Headache

Ali Bidari M.D.

Associate Professor

Program Director

Emergency Department

Tehran University of Medical Sciences - Iran

Case 1

- **Patient setting:** A 26-yr-old constructional worker, living alone, presented to ED in early Feb 2011
- **CC:** Severe headache of 2 hrs duration, started just upon rising from night sleep
- **PI:** Headache was constant, rated 8 out of 10 in analogue scale and mostly felt in frontal area bilaterally
- **Associated symptoms:** limited to mild nausea and fatigue
- **PMH:** No prior headaches or other medical conditions
- **P/E:** Normal, including vital signs, fundoscopy, general & neurological exams

Case 1: Follow-up

- He received oral acetaminophen, IM diclofenac and 4 mg IV morphine trying to manage the headache
- Headache gradually improved and he discharged home 4 hrs later
- The next morning patient was brought to ED by EMS after a call by a co-worker who found him unresponsive in his bed !!!

Case 2

- **Patient setting:** A 21-yr-old woman, one week post-partum
- **CC:** Intermittent headaches for 4 days , since discharge from maternity hospital
- **PI:** Headache episodes were diffuse & non-throbbing, worse whenever she tried to get out of bed and relieved by rest
- **Associated symptoms:** nausea and neck pain
- **PMH**: $G_1P_1A_0$, elective C/S surgery 1 week ago with a healthy baby, no prior headaches
- **P/E:** Normal, no postural hypotension

Case 2: Follow-up

- Brain CT was normal
- Emergency physician discharged the patient with advice on counseling a neurologist in an outpatient setting
- On her way-out, she experienced another severe episode of headache and readmitted to the ED !!!

Case 3

- **Patient setting:** A retired 60-yr-old nurse
- **CC:** Headache of 3 weeks duration
- **PI:** Headache dull in character and sometime throbbing, presents through day and night times and interferes with sleep, not responding to NSAIDs
- **Associated symptoms:** chilliness and night sweats
- **PMH:** Controlled hypertension, inferior MI 2 yrs ago
- **P/E:** Mild fever (T: 38.2^0 C), occipital tenderness on palpation without neck stiffness

Case 3: Follow-up

- Brain CT was normal
- Lumbar puncture performed. CSF pressure was 16 Cm H_20, CSF analysis was normal
- Patient was discharged and instructed to get a Brain MRI and see a neurologist after that
- But two days later, patient was brought to ED with acute left hemiplegia !!!

Headache: The impact on ED

- Headache constitute up to 4.5 percent of ED visits
- Overwhelming majority are benign primary headaches (migraine, tension, cluster)
- A minority may have serious headaches with poor outcome
- Emergency physicians are expected to identify those who are at higher risk of complications
- Risk stratification is mainly based on history taking and P/E

Clues of Diagnostic Significance

Sudden Onset Worst – Ever Headache

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Subarachnoid Hemorrhage

Clues of Diagnostic Significance

Visual Aura

↓

Classic Migraine

Clues of Diagnostic Significance

Sup. Temporal A. Tenderness, Optic neuropathy, Elevated ESR

↓

Temporal Arteritis

Clues of Diagnostic Significance

Cascade of Unilateral Daily Headaches, Accompanied by Autonomic Phenomena

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Cluster Headache

Clues of Diagnostic Significance

Postural Headache

Low CSF pressure Syndrome

Low & High Risk Headaches

Low risk headaches	High risk headaches
• Migraine	• SAH
• Tension	• Space occupying lesions
• Cluster	• Cerebral sinus vein thrombosis
• Cervicogenic	• Meningitis/encephalitis
• Psychogenic	• Temporal arteritis
	• Toxicities
	• Malignant hypertension

Clues to High Risk Headaches in History Taking

- Explosive onset and severe at onset
- No similar headaches in the past
- Concomitant infection
- Altered mental status
- Headache with exertion
- Age over 50
- Immunosuppression
- Toxic exposure

Clues to High Risk Headaches in Physical Exam

- Neurologic abnormalities
- Decreased level of consciousness
- Meningismus
- Toxic appearance
- Papilledema

Definition of Low Risk Patients in ED

1. Those with prior headaches who fail to respond to their standard therapy regimen

2. Those with new headache who meet the following criteria:
   - No substantial change in their typical headache pattern
   - No new concerning historical features (eg, seizure, trauma, fever)
   - No abnormal neurologic findings
   - No high-risk comorbidity

Routine neuroimaging is not needed in these patients

Definition of High Risk Patients in ED

- Any patient who is not low risk is considered for further evaluations in ED:
  - Neuroimaging
  - Lumbar puncture
  - Lab studies
  - Neurology or other specialty consults
- These patients need a period follow-up in ED or hospital admission

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Case 1: Outcome

- Further evaluation in ED showed metabolic acidosis and Co-Oximetry revealed a blood CO level of 30%
- Home search by fire department disclosed a blocked chimney
- Patient had a prolonged recovery phase and finally discharged by mild extrapyramidal symptoms

❑ **Pearl:** Exposures to toxin may cause headache. High index of suspicion and taking a good hx is crucial to early diagnosis

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Case 2: Outcome

- A neurology consult obtained a characteristic hx of CSF low pressure syndrome. The problem attributed to the CSF leakage because of epidural anesthesia 1 w ago for cesarean section. LP was performed and CSF pressure was 5 Cm H_2O.
- Headache promptly responded to 10cc autologous blood epidural patch and the Patient discharged home.

❑ Pearl: Hx taking is nearly diagnostic for some kinds of headache

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Case 3: Outcome

- Brain CT showed evidence of R frontal infarction
- Patient was admitted. Further w/u showed ESR: 95 and high titer CRP.
- Temporal arteritis was suspected and patient was started on high dose Prednisolone. Shortly then, bx of sup, temporal artery confirmed the diagnosis
- Patient discharged home after 2 w, with normal ESR & CRP but some residual hemiplegia

❑ Pearl: Always consider temporal arteritis in old patients complaining of recent refractory headache

Thank you for your attention