

Letters to the Editor

Sudden sensorineural hearing loss and non-otological surgery

Dear Sir,

Journeaux *et al.* (1990) are incorrect in stating that they are reporting the first case of sensorineural hearing loss following non-otological surgery in a previously stapedectomised ear. Patterson and Bartlett (1976) reported such a case, in which subsequent tympanotomy revealed a fistula which was repaired and the polyethylene strut replaced. The hearing loss resolved. Curiously, Patterson and Bartlett's case is quoted by the authors as an example of sensorineural hearing loss due to perilymph fistula. It would appear they did not read the original paper.

Fistula formation is a reported complication of nitrous oxide/oxygen anaesthesia in previously normal ears (Tonkin and Fagan 1975, Segal *et al.* 1984). Possible causes include changes in middle ear gas pressure or increased pressure in the perilymphatic space, leading to cochlear membrane rupture by the "implosive" or "explosive" routes as suggested by Goodhill *et al.* (1973).

There is no evidence that the incidence of sensorineural hearing loss following non-otological surgery is any higher in the stapedectomised ear, so the author's suggestion that "a mixture of air and oxygen instead of nitrous oxide" be used in anaesthesia to "protect" these patients has no basis. Most anaesthetists would, I suspect, not regard air/oxygen mixtures as having much anaesthetic effect.

As a final point, the authors make the vague unsupported statement that "it is known that ears that have undergone stapedectomy are more "fragile" and therefore susceptible to otologically damaging insults". I would be interested to hear on what evidence they make that statement.

Yours faithfully,

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References

- Goodhill, V., Harris, I., Brockman, S. J., Hantz, O. (1973) Sudden deafness and labyrinthine membrane ruptures, audiovestibular observations. *Annals of Otology*, **82**: 2-12.
- Journeaux, S. F., Master, B., Greenhalgh, R. M., Bull, T. R. (1990) Sudden sensorineural hearing loss as a complication of non-otologic surgery. *Journal of Laryngology and Otology*, **104**: 711-712.
- Segal, S., Man, A., Winerman, I. (1984) Labyrinthine membrane rupture caused by elevated intratympanic pressure during general anaesthesia. *American Journal of Otology*, **5/4**: 308-310.
- Tonkin, J. P., Fagan, P. (1975) Rupture of the round window membrane. *Journal of Laryngology and Otology*, **89**: 733-756.

Reply:

Dear Sir,

I would like to thank David Gatland for his comments about the Paper on sensorineural hearing loss occurring in a stapedectomised ear after general anaesthesia.

Patterson and Bartlett's paper, to which he alludes, describes sensorineural hearing loss occurring in a stapedectomised ear following general anaesthesia, but the history in this case strongly suggests that a perilymph leak preceded the anaesthetic.

A reason for reporting our case, was to suggest that a stapedectomised ear may be at risk during general anaesthesia and surmise on the factors that may be relevant.

The oval window "seal" following many types of stapedectomy, may not be secure, and I see it as correct to describe a stapedectomised ear as being more fragile than normal.

Yours faithfully,

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