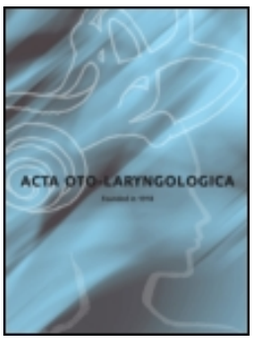

Acta Oto-Laryngologica

ISSN: 0001-6489 (Print) 1651-2251 (Online) Journal homepage: http://www.tandfonline.com/loi/ioto20

Vestibular Symptoms in Mumps Deafness

D. Hydén, L. M. Ödkvist & P. Kylén

To cite this article: D. Hydén, L. M. Ödkvist & P. Kylén (1978) Vestibular Symptoms in Mumps Deafness, Acta Oto-Laryngologica, 86:sup360, 182-183, DOI: 10.3109/00016487809123510

To link to this article: http://dx.doi.org/10.3109/00016487809123510

Published online: 08 Jul 2009.

Acta Otolaryngol, Suppl. 360: 182–183, 1979

VESTIBULAR SYMPTOMS IN MUMPS DEAFNESS

D. Hydén, L. M. Ödkvist and P. Kylén

From the Department of Otolaryngology, University Hospital, Linköping, Sweden

Abstract. Deafness appears in as many as 4% of adult cases of epidemic parotitis. It is often severe, though reversible and is usually unilateral. Vertigo has been reported in mumps, as have occasional cases with impaired caloric reaction. Twenty cases of unilateral hearing impairment in mumps have been investigated with audiometry and electronystagmography in order to determine the degree of permanent lesions. Nine of the patients had noted vertigo when falling ill with parotitis. Five of these had normal calorics, 3 were impaired and one was without response in the deaf ear. No certain correlation between vertigo and permanent caloric impairment was found. An interesting finding was that 5 cases without vertigo showed an impaired or absent caloric responsiveness, which might confuse future diagnostics. Presumably, most patients with hearing impairment in mumps suffer vestibular damage, but the acute vertigo in early childhood is easily overlooked. No certain correlation between age at the onset of mumps and any permanent caloric disturbance was found. One mumps case is described, in which a severe hearing loss and caloric impairment returned to normal.

Deafness due to epidemic parotitis has been known for over a century. It has been thought that the hearing impairment is very uncommon, that it is unilateral, severe and irreversible (Boot, 1908). Some authors have reported vestibular symptoms in connection with mumps (Beal & Naunton, 1966; Lindsay, 1959). The frequency and type of vestibular disturbance are, however, not described. In order to study the vestibular symptoms in cases of hearing impairment due to mumps an investigation was performed on a series of such cases.

MATERIAL AND METHODS

Twenty patients with unilateral hearing impairment appearing in cases with epidemic parotitis were investigated with audiometry and electronystagmography; 9 were female, 11 male. The age range was 3 to 37 years, the mean age being 12 years. Sixteen of the patients had a totally deaf ear, 3 had a partial deafness and one had impaired hearing that returned to normal.

RESULTS

Nine patients had suffered from vertigo at the onset of the hearing impairment; 11 had no history of vertigo (Table I). The mean age among the patients with vestibular symptoms was 18 years and in the non-vertiginous patients, 7 years. The caloric test performed 2 months to 6 years after the onset of the disease showed normal responses in 11 cases and impaired responses in 9 cases. There was no correlation between the history of vertigo and the outcome of the caloric test performed at this date.

In one case, a nurse, 29 years of age, the hearing impairment started 6 days after the onset of the parotitis and she experienced vertigo simultaneously. Initially she had a 55 dB hearing loss (Fig. 1), with recruitment. Her caloric response was seriously impaired. The hearing improved and was completely normal after 6 months. Her spontaneous nystagmus disappeared after less than 1 month and her caloric response was normal after 6 months.

Table I

Calorics		Vertigo	No vertigo
Normal		5	6
Impaired	partially	3	4
	totally	1	1

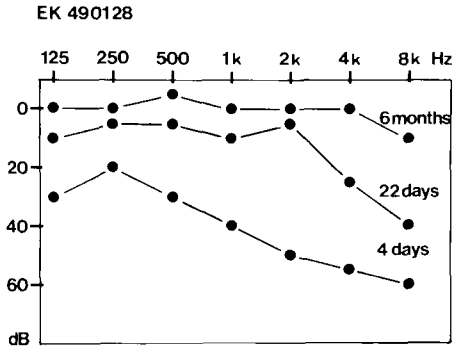

Fig. 1. A case of complete hearing recovery after acute unilateral loss due to mumps.

DISCUSSION

The frequency of hearing impairments in cases of mumps among 298 men in military service is reported by Vuori et al. (1962) to be 4%. The hearing impairment was mostly reversible and with no correlation to meningo-encephalitis. These cases were all unilateral, but bilateral hearing impairment has been reported to be 20% (Everberg, 1957). Hearing impairment without obvious epidemic parotitis has been reported to be caused by parotitis virus (Dishoeck et al., 1957; Saunders & Lippy, 1959). Welsh & Welsh (1963) reported that of 38 cases of sudden deafness, half of them due to epidemic parotitis, 43% had abnormal caloric reactions. The virus etiology of disturbances of the facial nerve and inner ear function has been much discussed lately (Ödkvist et al., 1977; Djupesland et al., 1978). Lindsay et al. (1959) using histopathology, have shown damage in the organ of Corti and stria vascularis in deafness due to measles. Many of the hearing impairment cases caused by virus infection are reversible, which indicates that the damaged parts are well able to regenerate, obviously true also for the vestibular part of the inner ear, as some of our vertiginous patients achieved a normal caloric response. The percentage of impaired caloric responses among our 20 patients (45%) seems to tally with reports on sudden deafness of mixed origin (Welsh & Welsh, 1963). One important observation is that 5 patients, who had not noticed any vertigo, at a later date showed an impaired caloric response. These cases could subsequently have become objects for tumour investigation if the connection between the epidemic parotitis and the inner ear lesion had not been known. The fact that a vestibular lesion can appear without any obvious symptoms might be explained by the young age of the patients and the consequent quick adaptation of the vestibular impairment. Furthermore, a spontaneous nystagmus may easily be overlooked in a child in bed running a high temperature. Our case with total restitution of hearing and vestibular function indicates that some cases may elude diagnosis.

The complications of epidemic parotitis have caused some authors (Bjorvatn & Sköldenberg, 1978) to recommend mumps vaccination.

REFERENCES

Beal, D. & Naunton, R. 1966. Mumps hearing loss. A case report. *Laryngoscope 11*, 1768.

Bjorvatn, B. & Sköldenberg, B. 1978. Mumps meningitis and orchitis in Stockholm—an epidemiological background for a vaccination policy. *Läkartidningen 75*, 2295–2298.

Boot, G. W. 1908. Non-suppurative involvement of the labyrinth in the course of mumps. *JAMA 51*, 1961.

van Dishoeck, H. A. E. & Bierman, T. H. A. 1957. Sudden perceptive deafness and viral infection. *Ann Otolaryngol 66*, 963.

Djupesland, Gisle. 1978. Cochleaere hörselstap och virusinfektion. II Nordiske Kongress for Oto-rhino-laryngologi, Oslo.

Lindsay, J. R. 1959. Sudden deafness due to virus infection. *Arch Otolaryngol 69*, 13.

Saunders, W. H. & Lippy, W. H. 1959. Sudden deafness and Bell's palsy: A common cause. *Ann Otol Rhinol Laryngol 68*, 830.

Welsh, L. W. & Welsh, J. J. 1963. Unilateral sensorineural deafness. *Ann Otol Rhinol Laryngol 72*, 113.

Vuori, M., Lahikainen, E. A. & Peltonen, T. 1962. Perceptive deafness in connection with mumps. A study of 298 servicemen suffering from mumps. *Acta Otolaryngol 55*, 231.

Ödkvist, L. M., Jonsson, I., Grandien, M., Lundgren, A., Widström, Å. & Hydén, D. 1977. Otoneurologiska mononeuropatier och virus. Svensk otolaryngologisk förening, Vol. 1, no. 2.

Dag Hydén, M.D.
Dept. of Otolaryngology
University Hospital
S-581 55 Linköping
Sweden