

## EAR AND BALANCE CLINIC

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### MENIERE'S DISEASE

Meniere's disease is common, occurring in one in one thousand people. It is caused by a disorder in regulation of inner ear fluid pressure.

Fluids in the inner ear are constantly being produced and absorbed. Any disturbance in this relationship results in over-production or under-absorption of the fluids. This leads to increased fluid pressure that may cause dizziness, fluctuating hearing loss and tinnitus. In 60 percent of cases, this affects only one ear. Twenty-five percent of cases eventually develop the problem in both ears, although one ear is usually less affected.

A thorough evaluation is required to look for the cause of the increased fluid pressure. In most cases, a specific cause cannot be determined. However, in most cases, circulatory, metabolic, toxic, allergic or emotional factors frequently contribute to the disorder.

#### Symptoms

Meniere's disease, by definition, consists of attacks of dizziness that vary from 20 minutes to several hours. Hearing loss and head noise accompany these attacks. The dizziness may occur suddenly and without warning. Violent spinning, whirling and falling, associated with nausea and vomiting, are common. A sensation of pressure or fullness in the ear is common.

Attacks of dizziness occur at irregular intervals, sometimes disappearing for years at a time. If the attacks do recur, they are usually less severe and of shorter duration than in the initial period. There is usually no dizziness between attacks.

#### Medical Treatment

Treatment is aimed at controlling the fluid pressure changes in the inner ear and varies according to the suspected cause, severity and frequency of symptoms.

#### Diuretic Treatment

Meniere's disease is improved with diuretic (water pill) treatment in most cases. Diuretics lower the body's sodium (salt) and water, including the inner ear fluids. Side effect--most diuretics cause loss of some of the body's potassium which may cause the following symptoms: muscle cramping or weakness, fatigue or abdominal cramping. Generally, the symptoms are avoided by using certain diuretic preparations, including daily high potassium-containing foods (bananas, tomatoes, potatoes). Occasionally a potassium supplement is needed.

Vasoconstricting Substances, such as caffeine and nicotine, may increase inner ear fluid pressure and should be avoided.

### Surgical Treatment

Surgery is needed infrequently and only when medical treatment fails to relieve the acute attacks of dizziness. The type of operation selected depends on the degree of hearing impairment in the affected ear, since every effort is made to preserve hearing. Head noise may improve, stay the same, or be worse following surgery.

Surgery is successful in relieving acute attacks of dizziness in most patients. Unsteadiness, however, may persist for a period of several months until the opposite ear is able to stabilize the balance system.

The operative procedures are as follows:

Endolymphatic Shunt: This operation reduces inner ear fluid pressure. It requires general anesthesia and hospitalization for approximately three days. The skin incision is made behind the ear. The endolymphatic sac, an inner ear structure, is located through the mastoid air cells behind the ear canal. The endolymphatic sac is opened and drained to reduce inner ear fluid pressure.

Endolymphatic sac surgery is usually advised when hearing is serviceable in the involved ear. There is a chance that surgery may stabilize the hearing level. It is successful in controlling attacks of vertigo in two thirds of patients once healing has taken place, but only fifty percent receive long-term relief of vertigo.

Transmastoid Labyrinthectomy and Vestibular (Balance) Nerve Section: This more definitive operation requires general anesthesia and hospitalization for one week. The skin incision is made behind the ear. The vestibular labyrinth (balance canals) is approached through the mastoid air cells. The balance canals are surgically removed and the balance nerve resected.

Labyrinthectomy eliminates attacks of dizziness in nearly all cases. The operation causes severe dizziness which usually resolves within several days. Unsteadiness usually continues for several weeks or months until the balance system compensates for the loss of balance function in one ear. This operation always causes total hearing loss in the operated ear. Therefore, labyrinthectomy is generally recommended for patients with no serviceable hearing in the involved ear.

Retrolabyrinthine Vestibular (Balance) Nerve Section: This procedure requires a general anesthetic and one week of hospitalization. The surgery involves an incision behind the ear. The balance nerve is cut before it enters the inner ear. The hearing nerve is preserved and hearing is usually preserved after surgery. Dizzy attacks are eliminated in almost all cases. The operation causes severe dizziness which improves over several days. Unsteadiness may persist for weeks to months after surgery, until the balance system can compensate for the loss of balance function in one ear.

## RISKS AND COMPLICATIONS OF SURGERY FOR VERTIGO

### Tinnitus

Tinnitus (head noise) is not usually affected by surgery. Tinnitus usually changes with hearing so that if hearing is improved, tinnitus is improved and if hearing is worse, tinnitus is worse.

### Taste

Taste disturbance may occur for several days following surgery. Uncommonly, taste disturbance is prolonged.

### Facial Weakness

The facial nerve, which provides movement to the face, travels through the temporal (ear) bone close to the hearing and balance nerves. Temporary weakness on one side of the face may occur after surgery because of nerve swelling. This occurs in about five percent of patients who have a vestibular nerve section. It is rare in other types of surgery for vertigo.

Facial function usually returns within several weeks. However, should it persist for longer periods, consultation with an eye specialist will be required to prevent eye complications.

### Cerebrospinal Fluid Leak

Most operations for vertigo result in a communication between the spinal fluid and the ear. This communication is closed prior to the completion of surgery. Occasionally, the communication reopens and rarely further surgery may be required to close it.

### Infection

Infection is uncommon. If infection occurs in the presence of a cerebrospinal fluid leak, than a serious infection of the spinal fluid spaces may occur. This would require treatment with intravenous antibiotics and would prolong the hospital stay. This complication is rare.

### Hematoma

A hematoma (blood clot) occurs rarely. Emergency reoperation to remove the clot may be necessary to relieve pressure on vital brain areas and to allow healing.

### Abdominal Incision

Occasionally fluid or blood develops in the abdominal incision from which fat is harvested to seal the spinal fluid leak in certain operations. Delayed healing can occur.