



## Cholesteatoma

### A Serious Ear Condition

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#### **What is a cholesteatoma?**

A cholesteatoma is a skin growth that occurs in an abnormal location, the middle ear behind the eardrum. It is usually caused by repeated infection that causes an ingrowth of the skin of the eardrum. Cholesteatomas often take the form of a cyst or pouch that sheds layers of old skin that builds up inside the ear. Over time, the cholesteatoma can increase in size and destroy the surrounding delicate bones of the middle ear. Hearing loss, dizziness, and facial muscle paralysis are rare but can result from continued cholesteatoma growth.

#### **How does it occur?**

A cholesteatoma usually occurs because of poor eustachian tube function as well as infection in the middle ear. The eustachian tube conveys air from the back of the nose in the middle ear to equalize ear pressure ("clear the ears"). When the eustachian tubes work poorly, perhaps due to allergy, a cold, or sinusitis, the air in the middle ear is absorbed by the body, resulting in a partial vacuum in the ear. The vacuum pressure sucks in a pouch or sac by stretching the eardrum, especially in areas weakened by previous infections. This sac often becomes a cholesteatoma. A rare

congenital form of cholesteatoma (one present at birth) can occur in the middle ear and elsewhere, such as in the nearby skull bones. However, the type of cholesteatoma associated with ear infections is most common.

#### **What are the symptoms?**

Initially, the ear may drain, sometimes with a foul odor. As the cholesteatoma pouch or sac enlarges, it can cause a full feeling or pressure in the ear, along with hearing loss and tinnitus. An ache behind or in the ear, especially at night, may cause significant discomfort. Dizziness, or muscle weakness on one side of the face (the side of the infected ear) can also occur. Any, or all, of these symptoms are good reasons to seek medical evaluation.

#### **Is it dangerous?**

Ear cholesteatomas can be dangerous and should never be ignored. Bone erosion can cause the infection to spread into the surrounding areas, including the inner ear and brain. If untreated, deafness, brain abscess, meningitis, and rarely death can occur.

#### **Treatment**

An examination by an otolaryngologist — head and neck surgeon can confirm the

presence of a cholesteatoma. Initial treatment may consist of a careful cleaning of the ear, antibiotics, and eardrops. Therapy aims to stop drainage in the ear by controlling the infection. The extent or growth characteristics of a cholesteatoma must also be evaluated.

Large or complicated cholesteatomas usually require surgical treatment to protect the patient from serious complications. Hearing and balance tests, X-rays of the mastoid (the skull bone next to the ear), and CAT scans (3-dimensional X-rays) of the mastoid may be necessary. These tests are performed to determine the hearing level remaining in the ear and the extent of destruction caused by the cholesteatoma.

Surgery is performed under general anesthesia in most cases. The primary purpose of the surgery is to remove the cholesteatoma and infection, and achieve an infection-free, dry ear. Hearing preservation or restoration is the second goal of surgery. In cases of severe ear destruction, reconstruction may not be possible. Facial nerve repair or procedures to control dizziness are rarely required. Reconstruction of the middle ear is not always possible in one operation; and therefore, a second operation may be performed six to twelve months later. The second operation will attempt to restore hearing and, at the same time, will allow inspection of the middle ear space and mastoid for residual cholesteatoma.

Admission to the hospital is usually done the morning of surgery, and if the surgery is performed early in the morning, discharge may be the same day. For some patients, an overnight stay is necessary. In rare cases of serious infection, prolonged hospitalization for antibiotic treatment may be necessary. Time off from work is typically one to two weeks.

Follow-up office visits after surgical treatment are necessary and important, because cholesteatoma sometimes recurs. In cases where an open mastoidectomy cavity has been created, office visits every few months are needed in order to clean out the mastoid cavity and prevent new infections. In some patients, life-long periodic ear examinations are required.

### **Summary**

Cholesteatoma is a serious but treatable ear condition that can only be diagnosed by medical examination. Persisting earache, ear drainage, ear pressure, hearing loss, dizziness, or facial muscle weakness signals the need for evaluation by an otolaryngologist.

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