UW Medicine

Otitis Media

Infection of the middle ear

This handout explains how an infection affects the middle ear and the different types of surgery that may be used to treat it.

Otitis media (middle ear infection) is a common health problem. It may cause short-term hearing loss. In children, it may cause speech and learning delays.

Antibiotics usually cure an otitis media infection. But if they do not, surgery may be needed. The purpose of surgery is to correct any hearing loss and help prevent future ear infections.

Ear infections are common in infants and children, but they also happen in adults.

How the Ear Works

The ear has 3 parts:

- The **outer ear**, which collects sound waves
- The **middle ear**, which increases the sound energy and transmits the sound vibrations to the inner ear
- The **inner ear**, which transforms the sound waves into nerve impulses and sends them to the brain

Middle Ear Infections

The middle ear contains air. This gives the eardrum and 3 tiny bones (*ossicles*) room to vibrate when there are sounds around us. Infection can cause the middle ear to become swollen or fill with fluid. This reduces how much the eardrum and the ossicles can vibrate and causes hearing loss. When the swelling and fluid are gone, hearing often returns to normal.

The Eustachian Tube

The eustachian tube runs from the middle of each ear to the back of the throat. This tube usually drains fluid that is made in the middle ear. If the eustachian tube becomes blocked, fluid can build up and cause infection.

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Ear infections are common in infants and children because their eustachian tubes become clogged easily. Ear infections may also occur in adults, but not as often as they do in children.

Anything that causes the eustachian tubes to become swollen or blocked causes more fluid to build up in the middle ear behind the eardrum. Some things that cause this are:

- Allergies
- Colds and sinus infections
- Excess mucus and saliva that is produced during teething
- Infected or overgrown *adenoids* (tissue above the roof of the mouth that helps infants and young children fight infections)
- Tobacco smoke or other irritants

Symptoms and Treatment

Symptoms of otitis media include drainage from the ear, ear pain, and fever. These symptoms are usually treated with antibiotics.

Surgery

Surgery for otitis media is called a *myringotomy*. It is done in the doctor's office or clinic using local anesthetic.

Your doctor will make a small incision in your eardrum and insert a tiny tube called a *tympanostomy* tube. This takes only a short time. You will stay in the office for about 15 minutes after the tube is placed to make sure that there are no problems.

Ear drainage may occur right after surgery or any time the tubes are in place. When drainage occurs, clean the outside of your ear with a soft, damp washcloth.

Tympanostomy Tubes

Tympanostomy tubes allow fluid to drain from your middle ear. This should improve your hearing and will also help the antibiotics fight the infection.

Your doctor will need to check the tubes 2 to 3 weeks after they are placed, and then every 6 months while they are in place. Your hearing will also be checked at these visits.

You will not be able to feel the tubes, and people will not be able to see them. Your ears may pop when you chew after the tubes are inserted. Sometimes the tubes cause mild discomfort. If this happens, acetaminophen (Tylenol) will relieve the discomfort.

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Using Antibiotic Eardrops

After surgery, use antibiotic eardrops: 3 drops in each ear, 3 times a day, for 3 to 5 days. After that, any time there is drainage from the ear, start using the drops again.

Call your doctor if the drainage does not stop after you have used the eardrops for 3 to 4 days.

Using Antibiotic Eardrops

1. Warm the bottle by holding it in your hand for 5 minutes.
2. Gently pull your ear up and back and insert the drops into the ear canal.
3. Press on the front of your ear several times to push the drops down into the ear canal.
4. You may insert cotton into your ear after using the drops to absorb any drainage.

The drops are usually good for at least 1 year if they are stored in the refrigerator. Be sure to check the expiration date on the bottle label. Do not use the drops if they are expired.

The longer the tube stays in place, the more your hearing may improve. But, there is also greater risk of puncture (*perforation*) to your eardrum. If this occurs, it can be repaired with a minor outpatient operation.

Protect Your Ears from Water

- Use silicone or wax earplugs to protect your ears while you are bathing and washing your hair. You can buy these earplugs at most drugstores at a low cost.
- Avoid swimming or diving underwater while you have the tympanostomy tubes in your ears.
- Ask your doctor if custom-made ear molds would be helpful for you.
- If water gets into your ears:
  - Place 3 to 4 antibiotic drops in your ears to decrease the chance of infection.
  - Use a hair dryer on low setting to evaporate the water.
  - Talk with your doctor. Rarely, your tubes may need to be removed.

Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns.

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