The headache syndrome

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Headache

Fundamental: the pain is due to (from) the cranial nerves – which serves meninges (V, VII, IX and X) and it is called dura mater (the scythe and the cerebellum's lent, basal dura), the venous sinuses, the cranium base arteries and dura's important vessels.

No pain sensitivity (painless) are:
- less important vessels (smaller vessels)
- cerebral tissue
- soft covers tissues

Wolff (1950) considers that headache is linked to a stimulation of the most sensitive tissues by an:
- traction
- pressure
- distension
- inflammation
Headache

Most of the cases, it is due to the extra and intra cranial vascular structures. Morbid processes which can lead to the mentioned mechanisms are:

1. **Increasing volume of brain**: localised\generalised
2. **Increasing pressure of the cranium** – marrow – liquid: inflammations, toxics, sun exposure.
3. **Decreasing of cranium** – marrow liquid quantity:
   – puncture – insufficient, Moudingof LCR
4. **Increasing volume of intracranial blood** with the painful dissension of the sensitive vessels under histamine, coffein, nycoline actions, also in hypo blood sugar, hypoxia.
5. **Decreasing of blood circulation**:
   – cerebral atherosclerosis
   – orthostatic hypotension
   – depression of heart pompe (*heart Disfunctions*)
Differential diagnosis and etiology

1. Intracranial tumors – pyosis, haemorrhages, vessel's disfunctions (angioma)
2. Nonexpansive intracranial processes:
   – sick headache
   – vasomotor headache
   – Meniere syndrome
   – LCR changing pressure (increasing/decreasing)
3. Psycho – headache
4. Overtraumatic's headache
5. Extracranial processes:
   – from the skull
   – vascular origin (Horton dis.)
   – neuralgia
   – ear or nose origin
   – eye origin
   – cervical vertebral column
6. General diseases:
   – systemic cardiovascular dis.
   – essential hypertension
   – hypoglycemia
   – toxics, allergy
Differential diagnosis

Type:
- lancinant headache
- cranial nerves' neuralgia
- constrictive headache
- throby headache: sick headache, tumors, arterial hypertension.

Localisation:
1. After the affected organ: eye, ear, nose, teeth, ethmoidal, sphenoidal, frontal, sinuses
2. Unilateral: – cranial nerves neuralgia
   – sick licadache. Moderate value for diagnosis

Intensity – **important** for:
- neuralgia
- sick headache
- hydrocephalic

- **extremely important** for: • soubarachnoidal (unadmissible) haemorrhagies

- moderate, variable – in tumors
Headache classification

- **Primary headache (cephalalgia):**
  1. Vasomotor cephalalgia
  2. Migraine (sick headache) = severe headache, often with nausea, vomiting and visual disturbance.
  3. Bing and Horton cephalalgia – histaminic
  4. Overtension cephalalgia / muscular contraction of the neck

- **Secondary** – determined by local or general causes:
  1. Replacing processes (hic) – tumors, haematoma
  2. Cranium cerebral traumatic processes,
  4. Cerebral inflammatory processes: meninges, pyosis
  5. Depressions
Secondary – determined by local or general causes:

7. Vascular diseases – HTA, systemic or regional hypotension
   – vertebro basilar or carotid arteries insufficiency
   – thrombosis, cerebral thrombophlebitis
   – venous hypertension
   – cerebral haemorrhagies, angiona, ancurysins

8. Eye disfunctions: glaucoma, refractive error


10. Systemic and visceral diseases: heart and respiratory failure, kidney failure,
    hypo blood sugar, anaemia, leukemia, tetany endocrinopathics, infectious
diseases

11. Superior cervical lesions
Migraine

- The most important from all unexpressive processes which evolve in cranium.
- 60% from cases – obvious hereditary character.
- 50% from cases – it's appears in early puberty, more frequent for girls.
- For adults, five times frequently on those with high levels of arterial blood tension.
- Specific is the periodicity of attacks, followed by silent periods of time.
Migraine

1. Vasoconstrictor phase – decreases blood flow with 35% and so induces hypoxia → sensory dysfunctions (only cerebral microcirculation is affected).

2. Second phase – the pain (full phase) – it has been observed the absence of any relation between pain and blood perfusion (accelerate microcirculation appears after cephalalgia); he interferes the algesic kinius: bradikinin, neurokinin, histamine and proslaglandin.

   The cephalalgia's origin is the stimulation of the nervous fibres which serves the cerebral vascular vessels.
Migraine

The classic migrena has 3 phases:

I – prodromal phase – debut with psychoaffective manifestations, sensitivo – sensorials (visuals, hearings, olfactors, speaking, paraesthesias) and authonomic (cold)

II – cephalic phase – cephalalgia localised on half cranium severe intensity, pulsing character, with photopholia and photophobia.

III – postcephalgic phase – diffuse pain, sleepy sensations, vomition, oliguria or polyuria, hyperthermia, psychical excitations.

The personality of migrenoid person – it's a nervous personality
# Differential diagnosis of cephalaeas

<table>
<thead>
<tr>
<th>Characters</th>
<th>Migraine</th>
<th>Allergic cephalaeas</th>
<th>Psychogenic cephalaeas</th>
<th>Tension (stress) cephalaeas</th>
</tr>
</thead>
<tbody>
<tr>
<td>Frequently</td>
<td>30%</td>
<td>rare</td>
<td>most frequent</td>
<td>30%</td>
</tr>
<tr>
<td>Sex</td>
<td>F&gt;M</td>
<td>M&gt;F</td>
<td>M = F</td>
<td>F = M</td>
</tr>
<tr>
<td>Age</td>
<td>Young 20 – 25 years active sexually</td>
<td>&gt; 50 years</td>
<td>Any age</td>
<td>30 – 40 years</td>
</tr>
<tr>
<td>Debut</td>
<td>Sharp</td>
<td>Sharp</td>
<td>Non characteristic</td>
<td></td>
</tr>
<tr>
<td>Behaviour</td>
<td>Nervous</td>
<td>Activ, agitated</td>
<td>Irritative</td>
<td>Active, agitated</td>
</tr>
<tr>
<td>Appearance</td>
<td>Morning</td>
<td>After falling a sleep</td>
<td>Non characteristic</td>
<td>After effort, rigid positions</td>
</tr>
<tr>
<td>Autonomic disturbances</td>
<td>oculo – nasal discharge, nausea vomiting</td>
<td>Tearing</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Localisation</td>
<td>On side (frontal, temporal), pulsating</td>
<td>Total (generalised)</td>
<td>Non characteristic</td>
<td>both sides – circle, continuous</td>
</tr>
<tr>
<td>Alcaloids (ergoceps, ergotamine)</td>
<td>+/-</td>
<td>-</td>
<td>-</td>
<td>++</td>
</tr>
</tbody>
</table>
Migraine's treatment


2. **Prevention**
   - specific with propranolol 120 – 160 mg/day or with nifedipine 10 mg/day
   - antiaminic drugs - metisergide (Deseril 1 – 6 mg/day), 5HT derivates
   - relaxation technics, acupuncture.

3. **Treatment of the crisis**
   a. Antiinflammatory drugs – ibuprofen, naproxen coffeeine 60 – 120 with adds to the anthalgic effect (analgesic)
   b. Ergotamin – like drugs (derived from ergot amine) –
      • dihydro ergotoxin ergoceps over crisis
      – for the cerebral oedema: Mg sulphate i.v, diuretics, combination aspirin + coffeeine 4 – panadol (cofedol)
Cervical headache

**Exam** – tenderness and limitation of movements on palpation: mobilisation, muscular contraction, painful sensation of the neck muscular groups, crepitus by movement of the arm.

- cervical spondilosis
- cervical artrosis
- discal hernia
- paraesthesia of arms, muscle atrophy
- fainting sensation

- visual and hearing troubles
- psychic manifestations – depression, difficulty in concentration
- sharp evolution

High lesions (C2) → isolated neuralgia in Arnold nerve

Medium lesions → neuralgias, superspinous and arms.
Headache of tension (stress induced)

The most common cephalgic syndrome (contracture cephalaea, psychoncurogenic cephalaea, habitual, essential).

**Mechanism:** epicranial muscles contracture, also of the nope with decreasing paintfull sensibility amount. Muscle rigidity is only a secondary phenomenon (e.g. Artrrosis) which intensifies the preexistent cephalaea.

**Objective exam** – do not evidentiate the objective disorders (clinic, x rays)
- electromyogramme – sometimes is modified.

**Treatment:** – avoiding the fix positions of head and neck
- gymnastics
- relaxation technics
- miorelaxating drugs: mydocalm, cloroxazon
- anxyolitical drugs: diazepam
- usual analgetics: algocalmin, nonsteroidalical antiinflammatoyr drugs.
Headache in general diseases: cardiovascular disorders

I. **Hypertension** – frequent;

- make different diagnosis with psychogenic headache, arthritic headache, allergic headache

*Characteristics*

- debut in the morning, usually after 10 o'clock – occipital casque localized
- improves in orthostatism and reappears in the evening after professional stress
- sometimes with paroxistical character – which imposes searching of little (minor) cerebral haemorrhagies without neurological manifestations
- no parallelism (correspondence) between the intensity of headache and the stage (degree) of the hypertension.
Headache in general diseases

II. The second cardiac disease is heart failure – headaches occurs due to increased venous pressure.

III. Renal diseases – headache is intense and constantly present
– in kidney failure increases the azot level
– in glomerulonephritis – the mechanism for producing headache is cerebral oedema.

IV. Polycithemia - here headache has a pressing pushy character.

V. Hypoglicemia headache occurs after 2 or 3 hours after meals and disappears after foods ingestion.

VI. Hystaminic headache – described by Horton; frequently on men than women, frequently over 50 years.
   • pain which occurs by night, after 1 sleep hours
   • unilateral in the temporal artery territory
   • treatment with antihistaminic drugs is very efficient (diagnostic test)
   • histamine injected i.m./i.v. – 0,01 mg induces the headache crises in 3 to 5 min
Headache in general diseases

VII. Intoxications – alcohol, monoxid carbon, nitrits, arsenium, mercurium, nicotine, drug induced intoxication (as for nitroglycerine or bromures).

VIII. Headache as an associated system occurs in the following illnesses:
  1. Infectious disease
  2. Chronicle liver disease
  3. Gastroduodenal diseases
  4. Biliary diskinetic syndrome
  5. Chronicle constipation
  6. Hypothyroidism
Seizures

The most classic and needed to take into account as well as diagnosis of recurrent crises.

Based on etiology:
1. constitutional or idiopathic Epilepsy, appears at the young age of 20 years and is not accompanied by other neurological abnormalities;
2. symptomatic Epilepsy, hide a primary cause, can be:
   - Congenital anomalies or perinatal trauma at birth
   - Metabolic disorders: hipocalcemia, hypoglycemia, phenylketonuria (PKU), Pyridoxine deficiency (and nn) and weaning to some drugs and alcohol, IRC and diabetes.
   - Posttraumatic, occur in about 2 years after the injury and must involve and dura, the shadow are recurring.
   - Tumor and occupying space, formations for the average age and the third when covered by title.

Attention! Are a wake-up call when: -after 30 years
   - increase in the amplitude and frequency,
     to accompany the neurological signs of outbreak,
   - partial.

- Vascular disease, the most common question after 60 years.
- Degenerative diseases, Alzheimer's disease.
- Acute infectious diseases (meningitis, encephalitis and bacterial keratitis) and cornice (neurosifilis, cisticercoza, stroke), AIDS to encefalite abscess, supratentorial that appears. A year after treatment.
Seizures

Based on the clinical trial (International League against Epilepsy):

1. Partial Seizures
   - Simple, no loss of consciousness, paralysis (jacksoniene), sensitive, cognitive (deja vu), hysterical formed variants, hallucinating, dysphasia, etc.
   - Complex, with loss of consciousness, preceded by the first.

2. Generalized Seizures may be:
   - Petit Mal or absence characterized by short loss of knowledge, accompanied by partial clonice contractions, disappear after 20 years.
   - Atypical absences.
   - Mioclonice seizures.
   - Convulsions tonico-clonice, Grand Mal and with the following status epilepticus forms: individual, subintrante, automaticity postepileptic crises.

3. Epilepsy type drop attack seizures generalized hypotonia.
Convulsive seizures are classic tonic-clonic, triggered by certain conditions and accompanied by aura, photophobia, which appears immediately before the crisis and brief prodrome, which may be a few days before the crisis.

- Recurring bouts
- EEG changes in crisis
- Mental disorders persist and focus after the crisis.

Differential diagnosis:
- For partial seizures: AIT, the attack of rage, panic attack.
- For generalized seizures:
  1. Neurocardiogenic syncope, painful, vagal, orthostatic hypotension, etc.
  2. Heart arrhythmias, especially older persons, requires heart exam and HOLTER monitoring.
  3. Cerebral circulatory insufficiency, vertebro-basilar.
  4. Pseudoepilepsia which may be accompanied by bouts of epilepsy, epilepsy evils-hysteria.

Biology (blood, sdr. Inflammatory, renal and hepatic function, VDRL), EEG, imaging (radiology, computed tomography, MRI), increased serum prolactin is based on the classic grand mal seizures.
Treatment

General measures
- Crisis prevention by avoiding precipitating factors, stress, medication overuse and antiepileptică.
- The recommendation to avoid situations and professional extraprofessionale that put lives in danger.
- To recognize the aura, the education environment.

The choice of medication:
- Dopamine GABA:
  - Valproic acid
  - Benzodiazepines
  - Barbiturates
  - Baclofen
- Membrane stabilizers:
  - Phenytoin, carbamazepine, primidone.

Titration of the serum concentration requires and possible drug association anticonvulsants. There are a number of side effects, anemia, patents citopenii, discrazii blood.

Surgical treatment possible in situations-drug treatment.
Special situations:

Orphan crisis
Delirium tremens
*Status epilepticus*, emergency medical and surgical
  - Keeping the upper airway open.
  - Dextrose or glucose 33-50% when suspected hypoglycemia.
  - Diazepam 10 mg 1 vial, iv, repeats at 10 minutes, do not suddenly stop receiving can cause respiratory or lorazepam 4 mg iv.
  - Or 18 lauded Fenitoin in infusion-20 kc, 50 min. using saline solutions as glucose creation into the ground.
  - Phenobarbital iv, titrated 10-20 mg/kc.
  - Caution risk of hypotension!
  - If necessary: assisted breathing and curarizare or midazolam.
Partial complex epilepsy can start with diazepam iv and continue with the rest of the drugs (phenobarbital, *carbamazepine*, fenitoin is of choice).
Absence seizures: etosuximida.
Epilepsy mioclonică: clonazepam, nitrazepam.
Febrile seizures: phenobarbital.
Monitoring

Frequency of crisis
Compliance to medication
Side effects of medications: phenytoin is the most effective and the most toxic (hepato-renal, hematopoietic, osteomalacia, idiosyncratic)

**Medical rehabilitation and socio-professional reinserare**
Inform the patient and the environment for knowledge and acceptance of the disease.

Knowing and avoiding situations that may trigger crisis: discontinuation of medication, alcohol consumption, stress, sleeplessness, etc.

To avoid professions at risk of accidents.
The monitoring of medical therapy.
Do not forget!
1. it can be but there is often a constitutional question to be diagnosed, inflammatory TUMOUR.
2. the crisis is treated with diazepam iv and ensures the breath.
3. attention to the signs and symptoms associated with it, e.g., fever, signs of the outbreak.
4. attention to the false jerking.
5. the follow up to the primary level of health care is important.