Benign Paroxysmal Positional Vertigo

By Aaron G. Benson, MD

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Benign positional vertigo, or BPPV, causes dizziness due to abnormalities in the inner ear. The inner ear normally has small sensory structures where hair cells are embedded in a soft structure containing crystals of calcium carbonate. The soft structure sometimes fragments and creates masses of loose tissue in the inner ear. They fall or are moved on to other structures, creating abnormal perceptions of balance.

The symptoms of positional vertigo can include dizziness, lightheadedness, imbalance and nausea. Activities that bring on the symptoms will vary but almost always are precipitated by a position change of the head with respect to gravity.

Getting out of bed or rolling over in bed are common problem motions. Because people with benign positional vertigo often feel dizzy and unsteady when they tip their head back to look up, sometimes BPV is called the top shelf vertigo. Individuals who experience the symptoms often find that when the symptoms begin their problems are more severe but over time they tend to be resolving on their own.

While no one knows what really causes benign positional vertigo, some individuals experienced trauma just before the symptoms appeared. Some of these dramatic triggers may include rapid movement of the head. The diagnosis can be established by examining a patient’s eye movement while positioning them. Other doctors feel that history alone may be sufficient. Many individuals experience symptoms particularly when they go to bed or arise in the morning. Avoiding a completely flat position sometimes can resolve the problem. Individuals who sleep with a slight head up position find that their symptoms are less severe. Lights and firm surfaces minimize problems.

Treatment
Benign positional vertigo is often self-limiting and symptoms can subside within six months. The symptoms tend to wax and wane without apparent reason. Motion sickness
medications sometimes help but can tend to prolong the recovery period. There are kinds of physical maneuvers or exercises that have also been proven to be effective.

A physical therapist can be trained in the use of the Epley maneuver, which involves sequentially moving the head in several different positions. The recurrence rate following this is relatively low, about 5 to 10 percent, and in some instances a second treatment is necessary.

After you undergo the Epley maneuver, it should be noted that patients should avoid rapid movements that would reposition debris. The Epley is thought to place otolithic debris in a portion of the inner ear where it becomes fixed. Most therapists recommend that you sleep in a semi recumbent position for approximately two or three days. During this period of time you may not move your head quickly to one side. Rather harsh exercise should be avoided during this period of time. After approximately a week, patients may resume most activities and should do so gradually.

**Surgical treatment**

If exercise is ineffective, there are numerous options for treatment. Those individuals who have proven benign positional vertigo can consider surgical procedures such as a vestibular nerve section, Canal obstruction procedure, singular nerve section or other operations.

*The vestibular nerve section*

Vestibular nerve section is an operation designed to cut the entire balance nerve to one side. Behind its use is the theory that if the vestibular function is eliminated from one side, symptoms will completely disappear over a longer period of time. The body can adapt to no information, it cannot handle incorrect information.

The vestibular nerve section is performed by making an incision directly behind the ear. The incision extends down into the neck and an opening is created into the skull. By separating the area between the brain and the temporal bone that houses the inner ear, the surgeon can identify the vestibular nerve as it enters into the inner ear. The nerve is then divided into two segments one containing the balance fibers and the other containing hearing portions of the nerve. The nerve is then cut only on the balance side. Most individuals experienced one last severe experience of dizziness. A recovery can take up to six months.
Canal obstruction procedures
A canal obstruction procedure is generally shorter in duration and involves less risk. The operation is done through the mastoid bone directly behind the ear. An incision is made in the crease behind the ear and some of the bone is removed. After entering the area near the inner ear, the surgeon identifies the posterior semicircular canal. This canal is usually the offending semicircular canal. The surgeon then opens a segment of bone housing the canal and plugs it with ground up bone. This prevents fluid from moving in this segment of the semicircular canal. Patients who have this find that they experience one relatively mild attack of dizziness following the procedure and then have complete resolution of their symptoms. Sometimes because of injuries to the membranes or because the bone is forced into other segments of the ear, patients may experience hearing loss as well. Perhaps a third of those individuals who undergo the operation will experience permanent, irreversible hearing loss.

Singular nerve section
Dr. Richard Gacek introduced the singular nerve section in the '60s. The operation has fallen out of favor recently because of its 20 percent (deafness) hearing loss rates. Most individuals who experience hearing loss had no functional hearing left in the operating ear. The advantage is that those individuals who have success from the operation are almost immediately cured. Many can go home the same day. Some individuals experience dizziness and have to be hospitalized briefly following the procedure. Other complications such as facial weakness are very, very rare.

There’s no reason for someone with benign positional vertigo to suffer permanently. It is uncommon for individuals with benign positional vertigo to be permanently disabled by their condition. Most people who have this can eventually experience improvement in their symptoms.