event.),
  - therapy **moderate** to **severe seizures**:
    - first choice:
      - **metoclopramide** supp. 10 mg (not available in the Czech Republic) event. repeat in 15–30 min,
      - **ergotamin tartarate** max 3 mg per attack, or 6 mg per week,
      - in severe attacks with vomiting, parenteral therapy is needed – under control:
        - **metoclopramide** 1 amp. 10 mg i.v.,
        - **acetylsalicylic acid** 1000 mg i.v.,
        - **dihydroergotamine** (not available in the Czech Republic i.v. – only as a nasal spray or p.o. solution),
    - alternatively – triptans:
      - **sumatriptan** 25–100 mg p.o. event. 6mg s.c. autoinjector 25 mg rectally event. 20mg nasally – effect only about 12-24 hrs, adverse effects: dizziness and fatigue,
      - **zolmitriptan** 2,5–5 mg p.o. or 2,5mg sublingually or 5 mg nasal spray,
      - CAVE: are contraindicated in ischemic heart disease, hypertension, angina pectoris, heart-attack, Raynaud's syndrome, coronary artery disease, pregnancy and lactation, NEVER give sumatriptan combined with an ergotamine derivative in migraine with neurological disruptions,
  - **therapy for status migranosus** – in the hospital – refer for hospitalization.

Prevention

Always gradually increase the dose of the medication when the diagnosis is certain until the effect is achieved – success can only be judged after 2-3 months of regular use. If they are working well, they can be gradually discontinued after 6-9 months of use and the spontaneous course monitored for the next 2-3 months.

As a preventive measure

- ***beta-blockers*** (BB) – **metipranolol** 3 daily × 10–40 mg p.o. – occasionally a higher dose (counter-indication is a fall in BP and P),
- alternatively: ***calcium channel blockers*** (CCB), ***serotonin antagonists*** (**pizotifen** 3×0,5 mg daily p.o.) can be given and gradually increase the dose (contraindication is fatigue, weight gain, depression).

Prevention usually fails with ***misdiagnosis*** (e.g. BB does not work in tension cephaleas), with ***incorrect dosage***, with too ***high initial dose*** (side effects appear and the patient discontinues the drug), with simultaneous ***withdrawal of analgesics*** and other antimigraine drugs.

Recommendations for natural medicine can also be used.

Lifestyle modification

The multifactorial conditioning of migraine (genetic factors, external and internal triggers) also forces therapeutic action in several directions:

- eliminate known **triggers** – e.g. alcohol; keep a – **headache diary** to identify triggers;
- regular **lifestyle** and **relaxation exercise** – e.g. Jacobson muscle relaxation or autogenic training;
- if neurological symptoms occur – refer for neurological examination.

Prognosis

Migraine in children disappears in 50% after puberty.

Migraine in adults begins in women at puberty, in men between 20 and 30 years. The course is variable. In pregnancy, 80% of women improve, 10% worsen and 10% remain unchanged.

Tension headache

Clinical picture: Manifested by diffuse dull or stabbing bilateral pain, often radiating frontally from the occiput – localized occipitally, parietally, and frontally, often in a circular "vice-like grip".

- It lasts for **hours and days**, usually of **moderate-intensity** (maximum atypical).
- Frequency tends to be **several times a week or monthly**. It may rarely be accompanied by vegetative

accompaniment, without neurological symptoms.
- Prevalence is about **10%**, with **three times more frequent in women** than in men.

Detailed history and physical examination to rule out neurological deficits and internal disease – if unclear refer to a neurologist if appropriate. CT scan (to exclude **intracranial expansion**).

CAVE: dg. tension headache is a "per exclusionem" diagnosis – therefore a good differential diagnosis is required (e.g. consider also slow-growing tumours)

Diferencial diagnostics

- **internal diseases** (hypertension, hyperthyroidism, tumors or brain metastases, drug-induced headache, larval depression, psychosomatic headache).

Therapy

- ***General measures***:
  - Education about the benign nature of the disease and the limitations of therapeutic options in predisposed individuals;
  - advise limitation of alcohol, nicotine, recommend adequate sleep and exercise, do not take analgesics regularly (CAVE: analgesic withdrawal pain);
  - instruction in **relaxation techniques**, **warm bath or shower**;
  - symptomatic **physical therapy** – especially shoulder and neck areas.
- ***Pharmacotherapy – acute***:
  - **acetylsalicylic acid** 500–1000 mg – in effervescent tbl.;
  - **paracetamol** 1000 mg once p.o. event. rct. supp.;
  - **ibuprofen** 400 mg once, maximum 800mg daily.
- ***Pharmacotherapy – preventive***: currently unknown.

Cluster headache

Clinical picture

Manifested by chronic recurrent intense pain mostly unilateral periorbital but possibly in the frontal or temporal region, often accompanied by tearing, nasal discharge, and redness of the eyes. It often occurs at night. (**CAVE**: Patients may be suicidal.)

- **It lasts** usually 1–2 hours (15 minutes to 3 hours has been reported, but sometimes prolonged), with a maximum after 20 minutes.
- **Pain frequency –** usually about 1-3 times (or 8 times) daily to weekly.

Prevalence' is about 0,1%, it is five times more common in men than in women.

Diagnostics

The diagnosis is made when **at least 2 of the following symptoms are present**:

- ipsilateral redness of the eye and tearing – for a sympathetic disorder;
- miosis;
- ptosis;
- swelling of the eyelid;
- nasal congestion;
- rhinorrhea;
- sweating in the face or forehead.

Therapy

- Therapy for an acute attack:
  - **dihydroergotamine** 4 mg nasal spray (or 1 mg inj.) – alternate inhalation with: sumatriptan 6 mg s.c. or 50–100 mg tbl.
- Therapy – preventive:

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  - **verapamil** slowly up to a maintenance dose of 3×80 mg daily to treat short cycles of headache;
  - **lithium** increase to 600-900 mg daily over weeks with regular monitoring of serum lithium concentration
  - **prednisone** 50-80 mg daily, then reduction to 15-20 mg daily (only when verapamil and lithium are ineffective);
  - ***acupuncture***.

Drug-induced headache

Clinical picture

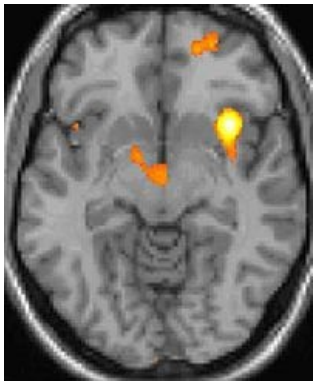
A persistent headache that typically arises after several years of frequent use of analgetics and antimigraine drugs – often combined, usually on the basis of migraine or even tension headache.

Pain typically diffuses pressure, less often daily throbbing with onset in the early morning. The only possible treatment is rehab therapy (during hospitalization).

Trigeminal neuralgia

Clinical picture

Repeated attacks of pain lasting several seconds to minutes, triggered by various small stimuli – chewing, touch, wind, when brushing teeth. Usually unilateral in the area of innervation of the 2nd-3rd branches of the trigeminal nerve where toothache must be differentiated), less often in the 1st branch of the trigeminal nerve (dif.dg. migraine, neuralgia in herpes zoster, arteritis temporalis). The pain attack is accompanied by contraction of mimic muscles (dif.dg. epileptic attack), then also by vegetative manifestations of irritation such as skin flushing and glandular secretion. Usually in the second half of life. In women, it occurs 2 times more often than in men.



Activated areas on the brain during a pain attack

Diagnostics

Referral to a neurologist (skull X-ray, CT with contrast to exclude skull base tumours, MRI to exclude multiple sclerosis,tumours, puncture of the liquor, neurophysiological functional tests (EP trigeminal).

Etiology

- ***Idiopathic*** (compression of the nerve root by a blood vessel in the brainstem region is considered as a possible cause).
- ***Symptomatic*** (mainly in bilateral involvement, neurological failures involving the 1st branch of the trigeminal system).
  - **Multiple sclerosis** (in about 2.5% of cases of trigeminal neuralgia, while about 1.5% of all patients with multiple sclerosis have trigeminal neuralgia).
  - **Tumours** and other **expansive processes** especially **in the trunk, base, and posterior cranial fossa.**
  - **Chronic** sinusitis, inflammation in the dental region, craniomandibular dysfunction.

Cluster headache

Diferential diagnostics

- Other neuralgia:
  - after shingles;
  - glossopharyngeal nerve.
- Migraine.
- Atypical facial pain.

Therapy

- **Carbamazepine** up to 3 × 2 tbl 200 mg daily (**CAVE**: drop in BP, hematopoietic, hepatic, renal disorders)
- **Phenytoin**.
- In case of failure of pharmacotherapy proceed to **surgical solution** – CAVE: not indicated in trigeminal neuralgia with etiology of multiple sclerosis, e.g.:
  - **termocoagulation of ganglion Gasseri**;
  - **decompression of the root of the trigeminal nerve** (the so-called *Jannett operation*).
- Recommendations for natural treatments may also be made.
- Good effect (incl. less consumption of drugs) was observed after **acupuncture** – try it before a possible surgery.

Prognosis

Difficult to estimate. **Approximately 70% of patients are problem-free after one year of treatment** with a sufficient dose of carbamazepine. The remaining 30% have a worse prognosis. **The success rate of surgery** in pharmacoresistant patients is **about 80%**. If the patient suffers from concomitant multiple sclerosis, the neuralgia attacks **do not depend on** the multiple sclerosis attacks.

Neuralgia of nervus glossopharyngeus

Clinical picture

A flash series of unilateral excruciating pain in the pharynx radiating to the same ear. Triggers are cold drinks, coughing, yawning, chewing, talking.

Therapy

- **Carbamazepine**.
- **Phenytoin** (alternativly).

- **Surgical therapy** – decompression, selective thermolysis, nerve root transection.

Prognosis

Response to pharmacotherapy is similar to that of trigeminal neuralgia. **Spontaneous remission is more common.**

Atypical facial pain

Clinical picture

- Unilateral or bilateral non-characteristic facial pain not corresponding to the sections according to the innervation of the areas by the cranial nerves – dull, stabbing, often unilateral orofacial pain, often of a permanent nature (concentrated in the face, maxilla, or teeth). They are accompanied by vegetative symptoms. Their cause is not organic. Women are three times more often affected.
- It is a diagnosis by exclusion. The affiliation of atypical pain to neuralgia is disputed.

Therapy

Comprehensive therapeutic approach:

- Psychological procedures (psychotherapy, relaxation methods), massage, treatment of the jaw and teeth (refer to a dentist - craniomandibular dysfunction), analgesics, antidepressants (amitriptyline, clomipramine).

Prognosis

Typically variable response to repeat the treatment at different stages. Often analgesic withdrawal and psychiatric treatment are required. The prognosis is uncertain.

Indications for referral to a neurologist

- The first occurrence of an unusual headache
- Prolonged headache, especially increasingly frequent or unusual constant pain;
- Headache with progressive intensity;
- Sudden onset to explosive pain – suspected subarachnoid hemorrhage;
- Precisely localised laterally constant headache;
- Accompanying symptoms – vomiting (except for vomiting in migraine), psychological alteration, or neurological disturbances.

Occurrence in primary care

Approximately 10-20% of GP patients suffer from some form of chronic or recurrent headache, women twice as often as men. 90% of these patients have functional pain (migraine, tension cephalea), 10% have symptomatic pain (due to various diseases).

Links

- ws:Bolesti hlavy/PGS (VPL)

Related articles

- Headaches - neurology article for PGS (Neurowiki)
- Headaches
- Drug-induced headache/PGS (VPL)
- Tension headache/PGS (VPL)
- Cluster headache/PGS (VPL)
- Trigeminal neuralgia/PGS (VPL)

Source

- GESENHUES, S – ZIESCHÉ, R. *Vademecum lékaře : Všeobecné praktické lékařství.* 1. czech edition. Galén, 2006. ISBN 80-7262-444-X.
- BERLIT, Peter. *Memorix neurologie.* 1. czech (translated 4. edition) edition. Grada, 2007. pp. 464. ISBN 978-80-247-1915-3.