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Case Study

# ROLE OF AYURVEDA IN THE MANAGEMENT OF UNILATERAL MIXED HEARING LOSS

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## ABSTRACT

Mixed hearing loss involves both conductive and sensorineural components, resulting from the combined dysfunction of the middle and inner ear. This case report describes a 12-year-old male child who presented with reduced hearing in the right ear for approximately six months. The hearing loss was unilateral, gradual in onset, and non-progressive, with no associated tinnitus, vertigo, ear pain, or discharge. A history of mumps infection approximately three years earlier, presenting with fever and right-sided parotid swelling, was noted. Mumps is a recognized cause of acquired unilateral sensorineural hearing loss and can result in permanent cochlear damage. Otolaryngological examination revealed Grade II adenoid hypertrophy, which may have contributed to the conductive component by causing Eustachian tube dysfunction and impaired middle-ear ventilation. Pure-tone audiometry showed severe mixed hearing loss in the right ear, with a pure-tone average (PTA) of 113dB, while hearing in the left ear remained normal. Hearing-aid rehabilitation had previously been advised, but the patient subsequently opted for Ayurvedic treatment. An inpatient Ayurvedic treatment protocol was administered, including internal medications, *Snehapana, Abhyanga* with *Swedana, Virechana, Ksheeradhuma Nasya*, *Shirovasti*, and *Karnapoorana* for 18 days, with follow-ups every three months. After three treatment cycles, the result of the Pure Tone Average (PTA) in the right ear improved from above 113dB to 80dB. The improvement was maintained during subsequent follow-up. From an Ayurvedic perspective, the condition was assessed as *Karnabadhirya*, predominantly involving *Vata* with associated *Kapha*. This case indicates a possible supportive role for Ayurvedic management in chronic mixed hearing loss.

## INTRODUCTION

Hearing loss is broadly classified as conductive, sensorineural, or mixed according to the anatomical site and nature of auditory dysfunction. Conductive hearing loss occurs when sound transmission through the external or middle ear is impaired, whereas sensorineural hearing loss results from dysfunction of the cochlea, auditory nerve, or related neural pathways. Mixed hearing loss is characterised by the simultaneous presence of conductive and sensorineural components and may therefore reflect pathology involving both the middle and inner ear[1,2].

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In children, middle-ear pathology is an important contributor to conductive hearing impairment. Adenoid hypertrophy may interfere with Eustachian tube function and middle-ear ventilation, thereby increasing the risk of otitis media with effusion (OME). Persistent middle-ear effusion can produce a conductive component of hearing loss, and assessment of hearing and middle-ear status is therefore an important aspect of paediatric otological evaluation[3,4].

Sensorineural hearing loss may also occur following viral infections. Mumps is a well-recognised, although uncommon, cause of acquired unilateral sensorineural hearing loss in children. Mumps-associated hearing loss is typically severe and may be permanent, with cochlear injury considered an important mechanism. Vestibular involvement has also been reported in individuals with hearing impairment following mumps infection[5,6].

In the present case, the previous history suggestive of unilateral mumps infection provides a possible background for the sensorineural component, whereas Grade II adenoid hypertrophy may have contributed to an additional conductive component. Thus, the coexistence of these possible inner- and middle-ear factors provides a clinical basis for the observed mixed hearing loss.

From an Ayurvedic perspective, ear disorders are described under *Karnaroga*, where hearing loss comparable to *Badhirya* is associated predominantly with *Vata dosha* and also has an association with *Kapha dosha*. Treatment principles include *Vata-Kapha* pacification, *Snehana, Swedana, Shodhana*, and local therapeutic procedures. These concepts provide the traditional rationale for considering an Ayurvedic therapeutic approach in disorders presenting with impaired hearing.

## MATERIALS AND METHODS

### Case History

A 12-year-old moderately built male child was admitted to the inpatient department on 30/03/2024 with complaints of diminished hearing in the right ear for approximately six months. The hearing impairment was unilateral, insidious in onset and non-progressive. There was no history of tinnitus, vertigo, otalgia, otorrhea, headache or facial asymmetry.

Approximately three years before presentation, during the COVID-19 pandemic, the patient experienced an episode of fever accompanied by headache, malaise and swelling over the right parotid region, which subsided spontaneously within four days. The clinical picture was suggestive of mumps infection. No auditory or vestibular complaints were noted during the acute illness. The patient also had a known history of adenoid hypertrophy for one year, with previous evaluation documenting Grade II enlargement.

The hearing deficit was first noticed nearly two years later while using headphones during routine activities. Subsequent ENT evaluation revealed profound sensorineural hearing loss in the right ear, and hearing aid rehabilitation was advised. Owing to a reluctance to use hearing aids and the desire for alternative treatment options, the patient was admitted for Ayurvedic management.

**Table 1: General examination**

| | |
|---|---|
| General condition | Conscious, well oriented to time, place and person |
| Built and nourishment | Moderately built and nourished |
| Vital signs | PR – 72/min<br>BP-110/70 mmHg<br>RR-18/min<br>HR-72/min<br>Temperature – Afebrile |
| Pallor | Absent |
| Icterus | Absent |
| Cyanosis | Absent |
| Clubbing | Absent |
| Lymphadenopathy | Absent |

### Local examination

Nose, throat- NAD

**Table 2: Examination of Ear**

| | Right ear | Left ear |
|---|---|---|
| Pinna | NAD | NAD |
| Pre-auricular and post-auricular area | NAD | NAD |

**Table 3: Otoscopic examination**

| | Right Ear | Left Ear |
|---|---|---|
| EAC | Clear | Clear |
| TM<br>1. Colour<br>2. Position<br>3. Transparency | <br>Pearly white<br>WNL<br>Translucent | <br>Pearly white<br>WNL<br>Translucent |
| COL | Present | Present |

**Table 4: Tuning fork examination**

| Test | Right ear | Left ear |
|---|---|---|
| Rinne's test | AC > BC | AC > BC |
| Weber's test | Lateralized to left ear | |
| ABC | Reduced | Same as the Examiner |

**Table 5: Hearing assessment – PTA on 29/03/2024**

| Parameter | Right ear | Left ear |
|---|---|---|
| Pure tone average | 113 dB | 15 dB |
| Type of hearing loss | Severe mixed hearing loss | Hearing sensitivity within normal limits |

**Table 6: Internal medicines**

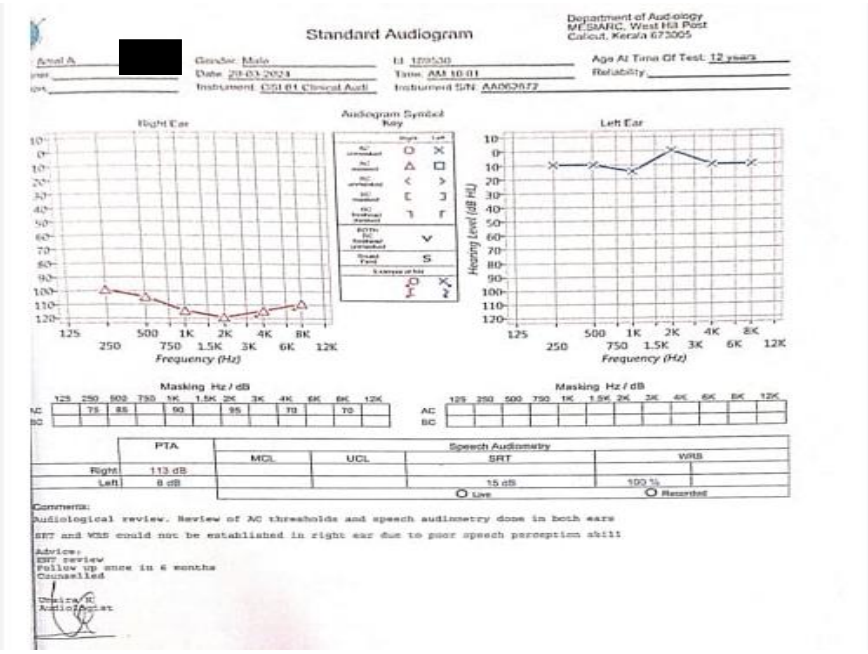
| S.No | Medicine | Dose | Time |
|---|---|---|---|
| 1 | *Ashta Choornam* | 1 tsp bd with lukewarm water | 7 days |
| 2 | *Rajanyadi Choornam* | 1 tsp bd a/f with honey and ghee in unequal quantity. | Whole treatment period |
| 3 | *Rasnadasamoola Ghritam* | 1tsp Hs | Whole treatment period |
| 4 | *Aswagandhachoornam* | 1tsp bd a/f with milk | Whole treatment period |

**Table 6: Procedures**

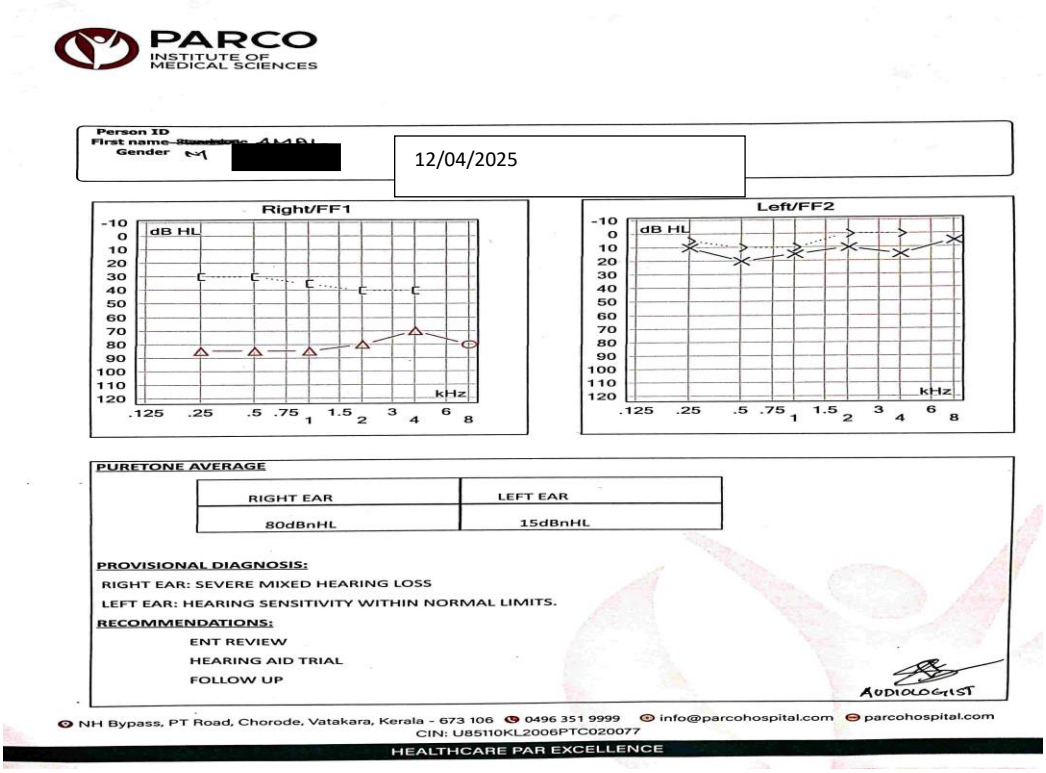
| S.No | Procedure | Medicine | No. of Days |
|---|---|---|---|
| 1 | *Takrapanam* | *Ashtachoornam* | 1 day |
| 2 | *Snehapanam* | *Rasnadasamoola ghritam* | 3 days |
| 3 | *Abyangam+Ushnambusnanam* | *Lakshadi tailam* | 2 days |
| 4 | *Virechanam* | *Gandharvaerandam*+milk+*Triphala kashayam* | 1 day |
| 5 | *Ksheeradhooma nasya* | *Rasnadasamoola ghritam* | 5 days |
| 6 | *Shirovasthi* | *Ksheerabala+Karpasastyadi tailam* | 7 days |
| 7 | *Karnapooranam* | *Ksheerabala 101 Avarti* | 7 days |

**RESULT**

The patient was admitted to the inpatient department, and Ayurvedic treatment was carried out; the patient's pure-tone average decreased from> 113 dB to 80dB remained relatively stable during follow-up.




**29/03/2024-Before treatment**


PARCO
INSTITUTE OF MEDICAL SCIENCES

Person ID
First name [redacted]
Gender M

12/04/2025

Right/FF1




Left/FF2




**PURETONE AVERAGE**

| RIGHT EAR | LEFT EAR |
|---|---|
| 80dBnHL | 15dBnHL |

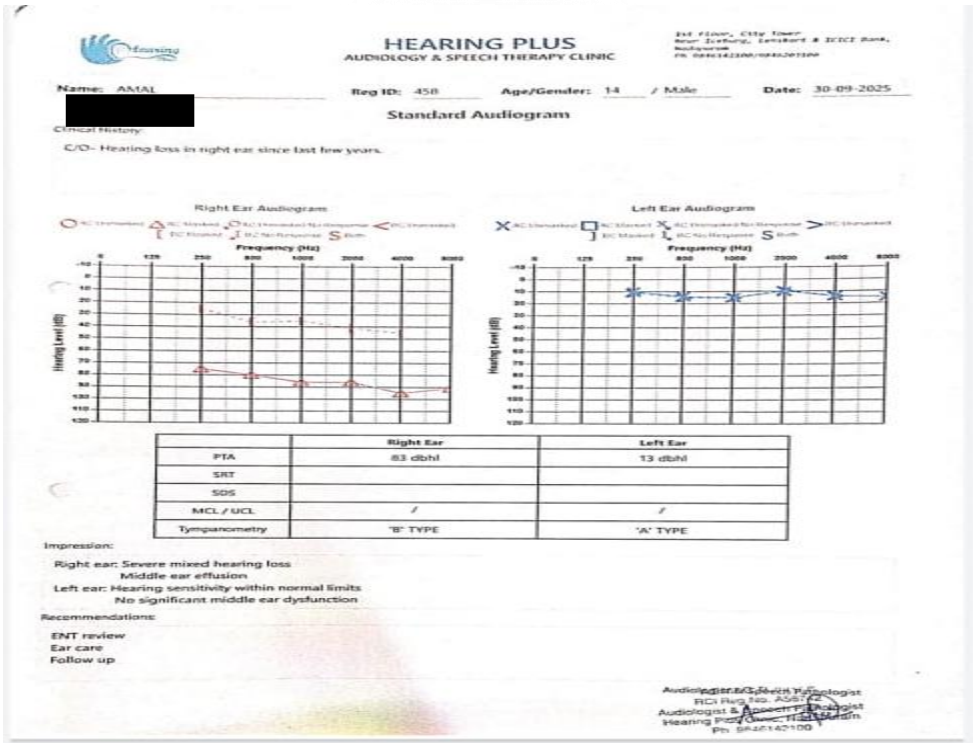
**PROVISIONAL DIAGNOSIS:**
RIGHT EAR: SEVERE MIXED HEARING LOSS
LEFT EAR: HEARING SENSITIVITY WITHIN NORMAL LIMITS.

**RECOMMENDATIONS:**
ENT REVIEW
HEARING AID TRIAL
FOLLOW UP

AUDIOLOGIST

NH Bypass, PT Road, Chorode, Vatakara, Kerala - 673 106 0496 351 9999 info@parcohospital.com parcohospital.com
CIN: U85110KL2006PTC020077
HEALTHCARE PAR EXCELLENCE

**12/04/2025**


HEARING PLUS
AUDIOLOGY & SPEECH THERAPY CLINIC

Name: AMAL [redacted] Reg ID: 458 Age/Gender: 14 / Male Date: 30-09-2025

Standard Audiogram

Clinical History:
C/O- Hearing loss in right ear since last few years.

Right Ear Audiogram




Left Ear Audiogram




| | Right Ear | Left Ear |
|---|---|---|
| PTA | 83 dbhl | 13 dbhl |
| SRT | | |
| SDS | | |
| MCL / UCL | / | / |
| Tympanometry | 'B' TYPE | 'A' TYPE |

Impression:
Right ear: Severe mixed hearing loss
Middle ear effusion
Left ear: Hearing sensitivity within normal limits
No significant middle ear dysfunction

Recommendations:
ENT review
Ear care
Follow up

Audiologist & Speech Therapist
RCI Reg No. A58726
Audiologist & Speech Therapist
Hearing Performance Specialist

**30/09/2025-Follow up**

## DISCUSSION

The unilateral mixed hearing loss in this patient may reflect the coexistence of inner- and middle-ear involvement. The previous episode of fever with right parotid swelling was clinically suggestive of mumps, a recognized cause of severe unilateral sensorineural hearing loss. However, the absence of auditory symptoms during the infection and the delayed onset of hearing difficulty make a definite causal association uncertain.

Grade II adenoid hypertrophy was an additional relevant finding. Its potential effect on Eustachian tube function and middle-ear ventilation may have contributed to the conductive component. Thus, the audiological profile may represent a pre-existing sensorineural deficit, possibly related to previous mumps infection, with a superimposed conductive component associated with adenoidal enlargement.

According to Ayurveda, impaired hearing can be considered under *Badhirya*, described among *Karnaroga*, in which *Vata* is regarded as the main *Dosha* involved, affecting the auditory apparatus. In a chronic condition, *Dhatukshaya* may further aggravate *Vata* and contribute to functional impairment. *Kapha* may also have a role when obstruction or excess secretions are present. In this child, the associated adenoid hypertrophy may be considered in relation to *Kapha* and *Srotorodha* in the *Urdhvajatru* region. Hence, the condition was considered predominantly *Vata*-related, with an associated *Kapha* component, forming the basis for treatment aimed at correcting both *Doshas* involved and the possible obstructive pathology.

The treatment plan was designed to address both *Dosha* elimination and *Dosha* pacification. *Snehapana* with *Rasnadasamoola Ghrita*, followed by *Abhyanga* and *Swedana*, was administered as preparatory therapy before *Virechana. Virechana* was subsequently carried out using *Gandharva Eranda* with milk and *Triphala Kashaya*. These measures were intended to support *Dosha* elimination and prepare the patient for subsequent *Vatahara* and *Brimhana*-oriented management.

***Ksheeradhuma Nasya***

*Nasya* is traditionally indicated for disorders affecting the structures above the clavicle, with the classical statement *"Nasa hi Shiraso Dwaram"* describing the nose as a therapeutic route to the head and sensory organs. In this case, *Ksheeradhuma Nasya* was administered with *Rasnadasamoola Ghrita*. Milk was selected for its nourishing and *Madhura* properties, while *Bala* is traditionally regarded as *Balya, Brimhana*, and *Vata-shamana*. The *Snigdha* quality of the formulation may further support Vata pacification. Hence, *Ksheeradhuma Nasya* was included to address *Vata* predominance and support the functional status of the auditory system in this chronic condition.

***Virechana***

*Virechana* was the principal *Shodhana* procedure, preceded by *Snehapana, Abhyanga*, and *Swedana* to prepare the patient for *Dosha* elimination. *Gandharva Eranda* with milk and *Triphala Kashaya* were used, with the aim of clearing vitiated doshas and supporting subsequent restorative therapy. Although *Virechana* is mainly indicated for *Pitta* disorders, its use may be individualized according to *Dosha* status, patient strength, chronicity, and therapeutic objectives.

***Shirovasti***

*Shirovasti* provides *Indriya Prasadana* and is traditionally used in the management of *Vata*-related disorders affecting the head and sensory functions. In this case, *Shirovasti* was performed using *Ksheerabala Taila* and *Karpasasthyadi Taila. Ksheerabala* is known for its *Indriya Prasadana* and *Brimhana* properties, while its ingredients- *Bala, Tilataila*, and *Ksheera*- are traditionally considered *Balyam*, supporting strength and stability of the middle ear structures. *Karpasasthyadi Taila* contains drugs that are mainly *Vata-Kapha Hara* and are traditionally used to support the strength and function of nerves and muscles. The retention of medicated oil over the scalp provides a sustained *Snigdha* effect, which helps to pacify *Vata* and was therefore included in the treatment with the aim of supporting sensory function.

***Karnapoorana***

*Karnapoorana* involves instillation and retention of medicated oil in the external auditory canal. In this case, *Dhanwantaram Taila* was used for seven days as a local measure intended to provide *Snigdha* and *Vata-shamana* effects. It was included as part of the *Vata*-directed management of the auditory disorder.

**Internal Medicines**

***Rasnadasamoola Ghrita***

Containing *Aja Mamsa* and *Jeevaniya Gana*, the formulation provides nourishment and supports strength, especially in children. The *Snigdha* nature of *Ghrita* promotes *Bala* and vitality. *Snehapana* was intended to improve *Agni* and support proper *Dhatu* nourishment.

***Rajanyadi Choornam***

Childhood is considered a *Kapha*-predominant period, and excessive *Kapha* may contribute to conditions such as allergy, sinusitis, and adenoid enlargement. Persistent *Kapha* aggravation can cause *Shiro Abhishyanda* and may subsequently affect ear health. Hence, *Kapha* control and maintenance of *Agni* are important in preventing such disorders. *Rajanyadi Choorna* also possesses reported immunomodulatory and antioxidant properties.

***Ashtachoorna***

*Ashtachoorna* was administered internally along with *Takra* to enhance *Agni* and facilitate the elimination of *Ama*. The formulation predominantly contains drugs possessing *Katu* and *Lavana Rasa*, which contribute to stimulation of the digestive process. The *Laghu*, *Ruksha*, and *Tikshna Guna* of its ingredients support proper digestion and promote *Srotoshodhana*, helping remove accumulated metabolic waste from the bodily channels. The *Ruksha Guna* helps reduce *Kapha* and counteract the properties associated with *Ama*, while the *Tikshna Guna* supports *Agni* and may increase *Pitta*.

***Aswagandhachoornam***

The *Ushna Veerya* and *Madhura Vipaka* of *Ashwagandha* help pacify *Vata* and nourish the *Dhatus*. Its withanolides support immune function by

enhancing natural killer cell activity and modulating cytokine responses.

## CONCLUSION

This case demonstrates an improvement in hearing thresholds following a multimodal Ayurvedic treatment approach in a child with unilateral mixed hearing loss. The treatment incorporated *Shodhana*, *Snehana, Swedana, Nasya, Shirovasti, Karnapoorana*, and internal medicines based on the Ayurvedic assessment of *Vata* predominance with associated *Kapha* involvement. The right-ear PTA improved from more than 113 dB to 80 dB and remained relatively stable during follow-up.

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