

# Headache Research Report

## APPENDIX H

### Historical Medical Perspectives on Headache

#### Symptom Diagnosis General and Regional

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D. Appleton and Company  
New York and London  
1927

#### HEADACHE (*Cephalalgia; Cephalea*)

Headache is a common complaint. The characteristics of the headache may sometimes give a clue to the diagnosis, but too much importance must not be given to this one symptom alone. Seven points at least should be determined in a history of this complaint: (1) location, radiation, and depth (2) duration, (3) frequency, (4) character, (5) intensity, (6) progress, and (7) associated symptoms and relation to other functions.

Cephalalgia may be local or general, and may arise from conditions that are intracranial, pericranial, or extracranial. Many headaches occur independently of the existence of any specific disease, others occur as a constant symptom of particular diseases. Headache is often the first evidence of fever from any cause, and is especially notable in the acute infectious diseases. Weakness from any cause, mental overwork (exhaustion), emotional strain (anger, worry, excitement), defective ventilation, excess of tea, coffee, tobacco, exposure to heat and cold, insufficient or interrupted sleep, or improper hygiene of any kind may produce headaches. The following diseases are those in which this complaint is a characteristic or prominent symptom. While the division of headaches on a basis of their localization may not be entirely satisfactory on account of overlapping, it is true, nevertheless, that the headaches in many conditions often present definite sites of predilection. It must also be remembered that combinations of several forms of headache due to the coexistence of their causes in the same patient may occur.

#### HEADACHE, FRONTAL

**Simple Catarrhal Frontal Sinusitis.** – Characteristics. – The pain is usually limited to the glabella or supra-orbital region, but may affect the whole frontal region on one or both sides. There is a marked periodicity of the pain, usually from 10 A.M. to 2 or 4 P.M., when it suddenly ceases. The pain may be exaggerated by stooping.

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*Chief Signs.* – Tenderness beneath the eyebrow (Ewing's point) or over the sinus; discharge from the nose; opacity of the sinus by transillumination and x-ray.

**Empyema of the Frontal Sinus.** – *Characteristics.* – Pain is the predominating symptom, and even in the chronic cases it is present. It varies in intensity from the severe, radiating, lancinating type to that of the dull, pressurelike sensation known as "brow-ache." It is located chiefly in the supra-orbital region, the root of the nose, the forehead, and top of the head, and is limited to one side. It is often of a neuralgic character, and is usually worse upon arising in the morning. As the day advances it gradually disappears and the patient is comparatively free from pain the latter part of the day and during the night.

*Chief Signs.* – History of previous nasal trauma or disease, or some specific infectious disease; tenderness on pressure or percussion, especially upon the orbital plate; increased nasal secretion, purulent or mucopurulent; anosmia; rhinoscopy (pus exuding from the space between the middle turbinate and the outer nasal wall; transillumination; x-ray.

**Eye-Strain (Errors of Refraction).** – *Characteristics.* – Various writers give eye-strain as the cause of headache in 4 to 90 per cent of cases of headache. While headaches due to eye-strain often show wide variation from the typical location and time of occurrence, those due to hyperopic astigmatism are most frequently superciliary, frontal, and temporal. They are usually aggravated or brought on by use of the eyes. Any error of refraction causing strain of the intrinsic muscles of the eyes may cause frontal headache or deep orbital pain (ametropia, low hypermetropia, low myopia, hypermetropic astigmatism, hypermetropia, myopic astigmatism, mixed astigmatism, myopia, etc.). The headaches come on often about noon after several hours' work, but, on the other hand, the patient may awake with the pain in the morning.

*Chief Signs.* – Fatigue after using the eyes; blurred vision; may be blepharitis; discomfort or tenderness of the eyeballs; ocular examination; relief after rest or correction of the error.

**Deviations or Deflections of the Nasal Septum.** – *Characteristics.* – Frontal headache is frequently present in high deviations, and is most severe in the morning on awakening.

*Chief Signs.* – See page 162.

**Acute Rhinitis (Coryza).** – *Characteristics.* – There is a sensation of fullness and pain about the nose and forehead.

*Chief Signs.* – Sneezing; nasal discharge; may be malaise and fever; may be mental hebetude (aprosexia nasalis).

**Constipation.** – *Characteristics.* – The pain is usually of a throbbing, pulsating character, localized in the frontal and orbital regions, and is made worse by sudden movements of the head.

*Chief Signs.* – Furred tongue; general malaise and debility; history of intestinal stasis.

**Anemia.** – *Characteristics.* – The headache is usually frontal, but it may be in the vertex, general, temporal, or occipital regions. It is usually dull and heavy, a sensation of weight or gnawing, though it may undergo neuralgic exacerbations and may radiate to the temples or over the entire head.

*Chief Signs.* – Fatigue; anorexia; palpitation; edema of the feet; pallor; faintness; blood examination (low hemoglobin and red cell count, moderate anisocytosis and poikilocytosis); discovery of basic disease causing the anemia.

**Iritis.** – *Characteristics.* – The pain is in or about the eye and temple and is severe, becoming worse particularly at night.

*Chief Signs.* – Contracted pupil; pericorneal injection; dulness of the iris.

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**Ethmoiditis.** – *Characteristics.* – There is usually a dull pain between the eyes a feeling of weight in the vertex. Pressure over the inner canthus causes tenderness.

*Chief Signs.* – Discharge of creamy tenacious mucus from the nose; may be asthenopia or eye disturbances; may be nasal asthma and cough; swelling of the middle turbinate; x-ray of the sinuses.

**Trigeminal Neuralgia** (*Trifacial Neuralgia; Tic Douloureux*). – *Characteristics.* – Paroxysmal neuralgic, unilateral pains occur along the course of one or more branches of the trigeminal nerve. When the ophthalmic branch alone is affected, which is not frequently the case, the pain will be in the supra-orbital region. The pain begins and ends suddenly with complete relief between attacks. Attacks are more frequent during the day. The patient indicates the site of the pain cautiously with only one or two fingers. The pain is agonizing.

*Chief Signs.* – Tenderness over the points of exit of the nerves from the bones (supra-orbital in this case); hyperesthesia along the course of the nerve.

**Supra-orbital Neuralgia** ("*Brow Ague*"). – *Characteristics.* – The pain is similar to that of trigeminal neuralgia but limited to the frontal branch. It is usually secondary to disease of the frontal sinus or orbit, herpes, or syphilis of the nervous system.

**Glaucoma.** – *Characteristics.* – The pain is usually severe, paroxysmal or constant, especially in the acute form. It is referred to the brow, cheek, temple, or side of the nose along the branches of the fifth cranial nerve.

*Chief Signs.* – Increased intra-ocular tension (tonometer or finger); colored rings around distant lights; shallowness of the anterior chamber; dilatation of the pupil; cupped disk; tortuous veins; arterial pulsations of the retinal vessels.

**Idiosyncrasy to Iodids and Chronic Iodic Intoxication.** – *Characteristics.* – The pain is dull and is located over the frontal sinuses,

*Chief Signs.* – History of ingestion of the drug; coryza; sore-throat; ptyalism; eruptions of the skin, usually acne, but may assume any form.

**Acromegaly.** – *Characteristics.* – Headache is common, usually frontal. Sometimes it is diffuse and persistent or even uncontrollable. It is usually accompanied by marked somnolence.

*Chief Signs.* – Gradual enlargement of the bones of the face, hands and feet with thickening of the soft tissues; bitemporal hemianopsia; may be optic atrophy with increasing blindness; polyuria, glycosuria; x-ray of the sella turcica.

**Less Common Causes.** – Adenoids; typhoid fever; gastritis; hematoma of the dura mater; lithemia; "neurasthenia"; malaria; periostitis; syphilitic nodes; thrombosis of the superior longitudinal sinus; trench fever; uremia; secondary hydrocephalus (bilateral frontal headache); maxillary sinusitis.

## HEADACHE, LATERAL

**Migraine** (*Periodic Sick-Headache; Biliary Headache; Megrin; Hemicrania*).

*Characteristics.* – Headache really constitutes the disease. It is cumulative and expansile in character, beginning in a small localized spot, which is generally constant either on the temple or forehead or in the eyeball. It is of a penetrating, sharp, boring character. The pain gradually spreads and involves the entire side of the head, sometimes the neck, and may pass into the arm. In some cases both sides are affected.

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*Chief Signs.* – Hereditary diathesis; history of first appearance in childhood, recurring perhaps through life up to the beginning of old age; nausea and vomiting; paroxysms of fixed duration, two to twenty-four hours; visual disturbances (flashes of light, spectra, dimness of vision or hemianopsia); prostration.

**Trigeminal Neuralgia.** – *Characteristics.* – The pain is sometimes so severe as to include the whole side of the head. See above.

**Dental Caries** (*Toothache*). – *Characteristics.* – The pain is severest in the maxillary or mandibular regions, but may radiate to the entire side of the head along the course of the fifth cranial nerve.

*Chief Signs.* – Local signs of caries; tenderness on percussion; x-ray.

**Acute Mastoiditis.** – *Characteristics.* – The first symptom is intense pain, involving the mastoid and often the whole side of the head. It may even extend over to the opposite side of the head.

*Chief Signs.* – Local tenderness; edema of the mastoid; congestion of the meatus with bulging of the posterior wall of the canal (otoscopy).

**Otitis Media.** – *Characteristics.* – Generally there is intense pain in the ear and side of the head. The pain may be shooting and increased by movement of the jaw, pressure over the tragus, or pulling of the auricle outward. If perforation does not soon occur with evacuation of pus, the pains radiate and become throbbing and pulsating.

*Chief Signs.* – Fever, deafness; tinnitus; bulging of the drum (otoscopy).

**Less Common Causes.** – Ceruminosis of the external auditory canal; maxillary, antritis (inflammation of the antruni of Highmore), adenoids, cranial caries; cancer of the tongue; cancer of the neck, dysmenorrhea, unilateral eye-strain; "hysteria"; gout; chronic nephritis; nasal polyp; cerebral tumor; "neurasthenia."

## HEADACHE, OCCIPITAL

**Neurosis** ("*Neurasthenia*"). – *Characteristics.* – Cases occur in which headache of a persistent character is the outstanding symptom. This is really more of a sense of pressure within the head. While it is probably most often occipital, it may be diffuse, vertical, temporal, frontal or parietal. The pain is dull or merely a sensation of fatigue, and is aggravated by mental or physical effort.

*Chief Signs.* – Suggestibility; easy fatigue; insomnia; backache.

**Chronic Parenchymatous Nephritis.** – *Characteristics.* – The headache is frequently severe, often occipital, extending to the neck. It may, however, be vaguely frontal, general, or even unilateral. Increase in the pain is a warning of impending uremia. The headache may be associated with giddiness, tinnitus, and a tendency to epistaxis.

*Chief Signs.* – Edema (beginning in the face); nausea and vomiting; increased arterial tension with accentuation of the second aortic sound; diminution of the output of urine, albuminuria; cylindruria; hematuria; albuminuric retinitis (ophthalmoscopy); lowered kidney function (phenolphthalein test); high blood urea (blood chemistry).

**Utero-ovarian Disorders** (*Displacements, Tumors, Inflammations*). – *Characteristics.* – The headache is usually occipital, sharp, and radiating, and is accentuated during the menstrual period. It may be relieved by pressure.

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*Chief Signs.* – Backache (low); leukorrhoea; disturbed menstrual function; evidence of pelvic disorder by bimanual examination.

**Adenoids.** – *Characteristics.* – Dull ache in the occipital region is a common symptom.

*Chief Signs.* – Nasal catarrh; mouth-breathing; disturbed sleep; deafness; chest deformities (Harrison's groove); backward development; examination of the naso-pharynx (finger or the nasopharyngoscope).

**Cervico-occipital Neuralgia.** – *Characteristics.* – The pain is paroxysmal, unilaterally occipital, sharp, and sometimes intense.

*Chief Signs.* – Tender points over the course of the posterior branches of the cervical nerves (Valleix's points).

**Sphenoidal Sinusitis.** – *Characteristics.* – Severe pain is common and may be the only symptom of the disease. It is usually occipital or deep in the center of the head. It may, however, occur in the temples, the postauricular region, and the middle ear, with a feeling of weight and pressure in the vertex.

*Chief Signs.* – Purulent discharge from the nose; detection of the source by the naso-pharyngoscope; opacity of the sinus (x-ray).

**Uremia.** – *Characteristics.* – Headache is an important symptom. It is most often occipital and extends to the neck. It may be an early symptom, is severe and continuous over a long period. Giddiness may accompany the headache.

*Chief Signs.* – History of renal disease; mental dullness and apathy; twitching of the muscles of the face and hands; paroxysmal dyspnea; vomiting; oliguria, albuminuria, cylindruria, hematuria; high blood urea (blood chemistry); albuminuric retinitis (ophthalmoscopy).

**Cerebrospinal Meningitis.** – *Characteristics.* – Headache is one of the premonitory symptoms and occurs also at the onset. It is chiefly in the back of the head and extends into the neck and back. The headache increases and there is painful stiffness of the neck and a sensitiveness to noises.

*Chief Signs.* – Acute onset; high fever; delirium; vomiting; convulsions; retraction of the head and neck; Kernig's and Brudzinski's signs positive; lumbar puncture (cloudiness, pleocytosis, presence of meningococci).

**Cerebellar Tumor.** – *Characteristics.* – The pain is extreme, lancinating or boring, and may be located in the occiput, forehead, or in the whole head, and shows marked exacerbations. It is a constant and early symptom.

*Chief Signs.* – Vomiting; vertigo; optic neuritis; reeling and lurching gait with a tendency to fall to the side of the lesion (asynergia); dysmetria; dysdiadokokinesis; may be tilting of the head to the side of the lesion; may be nystagmus; progressive course.

**Indurative, Rheumatic, or Nodular Headache.** – *Characteristics.* – The pain which is superficial in location, is dull and aching, and is aggravated by cold drafts and by prolonged tension on the muscles overlying the skull. The headaches are usually relieved by heat and massage.

*Chief Signs.* – Onset in later life; painful indurations and tender points near the attachment of the muscles to the occiput; may be rheumatic pains elsewhere.

**Eye-Strain (Muscle Imbalance).** – *Characteristics.* – The headache due to muscular errors, as opposed to refractive errors, is commonly occipital.

*Chief Signs.* – See page 72.

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**Less Common Causes.** – Chronic interstitial nephritis; cervical Pott's disease; utero-ovarian disorders (displacements, tumors, inflammations); hypotension; diabetes; epilepsy; tabes dorsalis; syringomyelia; basal tongue lesions; trench fever; Buhl's disease.

### HEADACHE, VERTEX

**Neurosis** ("*Hysteria*"). – *Characteristics.* – The pain is a feeling of pressure or numbness at the vertex, or of compression or constriction over the lateral regions ("en casque"). Sometimes there is a sensation like that of a nail driven into the head (clavus hystericus).

*Chief Signs.* – Occurrence in females; morbid motor, sensory, and psychic phenomena, such as paralysis without wasting of the muscles, characteristic convulsive seizures anesthesia or hyperesthesia, special sense palsies, suggestibility, and emotionalism.

**Neurosis** ("*Neurasthenia*;" *Helmet Headache*). – See above.

**Less Common Causes.** – Utero-ovarian disorders (displacements, tumors, inflammations); anemia; constipation; epilepsy; sphenoidal sinusitis.

### HEADACHE, GENERAL OR VARIABLE

**Arterial Hypertension** (*Essential Hypertension*). – *Characteristics.* – The headaches of hypertension are rather characteristic in that they tend to appear early in the morning and usually wear off after the patient gets up. They are, as a rule, bilateral, occipital, or frontal, and tend to occur almost daily in contradistinction to most types of headache. They may occur on change of posture but often do wake the patient from sleep.

*Chief Signs.* – Demonstration of an abnormally high blood-pressure by the hyginomanometer (over 1.60 mm. of Hg., usually much higher); occurrence in persons usually over fifty, leading strenuous lives, and who are otherwise healthy; ruddy complexion and plethoric habitus; absence of evidence of arterial, cardiac, renal changes until late; eye-grounds normal or arteries contracted, tortuous, A thickened.

**Arteriosclerosis.** – *Characteristics.* – The headache is often diffuse, more or continuous, not severe, the sensation being of pressure rather than of pain. It particularly common in cases with cerebral arteriosclerosis.

*Chief Signs.* – Occurrence usually after middle age; thickened arteries; high blood-pressure; left ventricular hypertrophy with accentuation of the second aortic sound; vertigo; may be confusion or lack of attention; later may be progressive dementia; transient paralysis and aphasia, or cerebral hemorrhage; sclerosis of the retinal vessels (ophthalmoscopy).

**Cerebral Syphilis** (*Cerebrospinal Syphilis*). – *Characteristics.* – The headache is usually very disagreeable and of a migratory nature. It is usually dull, at times boring. It is inconstant, intermittent, and often worse at night. It may disappear for weeks or months and then suddenly reappear. It may also be the only sign of cerebral syphilis for months or even years. The location is often frontal or parietal.

*Chief Signs.* – History of syphilis (two to five years before); mental symptoms (from fretfulness to dementia); insomnia; attacks of somnolence; vertigo; cranial nerve palsies (especially second, third, and sixth) ; may be epileptiform attacks, transient aphasia or paralysis;

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positive Wassermann; spinal fluid (positive Wassermann, lymphocytosis, increased globulin, colloidal gold reaction with luetic curve).

**Acute Alcoholism.** – *Characteristics.* – The headache follows a debauch and is known as "Katzenjammer." It may be neuralgic in character.

*Chief Signs.* – History of overindulgence in alcohol.

**Acute Gastritis.** – *Characteristics.* – The pain may be severe and accompanied by vertigo (vertigo e stomacho laeso). It may be restricted to the front of the head or it may be general.

*Chief Signs.* – Uncomfortable feeling in the abdomen; depression; nausea; eructations; vomiting; furred tongue; possibly fever.

**Chronic Gastritis.** – *Characteristics.* – Headache is common, though it may be more a sense of pressure than pain and may be accompanied by vertigo.

*Chief Signs.* – General debility oppression after eating; coated tongue with red margins; bad taste in the month; nausea in the morning; eructations; occasional vomiting of slimy mucus; impaired digestion; gastric analysis (subacidity).

**Nasal Obstruction** (*Polypi; Spurs; Septal Deviations; Turbinate Thickening; Bony Ridges; Chronic Rhinitis*). – *Characteristics.* – The headache is usually similar to that of the neurasthenic, a sense of pressure, though it may take any form.

*Chief Signs.* – Nasal discharge; disturbance of the sense of smell; neurasthenic symptoms; rhinoscopy, revealing the cause of the obstruction.

**Cerebral Thrombosis.** – *Characteristics.* – Pain is frequently a prodromal symptom, together with vertigo and transient aphasia.

*Chief Signs.* – Onset rather gradual as compared with hemorrhage or embolism; incomplete or slow loss of consciousness; gradually developing hemiplegia.

**Tuberculous Meningitis.** – *Characteristics.* – The pain may be intense and agonizing. The child puts its hand to its head and occasionally, when the pain becomes worse, gives a short sudden cry, the so-called hydrocephalic cry.

*Chief Signs.* – Insidious onset; change of disposition; irregular pulse and fever; signs of meningeal irritation; palsies; coma; discovery of a tuberculous focus; spinal fluid examination (clarity, lymphocytosis, tubercle bacilli, increased pressure).

**Fracture of the Skull.** – *Characteristics.* – Headache occurs during the stage of irritation.

*Chief Signs.* – History of injury; signs of cerebral irritation, developing into those of compression; possibly blood in the spinal fluid (spinal puncture) ; x-ray.

**Cerebral Concussion.** – *Characteristics.* – Headache may follow head injury and is often continuous and persistent.

*Chief Signs.* – History of injury; vomiting; varying degree of consciousness or complete unconsciousness; signs of cerebral irritation.

**Cerebral Tumor.** – *Characteristics.* – Headache as a rule is a severe and prominent symptom, though it may be quite absent. It is at first mild, early becoming severe and persistent, though periods of remission may occur. It is most characteristic when it occurs early in the morning, often at three or four o'clock, and wakes the patient from sleep. Later it is increased by those causes which produce cerebral hyperemia (excitement, exertion). It may be localized or diffuse, and there may be local tenderness on percussion. The site of a headache is a very uncertain guide for localization purposes, however.

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*Chief Signs.* – Vomiting, often early and constant (especially in cerebellar and pontine growths), not related to food, unaccompanied by nausea, and may be projectile; optic neuritis (choked disk), usually bilateral; vertigo; may be mental or emotional changes; may be convulsions; slow pulse; localizing symptoms; x-ray.

**Cerebral Abscess.** – *Characteristics.* – Headache in brain abscess comes on typically as one symptom in a sudden and stormy onset, often with rigidity of the neck. A period of relative quiescence and apparent improvement follows, corresponding to the stage of recovery from the diffuse initial onslaught. Usually after several weeks there is a relapse from extension of the trouble.

*Chief Signs.* – History of antecedent infection, frequently of the ear; stormy onset; restlessness; chills, fever, leukocytosis, sweats; delirium; convulsions; spinal puncture at the onset (evidences of meningitis); x-ray.

**Encephalitis Lethargica (Epidemic Encephalitis).** – *Characteristics.* – Headache is often among the initial symptoms. The headache may be accompanied by generalized pain and aching. It disappears with the onset of stupor.

*Chief Signs.* – Sudden onset with slight nasal discharge, fever, and sweating, followed in a day or two by restlessness, anorexia, constipation, often vomiting, possibly nocturnal delirium, subsiding in three to fourteen days, followed by abnormal drowsiness; drowsiness, passing in a week into lethargy or stupor; appearance of ptosis or other cranial nerve palsies; diplopia; may be meningeal symptoms; muscular hypertonia of rigidity; coarse tremor; choreo-athetoid movements; emotionalism; whispering monotonous speech or dysarthria; may be paralysis; psychic manifestations; moderate leukocytosis (9,000 or higher); spinal fluid normal or slightly altered.

**Sunstroke (Insolation; Thermic Fever).** – *Characteristics.* – The more usual form comes on during exposure, with pain in the head, dizziness, a feeling of oppression, and sometimes nausea and vomiting.

*Chief Signs.* – History of exposure to the sun's rays or high external temperature; hyperpyrexia; unconsciousness; hot, dry, red skin; rapid, full pulse; stertorous respiration; dilated pupils which later become contracted.

**Abscess of the Scalp (1. Subcutaneous; 2. Subaponeurotic; 3. Subpericranial).** – *Characteristics.* – There is local pain and tenderness.

*Chief Signs.* – Those of local inflammation: local swelling, heat, redness, and fluctuation.

**Cranial Caries (Necrosis; Periostitis; Osteitis; Osteomyelitis).** – *Characteristics.* – The pain is localized and often worse at night.

*Chief Signs.* – Those of local inflammation; frequently a history or signs of either tuberculosis or syphilis; x-ray.

**Aortic Regurgitation.** – *Characteristics.* – Headache, often throbbing, with dizziness, flashes of light, and a feeling of faintness on rising quickly may be among the earliest symptoms.

*Chief Signs.* – History of syphilis; precordial pulsation; forcible apex beat; increased cardiac dullness; diastolic murmur at the base conducted down the sternum; visible arterial pulsation; Corrigan pulse; capillary pulse; high systolic, low diastolic pressure: positive Wassermann.

**Hay-Fever.** – *Characteristics.* – There may be considerable headache and distress.



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*Chief Signs.* – Seasonal occurrence (usually during pollination); fits of sneezing; conjunctival irritation and lachrimation; watery, copious, and continuous nasal discharge; general depression; may be cough; determination of sensitization by skin tests.

**Less Common Causes.** – Cardiac decompensation; myocarditis; cardiac hypertrophy; endocarditis; nephritis; uremia; anemia; lumbar puncture (pains on arising); high cervical cord tumor; mediastinal tumor (passive congestion); polycythemia; focal infections; heat exhaustion; secondary syphilis; acute poliomyelitis; psychosis (particularly those associated with depression); general paresis; cerebral hemorrhage (may be a prodromal symptom); cerebral embolism (may be a premonitory symptom); epilepsy (may be part of the *aurae* or *sequelae*); pachymeningitis haemorrhagica; (associated with injury, alcoholism, or insanity); acute cerebral leptomeningitis; hydrocephalus, acquired (acute or chronic); multiple sclerosis; encephalitis; thrombosis of the superior longitudinal sinus; oxycephalus; cinchonism (sense of fullness); carbon monoxid poisoning; lead poisoning (saturnism); arsenic poisoning; chronic pulmonary tuberculosis; nervous dyspepsia, enteroptosis, hyperacidity (all causing neurasthenic types of headache); jaundice; gout; helminthiasis (headache resembling that of anemia); chronic cholecystitis; cirrhosis of the liver; thoracic aneurysm (passive congestion); cervical adenitis; thrombosis of the veins of the neck, acute yellow atrophy of the liver; pellagra; Meniere's disease; leontiasis ossium; miners' nystagmus; hypopituitarism; Addison's disease; diabetes (preceding coma); exophthalmic goiter; prolonged lactation; oxaluria.

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### The Art of Medical Treatment With Reference Both To The Patient And To His Friends

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PHILADELPHIA AND LONDON  
W. B. SAUNDERS CO 1926  
(pages 388-392)

#### HEADACHE

The symptom of headache, according to the best conception that we can at present form, is to be divided into three varieties: 1, Neuralgic headache. 2, Migraine. 3, Headache proper.

Neuralgic headache is to be identified by the quality of the pain, and by the distribution of the pain and tenderness in correspondence with the distribution of the cranial nerves. It is to be treated as described under Neuralgia (q. v.).

Migraine, as to the cause of which the strongest theory is that of vascular spasm, is dealt with under a separate head (q. v.).

Headache proper, meaning to include all other instances of the familiar symptom, has its most plausible mechanical explanation in a tension or other irritation of the dura. Such tension or

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irritation of the dura can be suspected, with more or less reason, to be present in the following conditions which are recognized to be causes of headache:

(a) Conditions known to be accompanied by increased pressure of the cerebrospinal fluid, such as: Meningitis of all varieties (including "meningismus"); alcohol poisoning; nephritis; arteriosclerosis (?).

(b) Conditions in which there is suggested a hyperemia, active or passive, of the brain or of the meninges: 1. Because the headache is accompanied by vasomotor disturbance elsewhere: Nitroglycerin poisoning (with flushing of the face); fever (with flushing of the face); eye-strain (with injection of conjunctivae or edema of lids); anger (with flushing of the face); menstruation (with uterine congestion); psychoneuroses (with vasomotor instability). 2. Because of other reason to believe in cerebral or meningeal hyperemia: Intense mental activity; sunstroke; head injury; lumbar puncture headache; syphilitic periostitis; meningitis, which belongs here as well as under (a) above. 3. Because of passive congestion: Cardiac insufficiency; constriction of the neck; partial asphyxia. 4. Because of a probability that there is less blood in the abdominal circulation, and consequently more elsewhere: Hunger; flatulence; constipation; deficient gastric function; tight lacing.

(c) Other causes of increase of pressure within the dura: Brain tumor; abscess (usually); hydrocephalus.

Whether or not this theory deserves consideration, headache are to be traced, if possible, to their immediate cause.

When this cause is a recognized pathologic condition, such as the onset of a febrile disease, cardiac insufficiency, or nephritis, treatment (except for temporary palliation) is the treatment of the cause.

In the common class of patients who complain of recurrent headache of which the immediate cause cannot be determined conclusively, all of the factors toward which suspicion is directed, from eye-strain to constipation, should be treated on suspicion. The net result may be in some degree successful.

But there remains that refractory type of cases in which headache recurs frequently without a tangible cause, except usually of a more or less outspoken psychoneurotic tendency.

In these cases it is most plausibly suggested that we are dealing with a vasomotor disturbance analogous (except for its longer duration) to emotional blushing. It is consistent with many facts to suppose that in these headaches there is a change in the local circulation within the cranium involving congestion of the blood vessels (arteries?, veins?, capillaries?), and very possibly a resulting increase in the cerebrospinal fluid pressure. What can be the immediate cause of such congestion is as difficult to trace as the cause of the congestions, or of the opposite "coldness" of hands and feet which are common in patients of the same type as those who are subject to headache.

If we are to form any tentative working theory of headache, therefore, our most promising lead is to suppose that patients who are subject to headache are subject to a peculiar vasomotor reaction involving intracranial congestion. Heredity, constitution or temperament, and habits of physical and of mental life are suggested as important underlying factors, predisposing to such reactions. Under this theory the remedy of this tendency must be expected to be as difficult as is the remedy of emotional blushing, but most is to be expected of painstaking and gradual improvement of the physical and of the mental hygiene. Much that has been said under Neurasthenia (q. v.) will apply.

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The palliative treatment of the particular headache under this theory lies in measures which should lessen vascular congestion within the cranium, and measures which tend to lessen the pressure of the cerebrospinal fluid. Only one of these is new. The ice-bag to the head and the hot foot-bath are measures of well-known but limited value. The concentrated saline purge is not infrequently effectual. Recently sodium chlorid in "enteric coated" tablets has been used with the object of reducing the cerebrospinal fluid pressure by osmotic attraction. Tablets of gr. xv (1.) (Hynson, Westcott & Dunning) are given, one every five minutes up to ten doses. Empirically, the coal-tar analgesics are of recognized effect. It is disputed whether their action is due to an influence upon the intracranial vessels or to action upon the brain, but this need not concern us in their practical use. In principle they are to be given when relief is necessary, but with caution against symptoms with the first dose due to idiosyncrasy of the patient, and with unwillingness to allow large or frequently repeated doses. (See Appendix G, Notes on Drugs.) Acetphenetid, gr. v (0.3), with sodium bicarbonate, gr. v (0.3), and citrated caffeine, gr. ij (0.13), is the safest. Acetanilid, gr. iss to iij (0.1 - 0.2), is probably the most effectual. Acetylsalicylic acid, gr. v to x (0.3 - 0.6), will often serve in patients whom it suits. Habitual resort to any of these, however, is to be discouraged.

*Information.* – To the patient with recurrent headache which does not belong to the neuralgic or to the migraine types, the following statement will usually apply:

The tendency to headaches is a peculiarity of certain persons which is intimately connected with the natural temperament and with the habits of the physical, and still more of the mental, daily life.

Particular factors of great variety, in persons of this tendency, are precipitating causes of headache.

Thus when headache occurs repeatedly the first move is to investigate carefully the possible precipitating causes, so as to remove such of these as can be removed. Eye-strain and constipation are probably the two most frequent alleviable causes, but many others are also possible. It may be that glasses or some similar aid will control the trouble.

But in addition to treatment of such definite factors, and also when treatment of these fails to give relief, attention must be given to the mental and to the bodily hygiene with a view to avoiding mental and emotional strain, and to attaining a mental and a physical condition in which abnormal reactions to the-episodes and activities of ordinary life will cease to occur. The attitude described under Neurasthenia (q. v.) will usually be appropriate even though other symptoms of neurasthenia are not in evidence.

## **Headache Research Report**

**A HANDBOOK OF PRACTICAL TREATMENT  
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VOLUME III  
PHILADELPHIA AND LONDON  
W. B. SAUNDERS COMPANY  
1912**

**Treatment of So-Called Functional Nervous Disorders  
F. X. Dercum, MD  
1912  
(pp. 898 – 908)**

### **HEADACHE**

Headache, as the word implies, is the name merely of a symptom and not of a disease. However, it is a symptom so frequently complained of and the pivotal point of so many affections that it requires a separate consideration. The term, as used both by the laity and medical writers, is of wide application. It becomes absolutely necessary, therefore, before entering into a consideration of treatment, to discuss the various forms of headache both from the standpoint of etiology and of diagnosis, for without a correct diagnosis and without correct views of etiology the treatment is often an impossible task.

Pains referred to any part of the head are apt to be spoken of as headache, even though this pain have its seat in structures external to the skull. This is the case notably with some forms of rheumatic and syphilitic headaches. Rheumatism of the scalp, for instance, is by no means an infrequent affection, and if it involves the occipital region, it may be associated with rheumatism of the muscular insertions of this region. Such pain may be very distressing, and if unrecognized may go unrelieved. It is very apt to be mistaken for the occipital headache so commonly met with in neurasthenia. It is distinguished by the fact that there is marked tenderness of the scalp to touch or to the hair-brush, and, if it be situated in the occipital and nuchal situations, there is the associated symptom of pain made worse by motion. Similarly, the scalp may be the seat of gummata which may either be painful to touch or which may give rise to severe and persistent headache, worse at night. Syphilis, as is well known, may also involve the periosteum and bones of the skull. Usually the symptoms are such as to permit of a ready diagnosis. The treatment of rheumatism of the scalp is, of course, that of rheumatism in general, and does not merit special discussion; this is also the case of syphilis of the scalp, cranium, periosteum, and skull.

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In a general consideration of headaches it becomes necessary to make a distinction between headaches due to organic changes and headaches that are purely functional in character. Headaches due to organic causes are such as would be produced by an inflammation of the dura, by a depression of bone irritating the dura, or by gross disease, such as brain tumor; organic headaches are, of course, associated with demonstrable lesions. They are usually distinguishable from non-organic headaches by the fact that they are constant or persistent. We should bear in mind, however, that organic headaches may fluctuate somewhat in intensity. It not infrequently happens, even in so grave an affection as brain tumor, that the headache is somewhat less at times than others. Indeed, the relief experienced may be so great for short periods of time that the patient may even speak of the headache as being absent. However, headache is usually so persistent a symptom, so constantly spoken of by the patient, that even if the fact of fluctuation in intensity be observed, this fluctuation must not be regarded as militating against the diagnosis of organic headache. Further, organic headaches are likely to be associated with other very pronounced symptoms. Thus, in brain tumor, we are apt to have vomiting and dizziness, frequently optic neuritis, and in a very large number of cases the so-called focal symptoms-localized convulsions or palsies, special sense and speech disturbances, or other signs which point to some one region of the brain. Again, in headache due to intracranial syphilis not only have we the peculiar history of the headache being worse at night, somnolence or other sleep disturbances, but also the associated palsies, unequal pupils, involvement of ocular muscles, and other signs pointing unmistakably to a brain syphilis.

A discussion of the organic headaches would involve a discussion of the various diseases of the dura and of the brain already discussed in other portions of this volume. As far as we are concerned, the question of organic headache is important only as regards their recognition; that is, their separation from the functional headaches. The organic headaches, let us repeat, are characterized first by being continuous, by the co-existence of sleep disturbances, nausea, vomiting, and by the association of gross physical signs pointing directly to gross lesions, general or focal in character.

### FUNCTIONAL HEADACHES

A consideration of the various forms of headache leads to the following useful grouping: Thus, we have, first, the headaches associated with the great neuroses – (a) neurasthenia; (b) hysteria; secondly, headaches of diathetic, toxic, and infectious origin; thirdly, headaches symptomatic of affections of the special sense organs, such as the eyes, and the various viscera; and, fourthly, headaches associated with various diseases of the blood.

**Neurasthenic Headache.** – The headache of neurasthenia, as already pointed out, is, as a rule, a dull, diffuse pain or ache, which in its milder forms suggests merely a sensation of fatigue. It may, however, become pronounced and even then may be nothing more than an exaggerated fatigue sensation which disappears upon rest. It is usually described by the patient as a dull feeling in the head or as a dull aching. As a rule, it is not diffused over the entire head, but is seated in the occiput, in the upper part of the neck, over the brows, or just over the eyes. The occipital pain is, however, by far the most frequent. Other situations are occasionally described by the patient, such as the sides of the head and the temples. Very commonly the pain is accompanied by a sense of pressure or constriction, these sensations either being referred to the

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sides of the head (the patient often saying that he feels as though a tight band had been placed around his head) or it is associated with pressure and drawing sensations at the back of the neck. Sometimes, instead of sensations of drawing, pressure, or constriction, other sensations, such as heaviness or throbbing, are described. Neurasthenic headache, when mild, disappears upon the mere cessation of work. The average statement of the patient is to the effect that mental effort brings it on or, if it be already present, leads to exacerbations.

It need not be here stated that in a patient presenting neurasthenic headache the other cardinal symptoms of neurasthenia are also present. (Sec p. 858.) Thus, we have the statements of the patient relating to ready fatigue and exhaustion, the associated symptoms of backache, limbache, and the various digestive, circulatory, and sleep disturbances so commonly met with. The diagnosis of a neurasthenic headache, therefore, resolves itself into the diagnosis of neurasthenia, while its treatment is the treatment of neurasthenia.

**Hysterical Headaches.** – It not infrequently happens that a patient, most frequently a woman, presents herself complaining of headache. Very frequently the statements in regard to the headache are couched in such terms as to suggest exaggeration, while the appearance of the patient is such as to negative the existence of really serious suffering. If asked to indicate the site of the pain, the patient is very apt to point to a small circumscribed spot or area with her finger. If, now, this area be examined, it is found to be very sensitive to superficial pressure. At the same time, the patient is apt to describe it as a pain which is deep and boring, or as though a knife were being driven into the head; this has given rise to the well-known term of *clavus* for the symptom. Sometimes other symptoms secondary in importance are also complained of by the patient, such as ringing or throbbing noises in the ears; sometimes she says that she feels as though the head were being beaten with a hammer. *Clavus* is merely to be regarded as an area of painful cutaneous hyperesthesia; other sensory stigmata of hysteria should at once be sought for. Especially should the patient be tested for the typical painful stigmata beneath the breasts and over the groins and elsewhere, bearing in mind, other things equal, the predominance of these signs upon the left half of the body. The treatment is, of course, the treatment of hysteria. (See p. 878.)

**Diathetic Headaches.** – Headaches are not infrequently complained of by patients who are the victims of the gouty or rheumatic diathesis. The diagnosis is to be made by the presence of other symptoms pointing to these affections. Like other affections of this character, they are more frequently, found in persons who have passed middle life, and in whom there is a history of exposure or deprivation or of excessive eating or drinking. Hereditary factors should also, it is needless to say, be inquired into. The headache of uremia and of diabetes need only be mentioned as instances of other headaches associated with diathetic conditions, the recognition of which, other things equal, should be prompt. Uremic headache, while diffuse, is most pronounced in the occiput, extending to the neck. At other times, again, it is frontal. Dizziness may also be present. The patient is frequently dull and apathetic. An examination of the urine, of course, leads to the diagnosis. Diabetic headache, usually associated with delirium, sometimes with cyanosis, may precede the onset of diabetic coma. Headache of diabetic origin is, on the whole, a rare symptom. Its association as a part of the symptom complex, of course, determines its diagnosis.

**Toxic Headaches.** – Among toxic headaches we should especially bear in mind headaches of alcoholic origin. The headache complained of by chronic alcoholic subjects is, as a rule, widely diffused, dull in character, and more pronounced in the frontal regions than elsewhere. It is, as a rule, more marked in the mornings. It is more pronounced after unusual

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excesses. It is, of course, associated with the other symptoms of chronic alcoholism. Headache due to lead is not met with save as prodromal to and associated with other and more pronounced cerebral symptoms, such as delirium, convulsions, and coma. Optic neuritis or neuroretinitis may also be observed. In the investigation of an obscure case of headache the abuse not only of tobacco, but of tea and coffee, should also be borne in mind. No difficulty, as a rule, is experienced in tracing headaches such as these to their proper cause. An inquiry into the habits of patients is usually very fruitful of results. Care should, however, be taken to prevent confusion of these headaches with migraine. (See p. 903.) Tobacco headaches generally occur at irregular intervals even in the confirmed users of tobacco, and then bear a relation to some unwonted excess. Like the headache due to alcohol, it is widely diffused and usually frontal.

**Headaches from Infection.** – The headaches associated with the various infectious diseases require only a passing mention, inasmuch as their association with other well-known symptom groups at once determines their nature. They neither require nor is it practicable to give them detailed consideration here.

**Headaches Symptomatic of Affections of the Special Sense Organs, such as the Eye and the Various Viscera.** – Closely allied to the neurasthenic headaches are headaches associated with functional troubles of the eyes, of the stomach, and of other viscera. Of these, none is so frequent as that due to overuse of the eyes; that is, to eyestrain. There can be no question, however, that eye-strain as a direct cause has been much overestimated. Almost always there is an associated and underlying condition of nervous exhaustion, so that any effort is followed by headache or by an exacerbation of headache. It is not surprising, therefore, that in neurasthenic states we should find that the use of the eyes brings on headache; especially if the eyes present marked difficulties of refraction and accommodation, so that their use is unavoidably attended by considerable effort. The headache in these cases is usually occipital in character and indistinguishable in its general character from that present in neurasthenia. More rarely it is frontal. It is always made worse by the use of the eyes. It is important, of course, to have the latter carefully examined, and to have their defects as far as possible corrected by proper glassing. Very frequently, however, this correction fails to relieve the headache, though it may ameliorate it. In many instances a treatment directed to the underlying neurasthenia is the only method by means of which a genuine relief can be secured.

Pains referred to the brow, to the temples, or to the malar regions are not infrequently the outcome of disease of the nasal cavity or sinuses. In the majority of cases the nasal or sinus symptoms are so prominent as to attract attention. In others they are comparatively slight, and the true cause of the pain may remain undiscovered unless it is specially sought for. In all obscure cases, with or without aching pains in the brow, the malar regions, or in the temples, the nasal cavities and sinuses should be thoroughly explored.

Various functional disturbances of the stomach and bowels are also associated with headache. Especially is this likely to be the case if there be present a chronic gastritis. Gastric headaches are more frequently frontal, though they may be referred to the convexity or may be generalized. As a rule, the headache is most pronounced when the signs of indigestion are most evident. Frequently such headaches are relieved by vomiting. The possible influence also of the absorption of toxic substances must here be borne in mind. Headaches due to stomach disturbances are, on the whole, infrequent.

Now and then atonic conditions of the bowel are accompanied by headache. A familiar instance is the headache which attends constipation and which is relieved by free evacuation.

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Headaches which accompany uterine and ovarian disease are also recognized. The pain is, as a rule, referred to the vertex, and is frequently relieved, temporarily at least, by pressure on the top of the head. It is, of course, accompanied by the symptoms of pelvic disease, and is secondary in importance and in value. It is important, further, to add that the patient almost always suffers from an associated neurasthenia. Indeed, I think that it may well be doubted whether a headache, directly dependent upon uncomplicated pelvic disease, really exists.

### **Headaches Due to Anemia and Hyperemia of the Brain and Diseases of the Blood. –**

A generation ago it was quite common to ascribe headaches to anemia and hyperemia of the brain. It was only after neurasthenia became well understood that the diagnosis of cerebral anemia ceased to be made. That cerebral anemia presents itself as a natural and pathologic entity there can be no doubt, but it does not present itself by any means with that degree of frequency which the older physicians thought. Finally, it may well be doubted whether head pain constitutes a symptom, or at least a prominent symptom, of cerebral anemia. In acute general anemia from hemorrhage the symptoms are those of failing vision, "blackness before the eyes," faintness, and a feeling of being dazed or confused, tinnitus, nausea, and vomiting; if the anemia be profound, lethargy, a tendency to sleep, unconsciousness with dilatation of the pupils, may finally supervene. Head pain at no time forms a part of the clinical picture. In the chronic anemia which results from frequently repeated hemorrhages we may likewise notice a tendency to faint, dizziness, somnolence, or at times insomnia, apathy, and tinnitus.

Cerebral hyperemia as a cause of headache has suffered an almost similar fate. Transient attacks of cerebral hyperemia, however, probably occur; as, for instance, due to increased action of the heart in febrile conditions, sudden chill, etc. Whether it occurs in association with plethora is doubtful, and yet this seems very probable when one remembers the condition of intense congestion of the face which sometimes comes on in a plethoric person after a full meal, especially if taken with alcohol. Such a patient may complain of throbbing in the temples, great fullness of the head, headache, and dizziness. Unquestionably also hyperemia occurs passively in general venous obstruction, as in mitral stenosis, emphysema, pressure on the superior vena cava by aneurisms and tumors, or from localized obstruction in cerebral sinuses or veins. It probably occurs also during tremendous muscular efforts. Headache associated with hyperemia is clearly secondary in its origin. It can hardly come under the notice of the physician as an independent cause of headache.

Furthermore, in diseases of the blood, such as chlorosis, pernicious anemia, and leukemia, symptoms similar to those noted in anemia are present. Headache, on the other hand, is rarely noted, if at all.

## MIGRAINE

Migraine is a nervous affection characterized by severe attacks of headache, recurring at irregular intervals. The pain is, as a rule, limited or markedly accentuated upon one-half of the head; hence the name, hemicrania. The individual attack is usually preceded, though not always, by distinct prodromata. Sometimes the patient suffers from a sense of heaviness in the head, pressure over the brows, or it may be dizziness. At other times there is present a sense of weakness and depression, or the patient may feel sleepy, may yawn repeatedly, or may wish to lie down. In many patients there is noticed a more or less marked impairment of vision, usually



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involving a part of the field only; at times a hemianopsia is simulated. Frequently also vibrating scotomata are observed, or the blind field is filled with quivering lines, sometimes of dazzling brightness. At other times an attack is preceded by a tinnitus, or it may be some paresthetic disturbance of the side of the face, or obscure sensations may be noticed in an arm, a hand, or more rarely in lower extremity. Rarely distinct paralytic phenomena are observed, such as a weakness of a hand or wrist.

After a variable period of time – a few minutes or a fraction of an hour, the pain begins. It is at first dull in character, accompanied by a sense of heaviness in the head. It gradually increases in intensity. Sometimes it remains limited to a comparatively small area of the temple. At other times it radiates over the entire area of the top of the head or of the face. Again, instead of the focus of the pain being situated in the temple, it may be found back of the ear. It gradually increases in intensity until usually, after several hours, an acme of suffering is reached. Not infrequently nausea supervenes and at times vomiting ensues. Subsequently, the pain subsides, and the patient is apt to fall into a sleep which is usually quite profound and lasts several hours. On awakening the patient is generally free from pain; the attack is over.

In the beginning of the attack various vasomotor disturbances may be observed. Thus, there is not infrequently flushing of the side of the head and face which is affected, a flushing which is succeeded by pallor as the attack progresses. At other times, too, distinct changes are noted in the pupils, the pupil of the affected side being at one period dilated and later on contracted. Marked pupillary changes are not, however, by any means observed in all cases, and this is likewise true of the vasomotor changes in the face. The duration of an attack usually extends over a number of hours; sometimes over the greater part of a day.

The frequency of recurrence differs greatly in various cases. Quite commonly we have a history of a migraine beginning in childhood or youth, the attacks being then many weeks and often months apart. Little by little the interval becomes shorter, until an attack occurs say once in two weeks, once in a week, or perhaps several times in a week: or the attacks may succeed each other so rapidly that a scarcely appreciable interval is to be found between them. Indeed, migraine headaches, when long established, are in some individuals practically continuous. At times, also, the headache is not unilateral, but marked upon both sides of the head, sometimes equally so, constituting then a so-called double hemicrania.

In severe cases, when the attack is at its height, the patient is exceedingly sensitive to light and noise. At times there is also marked sensitiveness on the affected side of the face and scalp to touch. Movement, too, adds greatly to the suffering.

Migraine is today regarded as a degenerative neurosis. Hereditary elements are present in a very large number of cases. According to Moebius, 50 per cent. of cases furnish a direct heredity. Quite commonly it begins at or about the period of puberty, though it at times makes its appearance in childhood. It rarely begins after thirty. Quite usually it becomes less marked as middle age is approached; not infrequently it disappears altogether at this period of life, or persists in a greatly modified and lessened form, such as the occasional occurrence of vibrating scotomata without the subsequent occurrence of pain.

While the essentially neuropathic and hereditary factors of Migraine must be admitted, it must also be borne in mind that its attacks may be directly provoked by various exciting causes, such as excesses with alcohol, tobacco, tea, and coffee, or by emotional or mental overstrain, shock, overwork, and especially overfatigue of the eyes.

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Many facts point to an important role played by the vasomotor apparatus, and others suggest defective tissue metabolism, defective elimination of waste substances, -- the alloxuric bodies, -- and consequent autointoxication, as causes. Indeed, it appears to bear a distinct relation to the gouty diathesis, as was long ago pointed out by Charcot and by Gowers.

In the treatment of migraine three important considerations must be borne in mind: First, attention must be given to the general health of the patient. This must be brought to as high a level as possible, and to this end no means are so efficacious as those embodied in general physiologic and hygienic measures. It not infrequently happens, especially if the attacks have occurred with great frequency or been almost continuous, that the general health has greatly suffered. Migraine is not infrequently at such times complicated with neurasthenia. As far as possible such a patient should be relieved from the strain of his occupation. Rest methods in some form, partial or even complete, should be instituted. (See section on Neurasthenia.)

In a large number of persons suffering, from migraine it is impracticable to institute absolute rest, and, indeed, this is not by any means always required. It will frequently suffice to institute partial rest methods (see p. 865), but this should be carried out as rigidly in the intervals between the seizures as during their occurrence. It is especially important to modify the diet, as in neurasthenia, with the view of minimizing the waste substances, notably those of the uric acid group. With this object in view the carbohydrates, the starches, and sugar-containing foods should be reduced to a minimum, but not, of course, absolutely withdrawn. The same is true of the red meats. Their role in favoring an excessive formation of uric acid is well known, and whatever view we may hold as to the relationship between uric acid and migraine, experience proves that migraine patients do better upon a diet which contains only a moderate amount of red meat. The white meats, chicken, fish, oysters in season and properly prepared, eggs, milk, and the succulent vegetables can be freely given. The milk especially is a most important article of diet, and it is a not uncommon practice with the writer in case of severe and obstinate migraine to place the patient exclusively upon a diet of milk for a time. Milk has the double advantage, while it is nutritious, of being unstimulating, and at the same time, because of its liquid nature, greatly favoring elimination. An important point in regard to diet consists also in instructing the patient as to the amount of food he is to take. Full feeding is in many of these cases of the very greatest value. The diet should first be regulated as regards the kinds of food; secondly, the quantity should be steadily increased, especially as regards the milk, until a maximum amount is taken. In addition, it is wise also to instruct the patient to drink freely of water, especially in the intervals between meals.

Attention must also be given to the skin. The patient should bathe freely. A tepid sponge bath or rapid immersion bath should be prescribed daily. The bath should be followed by vigorous friction. In some cases it may be of advantage to order a cold immersion bath daily, but not infrequently the sufferer from migraine is exceedingly sensitive to baths of this kind and does not react well from them.

As far as possible, errors of digestion should be corrected. Atony of the stomach, constipation, gastric catarrh if it exists, as is not uncommonly the case, should also receive their due measure of attention. As regards the constipation, it is wiser, in case of migraine, to use some mild saline or laxative water rather than to rely upon a vegetable laxative or cathartic. Phosphate of soda, especially in the effervescent form, is a valuable remedy in these cases. The Carlsbad salts, Hunyadi, and similar laxatives answer an equal purpose. It is exceedingly probable that the saline stimulates elimination by the bowel, and it is a not uncommon experience to find that a

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beginning migraine attack is frequently aborted by a saline, taken as soon as prodromal symptoms are noted.

As far as possible, the patient should be instructed to live in the open air. Gentle exercise is of the utmost value under these circumstances. One of the cardinal benefits of exercise is the increased intake of oxygen which the exercise induces, and the consequent more thorough oxidation of the waste products and their more ready elimination. By all the means at our command, then,-by proper proportioned rest and exercise, by a carefully adapted diet, by stimulating the activity of the kidneys, bowels, and skin,-the general health of the patient should be improved.

Whether it be advisable, in view of possible autoinfection through the intestinal tract, to give intestinal antiseptics, such as beta-naphthol, remains an open question. The writer has never found them of the slightest use in migraine. Bearing in mind, however, not only the possible, but also the very probable, role of the purin bodies in migraine, the writer has for years past treated cases of migraine, especially when obstinate, by means of the salicylates. He has been in the habit of administering sodium salicylate, preferably in combination with sodium bromid, in moderate doses, for a period of ten days or two weeks, with undoubted benefit as regards both the frequency and the severity of the attacks. According to the circumstances, from five to ten grains of sodium salicylate, associated with ten or twenty grains of sodium bromid, should be administered, well diluted, three times daily after meals. The remedy is, as a rule, well borne by cases of migraine, and unquestionably is followed by good results.

In many cases the sodium salicylate is not well borne, and it is then wise to use aspirin, or, better still, novaspirin freely, say in fifteen-grain doses three or four times daily. Rarely, because of the condition of the stomach, it may be wise to give salophen. This may be employed in similar or somewhat larger doses. It is always well borne by the stomach, but is less efficient than the other remedies.

The treatment of the attack itself requires special consideration. It is wisest to instruct the patient, just as soon as prodromata are noted, to take a saline; the dose, guided by previous experience, being such as to give rise to two or three loose movements. A full dose, say thirty or possibly forty grains, of bromid, preferably ammonium bromid, should be taken some two hours later. The patient should then lie down and compose himself to sleep. In patients in whom it is impracticable to take the bromid, because of the interference with the occupation, recourse may be had to one of the coal-tar products, antifebrin, phenacetin, or antipyrin, the remedy being combined with a moderate dose of bromid, with half a grain or a grain of caffen, or possibly with some aromatic spirits of ammonia. A useful combination is phenacetin, five to ten grains, with caffen, one-half to one grain; at other times ammonium bromid, twenty grains, caffen citrate, one grain, and antipyrin, ten grains, with or without ten or twenty drops of aromatic spirits of ammonia. Far more useful than the bromid and the coal-tar products, the author has found cannabis indica. The patient is instructed to take one drop of the fluidextract of cannabis indica every hour or every half-hour until some relief is experienced. Very soon the amount which the patient requires to control an attack is thus determined experimentally. Sometimes the patient is not relieved until the dose is increased to two, three, five, or ten drops, and sometimes even more. The patient should, however, always be cautioned with regard to the possible unpleasant effects which may supervene when the full physiologic action is established, such as dizziness, slight confusion, and disturbances in the sense of time. However, unusual or unpleasant sensations rarely make their appearance from therapeutic doses. We should be content

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to begin with small doses and, notwithstanding repeated failures, should steadily increase the dose in successive attacks until an impression is made and the necessary dose definitely determined. In rare cases, usually cases in which the attacks have existed for many years and in which the intervals are so short as to make the headaches practically continuous, we may be forced to abandon cannabis indica; but under such circumstances we may frequently obtain very useful results from gelsemium. This drug should be administered in the form of the fluidextract, in doses of from one to five minims, and repeated if necessary at intervals of four hours. Of late years, since the author has given more attention to the physiologic and hygienic treatment of migraine, and especially since his employment of the salicylates and bromid in the intervals of the attacks, he has experienced but little difficulty in controlling the pain by moderate doses of cannabis indica or by doses of phenacetin and caffeine, so small that even their repetition does no harm. Occasionally, cases of migraine of such severity are met with that no method of treatment appears to be of value. Under these circumstances Whitehead has recommended and carried out successfully the insertion of a seton in the back of the neck, the seton being worn for quite a long period. However, the writer has never made use of this expedient.

It goes without saying that while migraine does not result from eye-strain, eye-strain may evoke the attacks. In every case, therefore, the eyes should be examined and if necessary corrected. For similar reasons, the nasal cavities, the sinuses, the ears, and pharynx should likewise be studied and if diseased treated.

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**A TEXT-BOOK OF PRACTICAL THERAPEUTICS  
WITH ESPECIAL REFERENCE TO THE  
APPLICATION OF REMEDIAL MEASURES TO DISEASE  
AND THEIR  
EMPLOYMENT UPON A RATIONAL BASIS**

**Hobart Amory Hares, MD**

**Lea & Febiger  
Philadelphia and New York  
1912**

“In *headaches* due to uterine trouble the pain is often felt at the top of the skull or at the back of the neck near the occiput.” (p. 34)

“Recent reports show that some cases of severe *neuralgic headache* may be cured by the use of small daily doses of castor oil. How it acts is not known, unless it unloads the bowels and so prevents toxemia, which in turn, has caused nervous irritation.” (p. 164)

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“The citrate of magnesium (*Magnesii Citras*) is a more irritating purge than the sulphate, but it is more agreeable to the taste.... It is too irritating to be used when inflammation of the alimentary canal exists, but is useful in acute constipation and in *sick* and *bilious headache*.” (p. 333)