The Japan Neurosurgical Society

103. Vertigo in Posttraumatic Syndrome
(The second report)

T. OKUSA, K. NISHIGAIDO, K. IKEDA, M. EBARA, K. AKASHI,
Y. MACHIDA, Y. KUSHIDA, S. NAKANO and K. MICHISHITA
2nd Clinic of Surgery, School of Medicine, Toho University

Most of the patients who sustained minor or severe injuries to the head complained of vertigo, which might cause the disturbances of central nervous system, vestibular disfunction and automatic nervous unbalance.

The patients with complaint of Vertigo after head injuries were observed in the investigations of vestibular function comparing with C.A.G., E.E.G. and cerebrospinal fluid findings.

The materials for this studies were the patients with vertigo and normal adults.

The findings of E.E.G., vestibular disfunction and cerebrospinal fluid did not always agree.

104. Relation of the Vertigo or Dizziness to the Audiogram Pattern after Cerebral Concussion or Contusion

Tsuneo OHNO
Dept. of Neurosurgery, Kanto Rosai Hospital
Michiya OKAMOTO
Dept. of Otol. Rhin. Laryng., Kanto Rosai Hospital

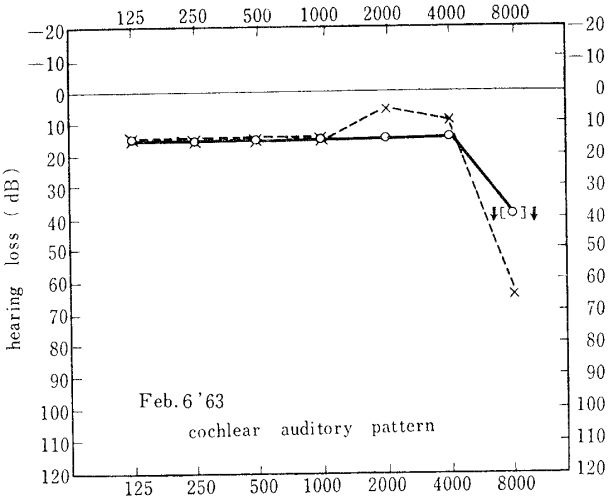
We have studied the classification of the post-traumatic audiogram into normal, peripheral (cochlear) and central patterns, except for conduction deafness.

We can demonstrate 3 cases with the interesting relationship between those patterns and the findings of vestibular function test in Fig. 1, 2, and 3. It seems that these cases may suggest the correlation of the central auditory disturbance and the central vestibular disfunction.

We had 343 consecutive cases after head injury with no evidence of direct labyrinthine destruction or disease. Relation of audiometric findings of these 343 cases to their complaints about vertigo and/or dizziness is represented in Table 1. The coefficient of the correlation between the

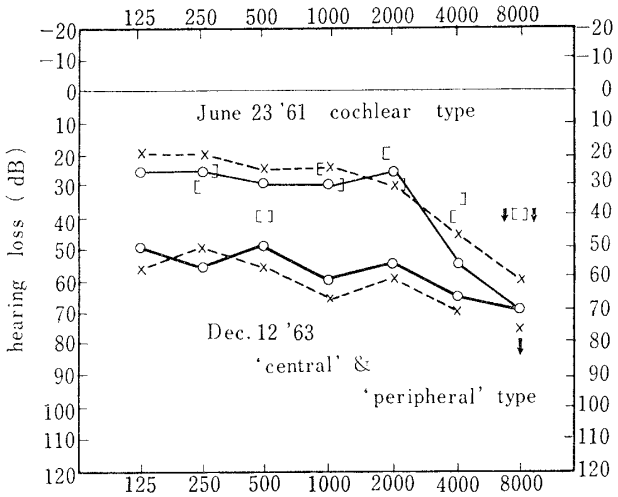
NII-Electronic Library Service

The Japan Neurosurgical Society



Jan. 8 '63 Fall down on the ground while playing sport
dizziness + PTA −
nystagmus spontaneous −
positional −
Romberg sign −
stepping test: slight deviation to left
caloric test: I.C.P.
blindfolded writing test: normal

Fig. 1. Case 1. M.T. 20yrs female

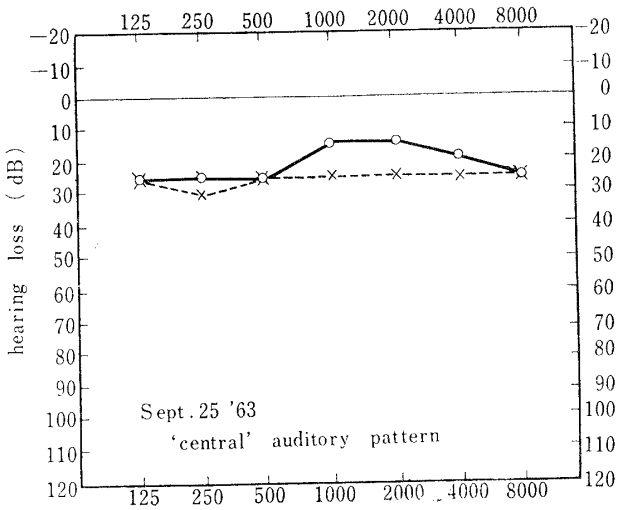


Feb. 3 '61 Blow with a steel pipe in the r. temporal region caused r. temporal bone fracture. PTA 3 hrs
vertigo & dizziness +
vestibular function & symptoms progressively deteriorated

		Sept. 20 '62	Dec. 12 '63
nystagmus	spontan.	−	−
	position.	−	+
Romberg sign		−	+

stepping test: turning round impossible
caloric test: I.C.P.
r.D.P.: bilateral hypofunction
blindfolded writing test:
'central' vestsbular dysfunction

Fig. 3. Case 3. T.N. 43 yrs male



Nov. 20 '62 While driving a bus, fell over a cliff
Sept. '63 dizziness & vertigo PTA 7 days
Dec. '63 epileptic attacks
nystagmus spontan. −
position. −
Romberg sign −
stepping test: normal
caloric test: marked hypofunction in both ears
March '64 no complaint

Fig. 2. Case 2. S.H. 29 yrs male

Table 1. The Correlation of 'Central' Auditory Disturbance and Vertigo &/or Dizziness (1961–1963)

hearing disturbance		vertigo &/or dizziness (+)	vertigo &/or dizziness (−)	
central type	(+)	a 141	b 45	$a+b$ 186
	(−)	c 65	d 92	$c+d$ 157
		$a+c$ 206	$b+d$ 137	n 343
		$a'+c'$	$b'+d'$	
cochlear type	(+)	a' 97	b' 57	$a'+b'$ 154
	(−)	c' 109	d' 80	$c'+d'$ 189

Coefficient of Correlation

$$r=\frac{ad-bc}{\sqrt{(a+b)(c+d)(a+c)(b+d)}}=+0.349 \quad \text{central}$$

$$m_r=\frac{1-r^2}{\sqrt{n}}=+0.047$$

$r'=+0.053$ $m_{r'}=+0.053$

Significance cochlear

$$\frac{r-r'}{\sqrt{m_r^2+m_{r'}^2}}=4.0$$

NII-Electronic Library Service

The Japan Neurosurgical Society

"central" auditory pattern and vertigo and/or dizziness is statistically significant, and so it may be that vertigo and dizziness with central auditory distarbance in patients with head injury is suggestive of central nervous system lesions.

105. Fine Structure of the End Plate of the Motor Nerve and Cholinesterase Activity in the Muscle of the Progressive Muscular Dystrophy

Takashi NARA

Department of Orthopaedic Surgery, Iwate Medical School

Sample of the muscle was obtained from the triceps cruris in the patient and it was stained with Seto's silver impregnation method and was examined with the electron microscope. The cholinesterase activity was also demonstrated by the thioacetic acid as substrate.

In this disease, with the light microscope, the terminal branch of the motor nerve was recognized to enter into the end plate of the motor nerve without showing myelin sheath. The Schwann cells accompanied to the myelin sheath show a loss of the nucleoli, disappearance of the perinucleolar clear yard and their structure becomes indistinct. The structure of the end plate of the motor nerve becomes indistinct in advanced cases, and finally the morphology of the end plate becomes impossible to recognize.

In many cases, then, the most of the terminal branch are recognized to disappear in the end plate as a large vague axon. The nuclei of more than several numbers consisting of the end plate of the motor nerve are usually distributed in a round or elliptical form, but these structures become indistinct in the disease.

On the electron microscope, round and elliptical vacuoles and mitochondria distribute in the cytoplasm. The finding Reger called tubular agranuler reticulum was recognized in the cytoplasm. The vesicles were recognized around the tubular agranular reticulum, reactive precipitates were present.

In the axolemma the synaptic vesicles were present densely. As suggested by De Robertis, it was proved that the vesicle transfered to sole-plasm through the axolemma, synaptic cleft and sarcolemma. The junctional fold generally tend to be swollen or enlarged, and the tips of some junctional fold are markedly swollen, vacuolated and further destroyed.

NII-Electronic Library Service