Seattle Children's

Headache Management in Primary Care

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Q&A on Headache Management in Primary Care With Dr. Heidi Blume

Q: What are some important things to know about pediatric headaches?
Unfortunately, headaches are very common in pediatrics. One study found that over 10% of school-aged kids and more than 20% of teens had "frequent or severe" headaches in the past year, and about 5% of younger children and 20% of teen girls have migraines.

Headache is a frequent complaint in both primary care and the ED, and many families are afraid that something dangerous, like a tumor or aneurism, is causing headaches. Fortunately, this is very rare.

Many things can contribute to headaches, including genes (family history of migraine), poor sleep, poor hydration or nutrition, stress/anxiety/depression, other medical problems (e.g., anemia, thyroid abnormalities, rheumatological disorders), dental problems, concussion, pregnancy, drug abuse, musculoskeletal pain (e.g., from slouching over a laptop or other screen for hours) or medications (e.g., stimulants or tetracyclines). Thus, it is reasonable to consider workup for other underlying disorders when appropriate in the evaluation of a youth with headaches.

Q: When should I refer my patient for headache?
It is reasonable to refer children and teens to Seattle Children's Neurology for evaluation of headaches that:

- Are causing disability despite adequate trials of abortive medications such as ibuprofen or acetaminophen
- Have not responded to a trial of adequate sleep, regular diet and good hydration (at least 60 oz. of fluid per day for teens)

Q: When does a child need neuroimaging for headache (or not)?
We have strong guidelines from the American Academy of Neurology (AAN) to help identify headaches caused by intracranial lesions; these recommend neuroimaging for a child with:

- Headache AND any abnormalities on neurological exam, i.e.:
  - Gait abnormalities
  - Asymmetry on neurological exam
  - Altered mental status
  - Papilledema
- Abrupt onset of severe, unremitting headache

- A new severe headache type
- Headaches that frequently wake them from sleep or occur with exertion
- Headaches with cough or Valsalva maneuver
- Headache and an underlying disorder that leads to immunodeficiency or increased risk of thrombus formation or bleeding

Typically, we suggest doing a brain MRI (magnetic resonance imaging) to avoid radiation and to obtain a detailed image if possible, although CT (computed tomography) scan is useful to rule out hydrocephalus, hemorrhage and fractures, and usually will identify significant brain lesions.

Q: Should PCPs order neuroimaging before referring?
The short answer is that it depends. If a child has headaches with the problems noted above, PCPs can call us, but I would expect that neuroimaging for a child with these symptoms would be approved when ordered by any provider — and shouldn't wait the 3 months for a Neurology Clinic visit.

Q: When is neuroimaging not recommended?
Neuroimaging isn't recommended for children with a normal exam and recurrent intermittent headaches that resolve or have a stable pattern over months.

If there is a question about how urgent the need is for neuroimaging vs. urgent neurology evaluation, community practitioners can reach out to Seattle Children's Neurology to review the case using the Provider-to-Provider Line at 206-987-7777. We would much rather know about kids with worrisome symptoms early on and get them to the correct treatment as soon as possible.

Q: What is the wait time for a patient referred for headache?
Unfortunately, it can be several months for a child to be seen in the Neurology Clinic at Seattle Children's if they have a nonurgent complaint or recurrent headache. This can be frustrating for families and referring providers. Last year, Seattle Children's Neurology received over 3,000 referrals to see new patients for evaluation of headaches.

To reduce wait times, our aim is to partner with our colleagues in the community to get kids the care they need. We are building a headache program at Seattle Children's and have recently hired several headache specialty nurse practitioners.

Q: What information can PCPs send with a referral?
When PCPs refer a child to Seattle Children's Neurology for evaluation of headaches, we ask that they:

- Include their particular concerns and questions
- Include copies of recent clinic notes, growth charts, labs results, imaging reports and relevant consult notes from previous providers (such as ophthalmology or a prior neurologist)

This helps us respond directly to concerns at the time of the first visit and begin a plan for evaluation and treatment without having to wait to obtain and review outside records.

Q: What can PCPs and families do for headache before the Neurology Clinic visit?
For kids with headache, it is important to do a thorough neurological exam in primary care, including a fundoscopic exam, at the time of referral.

If there are unexpected abnormalities on exam or papilledema, that child needs urgent evaluation. If, on exam in a PCP's office, there is any question about whether the optic discs are sharp or if there are other fundoscopic abnormalities, getting a local eye exam from an ophthalmologist or optometrist is extremely helpful, as their tools are much more sensitive than the direct ophthalmoscope that most primary practitioners and neurologists have in their office and will help us direct that child's care most appropriately.

While it can be time consuming, it is essential to get the complete history about headache (onset, frequency, characteristics, associated symptoms, aura, triggers, treatments, etc.), family history, medical history, medications, lifestyle factors and stressors.

It is most useful for the neurology providers to hear that a patient is already working on (or better yet achieved) appropriate sleep, nutrition, hydration, stress management and exercise. In fact, often simply improving these factors will lead to a significant improvement in migraines and tension headaches and may eliminate the need for a neurology consultation.

Q: What about treatment; what can PCPs do?
Reviewing appropriate treatment for acute headache is important; it is crucial to use acute medications like ibuprofen or acetaminophen in the appropriate doses as soon as the child knows it is going to be a severe headache. Waiting to take medications until the headache has been severe for hours or underdosing the medication will reduce the likelihood that the medications will be effective. However, avoidance of medication *overuse* should also be discussed.

Given how common migraine is in teens, many PCPs are comfortable with a trial of a triptan (such as rizatriptan, which has been approved for abortive therapy of migraine down to age 6 years of age) for teens with episodic migraine and/or a trial of supplements such as vitamin B_2 or magnesium or prescription preventive medication for migraine. (1,2) Any preventive migraine treatment that leads to significant side effects should be discontinued. (3)

A referral for biofeedback may also be a good option. We have found that biofeedback therapy is effective for headache management and can be considered when secondary headaches have been excluded. We are fortunate to have a terrific biofeedback program here at Seattle Children's.

There are several online resources from Seattle Children's and elsewhere that can help patients and providers manage primary headache disorders:

- Headache Relief Guide for Teens, Parents and Providers http://www.headachereliefguide.com/
- Seattle Children's Headache Guide: Headache Help for Your Child or Teen https://www.seattlechildrens.org/pdf/PE887.pdf
- Seattle Children's Biofeedback Apps for Relaxation, Sleep and Anxiety https://www.seattlechildrens.org/pdf/PE2628.pdf
- Seattle Children's 504 Plan for Headaches Template http://child.seattlechildrens.org/uploadedFiles/Child/People_and_Places/Programs_and_Services/Patient_Education_and_Communications/Patient_Education_Toolkits/PE2828.pdf

Q: Do you have some examples of how neurology could partner more effectively with PCPs?
We have a few examples where there is room for change on both ends of the referral spectrum. One example is a patient I wish I'd known about sooner. He is a preteen boy whose mother had noticed that he had been clumsier and tripping more for about 18 months; he started to need to use the handrail on stairs and was much less coordinated in sports than he had been. He'd had headaches early on in this course, but they had resolved. When I saw him he was doing a lot to compensate for his deficits and tried to deny there were problems, but he wasn't able to walk heel-toe, stand on one foot or turn normally and had blurred disc borders on fundoscopic exam. We got an urgent MRI and found he had obstructive hydrocephalus, likely progressive over several years. When he got a shunt, he recovered quickly and was able to go back to his normal activities and function. He'd waited several months to see me, and so his exam may have changed in that time, but this is the kind of patient we'd really like to hear about sooner. Given the concerning features of his history and abnormalities on exam, the neurologist on the other end of the Provider-to-Provider Line (206-987-7777) could have arranged for use of one of the reserved "urgent" appointment spots in the Neurology Clinic or recommended direct neuroimaging and potentially prevented several additional months of disability.

On the flip side, sometimes we're still covering very basic headache information in the Neurology Clinic. It isn't uncommon for neurology providers to see children or families referred for headache who don't understand how to use ibuprofen or acetaminophen for headaches, or teens with headaches who go to bed at midnight after being on screens for hours, wake at 6 a.m. for school, then skip breakfast and lunch — obviously a setup for headaches, fatigue and so many other problems.

When a PCP is able to take the first steps with the family and child/teen for headache management, that ensures that those who need a neurology visit can be seen more quickly and that the neurology headache visit will be as effective and helpful as possible for both the patient and the PCP, as the neurology provider will be providing specialty advice and treatment that may be outside of a PCP's typical scope. We really appreciate working with colleagues in primary care as a team to get kids back to doing the things they want and need to do!

References

1. Oskoui M, Pringsheim T, Billinghurst L, Potrebic S, Gersz EM, Gloss D, et al. Practice guideline update summary: Pharmacologic treatment for pediatric migraine prevention: Report of the Guideline Development, Dissemination, and Implementation Subcommittee of the American Academy of Neurology and the American Headache Society. Neurology. 2019;93(11):500-9.
2. Oskoui M, Pringsheim T, Holler-Managan Y, Potrebic S, Billinghurst L, Gloss D, et al. Practice guideline update summary: Acute treatment of migraine in children and adolescents: Report of the Guideline Development, Dissemination, and Implementation Subcommittee of the American Academy of Neurology and the American Headache Society. Neurology. 2019;93(11):487-99.
3. Powers SW, Coffey CS, Chamberlin LA, Ecklund DJ, Klingner EA, Yankey JW, et al. Trial of Amitriptyline, Topiramate, and Placebo for Pediatric Migraine. N Engl J Med. 2016.

Resources

- **General Guidelines for Referring Providers: Headache Assessment.** Find this and other resources for headache management for PCPs on our website at *seattlechildrens.org/clinics/neurosciences/refer-a-patient* under "Resources for Providers."