

First Report of Permanent Hearing Loss due to Wernicke-Korsakoff Syndrome Treated with Bilateral Cochlear Implants

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ABSTRACT

Sensorineural hearing loss (SNHL) is a rare complication of Wernicke’s encephalopathy with only a handful of reports in the literature. In all cases hearing improved with thiamine replacement. We report the 1st case of permanent bilateral sensorineural hearing loss due to Wernicke-Korsakoff syndrome that did not improve with thiamine replacement in a patient with alcohol use disorder

CASE REPORT

- 50-year-old female with a history of alcohol use disorder was referred for bilateral hearing loss
- 6 months prior to evaluation she was admitted to the hospital with pneumonia and Wernicke – Korsakoff syndrome
- She reported partial loss of hearing in her right ear shortly before admission, then progression to complete bilateral loss shortly after admission
- Patient’s encephalopathy improved with thiamine replacement, but her hearing loss persisted.
- Audiogram four months after onset revealed bilateral profound hearing loss (figure 1)
- She subsequently underwent simultaneous bilateral cochlear implantation with excellent results (figure 2)

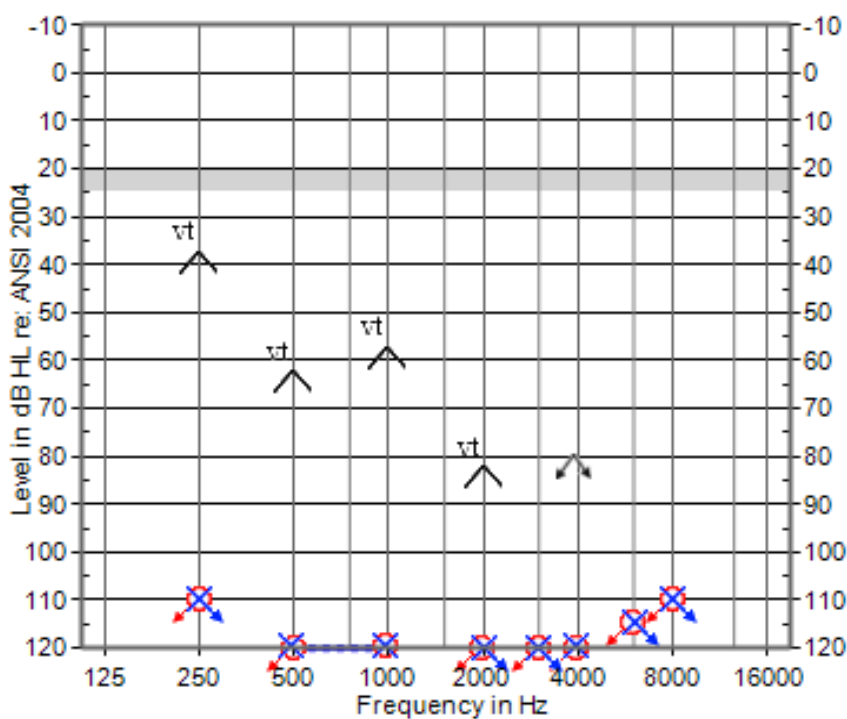


Figure 1. Pre-operative pure tone audiogram

		CNC words (%)	AzBio Quiet (%)	AzBio + 5 SNR (5)
Bilateral	Pre CI	0	0	
	Activation		62	
	3 Month	86	92	
	6 Month		99	73
Right	Pre CI	0	0	
	Activation	28	58	
	3 Month	68	88	
	6 Month		97	
Left	Pre CI	0	0	
	Activation	32	59	
	3 Month	62	93	
	6 Month		96	

Figure 2. Pre- and Post-CI Testing

DISCUSSION

- Hearing loss is a rare complication of Wernicke’s encephalopathy and Wernicke-Korsakoff syndrome
- Has been seen in cases of alcohol use disorder, hyperemesis gravidarum and bariatric surgery
- All previously known cases improved with thiamine replacement
- Mechanism though to be inner hair cell damage due to thiamine deficiency

CONCLUSIONS

- Though often reversible, permanent hearing loss can be seen with Wernicke’s encephalopathy and Wernicke-Korsakoff syndrome
- These patients may be excellent candidates for cochlear implantation

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