Headache in Children with Special Health Needs

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May 12, 2015
Disclosures

- I am involved in a Dysport-sponsored research study
Goals

1. Be able to identify headache in children with special health needs
2. Know when to image and refer to a pediatric neurologist
3. Understand treatment approach for children with headache
14 yo boy with Norrie’s disease – congenital blindness, intellectual disability (nonverbal), autism, aggression

- Increase in aggressive behaviors
- Holds his head during bouts of aggression, head bangs
- Tylenol seems to help
- Topamax trial for headache prevention
2 months later, seems to be some improvement in behaviors

“‘It is nearly impossible to tell if his aberrant behaviors were really due to headaches, but he is improved on the Topamax so will continue this for now.’“
I met him 1 year later. Behavior improved however had weight loss:

- Tapered off Topamax
- 9 months later behaviors worsened
- Further work-up for causes of pain was negative. MRI normal.
- Referred to psychiatry.
- Some improvement on Elavil.
Case

- Does he have headache?
- Is it appropriate to treat him with a headache prevention medication?
90% of school-aged children have headache at some point
2.5% of children under age 7 have migraines
In adolescence, up to 8% of boys and 23% of girls have had migraines
Children with developmental disabilities may be twice as likely to have frequent/severe headache

Primary headaches:

- Migraine
- Tension-type headache
- Chronic daily headache
- Trigeminal autonomic cephalgias
- Others......
Secondary headaches

- Medication overuse headache
- Increased intracranial pressure (tumor, pseudotumor)
- Chiari malformation
- Infection
- Anemia
- Medication
- Trauma
- Hypertension
- Others
Tension-Type Headache

- Non-throbbing
- Mild to moderate
- >30 mins

May be associated with photophobia and phonophobia (not N/V, not exertional)
Migraine

- Lasts >1 hour
- Does not need to be unilateral
- Throbbing
- Moderate to severe
- Worse with activities
- Photophobia and phonophobia
- Nausea and vomiting
- Alleviated by sleep
**Assessment**

- Evaluate for secondary causes (see red flags below)
- What type of headache?
- What has been tried? (how often)
- Associated factors and impact
  - sleep disturbance, lack of exercise, withdrawal from school/social interactions, anxiety/depression
  - history of concussion, snoring (OSA), vision problems, seasonal allergies
- Identify triggers, patterns -> headache diary
Identifying Pain and Headache: CYSHN

- Attempt to elicit a self-report from patient
- List behaviors that may indicate pain.
  - Change in behavior: agitation, aggression, self-injurious behavior
  - Desire to be in a dark room or in a quiet place, or to sleep
  - Relief with pain medication
- Determine if there is a family history of headache
Identify conditions that may cause pain
Attempt an analgesic trial
Keep a diary to identify triggers and patterns
When to worry

- Nighttime wakening, positional
- Focal neurologic symptoms or findings
- Abrupt onset/progressive/not responsive to medication
- Fever/neck stiffness/altered mental status/seizure
- ”thunderclap”/worst headache of life
- < 3 years
- Ventriculoperitoneal shunt
Most patients with defined headache syndrome and normal exam do not need imaging. If red flags are present, consider imaging.


GUIDELINES FOR NEUROIMAGING IN CHILDREN WITH HEADACHE

1. Persistent headaches of less than one month duration that do not respond to medical treatment.

2. Headache associated with an abnormal neurologic exam, especially if accompanied by papilledema, gait or motor abnormalities.

3. Persistent headache of less than six months duration with an absent family history of migraine.

4. Persistent headache associated with significant episodes of confusion or disorientation.

5. Headaches which awaken a child repeatedly from sleep or occur immediately upon awakening.

6. Family history or past medical history of disorders which may predispose to central nervous system lesions, and laboratory or clinical findings suggestive of CNS involvement.
In CYSHN, may be harder to assess for “red flags.” Have a lower threshold to image.

If uncertain about need to image:

- Call pediatric neurology
- Consider treatment trial
- Send to ophthalmology
Modality:

- **CT**
  - detects most pathology (tumor, hydrocephalus, bleed).
  - May not detect infarct, cerebral venous sinus thrombosis.

- **MRI**
  - no radiation
  - Often need sedation (unless “quick brain”)
  - May detect some less common causes of headache.
Additional Evaluation

- **Eye exam**
  - identify papilledema, need for glasses
  - Strongly consider in CYSHN who may not give other symptoms of increased ICP

- **Labs**
  - consider CBC, TFTs, vitamin D (new daily persistent headache)

- **Blood pressure**

  Warrants emergent neuroimaging, if negative, LP
Treatment

- Treat secondary causes of headache
- For primary headache:
  - Preventative approaches
  - Abortive therapies
  - Non-medication options
1. Preventative (prophylactic):
   - Decreases the frequency and severity of headaches.
   - Prophylactic medication needs to be taken daily
   - Takes weeks to months to be effective
   - Preventative medication should be started if it seems “worth it” based on headache burden
1. Abortive:
   - Stops the headache once it has started
   - Does not prevent the next headache from coming
   - Can cause medication overuse headache if used too frequently (more than twice weekly for weeks to months)
Lifestyle changes/non-medication options

- Sleep – regular, adequate
- Eating – regular, avoid triggering foods
- Exercise – regular (and weight loss if appropriate)
- Avoid caffeine
- Stress reduction
- CBT, meditation, biofeedback, acupuncture
- Treat comorbid psychiatric disorders
2. Vitamins/supplements

- B2 400 mg daily
- Magnesium 400 mg daily
- Butterbur (petasites) 75 mg twice daily
  - Must choose “PA-free” otherwise may contain toxic compounds. Brand name Petadolex safest.
Preventative

**Medication: first line**

- **Amitriptyline (Elavil) –**
  - Titrate to 1-2 mg/kg/day dosed at night.
  - I do an EKG before for QTc
  - Side effects: tachycardia, dry mouth, tiredness

- **Topiramate (Topamax) –**
  - Titrate to 1-2 mg/kg/day dosed at night.
  - Side effects: cognitive slowing, tingling, kidney stones, glaucoma, weight loss.

- **Cyproheptadine (Periactin) –**
  - First choice for patients under 10 years.
  - Side effects: tiredness, increased appetite.
Medication: second line

- Propranolol
- Duloxetine (Cymbalta)
- Verapamil
- Gabapentin
- Valproic acid
- Botulinum toxin injections
Abortive medications

1st line: Ibuprofen or aleve
- Consider combining with anti-emetic (e.g. reglan)

2nd line: Triptans
- Migraine-specific
- Contraindicated in hemiplegic or basilar migraine

*Avoid caffeine or barbituate-containing
*No narcotics
*for all abortive therapies: try to limit to twice weekly to avoid medication overuse headache
Treatment approach: CYSHN

- Trial abortive medication (ibuprofen, aleve)
- Consider trial of triptan (migraine-specific)
- If effective, and headaches are frequent and bothersome, consider preventative therapy
- Continue to consider other causes of pain or behavior change
- If not responsive to medication, consider further work-up
If you’re not sure if further work-up is needed
If you’re uncomfortable with headache medication
If the patient does not respond to preventative headache medication
We are also happy to consult by phone
Headaches are common in children
Suspect headache in CYSHN who have symptoms of pain, family history of headache
Evaluate for secondary causes of headache (look for red flags)
Treatment is multifaceted
Questions?
Resources

- International Headache Society Classification: http://ihs-classification.org/en/02_klassifikation/
- PedMIDAS: http://www.cincinnatichildrens.org/service/h/headache-center/pedmidas/ (headache disability measure)
- Headache diary: http://www.childrenshospital.org/~/media/centers-and-services/programs/f_n/headache-program/chb_my_headache_diary(1).ashx?la=en
- National Headache Foundation: http://www.headaches.org/