# Editorials

## Hard-to-Diagnose Headache: Practical Tips for Diagnosis and Treatment

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The article by Hainer and Matheson in this issue of *American Family Physician* provides a thorough review of the presentation of adult headache, including recognition of cluster headache and workup of the emergent headache.[1]

The challenge for physicians is to be aware of the red flag symptoms that identify dangerous headaches, and be able to diagnose and treat a headache that has no focal neurologic abnormalities or warning signs, or is a new, different, persistent, or concerning headache. Even when a life-threatening emergency has been ruled out, the patient is often left with a headache that severely affects his or her quality of life. For example, an older woman who had been experiencing disabling right-sided headaches for years was told that the headaches were migraines, and given pain medication. The patient's history included autonomic disturbances that occurred during the headaches, such as lacrimation and restlessness. The patient was diagnosed with cluster headache and successfully treated with oxygen, significantly improving her quality of life.

The following tips may be useful in evaluating and treating patients who present with a headache that is difficult to diagnose:

- It is crucial to not miss a subarachnoid hemorrhage. A detailed history is key in the diagnosis of this condition. Many patients with subarachnoid hemorrhage have had milder sentinel or warning headaches in the previous two weeks.[2,3] Proper diagnosis involves consideration of a broad range of etiologies, understanding test limitations, using computed tomography and lumbar puncture as needed, and close follow-up.[4]
- Rule out possible adverse effects caused by medications. For example, selective serotonin reuptake inhibitors and oral contraceptives are known to cause severe headaches.[5,6]
- Unusual presentations include cluster, SUNCT (short-lasting, unilateral, neuralgiform headache episodes with conjunctival injection and tearing), daily episodic, and stabbing headaches.[7,8] Check the patient's symptoms against the International Headache Society's diagnostic criteria.[9] Accurate diagnosis may expand the number of treatment options (e.g., oxygen therapy for cluster headaches).
- Advise patients to keep a headache diary.[10] In addition, multiple applications are available for mobile or handheld devices, some of which use the International Headache Society's diagnostic criteria to assist with diagnosis and tracking symptoms, duration, severity, triggers, and medications.[11]
- Engage the patient in a thorough investigation of possible headache etiologies and triggers.[12] Triggers include not eating regularly, hypoglycemia, sexual intercourse, caffeine withdrawal (often on weekends),[13] bright sunlight, tight ponytail holders,[14] dehydration,[15] and focal muscle tension (e.g., caused by extensive computer use, fear, sleeping positions, lifting weights). Food and substance triggers can include monosodium glutamate, tyramine, aspartame, alcohol, phenylethylamine, nitrates, and nitrites.[16]
- Encourage patients to experiment with behavioral changes such as eating regularly, monitoring variable caffeine intake, wearing a hat and sunglasses when outdoors, or preparing their sleeping environment (e.g., choosing a comfortable pillow). Teach patients to recognize the early signs of a headache and to act immediately to modify their behavior before the headache becomes severe.
- Explore nonpharmacologic treatments such as head massage, biofeedback, and acupuncture.[17-20] By discovering useful nonpharmacologic interventions, patients may feel less helpless and be more willing to try these approaches, with pharmacologic treatments available as backup if needed.
- Use evidence-based treatments (e.g., oxygen therapy for cluster headaches[21]; propranolol, biofeedback, and cognitive behavior therapy for preventing migraines[22]; and a combination of aspirin, acetaminophen, and caffeine for premenstrual migraine[23]). Supplements found to have some evidence of effectiveness for migraine include magnesium, butterbur, coenzyme Q10, and riboflavin.[17,24,25]
- Consider and treat comorbidities and systemic diseases including depression, anxiety, autoimmune disorders, vasculitis, and temporal arteritis.[26] Chronic morning headaches may be associated with anxiety and depression, insomnia, sleep apnea, hypertension, musculoskeletal conditions, and use of anxiolytics and alcohol.[27]
- A transdisciplinary team approach, including cognitive behavior training, progressive relaxation, exercise, education, biofeedback, psychology, and neurology, is

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more effective than management by a single physician.[28] A prospective study of this approach resulted in decreased medication use and increased use of nonpharmacologic modalities.[29] A team approach involving physicians, nurses, physical therapists, and psychologists may be effective in treating headaches caused by medication overuse, which is the third most common headache diagnosis.[30] Medication overuse headache is caused by excessive use of triptans, ergot, caffeine, and analgesics, and can significantly affect a patient's quality of life. Recommended treatment has been a combination of withdrawal and prophylaxis for the original headache, but the relapse rate is 25 to 30 percent.[31]

- Close follow-up is needed to maintain patient trust as diagnostic, behavioral, and pharmacologic therapies are explored.

The difficult-to-diagnose headache can be a source of frustration to the patient and physician. A stepwise individualized approach that includes thorough diagnosis, applies underutilized but proven treatments, and explores nonpharmacologic approaches in partnership with the patient, can help the physician and patient feel more empowered. Building trusted continuity relationships using a patient-centered model to address serious chronic problems such as headache is what family physicians do best.

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## REFERENCES

1. Hainer BL, Matheson EA. Approach to acute headache in adults. *Am Fam Physician.* 2013;87(10):682-687.
2. Edlow JA, Caplan LR. Avoiding pitfalls in the diagnosis of subarachnoid hemorrhage. *N Engl J Med.* 2000;342(1):29-36.
3. Pereira JL, de Albuquerque LA, Dellaretti M, et al. Importance of recognizing sentinel headache. *Surg Neurol Int.* 2012;3:162.
4. Pope JV, Edlow JA. Avoiding misdiagnosis in patients with neurological emergencies. *Emerg Med Int.* 2012;2012:949275.
5. Ferguson JM. SSRI antidepressant medications: adverse effects and tolerability. *Prim Care Companion J Clin Psychiatry.* 2001;3(1):22-27.
6. MacGregor EA. Migraine and use of combined hormonal contraceptives: a clinical review. *J Fam Plann Reprod Health Care.* 2007;33(3):159-169.
7. Moskowitz MA. Basic mechanisms in vascular headache. *Neurol Clin.* 1990;8(4):801-815.
8. Wang SJ, Fuh JL. The "other" headaches: primary cough, exertion, sex, and primary stabbing headaches. *Curr Pain Headache Rep.* 2010;14(1):41-46.
9. Olesen J, Steiner TJ. The international classification of headache disorders, 2nd edn (ICDH-II). *J Neurol Neurosurg Psychiatry.* 2004;75(6):808-811.
10. Jensen R, Tassorelli C, Rossi P, et al.; Basic Diagnostic Headache Diary Study Group. A basic diagnostic headache diary (BDHD) is well accepted and useful in the diagnosis of headache: a multicentre European and Latin American study. *Cephalalgia.* 2011;31(15):1549-1560.
11. Cohen G, Bratnick A. Headache diary apps for your smart phone. Headwise. http://www.headachemag.org/Articles/Lifestyle/Headache-Diary-Apps-for-Your-Smart-Phone. Accessed January 5, 2013.
12. Wöber C, Wöber-Bingöl C. Triggers of migraine and tension-type headache. *Handb Clin Neurol.* 2010;97:161-172.
13. Juliano LM, Griffiths RR. A critical review of caffeine withdrawal: empirical validation of symptoms and signs, incidence, severity, and associated features. *Psychopharmacology (Berl).* 2004;176(1):1-29.
14. Blau JN. Ponytail headache: a pure extracranial headache. *Headache.* 2004;44(5):411-413.
15. Blau JN, Kell CA, Sperling JM. Water-deprivation headache: a new headache with two variants. *Headache.* 2004;44(1):79-83.
16. Sun-Edelstein C, Mauskop A. Foods and supplements in the management of migraine headaches. *Clin J Pain.* 2009;25(5):446-452.
17. Quinn C, Chandler C, Moraska A. Massage therapy and frequency of chronic tension headaches. *Am J Public Health.* 2002;92(10):1657-1661.
18. Linde K, Allais G, Brinkhaus B, Manheimer E, Vickers A, White AR. Acupuncture for migraine prophylaxis. *Cochrane Database Syst Rev.* 2009;(1):CD001218.
19. Chaibi A, Tuchin PJ, Russell MB. Manual therapies for migraine: a systematic review. *J Headache Pain.* 2011;12(2):127-133.
20. Biondi DM. Physical treatments for headache: a structured review. *Headache.* 2005;45(6):738-746.
21. Cohen AS, Burns B, Goadsby PJ. High-flow oxygen for treatment of cluster headache: a randomized trial. *JAMA.* 2009;302(22):2451-2457.
22. Holroyd KA, Penzien DB. Pharmacological versus non-pharmacological prophylaxis of recurrent migraine headache: a meta-analytic review of clinical trials. *Pain.* 1990;42(1):1-13.
23. Silberstein SD, Armellino JJ, Hoffman HD, et al. Treatment of menstruation-associated migraine with the nonprescription combination of acetaminophen, aspirin, and caffeine: results from three randomized, placebo-controlled studies. *Clin Ther.* 1999;21(3):475-491.
24. Holland S, Silberstein SD, Freitag F, Dodick DW, Argoff C, Ashman E. Evidence-based guideline update: NSAIDs and other complementary treatments for episodic migraine prevention in adults: report of the Quality Standards Subcommittee of the American Academy of Neurology and the American Headache Society. *Neurology.* 2012;78(17):1346-1353.
25. Schiapparelli P, Allais G, Castagnoli Gabellari I, Rolando S, Terzi MG, Benedetto C. Non-pharmacological approach to migraine prophylaxis: part II. *Neurol Sci.* 2010;31(suppl 1):S137-S139.
26. Jensen R, Stovner LJ. Epidemiology and comorbidity of headache. *Lancet Neurol.* 2008;7(4):354-361.
27. Ohayon MM. Prevalence and risk factors of morning headaches in the general population. *Arch Intern Med.* 2004;164(1):97-102.
28. Gunreben-Stempfle B, Griessinger N, Lang E, Muehlhans B, Sittl R, Ulrich K. Effectiveness of an intensive multidisciplinary headache treatment program. *Headache.* 2009;49(7):990-1000.
29. Wallasch TM, Kropp P. Multidisciplinary integrated headache care: a prospective 12-month follow-up observational study. *J Headache Pain.* 2012;13(7):521-529.
30. Munksgaard SB, Bendtsen L, Jensen RH. Treatment-resistant medication overuse headache can be cured. *Headache.* 2012;52(7):1120-1129.
31. Evers S, Marziniak M. Clinical features, pathophysiology, and treatment of medication-overuse headache. *Lancet Neurol.* 2010;9(4):391-401. ■