

Yours sincerely,

Valerie J. Lund, M.S., F.R.C.S., F.R.C.S.(Ed),
Professor of Rhinology,
Honorary Consultant ENT Surgeon,
Royal National Throat, Nose and Ear Hospital,
330–332 Gray's Inn Road,
London WC1X 8DA.

References

- Lund, V. J. (1988) Inferior meatal antrostomy. Fundamental considerations of design and function. *Journal of Laryngology and Otology Suppl.* **15**: 1–18.
Penttila, M. A., Rautiainen, M. E. P., Pukander, J. S., Karma, P. H. (1994) Endoscopic versus Caldwell-Luc approach in chronic maxillary sinusitis: comparison of symptoms at one-year follow-up. *Rhinology* **32**: 161–165.

Dear Sir,

Perilymphatic fistula – the challenging enigma Methods of intraoperative diagnosis

We read with great interest the paper entitled 'Perilymphatic fistula – the value of diagnostic tests' by Podoshin *et al.* (July 1994).

We fully agree with the authors that perilymphatic fistula is, indeed, one of the most challenging problems in otological practice. We also agree, in general terms, with their conclusion that no pre-operative laboratory diagnostic test is truly diagnostic for perilymphatic fistula.

However, the entire article and the following conclusions were based on the intra-operative diagnosis of perilymphatic fistula by visualization of clear fluid from the round or oval window after a Valsava manoeuvre. This method of diagnosis is subjective or even frustrating (Bassiouny *et al.*, 1992; Harvey and Millen, 1994). There is a statistically significant difference in surgeons' rates of positive identification of perilymphatic fistula during surgery (Shepard *et al.*, 1992).

Consequently, the reliability of the surgical observation as the single method for confirmation of the diagnosis of perilymphatic fistula is too low to draw clear conclusions relative to any pre-operative test performance.

We believe that besides the free amino acid test (Schweitzer *et al.*, 1990) which the authors mentioned but did not use, there are several intra-operative tests to help us confirm a perilymphatic fistula, or at least to provide us with a greater possibility of correctly diagnosing it other than by microscopic visualization. We describe two of the intra-operative diagnostic methods which we consider extremely interesting.

Beta 2-transferrin is a protein that is unique to the cerebrospinal fluid, aqueous humor and living human perilymph, while is absent in the normal or inflamed middle ear (Bassiouny *et al.*, 1992; Weber *et al.*, 1994). Therefore, detection of beta 2-transferrin in the middle ear, during surgery, strongly suggests, if not proves, the existence of a perilymphatic fistula.

Electrocochleography is another promising intra-operative method of diagnosis. It is performed by

placing an electrode in one of the window niches and suctioning the area of the other window and vice-versa. Electrocochleography changes (decrease of action potential amplitude, increase of summating potential), during this procedure, suggest the presence of perilymphatic fistula (Ason and Gibson, 1994).

In conclusion, we believe that the only method to persuade the sceptical otolaryngologists, who doubt the incidence of even the very existence of perilymphatic fistula, is to develop, improve and use objective intra-operative methods of diagnosis. Thus, we will be able to better evaluate and improve pre-operative tests, and also to manage and solve the perilymphatic fistula enigma.

Sincerely yours,

Thomas P. Nikolopoulos, M.D., Ph.D.,
Dimitrios C. Kandiloros, M.D., Ph.D.,
Electerios A. Ferekidis, M.D., Ph.D.,
George K. Adamopoulos, M.D., Ph.D.,
Department of Otolaryngology,
University of Athens.

References

- Ason, S., Gibson, W. P. (1994) Perilymphatic fistula with no visible leak of fluid into the middle ear: a new method of intraoperative diagnosis using electrocochleography. *American Journal of Otology* **15**: 96–100.
Bassiouny, M., Hirsch, B. E., Kelly, R. H., Kamerer, D. B., Cass, S. (1992) Beta 2 transferrin application in otology. *American Journal of Otology* **13**: 552–555.
Harvey, S. A., Millen, S. J. (1994) Absent round window reflex: possible relation to step-wise hearing loss. *American Journal of Otology* **15**: 237–242.
Podoshin, L., Fradis, M., Ben David, J., Gertner, R., Feiglin, H. (1994) Perilymphatic fistula – a value of diagnostic tests. *Journal of Laryngology and Otology* **108**: 560–564.
Schweitzer, V. G., Woodson, B. T., Mawhinney, T. D., Rarey, K. E., Bauman, M. J., Raymer, S. L., Peterson, E. D. (1990) Free amino acid analysis of guinea pig perilymph: a possible clinical assay for the PLF enigma? *Otolaryngology – Head and Neck Surgery* **103**: 981–985.
Shepard, N. T., Telian, S. A., Niparko, J. K., Kemink, J. L., Fujita, S. (1992) Platform pressure test in identification of perilymphatic fistula. *American Journal of Otology* **13**: 49–54.
Weber, P. C., Kelly, R. H., Bluestone, C. D., Bassiouny, M. (1994) Beta 2-transferrin confirms perilymphatic fistula in children. *Otolaryngology – Head and Neck Surgery* **100**: 381–386.

Author's reply

Dear Sir,

I read with great interest the letter of Dr. Nikolopoulos *et al.*, and I admit that we did not use the amino acid test (Schweitzer *et al.*, 1990) for confirmation of PLF.

Last year we used intra-operative electrocochleography as Dr. Nikolopoulos has recommended, and we found a great correlation between the changes in action potentials and the visualization of clear fenestral fluid which recurred after suction.

We believe that electrocochleography still has an important place in otological and neurotological

diagnosis ('Noninvasive recordings of cochlear evoked potentials in Menière's disease', L. Podoshin *et al.*, 1986).

We have not enough experience with the intra-operative electrocochleography of PLF patients, but we hope that in the future we shall be able to publish our data.

Sincerely yours,

L. Podoshin, M.D.,
Professor and Chairman,
Department of Otolaryngology,
Bnai Zion Medical Center,

Haifa,
Israel.

References

- Podoshin, L., Ben-David, Y., Pratt, H., Fradis, M., Feiglin, H. (1986) Noninvasive recordings of cochlear evoked potentials in Menière's Disease. *Archives of Otolaryngology* **112**: 827-829.
- Schweitzer, V. G., Woodson, B. T., Mawhinney, T. D., Rarey, K. E., Bauman, M. J., Raymer, S. L., Peterson, E. D. (1990) Free amino acid analysis of guinea pig perilymph: a possible clinical assay for the PLF enigma? *Otolaryngology - Head and Neck Surgery* **103**: 981-985.