Sinusitis

A lot of people mistake a particularly bad cold for sinusitis. Many of the symptoms are the same, including headache or face pain, a nasty runny nose and nasal congestion. Unlike a cold, some cases of sinusitis are bacterial infections that often require antibiotics. While mild cases of sinusitis may go away without medical intervention, sinusitis also can be serious and can require surgery if left untreated. A bad cold, on the other hand, won't respond at all to antibiotics.
About 31 million people develop sinusitis in the United States each year. Frequently, sinusitis follows an upper respiratory infection or a normal cold. People who have allergies, asthma, physical abnormalities in the nose or sinuses, or a compromised immune system are at greater risk.

What Is Sinusitis?

Sinusitis is an inflammation of the mucous membranes lining the facial sinuses. The inflammation is often caused by a bacterial infection, although viruses and fungi also are implicated. People who have weakened immune systems can develop bacterial or fungal sinusitis. Some allergic individuals, who are not immunocompromised, can have "allergic fungal sinusitis." Acute sinusitis lasts three to eight weeks. Sinusitis lasting more than eight weeks is considered chronic.

The sinuses are air-filled cavities in the skull. Normally, they are lined with a thin layer of mucus that traps dust, germs and other airborne particles. Tiny hairs in the sinuses called cilia sweep the mucus (and whatever is trapped in it) towards openings in the top of the sinuses called ostia. The ostia lead to the back of the throat where mucous slides down to the stomach. This continual process is a normal function of the body.

When sinusitis develops, the normal flow of mucous from the sinuses to the back of the throat is interrupted. The ostia become blocked by swollen mucous membranes, causing mucous to be trapped in the sinuses. This trapped mucous makes the perfect home for bacteria and fungi that normally get swept down the throat and digested in the stomach. People with anatomical defects that block the ostia, such as a deviated septum or nasal polyps, often suffer from chronic sinusitis.

Some people with chronic rhinitis and/or asthma can develop a type of chronic sinusitis that does not appear to be caused by infection.

Symptoms

Common symptoms of sinusitis include:

Postnasal drip
Stuffiness
Congestion
Tenderness of the face (particularly under the eyes or at the bridge of the nose)
Coughing
Pain in the teeth
Pressure headaches
Fever
Sinusitis can be accompanied by any combination of symptoms. For example, you may have a tenderness of the face without fever or coughing.
Sinusitis is often confused with rhinitis, a term used for the symptoms that accompany nasal inflammation and irritation. The symptoms of rhinitis and sinusitis can be very similar. Although rhinitis only directly involves the nasal passages, the nasal congestion can cause facial pain and the postnasal drip can cause cough. Underlying conditions like allergies or structural abnormalities can cause chronic sinusitis and/or rhinitis or symptoms that mimic sinusitis. A computed tomography (CT) scan can determine if the sinuses are actually involved.

Asthma also has been linked to chronic sinusitis. Appropriate treatment of sinusitis often improves asthma symptoms, and vice versa. Cystic fibrosis, Wegener's syndrome and a compromised immune system also can increase the frequency and severity of sinusitis.

Diagnosis

Sinusitis is typically diagnosed in your primary care doctor's office. Diagnosis is based primarily on your symptoms and an examination of the throat, nose and sinuses. Redness, swelling of the mucous membranes, tenderness of the face, and dark circles under the eyes are indications your doctor will look for. Depending on how long you've experienced symptoms, your doctor will diagnose your sinusitis as acute or chronic. Diagnosis may require a sinus CT, particularly if symptoms aren't completely convincing of the diagnosis.

If your sinusitis has persisted for more than eight weeks, or if standard antibiotic treatment isn't working, a sinus CT may be necessary. Also, an allergist-immunologist or an otolaryngologist (a doctor specializing in the ear, nose and throat) may take a look up your nose using an instrument called an endoscope. An endoscope is a long, thin, flexible tube with a tiny camera and light at one end. It is inserted through the nose and snaked up to the ostia. Pus oozing out of the ostia means that an infection is brewing inside. Endoscopic procedures are not painful. Your doctor may give you a light anesthetic nasal spray to prevent you from feeling the endoscope.

Mucus Cultures

If your sinusitis is chronic or hasn't improved after several rounds of antibiotics, your doctor may perform a mucus culture. Mucus cultures reveal what kinds of microorganisms are living in the mucus. Knowing the identity of the microorganism can help your doctor determine which antibiotics to prescribe, since not all antibiotics kill all types of bacteria. Most samples are taken from the nose. There is no guarantee, however, that mucus taken from the nose contains the same microorganisms as the sinuses. Thus, it is sometimes necessary to do a more invasive procedure called an "antral puncture" to get mucus (or pus) directly out of the sinus.

If your doctor suspects that your sinusitis is caused by a fungus, surgery may be necessary for diagnosis and treatment. Most forms of fungal sinusitis are normally only seen in patients who have weakened immune systems, and some forms are very serious infections. Confirming the presence of fungus is important because fungal sinusitis needs to be treated with antifungal agents, rather than antibiotics.

Allergic fungal sinusitis, however, is a different type of fungal sinusitis that does not respond to antifungal agents. This type of sinusitis occurs in patients who have normal immune systems. Diagnosis of allergic fungal sinusitis cannot be made reliably on the basis of mucus cultures.

Biopsies

One of the dangers of the more serious types of fungal sinusitis is that the fungus can penetrate into nearby bone. Only a bone biopsy can determine if this has happened. Biopsies involving sinus tissue are taken with flexible instruments inserted through the nose.

Biopsies of sinus tissue also are used to test for immotile cilia syndrome, a rare disorder that is caused by dysfunctional or paralyzed cilia. Because the cilia are unable to clear mucous from the respiratory tract, people with immotile cilia syndrome often suffer from recurrent infections, including chronic sinusitis, bronchitis and pneumonia.

Treatments

Antibiotics: Antibiotics are standard treatments for bacterial sinusitis. It is important to finish the full course of antibiotics that your doctor has prescribed, even if you feel better after a few days. Stopping the antibiotics early can allow the infection to return. It also can create resistance to the antibiotic that was used to treat the sinusitis, making the antibiotic less effective and may allow the infection to spread further. Antibiotics usually are taken for 14 days. Longer treatments may be prescribed for people with more persistent or severe cases.

If several rounds of antibiotic therapy fail to eliminate the sinusitis, your doctor will consider ordering a sinus CT, even if one was done at the beginning of the infection. This test is important for defining the extent of the infection. Your doctor also may send you to a specialist in allergy and immunology. The specialist will check for underlying factors like allergies, asthma,

structural defects or a weakness of the immune system. Treating pre-existing conditions either with surgery or other drug therapies usually leads to improvement of sinusitis symptoms.

Other Treatments: Antibiotics help eliminate sinusitis by attacking the bacteria that cause it, but until the drugs take effect, they don't do much to alleviate symptoms. Some over-the-counter medications can help provide relief. Some experts recommend antihistamines to dry out sinus mucosa and ease breathing. However, because the bacteria causing the sinusitis actually thrive in dry mucus, symptoms often return when the antihistamine wears off. Furthermore, over-the-counter antihistamines can produce sedation or impair performance in many individuals.

Decongestants and mucolytics (drugs that thin the mucus in the sinuses) can help drain the sinuses and lessen pressure. Decongestants come in oral form, as well as nasal sprays. Since your body can easily become dependent on over-the-counter decongestant nasal sprays to keep nasal passageways clear, they only should be used for a few days except under close medical supervision. Saline nasal sprays help wash out nasal passages and clear some mucus from the airways. Steamy showers also help loosen up mucus.

Surgery: If drug therapies have failed, surgery may be recommended. This procedure is usually performed by an otolarangologist. Anatomical defects are the most common target of surgery. Your surgeon can fix septal defects, remove nasal polyps, and open up closed ostia. Sinus surgery is performed under either local or general anesthesia, and patients can often go home on the same day.

What To Do If You Think You Have Sinusitis

If you think you have sinusitis, don't just call your doctor and ask for an antibiotic - you may not have a bacterial infection and may not need an antibiotic. See your doctor for proper diagnosis. In most cases, sinusitis is easily treatable. Stopping a sinusitis infection early can help to eliminate further symptoms and complications.