Headaches in Children

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Introduction

- Headaches are common in children
- Most headaches are benign (migraine/tension/cluster)
- Cause of much parental anxiety as many worry that their child’s headache is a sign of brain tumor
- Usually not the case

Incidence of Headaches

- 13% of boys and 20% of girls consult physicians for headache
- Migraine occurs in 5-10% of children and 10-20% of adolescents

Classification of Headaches

- Primary
  - migraine with or without aura
  - tension headache
  - cluster headache (rare)
  - chronic daily headache
- Secondary
  - trauma
  - infection
  - brain tumor
  - toxins/drugs

Clinical Presentation

- Acute – influenza, sinusitis, meningitis, head injury
- Subacute – sinusitis, TBM
- Chronic Progressive – brain tumor
- Chronic non-progressive – chronic daily headache
Evaluation of Headache

- Detailed History
- Physical examination
- Neurological examination
- Formulate a differential diagnosis
- Laboratory tests
- Treatment
- Follow-up

Post Surgical Headache

- Poor documentation of post surgical headaches in general
- Headache following epilepsy surgery is even less well documented
- Post craniotomy headache is relatively well documented – a combination of tension type headache and site of injury headache overlying the surgical site

Headaches following epilepsy surgery

- Acute - together with other post operative symptoms which disappear spontaneously
- Chronic headaches are poorly documented
- Migraine and tension type headaches appear to be the commonest

Migraine is:

- Almost always familial
- Episodic – not daily
- Variable symptoms:
  - Frequency
  - Severity
  - Location
  - Duration
  - Aura
  - Nausea/Vomiting
  - Photo/Photophobia
  - Neurological features
**Summary of Migraine Symptoms**

- Vomiting: 9%
- Aura: 22%
- Unilateral Pain: 58%
- Nausea: 60%
- Pulsating pain: 74%
- Light/Sound Sensitivity: 80%
- Pain aggravated by activity: 88%

**Migraine May Be:**
- Associated with Tension Headache.
- Transformed into daily headaches
- Related to head trauma/surgery
- Related to stress/other triggers
- Related to illness/menses/diet
- Associated with excessive school absences

**History Red Flags**
- First and worst headache ever
- Onset of a new type of headache
- Changes in a headache pattern
- Pain that awakens the patient
- Pain caused by exertion
- Pain unrelieved by initial treatment
- Pain with neurological symptoms

**Physical Examination Red Flags**
- Patient critically ill
- Signs of head trauma
- Neck stiffness
- Large head
- High fever or the BP is raised
- Skin lesions as in NF1
Neurological Examination
Red Flags

- Balance difficulty
- Seizures or abnormal movements
- Altered level of consciousness
- Abnormal eye movements
- Abnormal fundoscopic findings
- Any neurologic abnormalities

The Good
A Case Study

- An 11 y/o girl has HA twice monthly, for the past 8 months. There is no aura. She is pale. She goes to her room, shuts off the lights and the television, and refuses her usual snack. She is nauseated and sleeps. She is better in 3 hours. There are no neurological symptoms.
- Family history of migraine. She is an "A" student, does not miss school, and does not overuse OTC medication.
- Her physical and neurological examinations are normal.

Good case contd

- Diagnosis

Migraine without aura

Migraine: Goals of Treatment

- Reduction of headache severity, frequency, duration and disability
- Avoidance of acute/chronic excessive medication
- Improvement of quality of life
- "Normalization"
Migraine: Treatment
- None
- Non pharmacological
- Acute – symptomatic
- Abortive
- Preventive
- Combinations

Migraine: Non-Pharmacological Approaches
- Confident reassurance
- Patient/parent education
- Diary
- Trigger avoidance
  - stress/sleep/diet
- Environment
  - cool/quiet/dark/cold compress
- School attendance
- Relaxation/biofeedback/counseling

Migraine: Symptomatic Treatment
- Nausea and Vomiting
  - Promethazine
  - Metaclopramide
  - Ondansetron

Migraine: Symptomatic Treatment
- Sedation
  - Diphenhydramine
  - Cyproheptadine
  - Benzodiazepine

Migraine: Symptomatic Treatment
- Pain
  - NSAIDS
    - Ibuprofen
    - Naproxen
    - Acetaminophen

Migraine: Abortive Treatment
- None are FDA approved in children and adolescents

- Ergotamine- DHE
- Triptans
  - Imitrex
  - Zomig
**Migraine: Symptomatic Treatment**

- **MAXIMS:**
  - Treat Early
  - Maximum Dosages
  - Avoid combinations
  - Caffeine
  - Salicylates
  - Barbiturates

**The Bad A Case Study**

- A 15 y/o girl has had frontotemporal H/A for 5 years which are increasing in frequency, severity, and duration. H/A are no longer helped by NSAIDs and occur twice weekly in the early morning.
- They are throbbing and accompanied by an aura and vomiting.
- There is a positive FH of migraine. She overuses medication and has missed a lot of school.
- Her physical and neurological examinations are normal.

**Case contd**

- **Diagnosis**
  - Severe migraine with aura

**Treatment Options**

- Symptomatic
- Abortive medication
- Preventive medication
- Other

**Migraine: Consider Preventive Treatment**

- Significant interference with ADL / QOL
- Headaches
  - > 2 / week
  - > 24 hours
  - Unresponsive to symptomatic/abortive medications
  - With OTC overuse

**Migraine: Preventive Treatment**

- None are FDA approved in children and adolescents
- Anti-histamines - periactin
- Tricyclic antidepressants - elavil
- Anti-epileptics – valproic acid, topamax
The Ugly
A Case Study

- A 14 y/o girl with known migraine is seen on an urgent basis for a headache that has lasted 72 hours. Her usual frequency is 2-3 per month, lasting 4-6 hours and relieved by two doses of Triptans.
- She has a viral illness and a low grade fever. She has phonophobia and cannot keep anything down.
- FH of migraine. She does not overuse OTC medications, and has not missed school.
- Gen exam shows dehydration.
- Neurologic exam is normal.

Differential Diagnoses

- Illness plus migraine
- Meningitis
- Status migrainosus
- Other

Testing

- Blood tests
- CT/MRI
- Spinal tap

Case contd

- Diagnosis

Status Migrainosus

Treatment Options

- Admit to infusion center
- Sedation
- Antiemetic
- Anticonvulsants / DHE
- Steroids
Treatment Options

- Confident reassurance
- Patient / parent education
- D/C OTC medications
- Return to school is a must
- Counseling
- Medication
- Follow-up