TRINITY ALLERGY, ASTHMA AND IMMUNOLOGY CARE, P.C.
NATARAJAN ASOKAN, M.D.
DIPLOMATE OF AMERICAN BOARD OF ALLERGY & IMMUNOLOGY
AND AMERICAN BOARD OF PEDIATRICS
1739 BEVERLEY AVENUE, SUITE #118, KINGMAN, AZ 86409
www.trinityallergy.com

Sinusitis

Sinusitis is inflammation of the linings of the paranasal sinuses. The paranasal sinuses are hollow structures of varying shapes and sizes located around the nose and opening into the nose. They contribute to lessening of the weight of the skull, adding resonance to our voice and making mucus which keeps the nose moist and healthy. There are four pairs of sinuses: Maxillary, ethmoid, frontal and sphenoid. Epithelial cells which bear fine hair-like structures (cilia) and mucus secreting goblet cells are among many types of cells that line the sinus cavities. The cilia by beating in a wave-like motion propel the mucus towards the openings of the sinuses and into the nasal cavity. Cigarette smoke and other irritants interfere with the beating of the cilia and interfere with propulsion of mucus in addition to causing excess secretion of mucus. Viruses, bacteria, molds and other organisms do similar things in addition to increasing local blood flow. This causes thickening of the mucus lining of the sinuses and secretion of large amounts of thick mucus. This causes obstruction of the small sinus openings and interference with drainage of the sinuses. This results in a vicious cycle resulting in worsening of the condition. When the process is less than 3 weeks in duration, it is known as acute sinusitis. Chronic sinusitis is more than 6 weeks in duration and subacute sinusitis is between 3-6 weeks in duration.

There are several conditions that predispose to occurrence of sinusitis. They are

- Infections by viruses, bacteria, molds and other organisms
- Inflammation caused by allergies
- Irritation by pollution, chemicals, smoke etc.
- Anatomical obstructions caused by nasal polyps, concha bullosa, nasal spurs and adenoids
- And rarely absence of cilia from birth, immunodeficiency caused by primary immunodeficiency diseases (genetic origin) and secondary immunodeficiency diseases like HIV

Acute sinusitis is characterized by onset of any combination of the following symptoms: significant nasal congestion and stuffiness not relieved by usual allergy and decongestant medications, production of thick, copious and discolored nasal mucus, facial pain and pressure, tooth pain, bad breath, significant postnasal drainage, sorethroat, cough, fever and a sense of not feeling well. It often starts as a cold. It does not get better within a week or so. Persistent cold symptoms lasting beyond 7-10 days could mean sinus infection.

Physical examination in the doctor's office reveals congested, red and swollen nasal mucosal lining, bad breath, drainage of pus from sinus openings, postnasal drainage and tenderness on palpation over the sinuses. In chronic sinusitis many of the above mentioned symptoms and signs may be absent and diagnosis is usually made by CT scan.

Diagnosis is often by clinical history and by examination. Sometimes your doctor may order CT scan of the paranasal sinuses for better understanding of the problem. X-rays are poor substitutes for diagnosing sinusitis and CT scans are preferred. The CT may show thickening of the mucus lining of the sinuses, presence of pus (air-fluid level), obstruction of sinus openings and other anatomical abnormalities mentioned above. In patients with chronic sinus infections, further studies to rule out cystic fibrosis, immotile cilia syndrome and immunodeficiency are in order in some patients.

Treatment of acute sinus infections includes regular irrigation with normal saline nasal wash, regular use of intranasal corticosteroid sprays such as Nasonex, Flonase, Rhinocort Aqua or Nasacort AQ, use of mucolytic agents such as Mucinex or guaifenesin and antibiotics for 14-21 days. Studies have shown that combined use of nasal sprays and antibiotics is more effective in treating acute sinus infections than either of them used alone. Antihistamines can interfere with regular beating of the cilia and make the mucus thicker; for these reasons, some physicians may stop antihistamines until recovery. Sinus cavities do not have great blood supply. Therefore, antibiotics are used for more than 14-21 days to allow better penetration into infected sinus cavities. Occasionally your doctor may use a short course of steroids or decongestant medications by mouth to relieve swelling in the nostrils and this will facilitate better drainage of the sinuses.

Treatment of chronic sinusitis with antibiotics is controversial. Many physicians begin to look at chronic sinusitis as something to do with chronic inflammation rather than with infections. Therefore, your doctor is more likely to prescribe oral and inhaled steroid medications rather than give antibiotics to treat this condition. If there are mechanical problems in the nasal cavities or if medical management fails, your doctor may refer you to an ear, nose and throat specialist for surgical treatment. Patients with underlying conditions such as cystic fibrosis, immotile cilia syndrome and immunodeficiency will benefit from treatment of those conditions.

There are few measures if regularly implemented will reduce the frequency and severity of sinus infections significantly. They include regular use of normal saline nasal wash, taking allergy medications (especially prescription nasal sprays) regularly, staying away from allergens (grass, pets, mold, dust and dustmites) and irritants (smoke, chemicals and smog), regular hand washing, avoiding gathering of people during flu epidemics and taking influenza vaccination regularly. If indicated taking Pneumonia vaccine once may also help. Allergy injections if taken regularly will control the sinus infections much better.

Sinusitis is one of the common chronic illnesses having great impact on the physical and economic well-being of people. By understanding it better and following some of the guidelines above, you will lead a much happier and healthier life. If you are one of those millions of sinusitis sufferers and would like to be evaluated for the same, please call our office for an appointment.