



Case Study

AYURVEDIC MANAGEMENT OF SENSORINEURAL HEARING LOSS WITH SPECIAL REFERENCE TO *BADHIRYA*

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ABSTRACT

Badhirya has been described by both *acharyas Susrutha* and *Vaghbata*. *Susrutha* has described 28 *Karnarogas* and *Vaghbata*, on the other hand has mentioned 15 *Karna rogas* with 10 *Karna pali rogas*. According to *acharya Susrutha*, vitiated *Vata* along with *kapha* obstructs *Shabdavaha siras* and on neglecting this, hearing deteriorates gradually leading to *Bhadirya*. This case report highlights the role of Ayurvedic management in a child with sensorineural hearing loss. A 11-year-old female child was presented to the OPD with decreased hearing of right ear since 1 year. Comprehensive clinical examination and audiological examination was carried out and based on Ayurvedic fundamentals, the condition was diagnosed as *Badhirya*, with the involvement of *Vata* and *Kapha doshas*. The patient was admitted in IPD and the treatment mainly aimed at *Deepana*, *Pachana*, *Brimhana*, *Rasayana* and *Shodhana*. Internal medications administered included *Aswaganda choornam*, *Ashtachoornam*, *Rajanyadi choornam*, and *Rasnadasamoola ghritha*. *Panchakarma* procedures comprised of *Takrapana*, *Snehapana*, *Abhyanga ooshma sweda*, *Mridu virechana*, *Ksheeradhooma nasya*, *Shirovasthi*, and *Karnapoorana*. Audiological parameters were further reassessed on completion of the procedures.

INTRODUCTION

Hearing is one of the five major sense organs, mediated by the ear. It plays a vital role in communication, learning, and social interaction. Through hearing, we are able to understand speech, respond to sounds, and connect with people around us. It is essential for language development in children and effective communication in adults.

The organ responsible for hearing is the ear, which consists of three parts: the outer ear, middle ear, and inner ear. Sound waves are collected by the outer ear, transmitted through the middle ear, and converted into nerve impulses in the inner ear (cochlea), which are then interpreted by the brain. Hearing also helps in maintaining balance, as the inner ear contains the vestibular system. It alerts us to danger (such as horns, alarms, or approaching vehicles) and enhances our

awareness of the environment. Thus, hearing is not only important for communication but also for safety, learning, emotional bonding, and overall quality of life.

Hearing loss is one of the most common sensory impairments worldwide and significantly affects communication, cognitive development, academic performance and quality of life, particularly in children. According to WHO, over 5% of the world's population (430 million people) require rehabilitation to address their disabling hearing loss. It is estimated that by 2050 over 700 million people or 1 in every 10 people will have disabling hearing loss^[1]. Hearing loss can be conductive, sensorineural, or mixed in nature. SNHL result from lesions of the cochlea or the 8th nerve and its central connections. It can be congenital or acquired in nature.

The major characteristic features of SNHL includes positive Rinne test, weber lateralized to better ear, reduced bone reduction on ABC and Schwabach test, and it often involves high frequencies, with no gap between air and bone conduction curve on audiometry, loss may exceed 60dB, speech discrimination may be poor with difficulty in hearing in the presence of noise.^[2]

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Early detection of SNHL is important as measures can be taken to stop its progress, reverse it or to start an early rehabilitation programme, so essential for communication. The underlying cause which is responsible for hearing loss has to be managed. Ototoxic drugs should be used with care and discontinued if causing hearing loss.^[2] NIHL can be prevented from further deterioration if the person is removed from noisy surroundings. Rehabilitation of hearing impaired with hearing aids and other devices is also adopted in certain cases.

Hearing loss can be understood as *Badhira* as per *Ayurvedic* classics. As per *Acharya Susrutha*, vitiated *Vata* and *Kapha* obstructs *Sabdavaha sira*s of *Srotrendriya* leading to *Srotorodha*, and thereby leading to hearing impairment.^[3] As per *Acharya Vagbata*, on neglecting *Karnanada*, the vitiated *Vata* along with *kapha* causes difficulty in hearing noise which is progressive in nature. The *Samanya chikitsa* mainly aims at *Ghratapana*, *Rasayana*, following strenuous activities (*Avyayama*) and abstinence from head bath, following *brahmacharya*, avoiding speaking in loud noises.

This case report deals with 11-year-old female child complaining of difficulty in right ear since 1 year. On consultation, the parents were advised to keep the child under observation and to perform cochlear implantation in the future if hearing deteriorates or functional impairment increases. With this background, the child seek Ayurvedic treatment.

The aim of this case report is to share the clinical course of this child with sensorineural hearing loss, correlating it with the Ayurvedic concepts of *Badhira*. The objective is to emphasise the role of Ayurvedic treatment as supportive care in children who continue to struggle with hearing loss beside conventional treatment modalities.

MATERIALS AND METHODS

Chief complaints

Difficulty in hearing of right ear since 1 year.

History of presenting complaints

An 11-year-old female child, moderately built and nourished, born to non-consanguineous parents presented with decreased hearing in the right ear for the past 1 year. The child was apparently asymptomatic until one year prior to presentation,

Examination

General Physical Examination

Parameter	Findings
General condition	Conscious, well oriented to time, place & person
Built and nourishment	Moderately built and nourished
Vital signs	Pulse – 70 beats/ min BP- 110/70 mmHg

when the parents noticed that she had difficulty hearing music while using headphones, from the right side. Since onset, the hearing loss has been progressively increasing and not associated with fluctuation. There is no history of ear pain, ear discharge, ear fullness, or itching. There is no history suggestive of upper respiratory tract infection, fever, or viral illness preceding the onset of symptoms. The child has no history of tinnitus, vertigo, imbalance, nausea, or vomiting. There is no history of head trauma, barotrauma, exposure to sudden loud noise, or blast injury. There is no history of ototoxic drug intakes, or no history of previous ear surgery or similar complaints in the past. The child was evaluated by an ENT specialist, where audiological assessment was done and was diagnosed with SNHL in the right ear. The parents were advised observation and possible cochlear implantation in the future if hearing deteriorates or functional impairment increases. Seeking alternative management, the parents later presented to our outpatient department for Ayurvedic management, following which the child was admitted in the hospital.

Birth and developmental history

The child was delivered at full term by normal vaginal delivery, with a birth weight of 2.9 kg. The neonatal period was uneventful, with no history of birth asphyxia, neonatal jaundice, NICU admissions, meningitis or seizures. Developmental milestones were achieved appropriate for age, and speech and language development were normal.

Immunization history

All immunizations were received as per National Immunization Schedule.

Past history

nothing relevant

Family history

No relevant family history

Personal history

Bowel- Regular

Appetite – Normal

Micturition- WNL

Sleep – Sound

Allergy – Not yet noticed

Diet- Mixed

	RR - 16 breaths/min Temperature - afebrile
Pallor	Absent
Icterus	Absent
Cyanosis	Absent
Clubbing	Absent
Lymphadenopathy	Absent

Local Examination of ear

Inspection

Structure	Rt ear	Lt ear
Pinna	Within normal limits	Within normal limits
Deformity/ scars	Absent	Absent
Preauricular sinus	Absent	Absent
Swelling/ erythema	Absent	Absent
Discharge	Absent	Absent
External auditory canal	Within normal limits	Within normal limits

Palpation

	Rt ear	Lt ear
Tragal sign	Negative	Negative
Mastoid tenderness	Absent	Absent
Pre/ post auricular swelling	Absent	Absent
Regional lymph nodes	Absent	Absent

Otoscopic examination

	RT	LT
EAC	WNL	WNL
Tympanic membrane		
1. Colour	Pearly white	Pearly white
2. Position	WNL	WNL
3. Transparency	Translucent	Translucent
COL	Normal	Mild wax

Tuning fork tests

Test	Rt ear	Lt ear
Rinne's test	AC > BC	AC > BC
Weber's test	-	Lateralized to left ear
ABC	Equal to examiner	Equal to examiner

Hearing assessment- PTA

Parameter	Rt ear	Lt ear
21/ 9/24 Pure tone average	>100 dB	15dB
Type of hearing loss	Minimal precipitously sloping to profound SNHL	Hearing within normal limits

Vestibular examination

Test	Findings
Nystagmus	Absent
Romberg's test	Negative
Gait	Within normal limits
Tandem walking	Possible

Internal Medicines

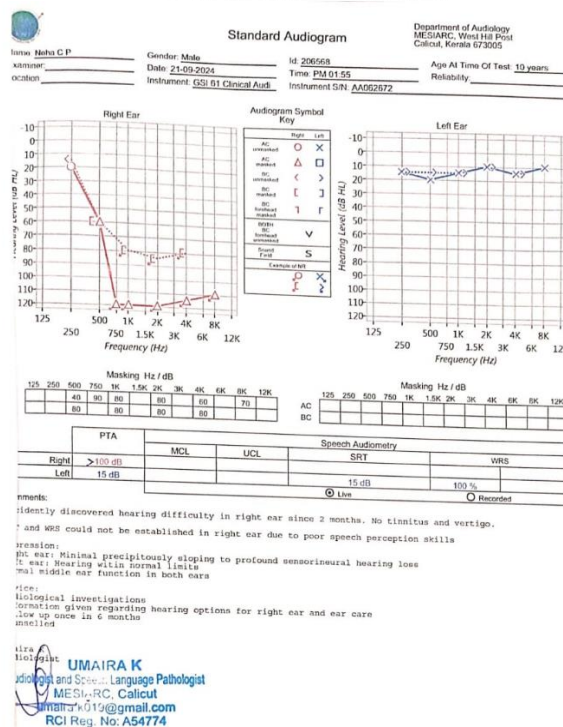
S.No	Medicine	Dose	Time
1.	Aswagandha choorna	1 tsp with milk	Twice daily, after food
2.	Ashtachooranam	1tsp with hot water	Twice daily, before food
3.	Rasnadasamoola ghritha	1 tsp	Twice daily, after food
4.	Rajanyadi choorna	1tsp with ghee & honey (in unequal quantities)	Twice daily, after food

Procedures

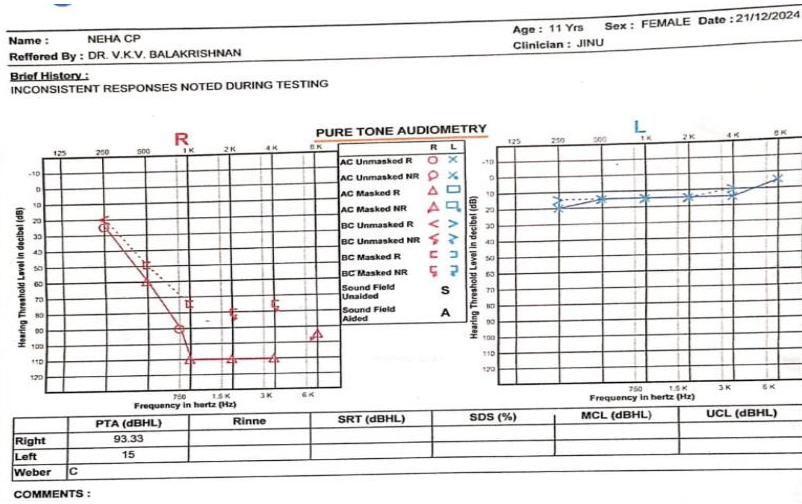
S.No	Procedure	Medicine	Number of Days
1.	Takrapanam	1 tsp Ashtachooranam	1 day
2.	Vicharana snehapanam	Rasnadasamoola gritham	3 days
3.	Abhyanga ooshmasweda	Lakshadi tailam	1 day
4.	Virechanam	Gandharvaerandam, milk, Triphala kashayam	1 day
5.	Ksheeradhoomanasyam	Rasnadasamoola gritham	5 days
6.	Shirovasthi	Karpasasthysadi tailam	7 days
7.	Karna poorana	Ksheerabala tailam	7 days

RESULT

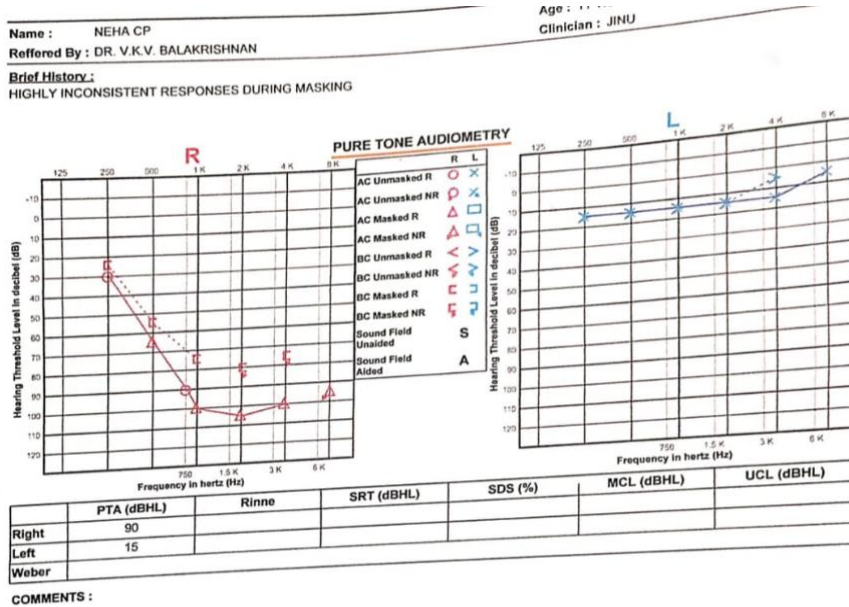
The patient was admitted in the inpatient department and Ayurvedic treatment was carried out, pure tone average of patient has been decreased from >100dB to 93.3dB. During follow up period, audiological parameters were reassessed and pure tone average has again reduced to 90dB.



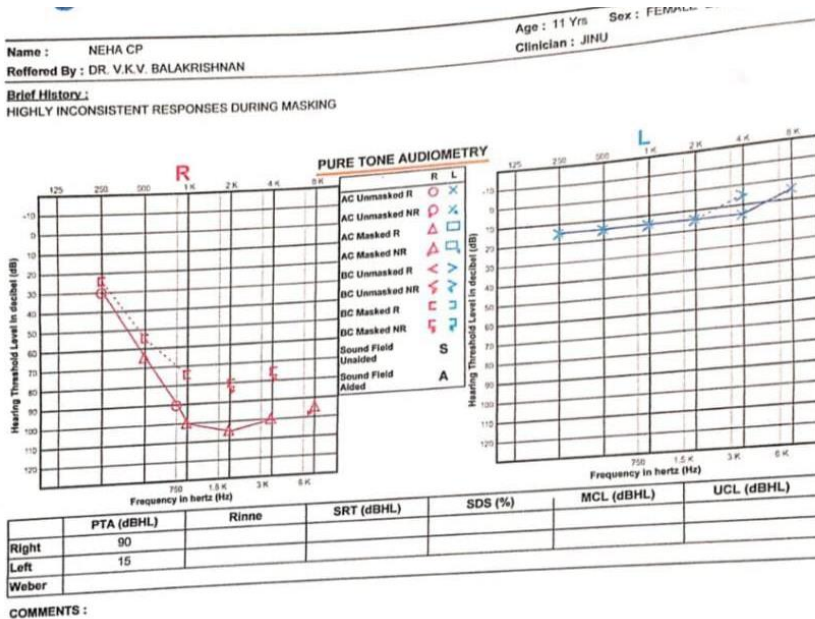
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25-01-2025



21-05-2025

DISCUSSION

The treatment was mainly based on the principles of *Agni Deepana*, *Krimihara*, *Brimhana* in nature. Ayurveda considers *Agni* as the prime determinant of health. Balanced *Agni* ensures proper digestion, metabolism and nourishment of *dhatu*s. Any impairment in *Agni* leads to the formation of *Ama* responsible for *Srotodhushti* and *Dosha kopa*. *Ama* is regarded as the root cause of many acute and chronic disorders. Therefore, *Ama chikitsa* is considered as a prerequisite before initiating disease specific treatment. Classical texts emphasize *Deepana*, *Pachana*, and *Shodana* as the fundamental principles for the management of *Ama*. *Ashta choorna* mentioned in *Vatika gulma chikistadhikara* of *Ashtanga Hridaya* is predominantly *Katu lavana rasa*, *Ushna veerya*, *Katu vipaka*. It is *Deepana*, *Pachana*, *Jataragni vardhaka*. *Katu lavana rasa* helps in stimulating *Agni*. *Laghu*, *Rooksha* and *Teekshna guna* helps in *Ama pachana*, and enhances *Agni*.

Aswagandha choorna having *Rasayana guna* may exhibit neuroprotective effects in the inner ear and brain tissue. *Aswagandha choorna* is also considered as a potent medicine for cognitive function protection^[4]. It helps in pacifying the vitiated *Vata* and *Kapha doshas*, having *Madhura vipaka*, *Snigdha laghu guna*. *Withanolides* helps in stimulating natural killer cells, modulates cytokines as well as helps in improving host immunity.

As the *Kapha dosha upachaya* in *Balyavastha* makes the child susceptible to *Ama sanchaya* and *Rasa dushti*. *Balya*, being *Kapha* predominant *Kala* makes the child more susceptible to *Kapha pradhana vyadhis* such as upper respiratory tract infections including adenoids, tonsillitis etc. Hence, *Rajanyadi choorna* acts as an immunomodulator and also as antioxidant properties. To prevent and treat *Karna rogas* in children, it is essential to control *Kapha* and to stabilize *Agni*.

Rasna dasamoola ghritha, mentioned in *Kasa chikitsa* in Ayurvedic classics is specially indicated in *Vata vikaras*. As *Ajamamsa* is also a constituent of this preparation, it is *Brimhana* in nature and also aids in *Datuvridhhi*. *Gritha* being *Snigdha* and *Balya*, boosts the overall vitality and development in children. *Snehapana* was hence carried out with *Rasna dasamoola ghritha* for stabilizing *Agni* as well as to help in *Dhatu vridhhi*.

Abhyanga ooshma sweda was done with *Lakshadi taila* as *Poorvakarma* prior to *Virechana*. *Doshas* which have been lubricated by *Abhyanga* and *Snehapana* in *Koshta*, *dhatu* and *Srotas* undergoes *Dravata* by *Sweda karma*, brought in to *Koshta* and will be expelled by *Shodana* therapies. *Shodana* was through *Virechana* with *Gandarva eranda*, milk and *Triphala Kashaya* which helps in expulsion of the

vitiated *Doshas*. As per Ayurvedic classics, proper *Shodana* therapy helps in providing *Bala* to *Indriyas*, provides *Sthiratvam* to *Dhatu*s, causes *Agni deepthi*.

Nasya is considered as the major route for expulsion of vitiated *Doshas* from *Jatru urdwa*, besides that the concept of "*Nasa hi shiraso dwaram*" also helps in influencing head, brain and sense organs. It also has the *Guna* in providing *Dridendriyatha*. As *Ksheera-dhooma nasya* is used, the *Madhura rasa* of *Goksheera* helps in *Sapta dhatu vardhaka* and *Indriya prasadaka*. Therby, it helps in improving the sensory functions. Due to its *Snigdha guna*, it helps in mitigating *Vata dosha*. *Bala moola* being *Madhura rasa*, *Lagu snigdha guna*, *Sheeta veerya* and *Madhura vipaka* is *Balya*, *Brimhana* and *Vata samana* in nature.^[5]

Shirovasti helps in treating the vitiated *Vata* along with providing *Indriya prasadana*. *Shirovasti* also has a neuromodulatory action. *Karpasasthyadi taila* considered as '*Sarva anilapaham*' helps in stabilizing the vitiated *Vata*. It is also prepared in *Aja ksheera* which is thereby *Brimhna* in nature. The *Taila* hence acts as *Balya* and helps in *Vata kapha hara* thereby providing strength to nerves and muscles of the ear.

Karnapoorana was done with *Ksheerabala taila* as it is *Balya*, *Brimhana* thereby providing strength to the nerves and muscles of the ear. Anti-oxidant properties of the *Taila* also prevent possible damage to the ear.

CONCLUSION

The present case highlights the potential role of Ayurvedic management in addressing *Badhriya* corresponding to sensorineural hearing loss (SNHL) in an 11-year-old girl child. Considering the predominance of *Vata* along with *Kapha* involvement in the pathogenesis of *Badhriya*, a treatment protocol incorporating *Deepana-Pachana*, *Brimhana*, *Rasayana*, and appropriate *Shodhana* procedures was adopted with the objective of correcting *Doshic* imbalance, enhancing tissue nourishment, and supporting auditory function.

The observed clinical and audiological improvements suggest that a holistic, individualized Ayurvedic approach may contribute to functional betterment and improved quality of life in pediatric SNHL cases. Early intervention, sustained therapy, and careful monitoring appear to be crucial factors in achieving favorable outcomes.

Although this is a single case observation and cannot be generalized, it provides a foundation for further systematic clinical studies to evaluate the efficacy, safety, and long-term benefits of Ayurvedic interventions in managing sensorineural hearing loss. Integrative research with standardized assessment parameters may help in establishing evidence-based protocols for broader clinical application

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