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Clinical Records

Severe audiovestibular loss following ear syringing for wax removal

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Abstract
Syringing of the ear is one of the commonest procedures performed for cleaning cerumen from the external auditory canal. Common complications following syringing are pain, external auditory canal trauma and otitis externa. Hearing and vestibular loss are often mentioned as a complication in descriptions of this technique, but we have not been able to find a reported case of such an occurrence. We report one such a case.

Key words: Cerumen; Syringes; Deafness; Perilymph; Fistula

Case report

A 76-year-old patient presented to us with a history of loss of hearing and balance following syringing of his left ear. He had undergone syringing of the left ear with his family physician for wax removal two weeks earlier. The patient reported feeling a pop or explosion like a bomb going off in his left ear while it was being syringed. He also felt some pain along with a sensation of spinning and ringing (vertigo and tinnitus) in his left ear. He noticed that his hearing decreased immediately and that he was very off balance after the procedure. He had no previous otological history, head injury, ear surgery or barotrauma to explain the hearing loss. He had suffered from benign positional vertigo of his right ear four years previously, when an audiogram documenting normal hearing in both ears had been performed.

On clinical examination, the left tympanic membrane had a large, dry perforation. Tuning fork tests indicated a left-sided severe sensorineural hearing loss. The patient tended to fall to the right on Unterberger's stepping test and had a positive sudden head thrust test (Halmagyi test)[1] to the left, both suggesting left vestibular dysfunction. There was no evidence of benign positional vertigo on the Dix-Hallpike manoeuvre. The facial nerve was intact. The rest of the neurological and cerebellar examination was normal.

Pure tone audiometry showed a profound sensorineural hearing loss in the left ear. The electronystagmogram with air caloric testing (10°C for 20 seconds) showed a right-beating nystagmus with a slow phase velocity of six degrees per second with left ear stimulation, and a left-beating nystagmus with a slow phase velocity of 20 degrees per second with right ear stimulation.

The patient subsequently suffered two episodes of sudden onset spinning, which lasted for a short time, associated with ataxia and worsening with head movement. There was no history of straining or associated tinnitus. The patient underwent rotational chair testing, which showed very poor gain to left-sided hemi-sinusoids, with marked asymmetry in the responses. There was also some evidence of much less marked right-sided vestibulo-ocular reflex loss, that could explain his inability to compensate very well for the left sided vestibular loss. The Halmagyi test was performed with a scleral search coil[2] which confirmed severe deficit in compensatory eye movements to left-sided head thrusts, indicating left vestibular loss.

The patient underwent exploration of the ear, at his request, for his repeated attacks of spinning and to repair the perforation. At surgery, a fracture through both crura was found, as well as through the footplate, with the anterior half of the footplate sunken into the vestibule. Figure 1 shows an intra-operative picture taken after the remains of the suprastructure was removed. The footplate was removed, the oval window grafted with perichondrium, and the tympanic membrane perforation repaired.

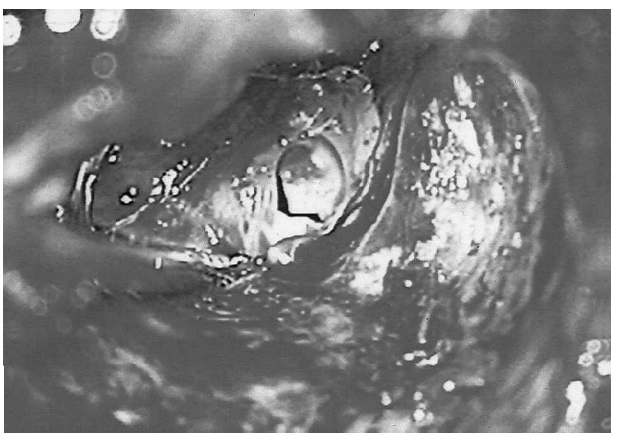

Fig. 1
Intra-operative photograph of fractured footplate.

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Six months following the surgery, the patient has had no further attacks of spinning, but has residual mild imbalance which is constant.

Discussion

Ear syringing is a frequently performed procedure and only very rarely results in iatrogenic injury. Possible complications are: pain or vertigo during the procedure, trauma to the meatal wall, otitis externa, trauma to the tympanic membrane, otitis media in case of a pre-existing perforation, and rarer complications such as hearing loss due to damage to the ossicles, facial paralysis and loss of balance due to destruction of the vestibular labyrinth.[3] Whilst the audiovestibular loss is often mentioned in nursing or General Practice texts on syringing, we have not been able to actually find a reported and documented case of such an occurrence.

The traditional syringe can develop pressures up to 16 kPa. Vertigo can occur due to caloric stimulation from improper water temperature, or if the ear drum is perforated. The worst injuries occur when a faulty syringe is used and the nozzle shoots down the ear canal and damages the eardrum, ossicles and sometimes the inner ear.[4,5] We presume in this case that the nozzle was inserted too far and directly traumatized the stapes. The subsequent recurrent vertigo may have been caused by continuing perilymph leak. Surgery with closure of the fistula and repair of the tympanic membrane appears to have been curative in this respect.

In spite of an extensive literature search, we could not find any report of a similar loss of auditory and vestibular function of the ear following syringing for cerumen impaction.

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