



Medical and Surgical Treatment MÉNIÈRE'S DISEASE

What is Ménière's Disease?

The inner ear, brain (cerebellum), eyes, and proprioceptive system (muscles and joints) are the four components involved in the maintenance of normal equilibrium.

A common inner ear disorder that causes vertigo and imbalance is Ménière's disease: "glaucoma of the inner ear." Increased pressure in the eye produces the symptoms of glaucoma and blindness. Similarly, increased inner ear fluid pressure produces the symptoms of Ménière's disease.

In Ménière's disease, the increased fluid pressure causes vertigo, deafness, ear ringing (tinnitus), and a sensation of ear fullness. There is often nausea and vomiting involved. Absorption of excess of fluid results in an increase in pressure in the inner ear. Medications have proven to be unsuccessful when treating all of the symptoms of Ménière's disease. The frequency of attacks is unpredictable.

Medical Treatment

During a sudden Ménière's attack, medications may be prescribed to help shorten the episode of vertigo, nausea, and vomiting. In some cases, medications may also be prescribed to help improve hearing and inner ear function. Patients are usually given a diuretic and placed on a low-salt diet for months in an effort to reduce inner ear pressure. When medication fails to control the disease, surgery may be indicated. Surgery is usually not indicated when both ears are experiencing symptoms of Ménière's disease. Stress can sometimes increase an attack of Ménière's disease.

Physical exercise can be helpful in reducing stress. Avoidance of substances containing caffeine may be advised. If the history and diagnostic blood or skin test indicates an inhalant allergy, desensitization therapy may be recommended.

Surgical Treatment

Self-treatment of the inner ear using the Silverstein Microwick™ is a Minimally Invasive Procedure. It has been found that the antibiotic gentamicin can destroy the balance cells of the inner ear. This medication is given directly into the inner ear using a Micro Wick™ developed by Dr. Herbert Silverstein. This method is effective in relieving attacks of Ménière's disease in 85% of patients while preserving the hearing in 95%. The Micro Wick™ and tube are manufactured by Micromedics of Minnesota and was FDA approved in September 1999. The Micro Wick™ is placed through a tiny tube in the eardrum, and rests against the round window membrane, which is the doorway to the inner ear.

This new technique uses dilute gentamicin optic solution that the patient places in the ear canal three times a day for two to four weeks. This self-treatment method is similar to treating eye diseases with eye drops. Thus far, the results have been excellent in relieving vertigo attacks and preserving the patients' hearing. Also, in 60% of patients, the pressure and tinnitus (ringing in the ear) have been reduced.

This minimally invasive office procedure is done using local anesthesia. A surgical blade or laser is used to make an opening in the eardrum through which a tiny scope is inserted. Any obstructing membranes near the round window membrane are easily removed before the Micro Wick™ is inserted. Next, a tiny vent tube is inserted in the eardrum opening. The round window membrane is clearly seen, and the Silverstein Micro Wick™ is inserted. The Micro Wick™ allows the gentamicin to reach the round window membrane and diffuse into the inner ear fluids.

The treatment is easy, painless, and well-tolerated by patients. After the treatment, the tube and the Micro Wick™ are easily removed in the office. The opening in the eardrum rapidly heals in several weeks. There have been few complications, and the results have been excellent. The Micro Wick™ technique represents an exciting new method for treating Ménière's disease and allows the delivery of new medications, as they are developed, to treat various other inner ear diseases such as sudden deafness and certain types of deafness. Only 8% of patients need further treatment.

Microsurgical Vestibular Neurectomy

(VN)

Microsurgical posterior fossa vestibular neurectomy is a procedure whereby the balance nerve is cut between the inner ear and brainstem. This stops the brain from receiving abnormal impulses from a diseased inner ear. The most common disease treated is Ménière's disease. The cure rate of relieving inner ear vertigo (90%) and preserving hearing is excellent. The patient will normally have severe vertigo, nausea, vomiting and imbalance for one to two days after this surgery. These symptoms are usually similar to those the patient experiences during an attack of dizziness prior to surgery, but are only temporary.

Medication is given to minimize these symptoms. The vertigo usually subsides after several days, but imbalance persists for several weeks. Some patients will complain of double vision; this also disappears after several days. Each day the patient's balance will improve and, at the end of three weeks, the patient can resume most activities. Patients regain balance because the opposite balance nerve, brainstem, and eyes compensate for the loss of the balance nerve. Slight imbalance on rapid motion may persist after one year; patients can, however, still play sports and do most things they did prior to surgery. Severe long-lasting unsteadiness is unusual after vestibular neurectomy (3%).

Labyrinthectomy

If previous surgeries were unsuccessful in curing vertigo and hearing is poor, a labyrinthectomy (removal of the inner ear membranes) maybe recommended. This procedure results in total hearing loss in the operated ear, with success in eliminating vertigo.

Following either vestibular neurectomy or labyrinthectomy, patients will have vertigo, which rapidly subsides. Balance is regained over the next three weeks and patients usually leave the hospital in three to five days. Balance function is taken over by the opposite ear. Rapid movement may cause some mild imbalance for as long as one year. Most patients can resume all activities in three weeks.