Supplement 1 Literature review on patients diagnosed with VS in the only hearing ear and performed with CI

Source(s)	Case No. in reference	Age at CI (y)/sex	Tumor side/size/ Duration	Contralateral history	VS treatment	Duration from hearing loss to CI/CI side	Preoperative hearing		EPST	Postoperative hearing of CI side		Daily user	Telephone use	Follow-up duration
							Ipsilateral side	Contralateral side		PTA	open-set SDS			
Thedinger et al [1]	1	49/M	R/27mm/4 y	Transmastoid labyrinthectomy for Meniere's disease	TLA tumor removal 3 m after contralateral CI	14 y/L	60 dB SRT; 32%SDS	Anacusis	+L	50dB SPL	CID sentence 171/200; Discrimination 38%	NR	NR	6 m
Talbot et al [2]	1	69/F	L/20 mm/ recently	Total hearing loss for about 30 y with unknown pathogenesis	TLA tumor removal 1 y after contralateral CI	30 y/R	61 dB PTA; 12% SDS	Anacusis	NR	NR	CID sentence 24%	NR	NR	6 m
Shin et al [3]	1	66/F	R/Grade II/1 y	Profound SNHL for Meniere's disease	Wait-and-scan	NR/L	Moderate SNHL for 1 y; Profound SNHL for 3 m	Profound SNHL	+L	NR	50% word recognition; 98% sentence discrimination	Yes	NR	12 m
Shin et al [3]	2	64/M	R/40 mm/2 y	Total deafness since childhood	Tumor removed via MFA 1 y before contralateral CI	Childhood/ L	Profound SNHL	Anacusis	+L	NR	30% word recognition; 13% sentence discrimination	NR	NR	14 m
Aristegui and Denia [4]	2	45/M	L/12 mm/NR	Total deafness due to craneoencephalic trauma during	Tumor removed via enlarged TLA (nerve preserved)	NR /L	Progressive hearing loss	Anacusis	NT	NR	95% disyllabic word recognition; 100% CID sentence	NR	NR	6 m

				childhood	and simultaneous ipsilateral CI						discrimination			
Ramsden et al [5]	1	45/M	R/ 20 mm/ 1y	Idiopathic total congenital hearing loss	Tumor removed via suboccipital approach 4 m before contralateral CI	Childhood/ L	30-40 dB PTA; 100% SDS at 70 dB	Anacusis	+L	NR	0% AB words; 7% BKB sentences	Yes	No	12 m
Ramsden et al [5]	2	50/M	R/35 mm (20 mm 1 y ago)/7 y	Idiopathic congenital hearing loss	Tumor removed via TLA 1 y after contralateral CI	Childhood/ L	Moderate sever SNHL; 0% SDS	Anacusis	+L	NR	0% AB words and BKB sentences	NR	No	12 m
Grayeli et al [6]	2	51/NR	NR	Sudden SNHL	TLA tumor removal and ABI	NR	Sudden SNHL	NR	NR	NR	70 % sentence recognition	Yes	NR	21 m
Sinnathuray et al [7]	1	24/M	L/33 mm/14 y	Deaf ear after surgery for external auditory canal stenosis and cholesteatoma	TLA tumor removal and ABI a few months after contralateral CI	NR/R	NR	Anacusis	+R	40dB SPL	30% SDS	NR	NR	60 m
Di Lella et al [8]	1[#]	41/F	L/15 mm/NR	Anacusis since childhood with no clear cause	RS-RL tumor removal 9 m after contralateral CI; ipsilateral CI 2 m after tumor removal	Childhood/ R	45 dB PTA; 100% SDS	Anacusis	+R	NR	65% disyllabic word recognition (90 at 4 m); 15 % sentence recognition (90% at 48 m)	Daily	No (yes at 48 m)	67 m
Di Lella et al [8]	2	61/F	L/30 mm/NR	Anacusis since childhood with no clear cause	TLA tumor removal 2 y before contralateral CI	Childhood/ R	35 dB PTA; 80% SDS	Anacusis	+R	NR	90% disyllabic word recognition; 65 % sentence recognition	Daily	Yes (close	60 m

												relatives)	
Di Lella et al [8]	4	46/M	L/30 mm/NR	Anacusis since childhood with no clear cause	TLA tumor removal 1 y after contralateral CI	Childhood/R	60 dB PTA; 70% SDS	Anacusis	+R	NR	25% disyllabic word recognition; 20 % sentence recognition	Daily	NR	1NR 1 m
Di Lella et al [8]	5	48/F	L/intracanalicular/NR	Sudden deafness within latest 1 y	Wait-and-scan	12 m/R	35 dB PTA; 85% SDS	Anacusis	+R	NR	90% disyllabic word recognition; 90 % sentence recognition ※	NR	NR	60 m
Di Lella et al [8]	6	41/M	R/20 mm/NR	Sudden deafness	RS tumor removal and ABI 7 y before contralateral CI	21 y/L	35 dB PTA; 85% SDS	Anacusis, ABI*	+L	NR	90% disyllabic word recognition; 90 % sentence recognition	Daily	Yes (close relatives)	18 m
Di Lella et al [8]	7	50/M	L/ 10mm/NR	Sudden deafness	TLA tumor removal and CI 1 m after contralateral CI	22 y/R	20 dB PTA; 100% SDS	Anacusis	+R	NR	90% disyllabic word recognition; 85 % sentence recognition	Daily	Yes (close relatives)	14 m
Di Lella et al [8]	8	57/F	R/ 20mm/NR	Idiopathic progressive SNHL	TLA subtotal tumor removal 2 y after contralateral CI	NR/L	Severe SNHL; benefit with HA	Anacusis, CI*	NR	NR	90% disyllabic word recognition; 90 % sentence recognition	Daily	Yes (close relatives)	48 m
Di Lella et al [8]	9	76/F	R/ 30 mm/NR	Radical mastoidectomy	TLA tumor removal 10 m	40 y/L	40 dB PTA; 90% SDS	Anacusis	+L	NR	90% disyllabic word recognition; 85 %	Daily	Yes (clos	60 m

					before contralateral CI						sentence recognition		e relatives)	
Di Lella et al [8]	10	25/M	L/30 mm/NR	Radical mastoidectomy	TLA tumor removal and ABI 2 m after contralateral CI	10 y/R	50 dB PTA; 80% SDS	Anacusis	+R	NR	70% disyllabic word recognition; 75 % sentence recognition	Daily	Yes	48 m
Mukherjee et al [9]	1	58/F	L/4 mm/5 y	Idiopathic loss for 10 y, some useful hearing	Wait-and-scan	10 y/L	36% BKB sentences	64% BKB sentences	+L	NR	99% BKB sentences	NR	NR	12 m
Mukherjee et al [9]	2	82/F	R/12 mm/7 y	Idiopathic loss since childhood, implanted with little effect	Wait-and-scan	Childhod/R Resently/L	42% CUNY with aid an LR	NR	+R	NR	23% BKB sentences on the right and 61 bilaterally without LR	NR	NR	12 m
Lassaletta et al [10]	9	52/F	L/15 mm/NR	Meniere, HA user	Microsurgical treatment	NR/L	30 dB PTA; 80% SDS	50 dB PTA; 70% SDS	NR	NR	80% dysillabic word recognition, and 100% with CI+HA	Daily	NR	30 m
Lassaletta et al [10]	10	50/M	L/10 mm/NR	Progressive HL, HA user	Microsurgical treatment	NR/L	70 dB PTA; 60% SDS	65 dB PTA; 70% SDS	NR	NR	80% dysillabic word recognition, and 80% with CI+HA	Daily	NR	14 m
Lassaletta et al [10]	11[#]	53/M	L/10 mm/1 y	Deafness due to several tympanoplasties performed over 25 y ago	TLA tumor removal and simultaneous CI 2 y before contralateral CI	1 y/L 25 y/R	50 dB PTA; 100% SDS	110 dB PTA; 0% SDS	NR	NR	65% dysillabic word recognition on the ipsilateral side, 79% on the contralateral side and 88% with bilateral CI	Daily	NR	46 m

Lassaletta et al [10]	12	42/M	L/12 mm/NR	Traumatic HL anacusis for over 10 y	Microsurgical treatment	NR/L	70 dB PTA; 35% SDS	110 dB PTA; 0% SDS	NR	NR	60% dysillabic word recognition	Daily	NR	114 m
Lassaletta et al [10]	13	52/M	L/NR/NR	Progressive HL, HA user	Microsurgical treatment	NR/L	110 dB PTA; 0% SDS	60 dB PTA; 80% SDS	NR	NR	50% dysillabic word recognition, and 80% with CI+HA	Daily	NR	12 m
Lassaletta et al [10]	14[#]	50/M	L/5 mm/NR	Idiopathic sudden hearing loss 20 y ago and CI for 1 y	TLA tumor removal and simultaneous CI 1 y after contralateral CI	20 y/R 1 y/L	20 dB PTA; 100% SDS	110 dB PTA; 0% SDS	NR	NR	0% dysillabic word recognition on the ipsilateral side and 100% with bilateral CI	Only use ipsilateral CI	Yes (ipsilateral side)	12 m
Lassaletta et al [10]	15	70/F	R/15 mm/NR	Progressive HL, HA user	Microsurgical treatment	NR/R	90 dB PTA; 20% SDS	65 dB PTA; 60% SDS	NR	NR	0% dysillabic word recognition and 60% with contralateral HA	No	NR	14 m
Ozdek et al [11]	2	57/F	R/12 mm/ 3 y	Deafness since childhood due to an unknown reason	TLA tumor removal and simultaneous CI	4 m/R	0% SDS	0% SDS	NT	well	0% SDS	Daily	No	18 m

DOD: duration of deafness; SRT: speech reception threshold; CID: Central Institute for the Deaf; EPST: electrical promontory stimulation test; MFA: middle fossa approach; NR: not reported; NT: not tested; AB words: abbreviated words; BKB sentences: Bamford Kowal Bench sentences; HL: hearing loss; SNHL: sensorineural hearing loss; SDS: speech discrimination score; PTA: pure tone audiometry; VS: vestibular schwannoma; CI: cochlear implantation; LR: lip reading; CUNY: City University of New York in noise; HA: hearing aid.

*Environmental sound detection

※Contralateral masking applied

#Bilateral CI consecutively

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