Approach to Headaches

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Headache

- One of the most common complaints encountered in family and emergency practices
- 95% women and 91% men experience headache in a 12 month period
- 18% women and 15% men will consult a physician

Pathophysiology

- Activation of pain sensitive structures in or around brain, skull, face, sinuses or teeth
- May occur as primary disorder or secondary to another disorder

Classification of headaches

- Primary

- Migraine with or without aura
- Tension headache
- Cluster headache
- Other (paroxismal hemicrania, cold stimulus headache, cough headache, exertional headache)

Classification of headaches

- Secondary
- Intracranial (tumors, chiari type I malformation, CSF leak with low pressure headache, hemorrhage, intracranial hypertension, infections, chemical/noninfectious meningitis, obstructive hydrocephalus, vasculitis, venous sinus thrombosis)
- Extracranial (carotid or vertebral artery dissection, dental disorders, sinusitis, glaucoma)
- Systemic (hypertension, fever, bacteremia, giant cell arteritis, hypercapnia, hypoxia, viremia, viral infections)
- Drugs/toxins (analgesics, caffeine, carbon monoxide, hormones, nitrates, PPIs)

Evaluation

- Goal is to exclude secondary causes of headache and diagnose primary headache disorders.

History

- History of present illness
  - Headache location, duration, severity, onset, quality, exacerbating/relieving factors, associated symptoms
  - Response to treatments
- Past medical hx
  - Previous headaches
  - Trauma or strain
  - Drugs/toxins/alcohol
  - Immunosuppressive disorders
  - Hypertension
  - Cancer
  - Dementia
  - Coagulopathy
  - Recent lumbar puncture
- Family history

Red flags

- Onset after age 50
- Increasing frequency and severity, change in type or pattern
- First or worst headache
- Sudden onset
- Head trauma
- Immunosuppression or cancer
- Systemic symptoms
- Neurologic symptoms or signs
- Papilledema

Review of systems

- Vomiting
- Fever
- Red eye, visual symptoms
- Lacrimation and facial flushing
- Rhinorrhea
- Pulsatile tinnitus
- Preceding aura
- Focal neurologic deficits
- Seizures
- Syncope at onset
- Myalgias

Physical exam

- Vital signs (BP, HR, temp, sats, RR)
- General appearance
- Head and neck exam (including fundoscopy, TMJ, cervical/MSK)
- Neurologic exam
- Cardiovascular exam

Investigations

- Neuroimaging (CT, MRI)
- Lumbar puncture and CSF analysis
- Temporal artery biopsy
- Tonometry
- ESR

Reasons for referral

- Inadequate level of comfort in diagnosing or treating
- Initial diagnosis is in question
- No response to treatment
- Worsening of condition/disability
- Inpatient management required
- Intractable or daily headaches

Migraine

- Without aura
  - At least 5 attacks:
  - Lasting 4–72 hours

At least 2:

  - Unilateral, pulsating, moderate to severe, aggravated by physical activity

At least 1:

  - Nausea/vomiting, photo and phonophobia

- With aura
  - At least 2 attacks:

At least 3:

  - One or more fully reversible aura symptom
  - At least one aura symptom develops gradually over >4 min, or ≥2 symptoms occur in succession
  - No aura symptom lasts >60 min
  - Headache follows aura within 60 min

Treatment of migraine

- Reassurance
- Removal of triggers (hormonal, food, stress, sleep, medications, weather, light & odours)
- Biofeedback
- Acupuncture
- Rest
- NSAIDs, acetaminophen, codeine
- Triptans
- Ergots
- Prophylactic therapy (anticonvulsants, TCAs, B-blockers, CCB, Botulinum toxin)

Tension headache

- At least 10 headaches:
- Lasting from 30 min to 7 days
- Pressing or tightening quality (not pulsating)
- Mild to moderate
- Bilateral
- Not aggravated by physical activity
- No nausea/vomiting
- No photo or phonophobia or only one

Treatment of tension headache

- Reassurance
- Counseling/education
- Heat
- Massage, stretching, posture
- NSAIDs, acetaminophen
- TCAs
- Trigger point injections

Cluster headache

- 5 attacks:
- Severe unilateral orbital, supraorbital and/or temporal
- Lasting 15-180 min

With at least one:

- Conjunctival injection
- Lacrimation
- Nasal congestion
- Rhinorrhea
- Forehead and facial sweating
- Miosis
- Ptosis
- Eyelid edema
- Frequency 1 attack q2day to 8 attack per day

Treatment of cluster headache

- Triptans
- Ergots
- Prophylaxis (CCBs, lithium, prednisone)

Brain Injury: Canadian CT Head Rule

<u>High Risk for Neurological Intervention</u>

- GCS of < 15 at 2 h after injury
- Suspected open or depressed skull #
- Any sign of basal skull # (racoon eyes, CNS otorrhea/rhinorrhea, hemotympanum)
- Vomiting >= 2 episodes
- Age >= 65 years

Brain Injury: Canadian CT Head Rule (Cont')

Medium Risk (for Brain Injury on CT)

- Amnesia of the trauma or before impact >=30 min
- Dangerous mechanism (pedestrian struck by vehicle, occupant ejected, fall from elevation >=3 ft or 5 stairs)

Not applicable if: non-trauma, GCS<13, age <16, coumadin or bleeding d/o, obvious open skull fracture