When Ear Tubes Lead to Otorrhea, Think Antibiotics

BY HEIDI SPLETE
Senior Writer

Some tympanostomy tubes are going to go bad. The reasons include water precaution issues, otorrhea, blocked tubes, development of granulation tissue, and extrusion problems.

In the first place, the tubes serve as pressure equalizers in children with structural or functional eustachian tube dysfunction, according to Benjamin Cable, M.D., chief of pediatric otolaryngology at Tripler Army Medical Center in Honolulu.

Overall, children with tubes suffer an average of 1.5 episodes of otorrhea per year that the tubes are in place. Short-acting tubes remain in place for 6-18 months, with an average placement time of 13 months. Long-acting tubes remain in place for at least 17 months and sometimes indefinitely, so there is plenty of time for complications to develop, he said.

Despite the potential problems, consider tubes for children who experience bilateral effusion for 3 months or have three episodes of acute otitis media in 6 months or four episodes in 12 months, Dr. Cable said in an interview.

Stress the importance of being careful in the water, but ear plugs are not particularly helpful for two reasons, Dr. Cable said. First, the opening of an ear tube is so small that a drop of water would not penetrate due to surface tension. If children swim on the surface and do not dive well below the water, there is little chance of water penetrating the tubes. Second, ear plugs often do not create tight fits within the ear canal.

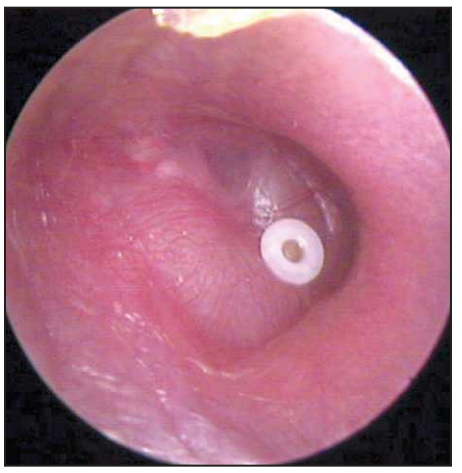
Otorrhea can occur due to nasopharyngeal pathogens or external auditory canal pathogens. Children who go without treatment of otorrhea tend to have prolonged drainage, Dr. Cable said.

First-line therapy should be ototopical drops in the ear canal, which have demonstrated effectiveness. Oral antibiotics are the second-line therapy, and in refractory cases, culture-directed therapy is key, Dr. Cable noted. Drops or oral therapy should be given for 7-10 days, but intravenous therapy may take up to 6 weeks and include home regimens.

Acute posttympanostomy otorrhea is common. However, despite the presence of elevated gastric enzymes in cases of middle ear effusion, gastric reflux has not been shown to play a significant role in acute posttympanostomy otorrhea. For example, measurable pepsinogen concentrations were below the normal reference ranges in a recent prospective study of 24 children aged 2-16 years (Otolaryngol. Head Neck Surg. 2005;132:523-6).

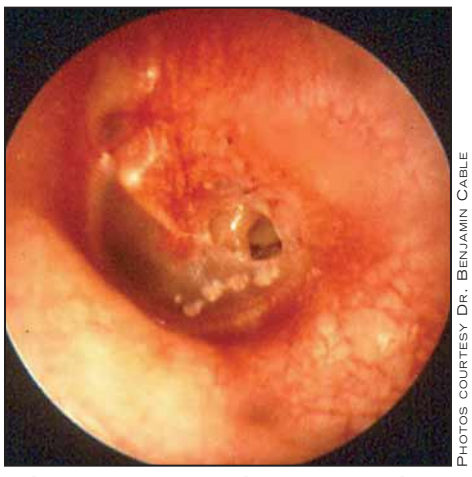
Tube removal is an option for severe cases of otorrhea. "Most often, tubes that require removal are ones that have become blocked with dried otorrhea or blood," Dr. Cable said. If the debris cannot be loosened by drops or removed by physical cleaning, the tubes can be removed and replaced in a slightly different location.

Granulation tissue must be treated with steroid-containing medication. "New ototopical drops now often contain a combination antibiotic and steroid, Ciprodex, for instance," Dr. Cable said. "If this is not available, steroid drops made for ophthalmic use can be used in the ear."



This tube is in the classic position, with dried otorrhea in its center.

This tube is totally blocked with pink, fleshy, shiny granulation tissue.



PHOTOS COURTESY DR. BENJAMIN CABLE

This eardrum perforation, or hole, did not heal after the tube extruded.

Autoextrusion occurs in 95% of cases of short-acting tubes. Tubes that last longer than 2 years are considered "retained." "The longer the tubes are in place, the less likely that the small perforation will heal after extrusion," Dr. Cable explained. "We used to think that happened at 2 years, but the evidence is now pointing more solidly at longer than 3 years, and most surgeons will recommend removal somewhere between 2 and 3 years."

Perforation closure occurs in approximately 97% of short-acting tubes and 80% of long-acting tubes, Dr. Cable said. ■

Pages 30a—30b