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MYRINGOTOMY

Myringotomy is a surgical procedure in which a small incision is made in the eardrum (the tympanic membrane), usually in both ears. Fluid in the middle ear can be sucked out through the incision.

Ear tubes, or tympanostomy tubes, are small tubes, open at both ends, that are inserted into the incisions in the eardrums during myringotomy. They come in various shapes and sizes and are made of plastic, metal, or both. They are left in place until they fall out by themselves or until they are removed by a doctor.

Purpose

Myringotomy with the insertion of ear tubes is an optional treatment for inflammation of the middle ear with fluid collection (effusion), also called glue ear, that lasts more than three months (chronic **otitis media** with effusion) and does not respond to drug treatment. It is the recommended treatment if the condition lasts four to six months. Effusion is the collection of fluid that escapes from blood vessels or the lymphatic system. In this case, the fluid collects in the middle ear.

Initially, acute inflammation of the middle ear with effusion is treated with one or two courses of **antibiotics**. **Antihistamines** and **decongestants** have been used, but they have not been proven effective unless there is also hay **fever** or some other allergic inflammation that contributes to the problem.

When medical treatment doesn't stop the effusion after three months in an adult or a child who is one to three years old, is otherwise healthy, and has **hearing loss** in both ears, myringotomy with insertion of ear tubes becomes an option. If the effusion lasts for four to six months, myringotomy with insertion of ear tubes is recommended.

The purpose of myringotomy is to relieve symptoms, to restore hearing, to take a sample of the fluid to examine in the laboratory in order to identify any microorganisms present, or to insert ear tubes.

Ear tubes can be inserted into the incision during myringotomy and left there. The eardrum heals around them, securing them in place. They usually fall out on their own in 6-12 months or are removed by a doctor.

While they are in place, they keep the incision from closing, keeping a channel open between the middle ear and the outer ear. This allows fresh air to reach the middle ear, allowing fluid to drain out, and preventing pressure from building up in the middle ear. The patient's hearing returns to normal immediately and the risk of recurrence diminishes.

Patients and parents often report that children talk better, hear better, are less irritable, sleep better, and behave better after myringotomy with the insertion of ear tubes.

Description

The procedure is usually done in an outpatient surgical unit under general anesthesia, although some physicians do it in the office with **sedation** and local anesthesia, especially in older children. The ear is washed, a small incision made in the eardrum, the fluid sucked out, a tube inserted, and the ear packed with cotton to control bleeding.

Preparation

The patient may not have food or water for four to six hours before anesthesia. Antibiotics are usually not needed.

Aftercare

Use of antimicrobial drops is recommended. Water should be kept out of the ear canal until the eardrum is intact. A doctor should be notified if the tubes fall out.

Risks

The risks include:

- Cutting the outer ear
- Formation at the myringotomy site of granular nodes due to inflammation
- Formation of a mass of skin cells and cholesterol in the middle ear that can grow and damage surrounding bone (cholesteatoma)
- Permanent perforation of the eardrum.

The risk of persistent discharge from the ear (otorrhea) is 13%.

If the procedure is repeated, structural changes in the eardrum can occur, such as loss of tone (flaccidity), shrinkage or retraction, or hardening of a spot on the eardrum (tympanosclerosis). The risk of hardening is 51%; its effects on hearing aren't known, but they are probably insignificant.

It is possible that the incision won't heal properly, leaving a permanent hole in the eardrum, which can cause some hearing loss and increases the risk of infection.

It is also possible that the ear tube will move inward and get trapped in the middle ear, rather than move out into the external ear, where it either falls out on its own or can be retrieved by a doctor. The exact incidence of tubes moving inward is not known, but it could increase the risk of further episodes of middle-ear inflammation, inflammation of the eardrum or the part of the skull directly behind the ear, formation of a mass in the middle ear, or infection due to the presence of a foreign body.

The other risks include those associated with sedatives or general anesthesia.

An additional element of post-operative care is the recommendation by many doctors that the child use ear plugs to keep water out of the ear during bathing or swimming, to reduce the risk of infection and discharge.

