Headache in children

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OUTLINE

- EPIDEMIOLOGY
- CLINICAL MANIFESTATIONS
- DIAGNOSTIC STUDIES
- TREATMENT

EPIDEMIOLOGY

- Headache is a common symptom among children and adolescents. Up to **75%** of children report having a significant headache by the time they are 15 yr of age.

- Headaches can be a primary problem (migraines, tension-type headaches) or secondary to another condition.

CONT

- Secondary headaches are most often associated with minor illnesses such as viral upper respiratory infections or sinusitis
  but may be the first symptom of serious conditions (meningitis, brain tumors), so a systematic approach is necessary .

cont

- Primary headaches are most often recurrent, episodic headaches and for most children are sporadic in their presentation .

- frequent headaches can have an enormous impact on the life of the child and adolescent .

CLINICAL MANIFESTATIONS

TABLE 180.1	Four Temporal Patterns of Childhood Headache
Acute: Single episode of pain without a history of such episodes. The "first and worst" headache raises concerns for aneurysmal subarachnoid hemorrhage in adults, but is commonly due to *febrile illness* related to upper respiratory tract infection in children. Regardless, more ominous causes of acute headache (hemorrhage, meningitis, tumor) must be considered.	
Acute recurrent: Pattern of attacks of pain separated by symptom-free intervals. Primary headache syndromes, such as *migraine or tension-type* headache, usually cause this pattern. Recurrent headaches are occasionally due to specific epilepsy syndromes (benign occipital epilepsy), substance abuse, or recurrent trauma.	
Chronic progressive: Implies a gradually increasing frequency and severity of headache. The pathological correlate is *increasing ICP*. Causes of this pattern include pseudotumor cerebri, brain tumor, hydrocephalus, chronic meningitis, brain abscess, and subdural collections.	
Chronic nonprogressive or chronic daily: Pattern of frequent or constant headache. Chronic daily headache generally is defined as >3-mo history of >15 headaches/mo, with headaches lasting >4 hr. Affected patients have normal neurological examinations; psychological factors and anxiety about possible underlying organic causes are common.	

Primary headache

- Tension-type headaches (TTH) are the most common (48 %) type of recurrent primary headaches in children and adolescents.

- Global and squeezing or pressing
- Mild to moderate
- Hours to days
- Not aggravated by routine physical activity

TTH

- There is no associated nausea, vomiting, phonophobia, or photophobia.

- Headaches can be related to environmental stresses or symptomatic of underlying psychiatric illnesses, such as anxiety or depression .

Migraine headaches

- **Migraine headaches** are another common type of recurrent headaches and frequently begin in childhood. up to 10.6% between the ages of 5 and 15 yr. and up to 28% of older adolescents.

- Headaches are stereotyped attacks of frontal, bitemporal or unilateral, moderate to severe, pounding or throbbing pain that are aggravated by activity and last 1-72 hours.

Migraine headaches

- Associated symptoms include nausea, vomiting, pallor, photophobia, phonophobia , and an intense desire to seek a quiet, dark room for rest.

- Toddlers may be unable to verbalize the source of their discomfort and exhibit episodes of irritability, sleepiness, pallor, and vomiting.

Migraine headaches

- Migraine With Aura
- Migraine Without Aura
- Childhood periodic syndromes
- Chronic migraine

- **Migraine Without Aura**

- Migraine without aura is the most common form of migraine in both children and adults.

- (at least **five** headaches that meet the criteria, typically over the past year .

- **Migraine With Aura** (At least 2 attacks)

- Aura a neurologic warning that a migraine is going to occur. (start of a typical migraine or isolated aura)

- lasting longer than 5 min and less than 60 min
- the headache starting within 60 minutes
- unilateral
- reversible

Aura

- Typical aura : visual, sensory, or dysphasic
- Atypical aura : hemiparesis, monocular blindness, ophthalmoplegia, vertigo, confusion

Aura

- Visual auras are very common and consist
  of spots, flashes, or lines of light that flicker in one or both visual fields .

- The most common type of visual aura in children and adolescents is **photopsia** (flashes of light or light bulbs going off everywhere).

secondary headaches

- Common causes :
- Head trauma
- viral illness
- sinusitis
- Medication-overuse headaches

- Serious causes :
- increased intracranial
  pressure (ICP) caused by a mass (tumor, vascular malformation) or intrinsic increase in pressure (pseudotumor cerebri)

cont

- **Increased ICP** should be suspected :

- associated vomiting
- worse when lying down or on first awakening
- awaken the child from sleep
- exacerbated by coughing, Valsalva maneuver, or bending over
- Papilledema or focal neurological deficits

DIAGNOSTIC STUDIES

- For most children, a thorough **history and physical examination** provide an accurate diagnosis and obviate the need for further testing.

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- The history needs to include a thorough evaluation of the prodromal symptoms, any potential triggering events or timing of the headaches, associated neurologic symptoms, and a detailed characterization of the headache attacks, including frequency, severity, duration, associated symptoms, use of medication, and disability.

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- Neuroimaging is usually not necessary.

- Imaging is warranted, however, if the patient has an abnormal neurological examination, symptoms of increased ICP, there are unusual neurological features during the headache (atypical aura), or the headaches are progressively worsening.

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- In these cases, brain MRI with and without gadolinium contrast, is the study of choice, providing the highest sensitivity for detecting posterior fossa lesions and other, more subtle abnormalities.

- When the headache has a sudden, severe onset, emergent CT should be done.

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- Brain CT can quickly evaluate for intracranial bleeding.

- If the CT is negative, a lumbar puncture should be performed to measure opening pressure and evaluate for pleocytosis, elevated red blood cells, and xanthochromia.

Indications for Neuroimaging in a Child With Headaches

Abnormal neurologic examination
Abnormal or focal neurologic signs or symptoms
• Focal neurologic symptoms or signs developing during a headache (i.e., complicated migraine) • Focal neurologic symptoms or signs (except classic visual symptoms of migraine) develop during the aura, with fixed laterality; focal signs of the aura persisting or recurring in the headache phase
Seizures or very brief auras (<5 min)
Unusual headaches in children
• Atypical auras, including basilar-type, hemiplegic • Trigeminal autonomic cephalalgia, including cluster headaches in child or adolescent • An acute secondary headache (i.e., headache with known underlying illness or insult)
Headache in children younger than 6 yr old or any child who cannot adequately describe his or her headache
Brief cough headache in a child or adolescent
Headache worst on first awakening or that awakens the child from sleep
Migrainous headache in the child with no family history of migraine or its equivalent

TREATMENT

- Secondary headache : depending on cause
- Tension-type headaches : acute therapy to stop attacks, preventive therapy when frequent or chronic, and behavioral therapy

TREATMENT

- Migraine headaches :
- (1) acute treatment for stopping a headache attack with the goal being 2 hr maximum

- (2) preventive treatment
- (3) biobehavioral therapy

cont

- If these first-line medications are insufficient, *triptan* agents (serotonin receptor agonists) may be considered.

- Triptans are contraindicated for patients with focal neurological deficits associated with their migraines or signs consistent with basilar migraine (syncope) because of the risk of stroke .

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- Symptomatic therapy requires early analgesic administration, often accompanied by rest in a quiet, dark room.
- Acetaminophen or a NSAID such as ibuprofen or naproxen sodium is often effective.
- Hydration and antiemetics are useful adjunctive therapies

- The limitation of any analgesic to not more than three headaches a week is necessary to prevent the transformation of the migraines into medication-overuse headaches .

Prophylactic treatment

- Children with more than one disabling headache per week may require **daily preventive agents** to reduce both attack frequency and severity.

- When the headaches are frequent (more than one headache per week) or disabling (causing the patient to miss school, home, or social activities,

Preventive medications

- tricyclic antidepressants (amitriptyline, nortriptyline)
- anticonvulsants (topiramate, valproic acid)
- antihistamines (cyproheptadine)
- beta-blockers (propranolol), and calcium channel blockers (verapamil).

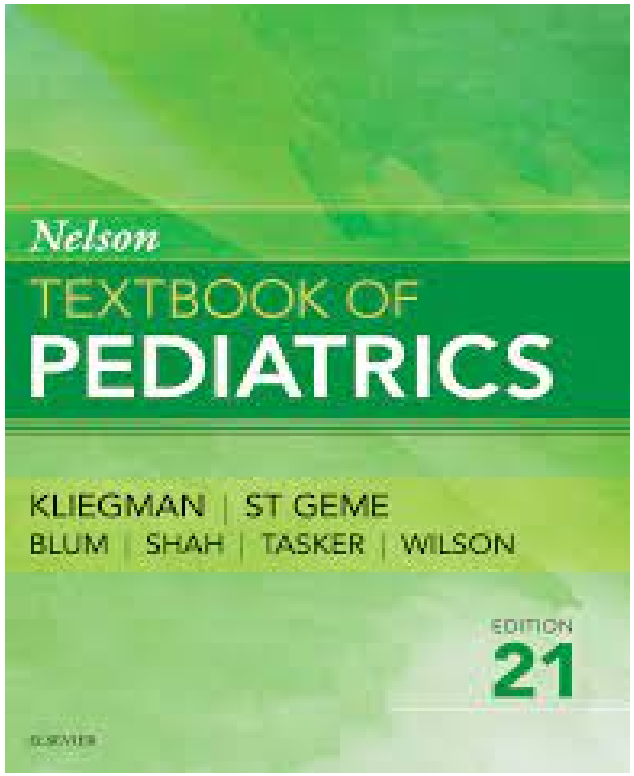
cont

- lifestyle modifications must be put into place to regulate sleep, daily routines, and exercise and to identify and eliminate any precipitating or aggravating influences (caffeine, certain foods, stress, missed meals, dehydration).

cont

- Other adjunctive treatment options include psychological support, stress management, and biofeedback.

- References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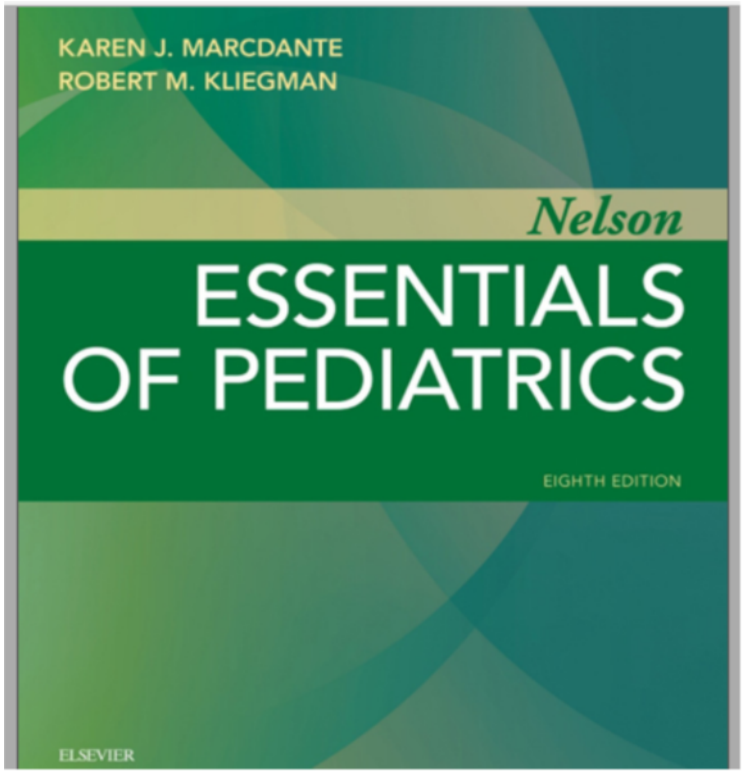
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