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Sinus Headaches



By: Susan Hutchinson, MD

Key Points About Sinus Headache:

- Migraine is commonly misdiagnosed as a sinus headache.
- Self-diagnosed sinus headache is nearly always migraine (90% of the time).
- Migraine is commonly associated with forehead and facial pressure over the sinuses, nasal congestion and runny nose.
- In the absence of fever, pus from your nose, alteration in smell or foul-smelling breath, you likely have a migraine headache.
- Your diagnosis needs health practitioner confirmation for accuracy and the best treatment.

Common Symptoms of Sinus Headaches

Sinus Headache is a common complaint in the general population. But just what is sinus headache? Common symptoms include facial pain and pressure, nasal and sinus congestion and headache. Numerous over-the-counter medications are marketed for these symptoms and reinforce the belief that this condition is common. However, sinus headache is not as common as you and others may think. How do we know that?

Sinus Headache Misdiagnosis

A very large population-based study, entitled American Migraine Study II, showed that many people who were diagnosed with migraine thought they had “sinus” headache. Significantly, there were almost 30,000 study participants—only about 50% who were diagnosed with migraine knew they had migraine before the study. The most common misdiagnosis was “sinus” headache.

“True” sinus headache, more properly called rhinosinusitis, is rare and secondary to a viral or bacterial sinus infection characterized by thick, discolored nasal discharge, possibly decreased smell or no smell, facial pain or pressure and commonly fever. Facial pain and headache should resolve within seven days after remission of viral symptoms or after successful treatment with antibiotics if a bacterial sinus infection is present. If pain continues, then your diagnosis should be reconsidered.

What is a Sinus Headache?

It is migraine with sinus symptoms. A very large study involving almost 3,000 patients was very important in evaluating the frequent complaint of “sinus headache.” In this study, the participants had at least six “sinus headaches” in the six months prior to entrance into the study. They had never been diagnosed with migraine and had never been treated with a migraine-specific medication.

What were the results? Eighty-eight percent of the participants were found to be having migraine headache and not a sinus headache. Strict criteria from the International Classification of Headache Disorders were used to tell the difference between headache types. In addition to their common symptoms of nasal and sinus congestion and facial pain and pressure, sufferers often had the following symptoms we associate with migraine:

- Nausea
- Sensitivity to light and/or noise
- Moderate to severe headache
- Pulsing/throbbing pain
- Headache worsened by activity

In this study, almost 3,000 patients with the complaint of “sinus headache” were taking lots of over the counter and prescription decongestants, antihistamines, nasal sprays, analgesics, and anti-inflammatory medications. However, there was a lot of patient dissatisfaction with their results. The dissatisfaction makes sense since many actually had migraine producing the sinus complaints.

Sinus Headache Symptoms and Migraine

Research studies show how common sinus symptoms occur with migraine. Specifically, in one study, 45% of migraine patients had at least one symptom of either nasal congestion or watery eyes. Significantly, if the congestion is part of the migraine, it would be expected to resolve with the specific migraine treatment.

So, how do you know if your headache is migraine and not sinus? Ask yourself the following questions:

- In the last three months, how disabling are your headaches? Do they interfere with your ability to function? (Are you missing work; school; family activities?)
- Are your headaches ever associated with nausea?
- Are your headaches ever associated with sensitivity to light?

There is the ID Migraine Questionnaire developed by Dr. Richard Lipton of Albert Einstein College of Medicine. If two of the above three criteria are present, migraine is likely 93% of the time. If all three are present, a migraine diagnosis is 98% likely.

Take-Home Point: Go beyond the nasal and sinus congestion and the facial pain and pressure; look for a headache associated with the inability to function normally at work, school, home or social functions, nausea, sensitivity to light and triggers such as weather change, menses, and stress (all common provokers for migraine). Significantly, it is commonly thought that weather change often causes “sinus headache” when weather change is a common trigger for migraine.

Sinus Headache Medication

If you feel that your sinus headaches could be migraine, ask your provider if a migraine-specific medication could be right for you. If so, try the migraine-specific medication for your next three “sinus headaches.” Look for the headache and associated symptoms to improve better than all the previous treatments you were taking. In some cases, a work-up may be done such as a CT scan of your sinuses to rule out a secondary cause such as sinus disease or simply to reassure you that the diagnosis is migraine and not a sinus problem.

Summary of Sinus Headaches

In summary, most “sinus headache” is migraine with sinus symptoms. Knowing this can help with getting the right diagnosis and treatment. Ultimately, this can help free you from the recurring burden of failed headache treatment and disability.

By Susan Hutchinson, MD, Director, Orange County Migraine & Headache Center, Irvine, CA.

This article is a legacy contribution from the American Headache Society Committee for Headache Education (ACHE) and the Fred Sheftell, MD Education Center.

Sinus Headaches, Allergies, Asthma and Migraine: More Than a Casual Relationship?

By: Roger K. Cady, MD

Facts You Should Know about Sinus Headaches, Allergies, Asthma and Migraine:

Most sinus headache is misdiagnosed, and most self-diagnosed and physician-diagnosed sinus headache is migraine.

- Sinus headache, or sinusitis, is associated with a pus-like or purulent nasal discharge that represents a potential infection in the sinus(es). Migraine may be associated with watery eyes and runny nose, but the fluid is clear.
- People with allergic rhinitis are more than ten times more likely to have migraine.
- Asthma may be associated or comorbid with migraine, and a full diagnosis of each is needed.
- Identifying potential triggers for asthma is important in reducing the risk of an attack and the risk of triggering a migraine.

In order to survive, all living organisms must be able to separate themselves from their environment. They must be able to absorb nutrients from that environment, while at the same time protect themselves from injury and contamination. To ensure that we live safely within our environment, nature has evolved complex safeguards involving the nervous system, endocrine (hormonal) system and immune system.

As part of this defense system, each portal of entry into the human body has a sophisticated mechanism in place to provide this protection. While most of the time these defense mechanisms function flawlessly, there is the potential for problems, and several important disorders, including migraine, asthma and allergies, may reflect disruptions of these mechanisms. Disruption of the defense mechanisms designed to protect the lung can result in asthma. If those in the skin or sinus go

awry, allergies can result and if those involving the nervous system are disrupted, migraine can result.

People with migraine inherit a nervous system that is more sensitive to change than those without migraine. This nervous system evolved to be highly vigilant of its environment. When the migrainous nervous system is functioning well, this vigilance is often reflected in positive ways.

For example, people with migraine are often well-organized, perceptive, and successful in school and artistic activities. This heightened vigilance may also be why migraine sufferers tend to be light sleepers and more emotionally vulnerable. However, if the nervous system perceives a threat from either the external or internal environment, the nervous system response can be an attack of migraine.

People born with asthma inherit a respiratory or airway system that is more sensitive and vigilant of its environment than those without asthma. When an asthmatic airway is threatened, it can respond dramatically by narrowing too much and creating an inflammatory response in this defense perimeter. This results in wheezing and shortness of breath.

In a similar fashion, people with allergies respond in a variety of ways when their systems are threatened. The most dramatic is an anaphylactic reaction. This is the type of reaction, noted rarely with a bee sting or an injection of penicillin, can be fatal. More commonly, allergic individuals develop sinus or skin symptoms that can vary considerably in severity. Seasonal allergies are likely the most common allergic condition. Symptoms generally consist of nasal congestion and discharge, eye irritation and sometimes headache. Allergies can also be closely associated with asthma.

Observations that link these seemingly diverse disorders together include the fact that they are common in the general population, genetic factors appear to be important for all of them, each can be triggered by internal or external threats and each represents an over-response or exaggerated response of the very mechanisms that nature designed to protect us. Given these similarities, it is not surprising that if you inherit one of these disorders, you have a greater likelihood of inheriting one or more of the others. When conditions are more likely to occur together than what is found by chance alone in the general population, they are called comorbid conditions. In the recent American Migraine Study II, 40% to 70% of respondents with migraine had comorbid allergies. Other studies have reported that people with migraine are 2 to 3.5 times more likely to have comorbid asthma, especially if they have a parent with migraine and asthma.

Unraveling the relationships these comorbid disorders have to each other poses many interesting questions. For example, can allergies or asthma trigger migraine? Clearly, these associations appear to be popular beliefs. For example, it has long been assumed that allergies are part of sinus disease and that sinus disease, in turn, results in “sinus headache.” In fact, most participants in the American Migraine Study II who had diagnosed migraine also reported having “sinus headaches.” However, whether sinus headache and migraine are distinct headache disorders or related to one another is a matter of debate.

Several studies in the medical literature have evaluated a group or population of people who reported they had recurrent attacks of sinus headaches. These patients may be either self-diagnosed as having sinus headache or incorrectly diagnosed by a physician as having sinus headache. Either way, many of these people actually have migraine and not sinus headache. The reason there is confusion between sinus headache and migraine is because pain that occurs near or around the sinuses may be incorrectly assumed to be sinus based on this location. However, the truth is that migraine also presents with pain in the forehead and around the eye and therefore may be thought to be sinus. Also, these studies tell us that if you have pain that appears to be sinus headache, you should see your doctor and ask for a full diagnosis of your headaches. This is very important because treatment of sinus headache or sinusitis differs significantly from treatment for migraine.

Important facts about sinus headache and migraine

Most sinus headache is misdiagnosed, and these patients may have migraine.

Sinus headaches are not normally disabling and migraine headaches are disabling.

- True sinus headache or sinusitis is associated with a pus-like or purulent nasal discharge that represents a potential infection in the sinuses. Migraine may be associated with watery eyes and runny nose, but the fluid is clear.
- Sinusitis as a disorder may be associated with headache, but these headaches may differ from migraine.
- Patients with sinusitis may also have migraine.

Important facts about allergic rhinitis and migraine

Allergic rhinitis is a histamine-driven response to an allergen, and when exposed to this allergen, the nasal passage becomes inflamed and irritated resulting in a “runny nose.” Histamine release has also been suggested to be involved in triggering migraine headaches. Allergic rhinitis can be screened for with simple skin testing at your allergist’s office or even in some primary care offices. Many people who have allergic rhinitis also have migraine. People with allergic rhinitis have a general histamine response to something they are allergic to.

- Histamine release may also be involved in triggering headache, specifically migraine.
- People with allergic rhinitis are more than 10 times more likely to have migraine.
- Accurate diagnoses and treatment of allergic rhinitis will be an important part in reducing the risk of migraine.
- Learning how to treat each condition individually should improve overall care and reduce disability of migraine associated with allergic rhinitis.

Important facts about asthma and migraine

The relationship between migraine and asthma is equally confusing. Clearly, there is some overlap in the risk or triggering factors for asthma and migraine—for example, stress and certain environmental triggers or allergens. Often migraine sufferers with asthma report that both asthma and migraine can worsen at the same time, and occasionally one seems to lead to the other. In one study, patients with asthma were 1.5 times more likely to also have migraine.

Asthma may be triggered by a number of different allergens or environmental triggers that also may lead to other airway conditions such as allergic rhinitis.

- Airway conditions including asthma, allergic rhinitis, or sinusitis all may be associated with headache.
- Diagnosing the specific headaches associated with airway conditions is important to ensure that treatment is successful. For example, some over-the-counter allergy medicines may also lead to a worsening of headache in some patients, especially if taken frequently.
- Asthma may be associated or comorbid with migraine, and a full diagnosis of each condition is needed.
- Identifying potential triggers for asthma is important for reducing the risk of an attack and the risk of triggering a migraine.

Summary

Throughout the literature, there are many reports that headaches occur in patients with airway symptoms, including sinusitis, allergic rhinitis or even asthma. The link between these conditions and headache is not well understood, but based on their frequent association, they may be comorbid conditions. To improve the chances of successful treatment, accurate diagnoses for each condition is critical because a single approach is unlikely to be successful in treating both conditions. Identifying those patients who are incorrectly diagnosed is also important when developing a treatment plan.

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Migraine Management

Nutraceuticals for Treating Migraine

There is evidence from clinical trials that oral **magnesium** oxide may be an effective preventive strategy for people with migraine. Some theories about how it works include the idea that magnesium can help to prevent waves of cortical spreading depression and aura. Magnesium, in theory, also reduces the release of inflammatory or activating chemicals that can cause migraine. Intravenous magnesium sulfate can also be helpful in the acute setting.

Other potentially useful **nutraceuticals** include **vitamin E**, which may help with menstrual migraine. There is limited data on this, but it may reduce nausea, photophobia and phonophobia during menstruation. There is also evidence that **riboflavin, or B2**, may be an effective preventive medication in some people with migraine.

While nutraceuticals may not seem dangerous, Dr. Pace advises all patients to use caution. Some of these treatments can react with other drugs or conditions if used in the wrong way. For example, magnesium may cause diarrhea, and it is possible to overdose on Vitamin E.

“Just because it is natural doesn’t necessarily mean it is safe,” she says. “Vitamins are not approved or regulated by the FDA, so it is important to discuss these options with your doctor before starting to determine if they are appropriate and okay to use.”

Dietary Recommendations

There's a **laundry list of foods** known to trigger a migraine attack, the most common ones being foods that contain histamine and MSG, chocolate, cheese and other dairy products, artificial sweeteners (e.g. aspartame), caffeine, cured meats, and anything with a strong smell.

How to cope: If you can identify specific food triggers, be sure to avoid them as much as possible. Many people also adopt a migraine diet that eliminates foods and ingredients known to trigger a migraine.

Diets that are high in leafy greens, fish (especially salmon and tuna), nuts and berries have been helpful.

It is important to avoid sugar, processed food, fried and salty foods.

Yoga/Tai Chi for Treating Migraine

The kind of mind/body therapy that yoga can provide may help create relief from migraine. Keeping up with yoga consistently can reduce headache frequency, intensity and duration, so it's important to practice regularly if you plan to use it as a complementary migraine treatment. However, certain types of yoga such as "hot yoga" may be uncomfortable for people with migraine. Others, such as "restorative yoga," may be tolerable even for a patient with chronic migraine.

Tai Chi can also have a similar benefit for patients with migraine. Specifically, it can help improve balance, which can be very useful for those with vestibular symptoms or vestibular migraine.

Mindfulness/Meditation for Treating Migraine

Many people believe that stress is a major trigger for their migraine. This is where **mindfulness and meditation** can come into play, as they have been known to help reduce migraine severity, duration and acute pain medication use. It may also help to relieve stress and anxiety while improving feelings of well being.

"Life these days often involves multitasking," Dr. Pace says. "You walk down the street with headphones in, listening to music, maybe checking your email on your phone and thinking about everything you have to do when you get home. Mindfulness is about slowing down and being aware of the moment. It's not about clearing your mind. It's more about acknowledging all of your thoughts and focusing on the moment."

Routine exercise

Regular exercise can reduce the frequency and intensity of headaches and migraines. When one exercises, the body releases endorphins, which are the body's natural painkillers. Exercise reduces stress and helps individuals to sleep at night. Stress and inadequate sleep are two migraine triggers.

A recent study conducted by Varkey, Cider, Carlsson, and Lindy (2011) found that exercise, regular relaxation exercises, or the use of topiramate were equally effective in reducing the rate of migraines. Those participants in the exercise group exercised for 40 minutes three times a week. Therefore, exercise can be an effective intervention in the preventive treatment of migraines.

Some people may get headaches or migraines when they exercise. One possible reason for this is that a part of the physical reaction may be the elevation of blood pressure. This is not a reason to avoid exercise, which is good for general health. Instead, headache and migraine patients need a plan for preventing headaches or migraines when they exercise.