The Journal of Laryngology & Otology

cambridge.org/jlo

# Hearing loss and dementia, vestibular neuronitis, salivary carcinoma, and the history of tympanic membrane anatomy

Edward W Fisher and Jonathan Fishman, Senior Editors

## Editorial

**Cite this article:** Fisher EW, Fishman J. Hearing loss and dementia, vestibular neuronitis, salivary carcinoma, and the history of tympanic membrane anatomy. *J Laryngol Otol* 2022;**136**:95–96. https://doi.org/10.1017/S0022215122000512

Dementia in all its forms constitutes a major public health, economic and societal problem globally as age demographics change, with an estimated 130 million sufferers worldwide predicted by 2050.[1] Associations with olfactory impairment have been established in the past,[2] and age-associated hearing loss and dementia have been under discussion in recent years.[3] This issue of *The Journal of Laryngology & Otology's* 'article of the month' is from Sheffield, and draws together evidence regarding hearing impairment and dementia.[4] The evidence is mounting of an association between early cognitive impairment and age-associated hearing loss. Association does not necessarily mean causation, as hearing loss may simply reflect the general degradation of brain processing power that is produced by the pathological processes in underlying causes of dementia. More work is required to clarify whether hearing loss is a truly independent variable and whether it has a role in assisting cognitive decline. If auditory input can have a beneficial effect on the progression of some forms of dementia, this encourages everyone involved in interventions to improve hearing in the elderly in the hope that this may delay dementia progression.

Benign obstructive salivary gland pathologies were discussed in an article in last month's issue of *The Journal*,[5] and this month includes a paper by Leopard and colleagues from South Wales regarding the epidemiology of salivary carcinomas.[6] In Wales, 356 carcinomas arose over 27 years, as established by national databases. This work was hampered by the comparative rarity of these tumours, but analysis tantalisingly demonstrated an interesting link between various histological subtypes of cancer and background radiation (radon), smoking, and obesity. An association with prior radiotherapy was already established, and many different types of cancer have been associated with radon levels in epidemiological studies. A recent series of parotid carcinomas from Japan, published in *The Journal*, managed to accumulate 108 cases over 32 years, favouring adjuvant radiotherapy, and emphasised the difficulty in studying epidemiology and outcomes for conditions with inherently low numbers.[7]

Vestibular neuronitis (or 'neuritis') is a common cause of acute vertigo, with an interesting history, which was well reviewed back in 1973 in *The Journal* by Wilmot from Omagh, Northern Ireland, in relation to vestibular function test findings and terminology.[8] This has been updated in this month's article by Manzari and colleagues from Italy,[9] which focuses particularly on the two different aspects of otolith function in patients with vestibular neuronitis, dissecting the different otolith functions by the use of a variety of vestibular assessments. The authors remind us that '*In the labyrinth, the utricular and saccular macula with their afferents form two complementary otolithic systems: the sustained system concerned with signalling low frequency linear accelerations and the transient system which is activated by high frequency stimuli such as sounds and vibration*'. This study, although retrospective, gives a good summary of the current state of knowledge of the evolution of vestibular neuronitis, and the damage that is left behind after the acute and subacute phases are over.

The anatomy of the tympanic membrane took many centuries to clarify, from a web to a bundle of nerves, to the layered structure that we understand today. This month has a historical review by Baudouin and colleagues from Paris.[10] They take us on a fascinating voyage through the history of knowledge of this structure, from Hippocrates ('a dry thin-spun web'), through to Fallopius and Vesalius (who both used the term 'tympanum'), then the great leaps in knowledge in the latter part of the renaissance and nineteenth century that occurred in parallel with technical advances which allowed dissection then microscopy. The story reads like a 'who's who' of otology, with giants such as Toynbee,[11] Prussak, Politzer[12] and Shrapnell. This paper makes fascinating bedtime reading for anyone interested in the ear.

## References

1 Prince M, Comas-Herrera A, Knapp M, Guerchet M, Karagiannidou M. *World Alzheimer Report 2016: Improving Healthcare for People Living with Dementia*. London: Alzheimer's Disease International, 2016
2 Gros A, Manera V, De March CA, Guevara N, Konig A, Friedman L *et al*. Olfactory disturbances in ageing with and without dementia: towards new diagnostic tools. *J Laryngol Otol* 2017;**131**:572–9
3 Lin FR, Albert M. Hearing loss and dementia – who is listening? *Aging Ment Health* 2014;**18**:671–3

4 Lau K, Dimitriadis PA, Mitchell C, Martyn-St-James M, Hind D, Ray J. Age-related hearing loss and mild cognitive impairment: a meta-analysis and systematic review of population-based studies. *J Laryngol Otol* 2022;**136**:103–118
5 Familiari M, Ferrario F, Giordano L, Di Santo D, Indelicato P, Battista RA *et al*. Management of obstructive pathology of the salivary glands in elderly patients: a preliminary study. *J Laryngol Otol* 2022;**136**:60–3
6 Leopard D, El-Hitti E, Puttasiddaiah P, Mcleod R, Owens D. Twenty-seven years of primary salivary gland carcinoma in Wales: an analysis of histological subtype and associated risk factors. *J Laryngol Otol* 2022;**136**:167–172
7 Nakano T, Yasumatsu R, Kogo R, Hashimoto K, Asai K, Ohga S *et al*. Parotid gland carcinoma: 32 years' experience from a single institute. *J Laryngol Otol* 2019;**133**:604–9
8 Wilmot TJ. Vestibular analysis in vestibular neuronitis. *J Laryngol Otol* 1973;**87**:239–51
9 Manzari L, Graziano D, Zambonini G, Faralli M, Morone G, Tramontano M. The clinical course of vestibular neuritis from the point of view of the ocular vestibular evoked myogenic potential. *J Laryngol Otol* 2022;**136**:129–136
10 Baudouin R, Denoyelle F, Simon F. Shedding light on the tympanic membrane: a brief history of the description and understanding of its anatomy. *J Laryngol Otol* 2022;**136**:97–102
11 Mudry A. The making of a career: Joseph Toynbee's first steps in otology. *J Laryngol Otol* 2012;**126**:2–7
12 Dundas-Grant J. Adam Politzer. *J Laryngol Otol* 1920;**35**:381–3

https://doi.org/10.1017/S0022215122000512 Published online by Cambridge University Press