VERTIGO

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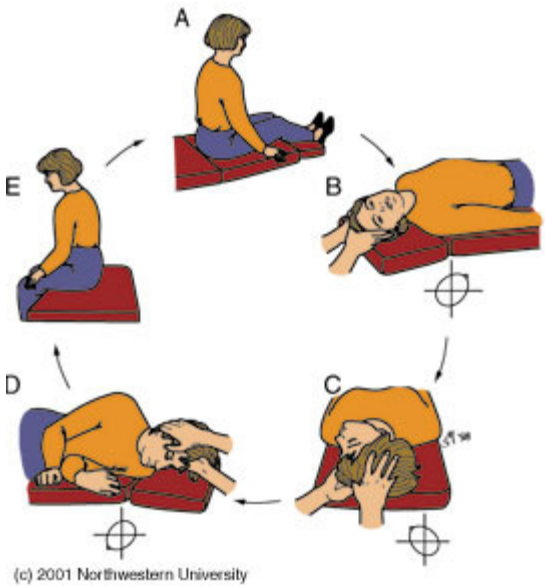
I've just returned from a mini-class reunion--one we have every year. There were only eight of us there out of 21 in our 1952 graduating class from Nursing School. Some are living far away and others have died. I was stunned to discover that four of that group of eight had vertigo. A small sampling I know, but still a bit of a shock. One woman's Physician had made a sincere attempt at an incomplete Epley maneuver---no hope of success there. These women have been toughing it out for years. Two of them agreed to let me try the Epley maneuver, another was too afraid because when she got the vertigo she would be very nauseated. The fourth was yours truly; but I had used the Epley maneuver, with the help of my husband, to cure myself two years ago. My vertigo was the result of walking full tilt into a cupboard door--edge on--that I had stupidly left open---tall people and their short relatives and friends learn NOT to do that!

I wondered how many of my readers suffer from vertigo--the sensation of false movement with the room spinning, or have a family member with this common symptom, especially in the older population. Just imagine, if every time you put your head in a certain position the room would spin around you. You would be helpless and very frightened--hanging on for dear life, crying for help and imagining the worst. Other possible symptoms are nausea, vomiting, sweating, and abnormal eye movements. Vertigo is usually a harmless condition, but a doctor should evaluate it. In some cases, vertigo is associated with serious and life threatening conditions. Let's start right out with the Epley maneuver, then follow with anatomy and the cause of the vertigo, so that you will appreciate the reason for each move.

THE EPLEY MANEUVER

Have someone with you for support and reassurance during these maneuvers in case you get dizzy for the last sit-up (E). These moves cannot harm; they are simply different head positions to return some little stone-like objects to their proper place in the inner ear. This is explained later.

Review these five positions in your mind before you start or have someone read them to you as you make each change in position.



1. Sit up on the bed or bench for 30 seconds

2. Briskly lie on your back with your head turned to the symptomatic side at a 45 degree angle. Your head will be kept in this position for 30 to 60 seconds, based on the duration of the vertigo. Your partner may note the movement of your eye balls (nystagmus). You will probably be dizzy for the first 10 seconds.

3. Next turn your head to the other side, and keep it in that position for another 30 to 60 seconds. You may be dizzy again.

4. Finally, roll in the same direction onto your side, carrying your head along so that it is pointed about 45 degrees, nose down. This position is also maintained for 30 seconds, and another burst of dizziness may occur.

5. Swing your legs to the floor and sit up straight. You may be very dizzy for about 15 seconds. Remain with your head tilted down one minute.

Meniere's disease. If you have been diagnosed with Meniere's disease, you can still cure your vertigo with this maneuver, but you may need to repeat the procedure two or three times.[1] However, Dr. Hain says that in any event the entire maneuver should be repeated for two more repetitions. There is a reported 30% recurrence in the first year and you

may need to repeat the treatment at a later date. After the first rep I went through another but I had been cured during the first maneuvers. That was two years ago. Following Epley's maneuver, you will not need to avoid head positions that caused symptoms in the past; very good news! [2] [3]

ANATOMY OF THE EAR--OUTER, MIDDLE AND INNER

The anatomy of the ear can be a little confusing not only because only the outer ear is visible to us, but also because the two parts we can't see--middle and inner--are responsible for hearing AND balance---very elegant and awe inspiring mechanisms. These three components of the ear are shown in Fig. 1.

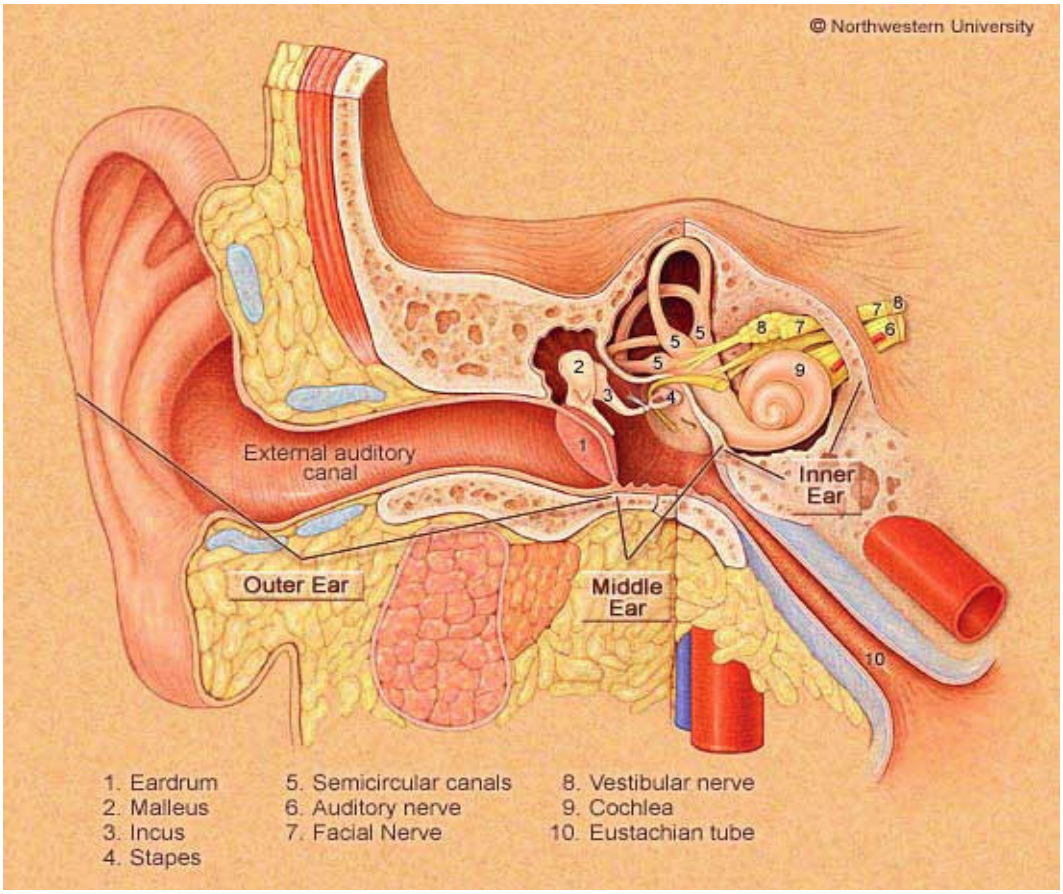


Fig. 1. *A cut-away showing the internal structures of the right ear. The inner ear is behind the ear drum and contains the structures implicated in vertigo. See Fig. 2 for detail of the inner ear. Illustration courtesy of Timothy C. Hain, MD. NWU.*

Outer Ear

The outer ear is composed of the ear lobe and the ear canal, which funnel sound waves towards the ear drum allowing it to vibrate. Modified sweat glands in the ear canal form ear wax.

Middle Ear

The middle ear is an air filled space located in the temporal bone of the skull. Air pressure is equalized in this space via the Eustachian tube which drains into the back of the throat and nose. Off topic, I'll spend a little time on the Eustachian tube in the middle ear because of the common occurrence of ear infections in babies and young children. There are four reasons for this.

1) The Eustachian tubes in babies are short (about a half-inch).
2) They are also more horizontal than in older children and adults.
3) They are, therefore, open to any infection in the throat.
4) Their immune system is not fully developed.

Inner Ear

The inner ear has two functions. The first is hearing and the second is balance. Note in Fig. 2 that there are two structures (utricle and saccule) and three tubes (canals) that reside in a "vestibule". This is the origin of the system's name--The Vestibular System. Balance and sense of position requires three systems working in coordination--visual, somatosensory, and vestibular. When one suffers from vertigo it is often the vestibular system that has been upset. This system consists of the semicircular canals plus the utricle and saccule, shown below in Fig. 2.

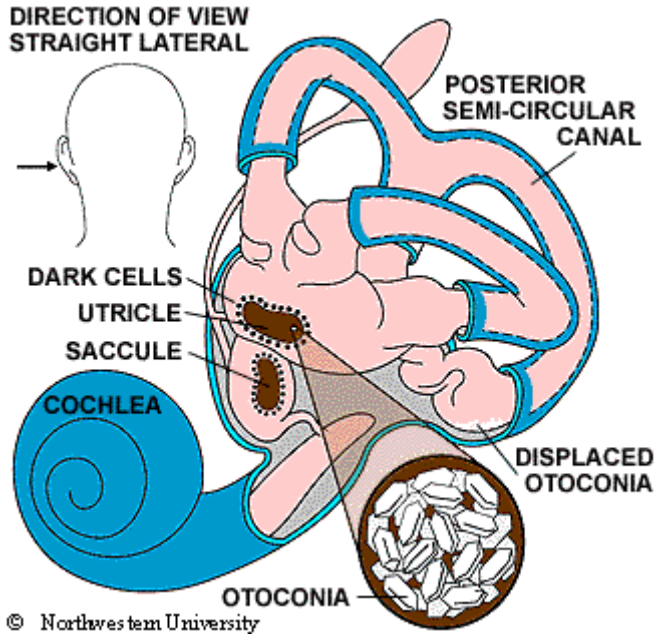


Fig. 2. *The left inner ear vestibular system and the normal placement of the tiny little stones (otoconia) located within a sac surrounded by a membrane called the Utricle. Illustration courtesy of Timothy C. Hain, MD. Northwestern University*

Semicircular canals. The semicircular canals (Fig. 2) are three small loops that are filled with liquid that moves when you move your head. The loops have tiny hair-like linings that have sensors for position. When the liquid moves in the loops, it rolls along the hair-like structures and sending nerve impulses to the brain. The brain in turn processes the messages and sends signals to the skeletal muscles so that you keep your balance. This, of course is a very rapid communication.

Utricle and its otoconia ("ear rocks"). The utricle is surrounded by "dark cells" and contains tiny crystals of calcium carbonate as shown in Fig. 2, called **otoconia** (meaning stones or tiny rocks) that are suspended in gel. It too has a tiny hair-like lining coupled to a mass of these stones. When the stones accelerate the hairs activate nerves to the brain registering accelerations in the horizontal plane. With a blow to the head or whip lash these little ear rocks may be dislodged or migrate out of the utricle into the semicircular canals. The displaced otoconia are shown in Fig. 2 out of place at the bottom of the posterior semi-circular canal.

The **saccule,** seen below the utricle in Fig. 2 also contains otoconia, but they are not able to migrate into the canal system. It sends signals to the brain about acceleration in the vertical plane. Your brain processes the information and sends signals to your muscles to keep your body in an upright position.

BENIGN PAROXYSMAL POSITIONAL VERTIGO

When the otoconia leave their home in the utricle they are free floating in the semicircular canal and send confusing messages to the brain about the body's position. The mixed messages result in vertigo and possible nausea.

Besides a blow to the head or whiplash, the utricle may also have been damaged by viral infection or diseases that affect the inner ear, or simply degeneration of the utricle because of advanced age causing the little rocks to migrate into the semicircular canal. When this is the case it is called "benign paroxysmal positional vertigo"; it can be easily cured with the different head positions of Epley's maneuver, returning the "ear rocks" to the vestibule, where they may be reabsorbed by the dark cells.

ACKNOWLEDGEMENT

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