



Case Study

CASE REPORT ON AYURVEDIC INTERVENTION ON UNILATERAL MIXED HEARING LOSS

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Article info

Article History:

Received: 25-06-2026

Accepted: 29-07-2026

Published: 15-08-2026

KEYWORDS:

Sensorineural
Hearing Loss,
Badhira, Pure
Tone Audiometry.

ABSTRACT

Sensorineural hearing loss (SNHL) is a disabling condition that affects speech perception, communication, and overall quality of life. Although hearing rehabilitation remains the cornerstone of conventional management, satisfactory improvement in auditory function is often difficult to achieve in chronic cases. Ayurveda describes a comparable clinical entity under *Badhira*, where derangement of *Vata Dosha* plays a predominant role. The present case explores the clinical response of an Ayurvedic treatment protocol in a child with unilateral SNHL. An 11-year-old boy presented with reduced hearing in the left ear for 8 years. Detailed clinical examination and Pure Tone Audiometry (PTA) confirmed unilateral sensorineural hearing loss. Based on Ayurvedic assessment, an individualized treatment plan comprising classical internal medications and external therapeutic procedures was administered. Hearing status and clinical symptoms were documented before and after completion of treatment using PTA and clinical evaluation. The patient demonstrated measurable improvement in hearing thresholds on post-treatment PTA. In addition, better sound perception and day-to-day communication were reported during follow-up. The treatment course was completed without any adverse reactions, indicating good tolerability. This case suggests that Ayurvedic intervention may contribute to functional improvement in selected cases of SNHL when planned according to classical principles. Although the findings are based on a single patient, they highlight the need for systematic clinical research to further evaluate the role of Ayurveda in the management of *Badhira*.

INTRODUCTION

Hearing is a fundamental sensory function that enables communication, learning, emotional expression, and social interaction. It plays a pivotal role in language acquisition during childhood and contributes significantly to cognitive, educational, and psychosocial development throughout life. Any impairment in hearing can have profound consequences on an individual's ability to communicate effectively, often resulting in social isolation, reduced academic performance, occupational limitations, and emotional distress. In children, the impact is particularly significant, as untreated hearing loss can interfere with speech and language development, delay cognitive maturation, and

adversely affect educational achievements and overall quality of life. Consequently, hearing impairment represents a major global public health concern that demands timely diagnosis and effective therapeutic interventions.

Sensorineural hearing loss (SNHL) is the most prevalent type of permanent hearing impairment and results from damage to the sensory hair cells of the cochlea, the auditory nerve, or the central auditory pathways. It may arise due to congenital abnormalities, genetic predisposition, infections, excessive noise exposure, ototoxic medications, autoimmune disorders, trauma, metabolic diseases, or age-related degeneration¹. Despite the diverse etiological factors, the underlying pathological mechanisms commonly involve irreversible degeneration of cochlear hair cells, synaptic dysfunction, impaired neural transmission, oxidative stress, mitochondrial dysfunction, inflammation, and apoptosis of auditory structures. The clinical manifestations of SNHL vary from mild to profound hearing impairment and may be associated with tinnitus, difficulty in speech discrimination,

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<https://doi.org/10.47070/ijapr.v14i8.4331>

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impaired sound localization, and communication difficulties, particularly in noisy environments.

Childhood sensorineural hearing loss (SNHL) represents a significant global health concern, affecting approximately 1 in every 2,000 newborns and increasing to nearly 6 per 1,000 children by 18 years of age. Timely recognition and intervention are particularly important during childhood, as undiagnosed or untreated hearing impairment may interfere with the development of speech and language skills and can subsequently influence educational performance and social and emotional well-being.^[2] Current management of SNHL primarily focuses on hearing rehabilitation rather than restoration of auditory function^[1]. Pharmacological therapies demonstrate limited efficacy except in selected conditions such as sudden sensorineural hearing loss, where corticosteroids remain the standard treatment. Hearing aids amplify residual hearing and improve communication in patients with mild-to-severe hearing loss, whereas cochlear implantation has revolutionized the management of severe-to-profound SNHL by directly stimulating the auditory nerve. Nevertheless, these interventions cannot regenerate damaged cochlear hair cells or reverse neural degeneration. Furthermore, the high cost of advanced hearing devices, the need for long-term maintenance, variable patient acceptance, and restricted accessibility in resource-limited settings present considerable challenges. Therefore, there is growing interest in exploring complementary and integrative therapeutic approaches that may enhance auditory function, improve quality of life, and address the condition from a holistic perspective.

Ayurveda, approaches disease through an individualized and holistic understanding of the body, mind, and environment. Hearing is considered one of the important sensory functions governed predominantly by *Vata Dosha*, while the proper functioning of the ear depends upon the integrity of the *Shabdavaha Srotas* and the balance of bodily tissues. Classical Ayurvedic literature describes *Badhira* as a disorder characterized by diminished or complete loss of hearing, predominantly resulting from the vitiation of *Vata Dosha*, either independently or in association with *Kapha Dosha*, which obstructs the normal conduction and perception of sound. The pathogenesis involves derangement of doshas affecting the auditory apparatus, ultimately impairing the transmission of auditory stimuli.

The Ayurvedic management of *Badhira* aims not merely at symptomatic relief but at correcting the underlying *Doshic* imbalance, removing obstruction within the channels, nourishing affected tissues, and restoring physiological function^[3]. Depending upon the patient's constitution, disease chronicity, and clinical

presentation, treatment may include *Shodhana* (bio-purificatory therapies), *Shamana* (pacifying therapies), dietary regulation, lifestyle modification, and specialized procedures collectively known as *Kriyakalpa*. Therapeutic interventions such as *Nasya*, *Karnapoorana*, and carefully selected internal formulations are traditionally advocated for disorders involving the head and neck. These interventions are believed to facilitate *Dosha* equilibrium, improve local circulation, provide neuroprotective support, and enhance the functional integrity of auditory structures.

The present case report describes the Ayurvedic management of an 11-year-old child diagnosed with sensorineural hearing loss. It outlines the diagnostic considerations, therapeutic interventions, clinical progress, and treatment outcomes observed during the course of management. The report aims to contribute to the growing body of evidence supporting the potential role of Ayurveda as a complementary therapeutic modality in the holistic management of sensorineural hearing loss while encouraging further systematic clinical investigations in this field.

Case History

An 11-year-old child presented to the Outpatient Department of Shalakya Tantra with the chief complaint of diminished hearing for the past 8 years. According to the parents, the child appeared to have difficulty responding to auditory stimuli from early childhood. At around 3 years of age, they observed that the child consistently turned the head toward the direction of sound instead of responding directly, suggesting impaired auditory perception. The child also had difficulty understanding verbal commands and frequently required repetition during conversations. Over time, the parents noticed that the child habitually increased the television volume beyond the level comfortable for other family members, which further indicated progressive hearing impairment.

The child was born at full term by normal vaginal delivery (FTND) with a birth weight of 2.75kg. The antenatal, natal, and immediate postnatal periods were uneventful. Developmental milestones were reportedly achieved appropriately, except for concerns related to hearing.

Following clinical evaluation and audiological assessment, the child was diagnosed with sensorineural hearing loss (SNHL). During the course of evaluation, adenoid hypertrophy was also identified. Conservative management with an intranasal corticosteroid spray was advised for the adenoid hypertrophy. As the hearing deficit persisted, amplification using a hearing aid was recommended to facilitate speech perception and improve communication.

Despite adherence to the advised conservative management, there was no appreciable improvement in hearing. The parents sought Ayurvedic management with the expectation of improving the child's auditory function and quality of life.

Past History

There was no history of recurrent ear discharge, otalgia, vertigo, head injury, meningitis, ototoxic drug exposure, seizures, or any chronic systemic illness. No previous ear surgery was reported.

Family History

There were no family history of congenital or hereditary hearing impairment, genetic disorders, or neurological diseases.

Birth and Developmental History

- Birth: Full-term normal vaginal delivery.
- Birth weight: 2.75kg.
- Antenatal and perinatal history: Uneventful.
- Immunization: Age appropriate.
- Developmental milestones: Achieved appropriately except for delayed recognition of hearing impairment.

Personal History

- Appetite: Normal
- Bowel habits: Regular
- Micturition: Normal
- Sleep: Adequate
- Diet: Mixed

Clinical Diagnosis

- **Modern diagnosis:** Unilateral Sensorineural Hearing Loss (SNHL)
- **Associated condition:** Adenoid hypertrophy.
- **Ayurvedic diagnosis:** *Badhirya*.

- *Dasavidha pareeksha*
Dushya- Rasa, Rakta
Desha- Sadarana
Bala- Avara
Kalam- Kshanadi – Sarva rithu
Vyadhyavastha - Purana
Agni- Vishamagni
Prakruthi- Kapha
Vaya- Bala
Satwa- Avara
Sathmya- Sarvarasasathmya
Ahara- Abhyavaharanashakthi – Madhyama
Jaranashakthi – Madhyama
Samprapthi ghatakas
Dosham: Vata, Kapha
Dushya - Rasa, Raktha
Srotas: Sabda vaha Srotodusti: Vimarga gamana
Adhistana: Sravanendriya
Roga margam-Bahyam
Ashta sthana pareeksha
Nadi -Pitta Pradhan Kapha
Jivha -Upaliptham
Mala- (Samyak day), Agrathitham
Mutra- Samyak
Shabda- Vikruthi
Sparsha -Anushnasheeta
Druk- Prakruth
Akruti- Madhyama
 Diagnosis: Unilateral severe to profound mixed hearing loss



Examination

	Right ear	Left ear
External ear & Pinnae	WNL	WNL
Pre auricular & post auricular region	WNL	WNL
EAC	WNL	WNL
TM	Pearly white	Pearly white
Cone of light	Present	Present
Tuning fork tests- Rinne's test Weber's test ABC test	AC > BC Lateralised to right ear Same as that of the examiner	AC > BC Cannot be elicited

Investigations

14/7/2018

SRAVANA HEARING AID CENTRE
Auditory & Speech Therapy Centre

Ph: 9460 2200733
Mob: 99471 86928
99473 30500

Address: 1st Floor, Centre Point Building, Opp. Sanku Chitra, Newkara Road, Bangalore-560041

Branches: KANNUR, PACHAYANGADI, PATTANAMANGALAM

Date: 14/7/2018

AUDIOLOGICAL EVALUATION REPORT

Auditory Brain Stem Response (ABR) Report:

Findings:

Right Ear: Peak V could be obtained till 30dBnHL at a repetition rates of 27.1/sec

- Absolute latencies within normal limits
- Wave morphology and replicability is good

Left Ear: Peak V could be obtained at 90dBnHL at a prolonged latencies at a repetition rates of 27.1/sec

- Wave morphology and replicability is poor

Impression:

Right Ear: Hearing sensitivity within normal limits
Left Ear: Severe to profound hearing loss

Recommendation:

- Left ear masked responses need to be done
- BERA after 3months
- Follow Up

Thanking you,
Sreeyuktha P K (MASLP)

Authorised Fitting Centre for:
Siemens, Phonak, Starkey, Unihorn, Widex, GN Resound, Electone, Arpho, Alps, Oticon

11/7/2024

LIFE AUDIOLOGY AND SPEECH THERAPY CENTRE
1ST FLOOR, CMC HITECH POLY CLINIC NEAR BUSSTAND, PACHAYANGADI, TEL: +91 9747406040

Report to: [Redacted]
Patient: [Redacted]
Date: 11-07-2024 10:53 AM - LIFE AUDIOLOGY

Life AUDIOLOGY AND SPEECH THERAPY CENTRE

Comments:

Complaint of blocking sensation and reduced hearing sensitivity in the last many years in left ear.
Complaint of adenoids, No tinnitus, vertigo, ear pain, ear infection and discharge as reported.

Immittance Report

Tympanograms

Right: ECV: 0.8 ml, Peak: 0.2 ml / -83 daPa - As, Probe tone: 226 Hz, Pressure: -200...200 daPa at 200 daPa/s

Left: ECV: 0.8 ml, Peak: 0.3 ml / -134 daPa - C, Probe tone: 226 Hz, Pressure: -200...200 daPa at 200 daPa/s

Reflexes

	500 Hz	1 kHz	2 kHz	4 kHz	BBN
Left	---	---	---	---	---
Right	---	---	---	---	---

7/11/2024

Life AUDIOLOGY AND SPEECH THERAPY CENTRE
1ST FLOOR, CMC HITECH POLY CLINIC NEAR BUSSTAND, PACHAYANGADI, TEL: +91 9747406040

Report to: [Redacted]
Patient: [Redacted]
Date: 27/05/2026

nanoTym Immittance Report

Comments:

Right Ear: As type tympanogram, Left Ear: A type tympanogram

Life AUDIOLOGY AND SPEECH THERAPY CENTRE
1ST FLOOR, CMC HITECH CLINIC, NEAR BUSSTAND, PACHAYANGADI, TEL: +91 9747406040

Report to: [Redacted]
Patient: [Redacted]
Date: 27/05/2026

nanoTym Immittance Report

Comments:

Right Ear: As type tympanogram, Left Ear: A type tympanogram

27/5/2026 (After treatment)

Pure Tone Average Values**Pure-Tone Hearing Impairment Percentage**

Date	Right Ear (%)	Left Ear (%)
11/07/2024	0%	>97.5%
28/09/2024	0%	82.5%
03/09/2025	0%	65.0%
27/05/2026	0%	0%

Internal Medicines

S.No	Medicine	Dose	Anupana	Time
1.	<i>Aswagandha Choorna</i>	1 tsp	Milk	Twice daily, after food
2.	<i>Ashta choorna</i>	1 tsp	Hot water	Twice daily, before food
3.	<i>Rajanyadi choorna</i>	1 tsp	Honey & ghee	Twice daily, after food
4.	<i>Rasnadasamoola ghritham</i>	1 tsp		Twice daily, after food
5.	<i>Krimigna vati</i>	1 tablet		Twice daily, after food

Therapeutic Intervention

The therapeutic intervention was given for a period of 21 days at regular interval of 3 months as shown from the age of 4 years.

S.No	Procedure	Drug	Number of days
1.	<i>Takrapana</i>	<i>Vaiswanara Choorna</i>	1 day
2.	<i>Vicharana Snehapana</i>	<i>Rasnadasamoola Ghritha</i>	3 days
3.	<i>Abhyanga ushma sweda</i>	<i>Lakshadi Taila</i>	2 days
4.	<i>Virechana</i>	<i>Gandarva erandam -10ml with milk 20ml</i>	1 day
5.	<i>Ksheeradhoomanasya</i>		5 days
6.	<i>Shirovasthi</i>	<i>Ksheerabala 7 Avarthi & Lakshadi taila</i>	7 days
7.	<i>Karnapoorana</i>		7 days

DISCUSSION

The initial lines of the treatment are based on the principles of *Agni Deepana*, *Krimihara*, *Brihmana* and *Vata samana*. *Agni* is considered as an important parameter in Ayurvedic treatments. Deranged *Agni* leads to the production of *Ama* which obstructs *Srotas* and triggers systemic disease. Moreover, *Agni* correction is required for proper absorption and assimilation of medicines. Hence, *Ashtachoorna* mentioned in *Gulma chikitsa* was given before food with hot water aimed at increasing the digestive fire. *Agni Deepana* plays an important role in the treatment. *Katu* and *Lavana rasa* support proper digestion. *Laghu*, *Ruksha Gunas* facilitate digestion and promote *Srotoshodhana*, thereby supporting the removal of accumulated *Doshas* and metabolic impurities.

Krimighna Vati may support normal gastrointestinal motility and facilitate proper bowel elimination. *Ashwagandha* possesses *Ushna Veerya* and *Madhura Vipaka*, which are considered beneficial in balancing *Vata Dosha* and supporting *Dhatu* nourishment. It is also particularly reported to exhibit immunomodulatory activity. *Rasna Dasamoola Ghritha*

contains nourishing components like *Ajamamsa* and drugs belonging to the *Jeevaniya Gana*, which provide *Brimhana* effects. The therapeutic rationale of *Snehapana* in this protocol is to support *Agni*, facilitate proper digestion and metabolism, and thereby promote adequate *Dhatu* formation and nourishment. *Lakshadi Taila* was administered as a *Poorva Karma* before *Virechana* to prepare the body and facilitate the mobilization of *Doshas* towards the gastrointestinal tract.

Virechana was performed to restore the imbalance of *Doshas* by facilitating the elimination of aggravated *Doshas* from the *Koshta*. Classical Ayurvedic literature attributes properly administered *Virechana* with effects such as *Indriyaprasada*, *Agni Deepana*, and improved *Dhatu Poshana*, thereby supporting the normal functioning of the sense organs and tissue nourishment. *Nasya* is traditionally considered beneficial for promoting *Indriya Bala* and supporting diseases predominantly associated with *Vata*. *Ghritha*, owing to its *Yogavahi* nature, is considered to enhance the therapeutic action of the

formulation. *Ksheeradhooma nasya* also helps in alleviating aggravated *Vata* in the region of *Srotra*, thereby supporting the functional integrity of the auditory system.

Shirovasti is traditionally indicated for disorders involving aggravated *Vata* and is considered beneficial for *Indriya Prasadana*. *Ksheerabala Taila*, used in this procedure, possesses *Brimhana* and *Indriya-prasadana* properties. Its constituents, including *Bala*, *Tila Taila*, and *Ksheera*, are traditionally regarded as strengthening and nourishing agents. These properties may support the strength and stability of structures involved in auditory function. *Karpasasthyadi Taila*, with predominantly *Vata-Kaphahara* and strengthening properties, may additionally support the nerves and muscular components associated with hearing. *Karnapoorana* with *Ksheerabala Taila* provides the benefits of its *Balya* and *Brimhana* properties and is traditionally employed to support the strength and nourishment of structures associated with the ear. The antioxidant constituents reported in *Ksheerabala* may also provide protection against oxidative stress and support the maintenance of healthy auditory tissues.

CONCLUSION

The present case highlights the potential role of a comprehensive Ayurvedic management protocol

in the management of sensorineural hearing loss in children. The combined approach of *Deepana-Pachana*, *Snehapana*, *Mridu Virechana*, *Ksheeradhuma Nasya*, *Shirovasti*, and *Karnapoorana* was aimed at correcting *Agni*, restoring *Dosha* balance, promoting *Dhatu* nourishment, and strengthening the sensory functions. The *Balya*, *Brimhana*, *Rasayana*, and *Indriya-Prasadana* properties of the medicines and procedures may have contributed to improvement in auditory function and overall vitality. The observed clinical improvement suggests that this multimodal Ayurvedic approach may have therapeutic potential in childhood sensorineural hearing impairment. However, larger studies with appropriate controls and objective audiological assessments are required to establish its efficacy and clarify the underlying mechanisms.

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Cite this article as:

Sruthi P, V.K.V. Balakrishnan. Case Report on Ayurvedic Intervention on Unilateral Mixed Hearing Loss. International Journal of Ayurveda and Pharma Research. 2026;14(8):91-96.

<https://doi.org/10.47070/ijapr.v14i8.4331>

Source of support: Nil, Conflict of interest: None Declared

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