Keeping It Clean

We can all agree that, before a dive, clean ear canals with normally equalizing middle ears is ideal. But what about the ears that need cleaning? They can give a diver grief.

EARDRUM RUPTURE

A wax plug can trap air between itself and the tympanic membrane (eardrum). This in turn can cause an impossible to-equalize situation, whether the diver is descending or coming up from a dive. This air trapping can cause a possible subsequent "explosive" tympanic membrane perforation, one that tears outward instead of the more common inward perforation with the in-pouring of water.

VERTIGO

Also, a wax plug could prevent water from chilling one ear, while the other is naturally chilled by water filling the ear canal. This causes caloric vertigo, or dizziness, from temperature change from unequal chilling of the two ears. Finally, infection will more likely result if wax retains moisture and causes maceration, or softening of the skin, of the ear canal.

SO, HOW SHOULD YOU CLEAN YOUR EARS?

The Wrong Ways

Let's start with how NOT to clean your ears. Avoid cotton-tipped swabs. I have often found the ends from cotton tip applicators in patients' ear canals, the tip having separated from the shaft without the person knowing it. In a few days, this usually results in a severe ear canal infection; the cotton retains moisture and bacteria grow between the fibers. No amount of oral or topical antibiotic will help with this: only removal of the cotton helps. The cotton should be identified and removed with a small right-angle pick or Shea forceps by a qualified physician,preferably using an operating microscope, which is designed for use with small tissue such as the inner ear. Do not ever attempt to do this yourself: those who do try this often force the cotton in farther, lacerating or tearing the ear canal or eardrum.

The cotton-tip applicators also bear a remarkable functional resemblance to the ramrod used in the 19th century to push the ball and patch (bullet and accompanying lubricant) down a rifle barrel. The ramrod effect of a swab pushes wax deeper into the ear. This usually makes wax removal more difficult. Think you'll use a cotton-tipped applicator to clean your ears ever again? Of course not. If you feel you must, however, don't do it behind a door that could be opened, around small children (who like to jump) or on a pitching boat: it could be suddenly jammed into the eardrum. Oh, yes, don't answer the telephone with the applicator in your ear! The only ringing you may hear after that is your own. As a physician, I've seen all this and more. How about the eraser end of a pencil? Again, not a good idea, since frequently the eraser is pulled from its brass casing and remains in the ear canal. (The manufacturer expects you to press the eraser downward on paper, not pull it upward from its base as it is withdrawn from the ear canal.) Just today, I removed a portion of a round, wooden toothpick from a patient's ear canal; the sharp end pointed to the eardrum. The patient did not realize it was there. Inserting a cotton tip at this time would have pushed the wood particle through the eardrum. Fortunately, the audiologist saw this before it could happen.

HANDLING INSECT INFECTIONS

OR, WHAT'S THAT BUZZING SOUND?

Occasionally, people who sleep outdoors or who live in warm areas can get insects in their ears. I have seen small ticks, snails and, more commonly, flying insects in the day and roaches at night – roaches tend

to run for cover in small openings. This can mean that sometimes they take up residence in ears. An insect in the ear can be an alarming experience. For removal, you'll need a cool head, especially if the insect is still moving or stinging. The first priority is to stop the movement. In the hospital, I use a spray local anesthetic to stun the insect. In the field, you can use rubbing alcohol, rapidly drowning the insect and cleansing the ear canal. Since most other efforts besides flooding or irrigating the ear canal are quite dangerous, use great care to remove the insect. Again, the preferred method is removal by a qualified physician with special instruments and a microscope. Remember, in most cases, the insect is facing the eardrum, and its legs prevent easy backward removal. In the field, an acceptable way to remove the insect is to use a bulb syringe, filled with warm soapy water (baby shampoo) and hydrogen peroxide solution. This flushes out the insect. If this is unsuccessful, infection can result, making removal much more difficult. If this happens to you, a family member or a friend, get medical help right away. I have never had a patient disagree that the bug should come out at once.

THE RIGHT WAY

So, how should you clean your ears? When you bathe, occasionally wash with a bulb syringe, warm soapy water and hydrogen peroxide solution. On a diving trip, use a mixture of half white vinegar and half rubbing alcohol after a day's diving: this serves to cleanse and dry the ear canal, acidifying or changing the pH balance to make the area less prone to bacterial infection. This can also help prevent otitis externa (swimmer's ear). If you have a hard time getting water out of your ears, try a hair dryer. It's a good idea to lift the ear upward and back to straighten the ear canal and then to blow warm dry air into the ear canal for five minutes. Just remember that ear care is as basic and important as the care of any of your other diving equipment.