Headache Emergencies: Diagnosis and Management

Benjamin W. Friedman, MD[a,*], Richard B. Lipton, MD[b,c]

KEYWORDS

• Headache • Emergency • Diagnosis • Management

Headaches are a common reason for visiting a neurologist, a primary care provider, or an emergency department. Most headaches that cause a medical visit are benign in nature in that the pain is self-limited and mortality or irreversible morbidity is unlikely. These benign headaches may be one of the primary headache disorders, such as migraine, tension-type headache, or cluster headache, or a secondary cause of headache, such as viral rhinosinusitis or cervicogenic headache. For most of these benign headaches, pain and other symptoms can be treated with over-the-counter or prescription medication. Occasionally, the pain from the benign headaches can be so severe and unremitting as to constitute a true emergency. This subject will be discussed later. At times, headaches are symptomatic of an underlying process that requires prompt diagnosis and urgent treatment to reduce threats to life or limb. Suspicion of these disorders mandates emergent diagnostic testing to exclude the disease. In this article, the authors review the 6 most common presentations for worrisome headaches and briefly discuss the differential diagnosis. The authors then review the specific etiologic categories of headaches most commonly sought in the differential diagnosis of a worrisome headache.

CLINICAL PRESENTATIONS OF CONCERN

In this section, the authors describe a series of relatively common headache presentations that raise the specter of worrisome headache. These presentations may occur

[a] Department of Emergency Medicine, Albert Einstein College of Medicine, Montefiore Medical Center, 111 East 210th Street, Bronx, New York 10467, USA
[b] Department of Neurology, Montefiore Headache Center, Albert Einstein College of Medicine, Bronx, 1300 Morris Park Avenue, Bronx, NY 10461, USA
[c] Department of Epidemiology and Population Health, Montefiore Headache Center, Albert Einstein College of Medicine, Bronx, 1300 Morris Park Avenue, Bronx, NY 10461, USA
* Corresponding author.
E-mail address: bwfriedmanmd@gmail.com

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in isolation or in various combinations. For example, progressive headache may develop with evolving focal features in a worrisome combination.

First, Worst, or Sudden Onset

Most patients who present to a clinician with a new-onset headache will have a benign cause. However, the physician should be cautious about attributing the headache to a benign syndrome without a well-defined headache history. A low threshold for diagnostic imaging is warranted in patients who present with a new headache type, even though many of these will prove to be either self-limited or one of the defined recurrent headache syndromes.

The headaches of cerebrovascular catastrophes are often described as abrupt onset or the worst headache of the patients' life. The differential diagnosis for sudden-onset headache is broad and includes benign causes, such as migraine. However, a "worst headache of my life" or a sudden-onset headache should cause the clinician to consider hemorrhagic stroke, including aneurysmal subarachnoid hemorrhage, cervical artery dissection, venous sinus thrombosis, pituitary apoplexy, and other forms of intracranial hemorrhage.

Progressive Headache

A progressive, gradually worsening subacute headache raises concern for an enlarging space-occupying lesion. Intracranial mass lesions often produce focal signs and symptoms. Masses located outside the substance of the brain or in selected intraparenchymal regions, such as the anterior frontal lobe, cerebellum, or intrahemispheric fissure, may grow large without producing focal features. Neuroimaging is warranted to exclude a primary or metastatic tumor, subdural hematoma, hydrocephalus, abscess, and other intracranial mass lesions.[1] Although many patients will ultimately be given a benign diagnosis, such as transformed migraine, medication overuse headache, or new daily persistent headache, these diagnoses require the exclusion of space-occupying lesions.

Headache Associated with Focal Signs and Symptoms

Headaches associated with focal signs and symptoms require a thorough work-up to exclude mass lesions, ischemic or hemorrhagic stroke, a vascular pathologic condition, or infection. The differential diagnosis of headache plus focal findings is broad and work-up should be guided by the patients' profile of other risk factors. Symptomatic malignancy is usually visualized on routine noncontrast head computed tomography (CT). Cervical artery dissection requires dedicated imaging of the cervical arteries, whereas cerebral venous sinus thrombosis requires dedicated imaging of the cerebral venous system. Idiopathic intracranial hypertension requires the measurement of cerebral spinal fluid pressure. Infections, such as cryptococcal meningitis or Lyme meningitis, require spinal fluid analysis. Risk factors for these various illnesses and the appropriate work-up are discussed later.

Headache Associated with Fever and Stiff Neck

Meningitis classically presents with fever, meningismus, and altered mental status.[2] Patients with meningitis and an intact sensorium usually report headache. Pyogenic or sterile meningitis must be considered in patients who present with a headache, fever, or stiff neck. Less commonly, encephalitis, brain abscess, collagen vascular disease, and carcinomatous meningitis may cause these symptoms.