

## *Middle Ear Infections/ Otitis Media*

Otitis media is the general term used for a variety of middle ear infections that cause pain and, sometimes, hearing loss.

### **Chronic Ear Infections**

Bacteria and microbes are normally harmless in the nose, sinus cavities, and Eustachian tubes, as they are usually controlled by the body's immune system. A number of factors can alter the mucus and impair the immune system's defenses, however. Genetic factors, anatomic abnormalities, bacterial or viral infections, allergic rhinitis, upper respiratory infections, and secondhand smoke can contribute to inflammation and obstruction of the airways. If the Eustachian tube becomes blocked, mucus can build up in the ear and harbor infections. Bacteria may be found in about 70% of ear infections, with *haemophilus influenzae* and *streptococcus pneumonia* being the most common. Studies have also found that viruses are present in the middle ear fluid of 75% children with otitis media. Children with shorter-than-normal or relatively horizontal Eustachian tubes are at higher risk for recurrent ear infections.

Secretory otitis media may also be chronic, a condition most often found in children. Serous and purulent otitis media also can progress from acute to chronic problems. The infection spreads to the mastoid process, a honeycombed area of bone in the skull behind the ear that has few blood vessels.

Chronic secretory otitis media is frequently due to the presence of large amounts of adenoidal tissue. Sometimes it occurs in adults who have permanent or recurrent blockage of the eustachian tube, or recurrent changes in the consistency of the liquid that is produced in the middle ear, or both.

Although the causes of chronic serous and purulent otitis media are not clear-cut, the adenoids may play a significant role. Sometimes the attacks are not really recurrent, but a single one that is never completely cured; the infection spreads to the mastoid process. Because only a relatively small amount of blood reaches this area, antibiotics that travel through the bloodstream are less effective in fighting an infection there than in the middle ear itself, where the blood supply is rich. Therefore, a recurrent problem is often caused by insufficient antibiotic treatment, which results in a subclinical remnant of infection in the mastoid. When the antibiotics are stopped, the remnant in the mastoid reinfects the middle ear. This process may easily be mistaken for a new infection, rather than a recurrence.

## **TREATMENT OF EAR INFECTIONS**

### **Acute Otitis Media**

Acute secretory otitis media is treated with decongestants and, if necessary, by myringotomy (surgical incision of the eardrum). Acute serous and purulent otitis media require heavy doses of antibiotics plus nasal decongestants and antihistamines. If it appears that the eardrum may rupture, the physician will probably perform a myringotomy rather than permit the eardrum to rupture on its own, because the surgical cut is clean and will almost always heal spontaneously, whereas the rupture may not. Myringotomy also relieves the pain and provides drainage, which in itself is important in the treatment of the disease.

Physicians vary in their use of antibiotics to treat single episodes of acute otitis media. Although antibiotics are commonly prescribed, some experts recommend antibiotics only for children who are at high risk of complications. Others may prescribe them if the child is in severe pain and the eardrum is red and bulging.

### **Chronic Otitis Media**

The use of antibiotics to treat chronic ear infections is becoming increasingly controversial. Numerous studies have found that children who do not take antibiotics for ear infections recover at about the same rate

as those who do take antibiotics. And of serious concern is the emergence of mutated bacterial strains that are now resistant to common antibiotics.

Chronic secretory otitis media is usually treated with antihistamines and nasal decongestants. If these medications are ineffective, and the adenoids are enlarged, the best course in most cases is surgical removal, a simple procedure that usually ends the problem. In lieu of an adenoidectomy, or in cases when this surgical procedure is not effective, the alternative is to place a small plastic tube through the patient's eardrum so that the ear is inflated artificially and the fluid can drain from the middle ear. The major disadvantage of this method is that water must not get into the ear, meaning the patient must not swim and must be extremely careful when bathing, two difficult things to accomplish with young children over what may be a period of years.

### **HOME REMEDIES AND ALTERNATIVE THERAPIES**

Watchful waiting and careful monitoring of the child may be a viable alternative for many cases of acute otitis media. If parents take this approach, they must be alert for signs including high fever, severe pain, or other complications that require immediate medical attention. Although antibiotics may be recommended to cure an infection, home remedies can help ease discomfort. The use of a warm compress or heating pad on a low setting can reduce pain, as can acetaminophen. Parents should avoid giving aspirin to a child under the age of 18 with a possible viral infection because of its link to Reye's syndrome, a potentially fatal disease; use an acetaminophen such as Tylenol instead.

### **PREVENTION OF EAR INFECTIONS**

Exposure to passive smoke is a significant risk factor for childhood otitis media. Breastfeeding reduces the risk of ear infections, probably because mother's milk provides immune factors that help the baby fight infection, and because while breastfeeding, babies are usually held in a position that allows the eustachian tubes to function well. Pacifiers are shown to increase babies at risk, because sucking increases the production of saliva, which becomes a vehicle for bacteria to travel up the eustachian tubes to the middle ear.

Although it is difficult to prevent ear infections, one can try to maintain overall health by avoiding exposure to people who have colds, flu, and other viral illnesses. Practicing good hygiene, maintaining a healthy diet full of fresh fruits and vegetables, and reducing stress are important steps toward supporting the immune system and maintaining good health. Chronic otitis media often may be avoided by taking the full course of antibiotics prescribed by your doctor and using decongestants, antihistamines, and other drugs as prescribed to maintain a clear eustachian tube.