

Efficacy of Ayurvedic Treatment in Case of Sensory Neural Hearing Loss: A Case Report

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ABSTRACT

Badhirya, commonly known as deafness or hearing impairment, is a multifaceted condition with various aetiologies and clinical presentations. A significant form of deafness is Sensorineural Hearing Loss (SNHL), defined by impairment to the auditory nerve pathways or inner ear. It may be acquired or congenital and accounts for around 90% of all recorded occurrences of hearing loss. As of now, there is no recommended therapy for it. According to Ayurveda, hearing loss is correlated with *Badhirya*, and our Acharyas have suggested a variety of therapeutic approaches and formulations to effectively treat this condition. Hereby, the authors present a case report of 42-year-old male patient presented at the Shalakya Outpatient Department (OPD) with a three-month history of tinnitus and decreased hearing in both ears. Consequently, *Anutaila Nasya*, *Bilwadi Taila Karpooorana*, and *Saraivada Vati* were administered orally to the patient with *Badhirya* in present study. In present case, it was determined to be clinically successful, and excellent improvement in hearing was observed.

Keywords: Hearing aids, *Karnapooran*, *Nasya*, Tinnitus

CASE REPORT

A 42-year-old male patient presented to the Shalakya OPD with complaints of diminished hearing in both ears, accompanied by a ringing sound for the past three months. The patient was apparently well until three months ago when these symptoms began. He sought advice from a local Ear, Nose and Throat (ENT) facility, where he was recommended to undergo a pure tone audiometry test. The patient has been working as a Disc Jockey (DJ) operator for the past 11 years. His family history is not significant, and he has no known history of diabetes mellitus or hypertension. He has a history of pulmonary tuberculosis, which occurred eight years ago, for which he received allopathic treatment for one year.

Upon local examination, the patient's vital signs were as follows: pulse rate 79/min, blood pressure 130/80 mmHg, and normal bilateral air entry on respiratory examination. The cardiovascular system exhibited normal S1S2 heart sounds, and the central nervous system examination revealed that the patient was conscious and oriented. The musculoskeletal examination revealed no deformities, and the abdominal examination showed a soft, non-tender abdomen. The examination findings are presented in [Table/Fig-1,2].

Examination	Observation
Nadi	<i>Pitta Pradhan Kapha</i>
Jivha	<i>Niram</i>
Mala	<i>Samyak</i> (1-2 times a day)
Mutra	<i>Samyak</i> (4-5 times a day)
Shabda	<i>Vikrut</i>
Sparsha	<i>Anushnasheetta</i>
Druk	<i>Prakrut</i>
Akṛuti	<i>Madhyama</i>

[Table/Fig-1]: Ashtavidha Parkshan.

Examination	Observation
Dushya	<i>Rasa, Rakta</i>
Desh	<i>Sadharan</i>
Bala	<i>Madhyama</i>

Kala	<i>Aadana</i>
Anala	<i>Agnimandya</i>
Prakṛuti	<i>Vata Pradhan kapha</i>
Vaya	<i>Madhyama</i>
Satva	<i>Madhyama</i>
Satmya	<i>Shadarasatmya</i>
Ahar	<i>Mishra Aahara</i>

[Table/Fig-2]: Dashavidh Pariksha.

All routine investigations of blood and urine were conducted for all cases. Along with this, a few specific investigations were also performed [Table/Fig-3].

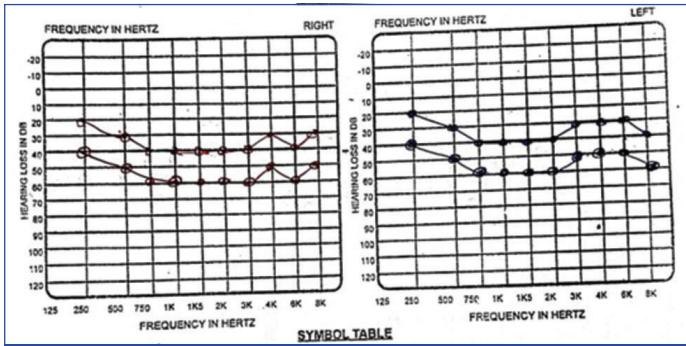
CBC	Observational values	Normal values
Hb	11.1 gm%	M: 14 to 16% F: 11 to 14%
TLC	9800/cumm	4000-11000/cumm
DLC	-	
Neutrophils	66%	40.75%
Lymphocytes	28%	20.45%
Eosinophils	02%	1.6%
Monocytes	04%	2.10%
Basophils	0	0.2%
Total RBC	3.71 million	4.5 to 5.5 million
Platelets	318000/cumm	1,50,000-4,50,000/cumm
PCV	40.7%	M 42-52% F 36-48%
ESR	32 mm/1 st hr	M-0.15 mm/hr F-0.20 mm/hr
MCV	86 mm/hr	80.97 mm/hr
MCH	26.7 pg	26.5-33.5 pg
MCHC	33.9 gm/dL	31.5-35.5 g/dL
Blood group	A Rh+	-
RBS	131 gm%	F 70-110 mg% PM <140 mg% Random <140 mg%

LFT	Within normal limit	-
KFT	Within normal limit	-
HIV	Negative	-
HbsAg	Non reactive	-

[Table/Fig-3]: Various laboratory investigations.

CBC: Complete blood count; Hb: Haemoglobin; TLC: Total leucocyte count; DLC: Differential leucocyte count; ESR: Erythrocyte sedimentation rate; RBC: Red blood cells; PCV: Packed cell volume; MCV: Mean corpuscular volume; MCH: Mean corpuscular haemoglobin; MCHC: Mean corpuscular haemoglobin concentration; RBS: Random blood sugar; LFT: Liver function test; KFT: Kidney function test; HIV: Human immunodeficiency virus; HbsAg: Hepatitis B surface antigen

The observation from present case report is that the pure tone audiometry prior to therapy showed a result of 47 dB HL, indicating significant hearing loss. [Table/Fig-4] presents the pure tone audiometric tests before treatment, while [Table/Fig-5] outlines the treatment plan adopted.

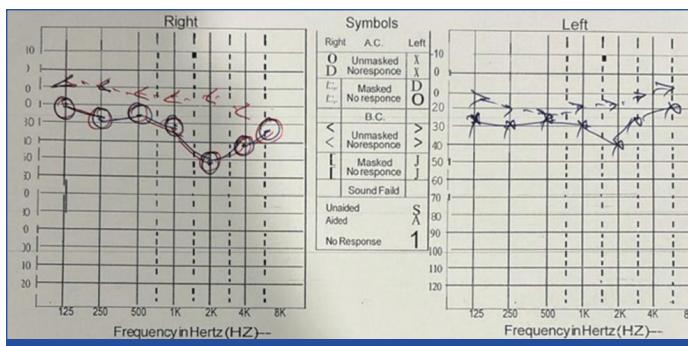


[Table/Fig-4]: Audiogram before treatment.

Treatment	Medicine	Mode of administration	Duration
Nasya	Anutaila	10-10 drops in right and left nostrils (nose) for 7 days within 3 days gap.	3 months
Karnapurana	Bilwadi Taila	Approximately, 22-24 drops (i.e., 1-1.5 mL) in each ear. For 15 days within three days gap.	5 months
	Sarivadi Vati	1 tab of 250 mg TDS with luke warm water or milk after meal.	
Oral medicine	Ashwagandha lehyam	1 tsp with milk BD.	5 months constantly

[Table/Fig-5]: Treatment timeline.

Following treatment, the audiometric result was 16 dB HL, indicating mild hearing loss [Table/Fig-6].



[Table/Fig-6]: Audiogram after treatment.

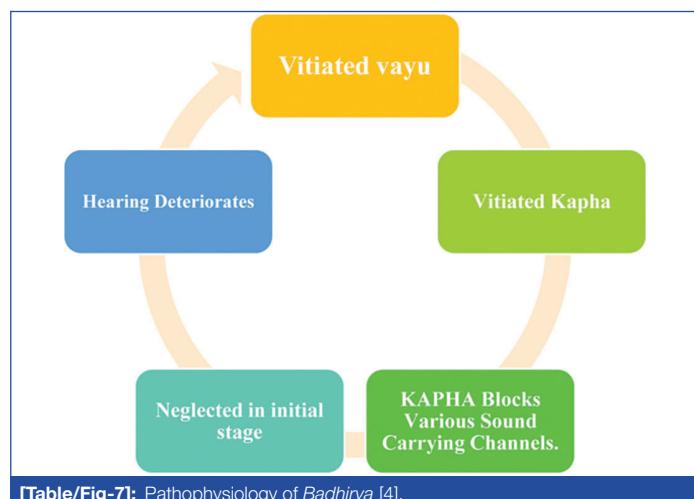
DISCUSSION

Around 360 million individuals worldwide suffer from significant hearing loss. Hearing loss due to conductive causes arises from disorders of the external and middle ears, while SNHL results from diseases of the auditory system, such as lesions in the cochlea, nerve damage, or impairment of the auditory pathways. SNHL may be triggered by cochlear disorders (sensory type) and neurological diseases involving the eighth Cranial Nerve (CN) and its central connections. Retrocochlear hearing loss is caused by lesions of the eighth CN and central auditory connections. The cochlea, which is the sensory organ for hearing, degenerates and leads to sensorineural hearing loss [1].

According to Ayurveda, in the early days, vitiated vata and *kapha doshas* obstruct several sound-carrying channels (*shabdavaha srotas*) as a result of negligent behaviour regarding the ears (Karnada) [2]. This may eventually lead to *Badharya*. The therapeutic recommendations for *Vataja Karnashoola* can be applied to *Badharya*. When *kapha* is associated with kaphanubandha factors (a secondary *dosha*), it must be eliminated by *vamana*, which is then followed by *nasya* and *tiikshna dhupapana*.

Treatment modalities such as *shirobasti*, *basti*, *nasya*, *svedana*, *nehana*, and *svedana* can be used according to the involvement of the doshas. Acharya Sushruta describes *Karnapoorana* with *bilwadi taila*, *ajadugdhasiddha taila*, and others as specific methods for treating *Badharya* [3].

Vitiated vayu, due to negligence regarding *karnanada*, accompanied by *vitiated kapha*, blocks various sound-carrying channels. If this condition is neglected in its initial stages, hearing deteriorates gradually, ultimately leading to *Badharya* [Table/Fig-7] [4].

[Table/Fig-7]: Pathophysiology of *Badharya* [4].

Nasya

It is made using the *dashaavruthatailapakavidhi* (ten times paka), which enables it to achieve *athyantha sukshmaguna*. This formulation is the most important and distinctive one described in all Ayurvedic texts. The primary indication for *Vanechanica Nasya* is *Avarodhajanya Shiroshoola*. *Nasya* with *Anutaila* aids in remove blockages in the channels (*srotorodha*), which enhances the activity of the *karnendriya*. *Anutaila* is intended to nourish the neurological system, balance blood circulation in the sensory organs, particularly the ears, and soothe the disturbed *Vata Dosha* in the brain [5].

Bilwadi Taila

Bilwadi Taila possesses the property of *Vata Kaphahara*. The proper function of hearing and balance can be maintained by the absorption of *Bilwadi Taila* through the tympanic membrane and the epithelial tissue of the outer ear canal. The "Kedarakulya Nyaya" states that *Karnapoorana* may initially enhance blood circulation to the ear. *Karnapoorana* facilitates the elimination of *Kapha* and *Vata*, which may rectify the microcirculation and preserve hearing ability while alleviating noises in the ears (*Karnanada*). *Karnapoorana* is the most effective treatment for ear disorders, where *Bilwadi Taila* oil is used to clear the ear canal and reduce tinnitus and hearing loss [5].

Sarivadi Vati

Sarivadi Vati is used to treat tinnitus, ear infections, and hearing issues. Its antimicrobial properties, derived from substances such as *Kushta* and *Guduchi*, effectively combat bacterial ear infections. *Sarivadi Vati* removes *Avarodha* of *Srotasa* and performs *Vatanulomana* and *Kapha Shamana*. Most of the ingredients have a *trichohashamaka* effect. It contains *Triphala*, which acts as an antioxidant and includes *Rasa Ausadhi*, which fortifies the nerves, enhancing *Rasa* and *Rakta Dhatu*. *Rasayana* is the principal

action of *Sarivadi Vati*, which acts as *Vatanulomana* and eliminates *Srotorodha* [5,6].

In a similar case report, a patient with SNHL was managed with Ayurvedic medications and lifestyle changes, such as practising yoga, following *Pathya*, and avoiding *Apathya* [7]. In present case, the patient was treated with Ayurvedic medicine, which helped to reduce the sensorineural hearing loss. Future studies with larger sample sizes should be conducted to assess the effectiveness of Ayurvedic medications in the treatment of SNHL. Based on the findings of present case, generalised conclusions cannot be drawn.

CONCLUSION(S)

Ayurveda provides a comprehensive explanation and treatment for sensory neural hearing loss. In present case, it was found to be helpful, shifting the hearing loss from moderate to mild.

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