

Definition

Sinusitis refers to an inflammation of the sinuses, airspaces within the bones of the face. Sinusitis is most often due to an infection within these spaces.

Description

The sinuses are paired air pockets located within the bones of the face. They are:
the frontal sinuses; located above the eyes, in the center region of each eyebrow
the maxillary sinuses; located within the cheekbones, just to either side of the nose
the ethmoid sinuses; located between the eyes, just behind the bridge of the nose
the sphenoid sinuses; located just behind the ethmoid sinuses, and behind the eyes

Causes and symptoms

The sinuses are connected with the nose. They are lined with the same kind of skin found elsewhere within the respiratory tract. This skin has tiny little hairs projecting from it, called cilia. The cilia beat constantly, to help move the mucus produced in the sinuses into the respiratory tract. The beating cilia sweeping the mucus along the respiratory tract helps to clear the respiratory tract of any debris, or any organisms which may be present. When the lining of the sinuses is at all swollen, the swelling interferes with the normal flow of mucus. Trapped mucus can then fill the sinuses, causing an uncomfortable sensation of pressure and providing an excellent environment for the growth of infection-causing bacteria.

Sinusitis is almost always due to an infection, although swelling from allergies can mimic the symptoms of pressure, pain, and congestion; and allergies can set the stage for a bacterial infection. Bacteria are the most common cause of sinus infection. *Streptococcus pneumoniae* causes about 33% of all cases, while *Haemophilus influenzae* causes about 25% of all cases. Sinusitis in children may be caused by *Moraxella catarrhalis* (20%). In people with weakened immune systems (including patients with diabetes; acquired immunodeficiency syndrome or AIDS; and patients who are taking medications which lower their immune resistance, such as cancer and transplant patients), sinusitis may be caused by fungi such as *Aspergillus*, *Candida*, or *Mucorales*.

Acute sinusitis usually follows some type of upper respiratory tract infection or cold. Instead of ending, the cold seems to linger on, with constant or even worsening congestion. Drainage from the nose often changes from a clear color to a thicker, yellowish-green. There may be fever. Headache and pain over the affected sinuses may occur, as well as a feeling of pressure which may worsen when the patient bends over. There may be pain in the jaw or teeth. Some children, in particular, get upset stomachs from the infected drainage going down the back of their throats, and being swallowed into their stomachs. Some patients develop a cough.

Chronic sinusitis occurs when the problem has existed for at least three months. There is rarely a fever with chronic sinusitis. Sinus pain and pressure is frequent, as is nasal congestion. Because of the nature of the swelling in the sinuses, they may not be able to drain out the nose. Drainage, therefore, drips constantly down the back of the throat, resulting in a continuously sore throat and bad breath.

Prevention

Prevention involves the usual standards of good hygiene to cut down on the number of colds an individual catches. Avoiding exposure to cigarette smoke, identifying and treating allergies, and avoiding deep dives in swimming pools may help prevent sinus infections. During the winter, it is a good idea to use a humidifier. Dry nasal passages may crack, allowing bacteria to enter. When allergies are diagnosed, a number of nasal sprays are available to try to prevent inflammation within the nasal passageways, thus allowing the normal flow of mucus