

Nasal Obstruction

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(Editor's Note: This is Part II of a two-part article. Part I was printed in the March 2007 issue of Hole Notes.)

Anatomic Causes of Nasal Obstruction

Many anatomic factors cause nasal obstruction. You might suspect an anatomic blockage when your breathing always seems worse on one side of the nose, and if the blockage has been present for many months or years. Remember that the two major components of the nasal passages are the septum and the turbinates. Significant abnormalities of these structures will impair breathing. In addition to nasal blockage, they can lead to snoring (which can be disruptive to the individual if he has apnea or pauses in breathing, but is more often a nuisance to a sleeping partner). Additionally, areas that block airflow in the nose can also block mucous flow and sinus drainage, and lead to sinus infections. Much of the remaining portions of this article will examine these anatomic causes of nasal obstruction.

Deviated Septum

The nasal septum is the partition between the right and left sides of the nose. It is composed of both cartilage and bone. Figure 4.1 shows a normal midline septum compared with a septum that is severely deviated into the right side. A deviated septum is usually diagnosed when a physician looks inside the nose. One clue is to breathe in and out through each side of the nose while blocking the other nostril. A consistent difference in airflow between the two sides may indicate a deviated septum. If you have an obvious twist to the outside of your nose, this may also indicate a deviation on the inside.

Often, a deviated septum results from a nasal injury. Some of my patients who have septal deviations remember the exact incident when they fractured or broke their nose, and recall breathing problems beginning after this. Other people are unable to recall any nasal trauma. No one knows whether these individuals were born with their deviation, or whether they suffered some trauma to their developing nose while sliding down the vaginal canal

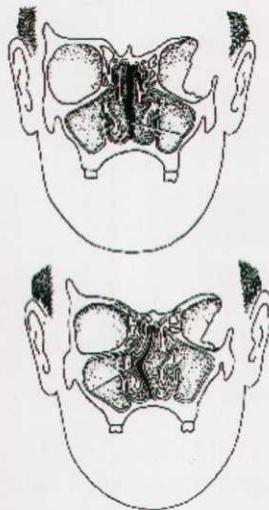


Figure 4.1
Normal Versus Deviated Nasal Septum.

during birth. If the twist of the septum does not seem to harm your breathing, then there is no reason to correct the problem. However, if the deviation is severe enough to warrant repair, you may need surgery. There may also be instances when the septum needs to be fixed not for breathing but because it blocks the sinus openings, leading to chronic sinus infection.

Surgery for a deviated septum involves working inside the nose to reshape the cartilage and bone, either called a septoplasty or submucous resection. It is performed on an outpatient basis under either general ("all the way under") or local (sedation) anesthesia. The septum sometimes needs to be straightened during sinus surgery so that the surgeon can reach back to the sinuses. Correction of a deviated septum usually does not change the outer appearance of the nose. If someone says they had a deviated septum operation but they look like they have a new nose, they are probably covering up elective cosmetic surgery.

Hypertrophic (Enlarged) Turbinate Bones

There are three sets of paired turbinates in the nose: Inferior, middle and superior.

Inferior Turbinate Problems

Large inferior turbinates can lead to blockage in nasal breathing. While some physicians feel that turbinate swelling has a minimal role in nasal dynamics, others believe it is a major contributor to problems. There is still controversy among physicians as to how often inferior turbinate hypertrophy (the medical term for enlargement) needs to be treated. In addition, there is not even agreement as to the best method of treatment for enlarged turbinate bones. While some doctors will inject turbinate tissue with cortisone to decrease swelling, others believe in surgical cautery, laser or trimming. It is best to ask your doctor to delineate the pros and cons of this treatment if it has been recommended for you.

Middle Turbinate Problems

Middle turbinates can be abnormally shaped, which can lead to "nasal headaches." In addition, most of the important sinus drainage occurs just below the middle turbinate, and thus abnormal formations of the turbinate can lead to significant sinus problems.

A paradoxically shaped middle turbinate, instead of spiraling outward, curves inward, touching the nasal septum as well as narrowing the area of maxillary sinus drainage. When two structures, such as the septum and the middle turbinate, come into contact, this can set off pain fibers and result in headache. If the already large middle turbinate gets more swollen during an allergy attack, this can further block sinus drainage and cause an infection. Surgical trimming of the turbinate should correct the problem.

Normally, the turbinates are bony structures lined with nasal mucosa. If developmentally, the middle turbinate has air inside it (which is seen in Figure 4.2), sinus drainage can be altered and may result in recurrent infection.

This condition, in which there is an air cell inside the normally bony middle turbinate, is termed a concha bullosa and

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may additionally be associated with headache. If you have a concha bullosa, then the sinus problem may be alleviated by surgically opening up this air pocket inside the turbinate; this should lead to improved sinus drainage.

Last year, Betsy came to see me after she had gone to an allergist, neurologist and chiropractor for facial headaches. Because of some underlying nasal complaints, I ordered a CAT scan x-ray, which revealed a middle turbinate with air inside (the concha bullosa). I had Betsy come to my office during one of her headaches, and I injected her middle turbinate with a local anesthetic, after which her headache resolved. I next took her to the operating room, where I removed her middle turbinate. She has not had a headache since!

Nasal Polyps

Polyps are grapelike, inflammatory swellings of the nasal and sinus linings. Polyps are benign (noncancerous), can be on one or both sides of the nose, and are more commonly seen in adults than in children. By far, the most common cause



Figure 4.2
*Concha bullosa. Secondarily
Infected Maxillary Sinus.*

of polyps is allergy, followed by chronic sinus infection. Aside from causing nasal blockage, polyps may plug up the normal sinus openings (ostia) and contribute to the development of sinus infection. While nasal polyps in children are atypical, their occurrence before age sixteen may indicate cystic fibrosis.

Nasal polyps may be associated with asthma. I often see an asthma patient whose asthma has flared up because of nasal polyps and sinus infection. Scott is one of my typical asthma patients with nasal polyps. When he first came to see me, he was on a number of asthma inhalers and for the past four months had been using oral medications for worsening symptoms. Once I removed his massive nasal polyps, his breathing greatly

improved, and he stopped taking the meds. About once a year Scott will see me complaining of a flare-up of his asthma, when his nose and sinuses act up. I give him some oral cortisone, which shrinks the polyps, and he is back to normal.

In some patients, there is an association between asthma, nasal polyps and aspirin intolerance known as Samter's triad. Almost one out of four patients with nasal polyps has an intolerance to aspirin. In these people, ingestion of aspirin is followed by wheezing, excessive watery nasal discharge and swelling of the throat, which can be fatal if not treated immediately.

The initial treatment of nasal polyps is usually medical. Polyps shrink after a course of cortisone (or other steroid) pills, but few patients are kept on this medication for more than several weeks because of potential side effects. If there is significant shrinkage following the taking of cortisone tablets, then an extended course of a cortisone-containing nasal spray may keep the nasal passages clear and prevent reformation of polyps. Cortisone-containing sprays have rare, minor side effects, so they can be used safely in most people for many months under a doctor's supervision. They do not cause rebound

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congestion as is seen with nonprescription decongestant sprays.

Despite appropriate medication, many polyp patients require surgery to remove the polyps and open the nasal passages. Surgical polyp removal, or polypectomy, can be performed in an office or outpatient setting. It can be done under either local or general anesthesia, and can be combined with other nasal and sinus surgery. Although most polyps are not cancerous, once removed, they are sent for pathologic examination under a microscope to ensure that there is no malignancy (cancer) present. While most patients notice marked improvement in their breathing after removal of polyps, they should be aware that polyps often recur. If they start to grow back in a matter of months, then a more thorough search for the cause should be undertaken. This usually includes an allergy workup and CAT scan x-ray if they haven't already been done. One way to prevent polyp regrowth after removal is to stay on topical steroid sprays for an extended period of time.

In general, polyps can be a nuisance but are rarely life-threatening. However, certain types of polyps have a predisposition to turn into cancer, and thus if you have polyps, it is best to have a physician fully evaluate them.

Enlarged Adenoids

Adenoid tissue sits at the back of the nose in an area called the nasopharynx. This tissue is similar to tonsil tissue, which is located on each side of the throat. The adenoids shrink and usually become insignificant by the late teens or early twenties. However, there are instances when this tissue remains enlarged in an adult and may be chronically infected; that causes bilateral (both sides of the nose) nasal obstruction. These large adenoids can also contribute to sinus infection. Whenever the adenoids are significantly enlarged in an adult, one must always be concerned about a possible tumor, and thus your doctor may recommend adenoid removal to obtain a biopsy of the tissue for lab evaluation.

The adenoids tend to play a more central role in sinusitis in children. I have many pediatric patients who have been diagnosed with recurrent episodes of sinusitis. Once their adenoids are surgically removed (known as an adenoidectomy), their sinus problems often vanish.

Foreign Body in the Nose

Every so often I see a patient like Ellen, a three-year-old girl whose pediatrician sent her in for what she thought was a sinus infection. The little girl had already been on four weeks of antibiotics but persisted with thick, yellow drainage from her right nostril. Upon close inspection, I found a small bead embedded in the right side of Ellen's nose. Once it was removed, her nasal drainage stopped. Foreign bodies should be suspected in an individual with one-sided nasal drainage. Typically, foreign objects in the nose occur in children or in mentally retarded individuals. Among the things that I have retrieved from inside the nose include buttons, crayons, small plastic toys, peanuts, raisins, popcorn and pencil erasers.

Causes of Nasal Obstruction

Nonanatomic

- + chronic sinusitis
- + overuse of nose sprays
- + hypertension
- + allergies
- + birth control pills
- + thyroid abnormality

Anatomic

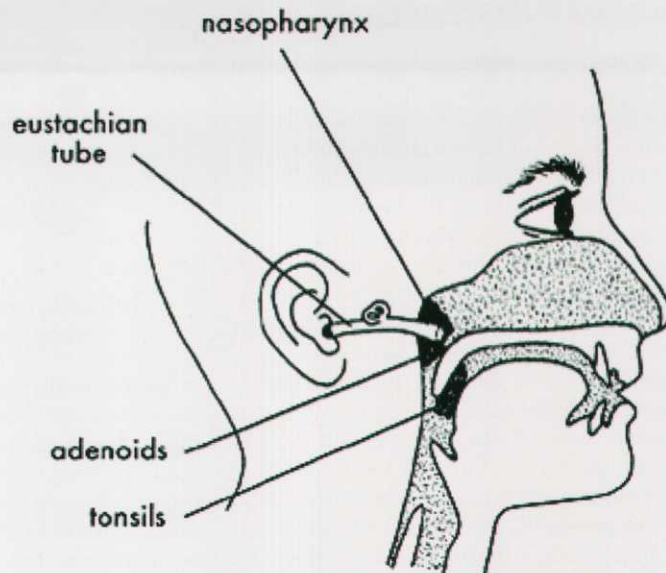


Figure 4.3
Adenoids and Tonsils, side view.

- + deviated septum
- + large adenoids
- + hypertrophic
- + nasal polyps
- + nasal foreign body
- + turbinate bones

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