

By Charles Matthews, MD

Seeking the cause of a headache is the first priority at the Headache Clinic—an important task considering the very wide variety of possible causes. While potentially serious, these causes are rarely encountered in routine clinical practice.

**INFECTIONS, TOXINS, RARE DISEASES, HORMONES**

Among the many patients we evaluate, a very few will have undetected chronic infection of the coverings of the brain, such as tuberculosis, AIDS, or fungal infections. Headaches also can be caused by increased spinal fluid pressure or low spinal fluid pressure.

Rocky Mountain Spotted Fever, Lyme disease, chronic mononucleosis, and other undetected systemic infections may present with headache. We also see headache with carbon monoxide, mold, and other environmental poisoning.

Hormonal problems are commonly associated with new headaches, and patients with hormonal problems will sometimes have headache as the primary symptom. Besides imbalances in estrogen/progesterone/testosterone, other hormonal problems—such as thyroid, adrenal, growth hormone, or parathyroid dysfunction—may cause headache.

**LIMITS AND PROBLEMS OF MRIs**

MRIs are an important screening tool, but not always helpful in identifying the rarer sources of headaches. For example, almost all of the problems above will have a “negative MRI”—so the condition may be missed.

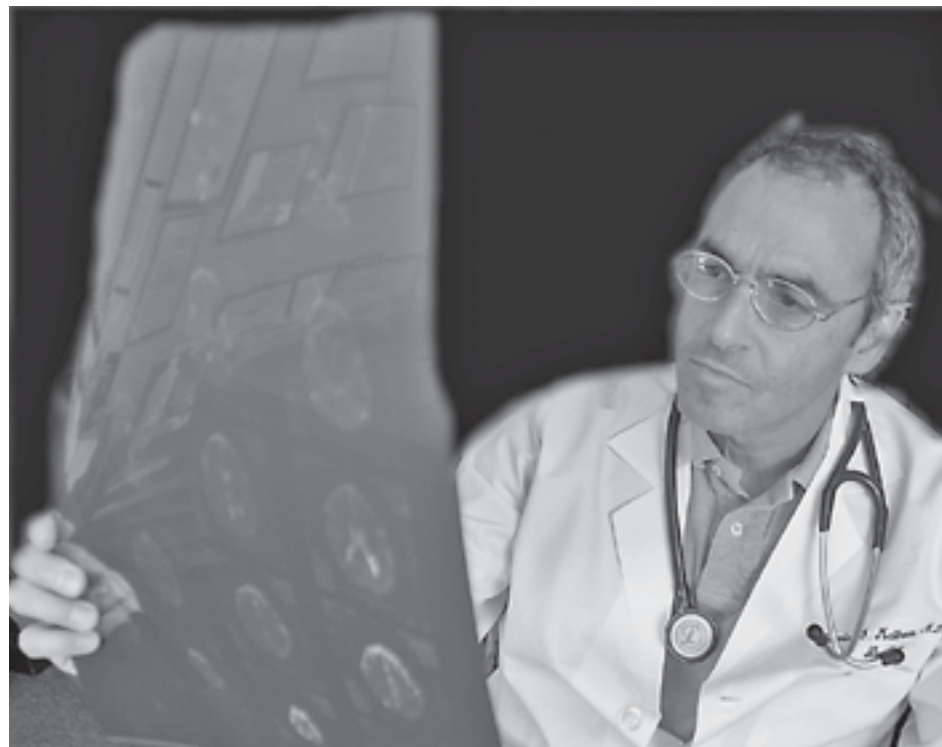
While most brain tumors and other masses in the brain are easily detected by CT or MRI, rare infiltrative tumors of the brain such as lymphoma, and more common very small tumors of the pituitary, may cause headaches without changes on MRI. Brain aneurysms may require special studies to detect.

Sometimes, the MRI is not done in a way that will detect the problem. In some cases, for example, it is necessary to administer a contrast agent by IV to detect such conditions as low-pressure headache or cancer of the meninges; and specific enlarged MRI views of the pituitary with contrast may be necessary to detect a small pituitary tumor. In other cases, clotting of the veins in the brain or inflammation of the arteries can only be detected by an MRI arteriogram or venous angiogram. So, a “negative MRI” can be misleading.

**MULTIPLE HEALTH PROBLEMS: AN IMPORTANT CUE**

When a person who was previously well is diagnosed with two or even more different illnesses in a short period of time, the likelihood of an unusual diagnosis is increased.

In other words, if you have headaches that aren’t responding to treatment and you have two or more of the following problems, you should consider further investigation: fibromyalgia, insomnia, depression, anxiety, chronic sinus problems, chronic fatigue;



Dr. Matthews studies MRI images to find the root cause of headache.

# Serious Causes of Headache

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back or neck pain; irritable bowel syndrome; unexplained heart rhythm problems; and dizziness or unexplained vertigo.

**PHARMACEUTICAL SOURCES**

Can medicines cause disease? Of course they can—and, in some cases, very serious diseases. Although extremely rare, some happen quite rapidly, such as liver failure or bleeding with *Depakote* (sometimes used to treat migraine); or kidney stones or a rare type of glaucoma with *Topamax*. Beta blockers (*Inderal* and *Toprol*) and antidepres-

sants can cause sexual dysfunction or loss of interest in sex. Almost all medications for headache can cause sedation, putting patients at risk for automobile accidents.

Some patients on antidepressants and anti-nausea medications such as *Reglan* have had severe psychiatric reactions, such as suicidal thoughts. While rare, allergic and anaphylactic deaths occur with aspirin and other pain medications. There is an extremely small heart attack risk in patients with undetected heart disease who take *Imitrex* or one of the other triptans.

**HIDDEN DISEASES: SIDE-EFFECTS OVER TIME**

Emergency side-effect problems, in general, are extremely rare. It is much more common, in our experience, for long-term side effects to go undetected, and—over time—to create serious health problems.

The most common “hidden disease” caused by medication is weight gain. This is a serious, frequent, and often unnecessary side effect of headache treatment. *Depakote* and *Elavil* commonly produce this side effect. It is important to consider family cardiac risk factors before using such agents. This is just as important in the 20-year old as the 50-year old, because of the risk of heart attack and stroke many years later.

Another common hidden disease caused by medication is high blood pressure. Many antidepressants most beneficial for headache have the effect of increasing norepinephrine, a brain neurotransmitter that is directly related to modulation of pain. Unfortunately, norepinephrine may raise blood pressure as well. *Effexor*, *Elavil*, and *Pamelor* may have these side effects.

For a young patient facing years of medication, this is a serious matter. Changes in blood pressure may be very subtle—a matter of ten points or so—but even a small increase in blood pressure may translate into long-term cardiovascular risk.

Another long-term disease caused by medication is osteoporosis, a leading cause of disability and suffering in the elderly. *Topamax*, for example, was known to sometimes cause significant metabolic acidosis and thus, fatigue, when the drug was first approved for use by the FDA. Although bone density measurements have not been well studied in patients taking *Topamax* even mild metabolic acidosis from *Topamax* may be a risk for bone loss and osteoporosis over years.

*Topamax* is still a very effective medication for migraine; but the potential side effects should be monitored and prevented—with calcium supplements; a wellness exercise program; measurement of the serum chloride; and correction with sodium bicarbonate if necessary—if the medication is to be continued. If the long-term administration of *Topamax* is necessary, we recommend measuring bone density to make sure their wellness program is working and that bones are getting stronger rather than weaker over time. **h&h**

**EMERGENCY CAUSES OF HEADACHE**

While there are many potential causes of headache requiring careful consideration to identify, a few are serious and require emergency treatment. In addition to headache, these problems include the following symptoms, and require immediate attention:

- Meningitis: fever, stiff neck
- Encephalitis: confusion, fever
- Brain tumor: weakness on one side, persistent visual change
- Brain Hemorrhage: sudden explosive headache
- Aneurysm: headache with straining or bending over
- Undetected Medical Illness: headache that won't go away

**The North Carolina Comprehensive Headache Clinic is an outpatient neurology facility providing diagnostic evaluation and treatment for the patient with headache. For information, contact**

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**New patients are welcome**