NANOS Patient Brochure

Migraine

Migraine

Your doctor thinks you may have migraine. Classic migraine attacks start with visual symptoms (often zig-zag colored lights or flashes of light expanding to one side over 10-30 minutes) followed by a single sided pounding severe headache associated with nausea, vomiting, and light sensitivity. Common migraine, however, may cause only a headache that may involve both sides of the head. Migraine is very common occurring in at least 15-20% of the population and perhaps up to 50% of women. In its common form it is probably responsible for most headaches that may have been previously attributed to "tension," "stress," or "sinus." There is often a family history of sick headaches or a prior history of motion sickness. It is also possible to have a "migraine variant" where the visual symptoms occur without a headache.

Physiology:

Migraine has been known since the Greek civilization more than 2500 years ago but it is only recently that we have begun to understand the mechanism involved. We think that the basic problem in migraine is an abnormality in the neurotransmitter serotonin. This is an important chemical used by cells in your brain to transfer information. During a migraine attack alterations in this chemical lead to local dysfunction of parts of the brain and changes within blood vessel walls often causing spasmodic constriction. Narrowing of a blood vessel may lead to loss of brain function because of decrease in oxygen supply. If present long enough, a stroke is possible. Fortunately this is very uncommon. Alterations in blood flow to the surface coating of the brain leads to the headache that is characteristic of migraine.

There are various foods that may trigger a migraine attack. These include cheese (especially aged), nitrates (often found in cured meats and used in hot dogs and other processed foods), chocolate, red wine, and monosodium glutamate (a flavor enhancer frequently found in Chinese food). Caffeine, Nutrasweet, and alcohol may also produce problems in susceptible individuals. Hormonal changes are frequently associated with a change in migraine episodes. This is especially true for pregnancy, birth control pills, and associated with menstrual periods or menopause. Patients often attribute their migraine to "stress." While stress probably does not cause the predisposition to migraine it may influence the frequency of attacks. Interestingly, however, most migraine attacks seem to occur following relief of stress; often at the beginning of a weekend or vacation.

Symptoms:

As mentioned, the most common symptom of migraine is headache. While this is usually on one side and pounding, it may be on both sides and steady. It is frequently associated with nausea and vomiting as well as light and sound sensitivity. The headache may last for hours to days.

Migraine may be associated with visual symptoms. These are usually in both eyes but often to one side. This most frequently starts with a spot of blurring that expands to one side over 10 to 30 minutes.

The expanding border is often described as “shimmering” or associated with “zig-zag” lines, “heat waves,” or “sparklers.” While most frequently followed by a headache this may be absent (“migraine variant”). Less commonly vision may be lost in one eye only. This may involve the entire field or only the upper or lower section. In very rare cases the visual defect may not entirely resolve. This may be due to a completed stroke associated with migraine.

Other visual system pathology includes uncommon episodes of double vision, change in lid position (lid droop), or change in pupil size (both smaller and larger). These are rare and need to be investigated to make sure nothing else is going on.

Migraine episodes can affect other parts of the brain and may produce episodes of weakness in one arm, leg or side, numbness, or even problems with speech. This should clear within an hour. If it doesn't additional work up is probably indicated.

Diagnosis:

In most cases a history is sufficient to make a diagnosis. This is particularly true if there is a family history and if the episodes are “stereotypic” (occurring repetitively in the same fashion). When atypical (a new pattern) and especially if there is any persistent loss of vision, or weakness then obtaining an MRI may reduce the chance of other vascular pathology. Onset in older patients without a prior history used to be felt rare. While less common older individuals may suffer first attacks of migraine.

Treatment:

Migraine treatment may be divided into acute treatment (ongoing attack) and prophylactic treatment, designed to reduce the frequency and severity of attacks. The easiest prophylactic therapy is avoidance of factors known to precipitate a migraine attack. This may include foods, environmental items such as perfume, and medications such as birth control pills. Prophylactic medications need to be taken on a regular basis and therefore are only indicated if the attacks of migraine are bad enough or frequent enough to warrant taking pills on a regular basis. One aspirin a day may have some affect on the frequency of migraine.

The four most commonly used prophylactic medication groups are tricyclics, beta-blockers, calcium channel blockers, and some anti-seizure medications. Amitriptyline (an anti-depressant) may be effective in reducing migraine attacks. This is usually given at night to reduce its sedative side effects. It may also cause dry mouth and constipation. Beta-blockers such as propranolol and nadolol are also

frequently useful. These are given between 2 and 4 times per day but longer acting preparations are available if they are successful. These may slow heart rate and result in fatigue, sleepiness, and sexual dysfunction. They should not be used in patients with asthma or heart failure and may alter blood sugar levels in diabetics. Calcium channel blockers such as verapamil and nifedipine are particularly useful in patients with complicated migraine episodes. They may lower blood pressure and thus must be used with caution in patients with cardiac disease. Valproate (Depakote) and gabapentin (Neurontin) are usually used in patients with seizures but may be effective in patients with migraine who have not responded to other agents. Occasionally multiple agents may be necessary to achieve adequate control.

Acute migraine treatment is aimed at reducing the symptoms of headache. Treatment is unlikely to affect the neurologic manifestations. Anti-inflammatory medications (such as aspirin, ibuprofen, etc.) which are available over-the-counter may reduce the severity of an acute attack. Recently, medications that deal directly with the presumed chemical imbalances have been made available. Imitrex, the prototype of the group, initially required injection. It is now possible to administer it and other members of this group (Amerge, Maxalt, Zomig) by mouth, under the tongue, or by nasal spray. Older medications that may still be effective, include drugs that constrict blood vessels. These include caffeine and ergotamines. They should NOT be used in patients with complicated migraine. Dihydroergotamine typically affects the venous side and thus may be used in complicated migraine. Finally symptomatic relief may require sedatives, anti-nausea medications, and even narcotic pain medications. The optimal regimen of medications requires communication between the migraine sufferer and their physician. Often, alterations in dosage may be effective in reducing symptoms.

Frequently asked questions

How could I be having migraine when I don't have a headache?

While headache is the most common symptom, visual symptoms and even neurologic dysfunction may occur without a headache. The important features are the frequent repetitive nature of the events and most importantly the transient nature with no evidence of residual dysfunction. While migraine can lead to a stroke this is rare and all of these patients deserve a work up to make sure there is nothing else going on.

Do I have to take these medications?

No. The medications are designed to either relieve symptoms during an attack or decrease the frequency of attacks. If the symptoms are not bad, the episodes occur infrequently, or they respond to over the counter pain medications it is not necessary to take anything.