Neuro Nugget: Headache

American Physician Institute for advanced professional studies

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Headache: Definitions & Background

- Key Facts
    - As many as 90% of individuals have at least one headache every year
    - Severe, disabling headache occurs in about 40% of individuals per year
    - Migraine is the most common headache
    - About 5% of patient reporting to the ER with headache have a serious underlying neurological disorder
    - Look for the red flags when examining a patient with headache
- The International Headache Society Headache classification system has three main categories.
- **Primary Headaches**
    - Migraine headaches
    - Tension-Type headaches
    - Cluster headache and other trigeminal autonomic headaches
    - Other Primary headaches (Cough Headache, Stabbing Headache, Exertional Headache, Headache associated with Sexual Activity, Hypnic Headache, Hemicrania Continua, Thunderclap Headache, New Daily Persistant Headache)
- **Secondary Headaches**
    - Headache attributed to head and / neck trauma
    - Headache attributed to cranial or cervical vascular disorder
    - Headache attributed to nonvascular intracranial causes
    - Headache attributed to a substance or its withdrawal
    - Headache attributed to infection
    - Headache attributed to disorder of homeostasis
    - Headache or facial pain attributed to disorder of cranium, neck, eyes, ears, nose, sinuses, teeth, mouth, or other facial or cranial structures.
    - Headache attributed to psychiatric causes
- **Cranial Neuralgias**
    - Cranial Neuralgias and other causes of facial pain
    - Other headache, or cranial neuralgia, central or primary facial pain

Headache: Approach to History

- Length of history: acute, subacute or chronic
- Pattern: when and how often do they occur?
- Duration: how long does it last?
- Progression: is it getting worse?
- Site: where does it hurt?
- Quality: is it throbbing, dull ache, stabbing pain?
- Associated symptoms: flashing lights, nausea, tearing of the eyes, neck stiffness?
- Triggers: coughing, straining, particular foods?

Headache: Red Flags on History

- Worst headache ever
- First severe headache
- Subacute worsening over days or weeks
- Vomiting precedes headaches
- Induced by bending, lifting, coughing
- Known systemic illness
- Pregnancy (Cerebral Venous Thrombosis)
- Onset after age 55

Headache: Red Flags on Physical Exam

- Severe hypertension
- Bradycardia (Cushing's reflex)
- Fever
- Rash
- Meningeal Signs
- Scalp tenderness
- Papilledema on fundoscopic exam
- Focal weakness or numbness
- Abnormal deep tendon reflexes

Temporal Pattern of Headache

When diagnosing headaches the two features to help you make diagnostic headway are the headache features and the headache temporal pattern. Notice that the acute onset headaches cause the most concern

Acute Onset Headaches

- Subarachnoid Hemorrhage
- Other Cerebrovascular Disease
- Meningitis or encephalitis
- Ocular Disorders
    - Glaucoma
    - Acute Iritis
- Seizures
- Lumber puncture
- Hypertensive encephalopathy
- Sexual Activity

Subacute Onset

- Intracranial Mass
    - Tumor
    - Subdural hematoma
    - Abcess
- Giant Cell Arteritis
- Hypertension (pheochromocytoma, MAOI + tyramine)
- Pseudotumor Cerebri

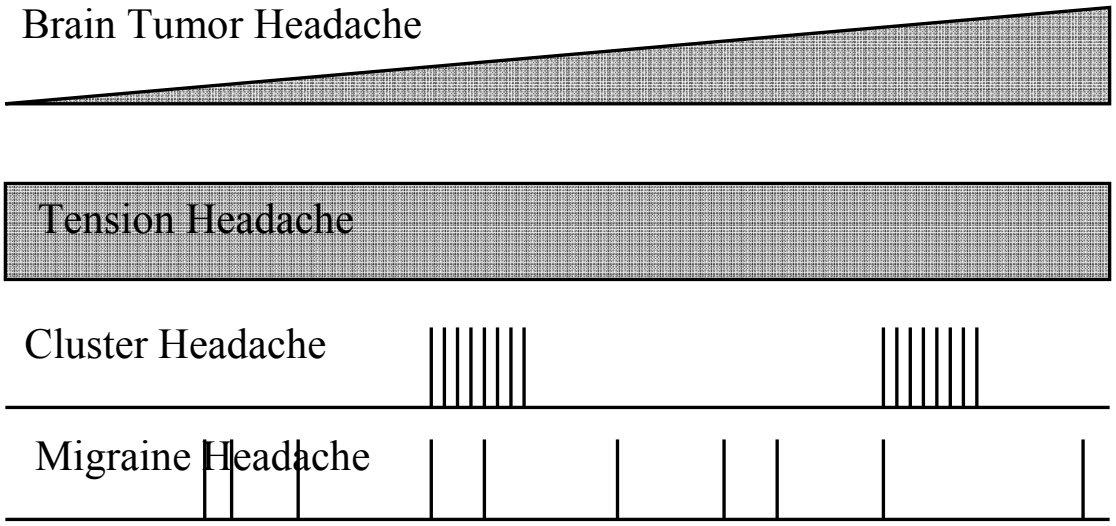
- Facial Neuralgias
    - Post Herpetic Neuralgia
    - Trigeminal Neuralgia
    - Glossopharyngeal Neuralgia

Chronic (or Recurrent) Headache

- Tension Headache
- Migraine Headache
- Cluster Headache
- Sinusitis
- Dental Disease
- Degenerative Spine Disease

Temporal Patterns of Headaches

The following illustration represents the temporal (time) pattern of headaches over a period of one year.



Subarachnoid Hemorrhage

- Rupture of intracranial artery elevates intracranial pressure. This distorts intracranial pain-sensitive structures.
- Signs
    - Severe sudden headache: “worst headache of my life!”
    - Sometimes ruptured AVMs cause milder headaches
    - Blood pressure often rises
    - LOC in 50% of cases due to decreased cerebral perfusion caused by increased intracranial pressure.
    - Meningeal irritation leads to meningeal signs and fever
- Work-up
    - CT is 90% sensitive
    - Focal neuro signs not common since blood stays in subarachnoid space.

    - LP: high opening pressure; CSF fluid is grossly bloody; after hours fluid looks yellow (xanthochromic)
- Treatment
    - Prevent elevation of intracranial pressure that may rerupture aneurysm or AVM
        - Bed rest with sedation
        - Analegisics (not NSAIDS that interfere with platelet adhesion)
        - Arterial blood pressure control
    - Surgical treatment
        - Clipping or wrapping aneurysm
        - AVM removal by block resection or ligation of feeder vessels
- Prognosis: Survival is less than 50%

Migraine Headaches

- Key Facts
    - Migraine is the most common cause of headache
    - About 18% of women and 6% of men suffer from migraines
    - Because prevalence peaks during the most productive years, between the ages of 25 and 55, migraine is an important cause of lost work time
    - The annual cost of lost labor due to migraine in the USA is estimated to range from $5.6 to $17.2 billion.
- Migraine Criteria
    - Episodic attacks of headache lasting 4 to 72 hr with two of the following symptoms:
        - Unilateral pain
        - Throbbing
        - Aggravation on movement
        - Pain of moderate or severe intensity
    - And one of the following symptoms:
        - Nausea or vomiting
    - Photophobia or phonophobia
- Migraine Subtypes
    - Migraine without Aura
    - Migraine with Aura
    - Childhood Periodic Syndromes that are often precursors to Migraine
    - Retinal Migraine
    - Complications of Migraine
- Migraine Complications
    - Chronic Migraine
    - Status Migrainosus
    - Persistent Aura without Infarction
    - Migrainous Infarction
    - Migraine-triggered seizures
- Prophylactic Treatment
    - Indications for Prophylactic Treatment
        - More than 3-4 attacks per month
        - Severity of HA sufficient to affect work
    - Prophylactic Agents
        - Propranolol

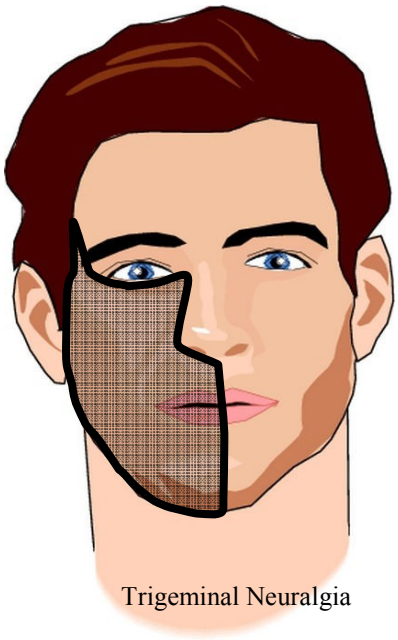
        - Amitryptilline
        - Valproic Acid
        - Topiramate
        - Calcium channel blockers
- Treatment of the acute attack
    - Step 1: NSAID with or without antiemetic
        - Ibuprofen and naproxen are commonly used
        - GI side effects can be a limiting factor
        - Use a high dose early in the attack
    - Step 2: Triptans
        - Sumatriptan was the first specific drug for migraine and is still in common use
        - Newer triptans such as eletriptan
- Treatment of Status Migrainosis
    - Status Migrainosis is defined as a migraine attack that lasts for more than 72 hours (with or without treatment)
    - Intractable migraine HA may require ER care or hospitalization
    - Parental analgesics (diclofenac) with antiemetic should be tried first
    - If this fails the DHE protocol may be used
        - Dihydroergotamine 1 mg SQ or IM or slow IV
        - Metoclopramide 10-20 mg IM or slow IV
        - Short courses of IV steroids may also be useful
- Medical co-morbidities that prevent acute treatment
    - Coronary artery disease (avoid triptans)
    - Peptic ulcer disease (avoid NSAIDs)
    - Cardiac valvular disease (avoid ergot derivatives)

Cluster Headache

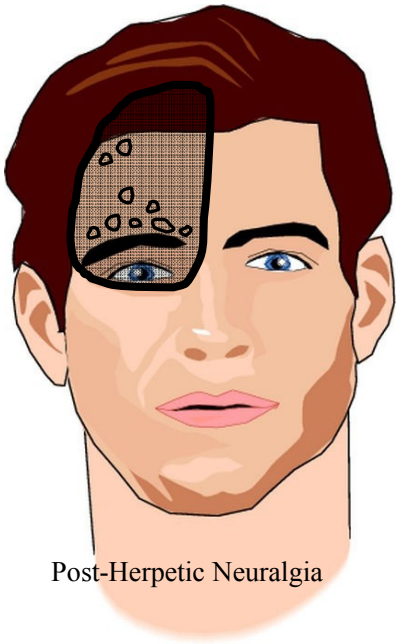
- Features
    - 1. Severe, uniorbital, supraorbital, temporal pain, lasting 15 min to 3 hrs
    - 2. Frequency of one headache one every two to eight days
    - 3. Associated with one of the following ipsilateral cranial autonomic features:
        - Lacrimation
        - Ptosis
        - Miosis
        - Nasal Conjestion or rhinorrhea
        - Forehead or facial sweating
        - Eyelid edema
        - Conjunctival injection
        - Restlessness or agitation during the headache (present in 93% of pts)
    - Occur at the same time every day: **alarm-clock headache**
    - Due to severity and agitation also known as **suicide headache**
    - Cluster period: the period during which recurrent attacks occur (typically weeks)
- Prophylactic Treatment for Episodic Cluster Headache
    - Verapamil 120-160mg tid
    - Prednisone 50-80mg qd tapered over 2 weeks
    - Divalproex 600-1200mg qd
    - Topiramate 25mg tid for 1 week, then increase to 200mg qd
    - Ergotamine 2-4mg qd as bid or tid

    - Methylergonovine 0.2 tid or qid
    - Melatonin 10mg qhs
- Prophylactic Treatment for Chronic Cluster Headache
    - Verapamil
    - Lithium (start 300mg qd, target as in Bipolar)
    - Microvascular decompression for intractable cases
- Acute Treatment
    - Oxygen 7L per min for 15 minutes by face mask
    - Sumatriptan 6mg subQ; repeat in 24 hrs or 20mg nasal spray
    - Dihydroergotamine intranasal 0.5mg nasal bilaterally

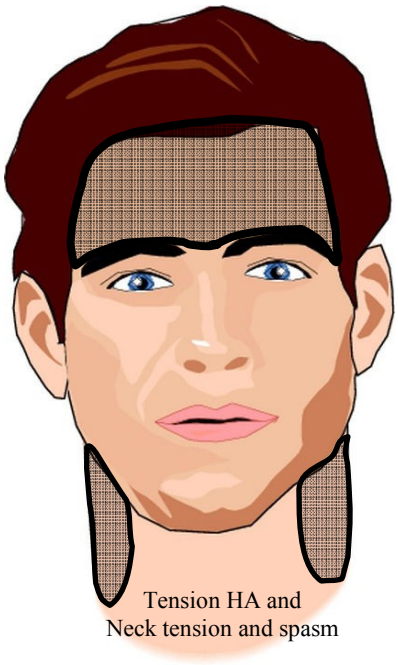
Headache Types Illustrated



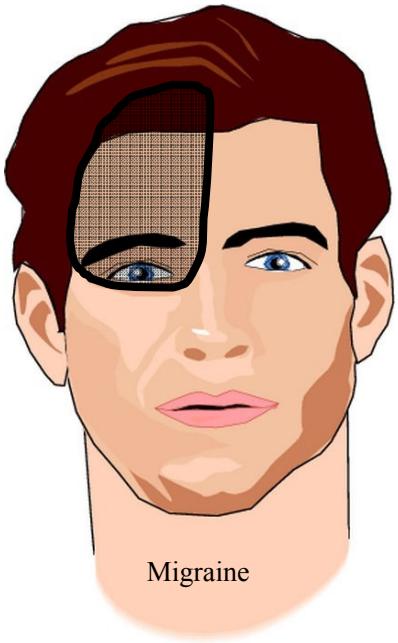
Trigeminal Neuralgia



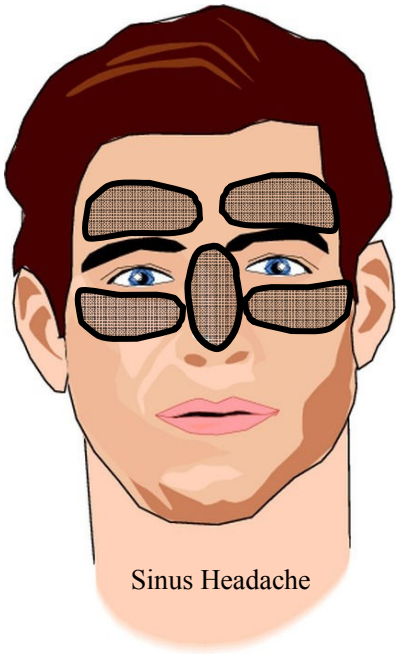
Post-Herpetic Neuralgia



Tension HA and
Neck tension and spasm



Migraine



Sinus Headache

Cluster
Headach