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CASE REPORT

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Ayurvedic management of Badhirya w.s.r. Sensory Neural Hearing Loss - A Single Case Report

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ABSTRACT

Introduction: Sensorineural hearing loss (SNHL) is a type of hearing loss or deafness in which the root cause lies in the inner ear or sensory organ (cochlea and associated structures) or the vestibulocochlear nerve (cranial nerve VIII). According to ancient Acharyas, Badhirya is caused by the vitiated Vata Dosha or Vata-Kapha Doshas obstructing the Shabdavaha Srotas (pathway of hearing) or Shabdavaha Sira (auditory nerve) or by the negligence of Karnanada (tinnitus), etc., and gives rise to diminished hearing or incapability of hearing. In Vataja Badhirya patient is unable to differentiate the sound. So on the basis of sign and symptom it can be correlated with Sensory neural hearing loss. Aim: To evaluate the effect of Marsha Nasya with Anu Taila, Karnapurana with Bilwadi Taila and Sarivadi Vati (orally) in the management of Badhirya (SNHL). Materials and Methods: The subject approached Shalakya Tantra OPD with complaints like decreased hearing along with trouble in understanding speech since 1 years. Marsha Nasya with Anu Taila, Karnapurana with Bilwadi Taila, and Sarivadi Vati (orally) were prescribed for the treatment of the mentioned complaints for 6 months. Discussion: Vata Vyadhi Chikitsa Siddhant can be implemented as the management of Badhirya. The disease is Vata and Kapha predominant. Karnapurana and Nasya are the most prescribed procedures in the management of Badhirya, and thus attempts are made to bring about excellent results. Results: This case study indicates the significance of Ayurvedic management in Badhirya, which was confirmed by subjective improvement and by audiometric findings.

Key words: Badhirya, Karnapurana, Nasya, Rasayana, Sensory neural hearing loss.

INTRODUCTION

The World Health Organization (WHO) has defined hearing loss as "a person who is not able to hear as well as someone with normal hearing - a hearing threshold of 20 dB or better in both ears." Sensorineural hearing loss (SNHL) is a type of hearing loss or deafness in which the root cause lies in the inner ear or sensory

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organ (cochlea and associated structures) or the vestibulocochlear nerve (cranial nerve VIII). SNHL occurs when there is a problem in the sensory apparatus of the cochlea (sensory) or in the pathways of conduction of nerve impulses to the brain. SNHL can be peripheral and central (auditory pathway or cortex).

Acharya Sushruta has mentioned 28 types of Karna Rogas (diseases of the ear) in Uttara Tantra Chapter 20, and Badhirya (HL) is one of them.[1] According to Acharya Sushruta, vitiated Vata and Kapha Doshas reside in Shabdanuvaha Siras and cause Badhirya.[2] Acharya Dalhana states that not only Vata Dosha but also Rakta, Pitta, and Kapha Doshas get involved to cause Badhirya.[3] According to Acharya Vaqbhatta, Vata associated with Kapha and getting increased or by neglect of Karnanada (Tinnitus) results in hearing only loud sounds, hearing with difficulty, and gradually leading to deafness.[4]

Acharya Sushruta has mentioned in Urdhvjatrugata Marmas (supra clavicular region) that when Aghata

(trauma) on *Vidhura Marma* occurs, it will lead to *Badhirya*. [5]

In Ayurveda, Vataghna and Vatakaphaghna are the treatments mentioned in context with Badhirya, which include Vatashamaka Snehana, Swedana, Nasya, Karnapoorana, oral administration of Rasayana Sevana, Ghritapana, and other Vatahara procedures. [10]

The Following are some tests that may be recommended for babies and children to diagnose hearing loss: Auditory brainstem response, central auditory evoked potential, Otoacoustic emissions, Middle ear muscle reflex, Tympanometry, B.E.R.A. Audiometry.^[11]

CASE REPORT

Patient information

A 17-year old girl child came to *Shalakya* OPD of ABC hospital on December 30, 2023, with complaints of decreased hearing in both ears since 1 year. Even she is facing trouble in understanding speech. she hadn't taken any allopathic treatment. So, she came here for further *Ayurvedic* management.

History of past illness

The subject has no systemic illness.

Family history

No any history found related to sensory neural hearing loss.

Personal history

Table 1: Personal History of the Patient

1.	Bowel	Regular, once a day
2.	Appetite	Good
3.	Micturition	5-6 times per day
4.	Sleep	8 hr in night and day sleep for 1 hour
5.	Diet	Mixed

Pareeksha (Examination)

Table 2: Ashta Sthana Pareeksha

1.	Nadi	Vata Pradhan Kapha Anubandha, 72/min
2.	Mala	Prakruta, regular, once a day

3.	Mutra	Prakruta, 5 to 6 times/day, once at night
4.	Jihwa	Lipta
5.	Shabda	Prakruta
6.	Sparsha	Prakruta
7.	Druk	Aawila
8.	Akruti	Mahyama

Table 3: Dashavidha Pareeksha

1.	Prakriti	Vata-Pittaja
2.	Vikriti	Madhyama
3.	Sara	Tavakasara
4.	Samhanana	Madhyama
5.	Satmya	Madhyama
6.	Satva	Pravara
7.	Ahara Shakti	Madhyama
8.	Vyayama Shakti	Madhyama
9.	Vaya	Bala
10.	Pramana	Madhyama

On Examination of Ear

Table 4: On Examination of Ear before treatment (30/12/2023)

Otoscopic examination	Rt. Ear	Lt. Ear	
EAC	Clear	Clear	
Tympanic membrane	Intact and Mild retracted	Intact and Normal	
Tunnic Fork Test			
a. Rinne's test	AC>BC	AC>BC	
b. Weber's test	midline	midline	
Audiometry - PTA	Severe mixed hearing loss	Moderately severe sensory neural hearing loss	

Treatment

Table 5: Treatment advised from (1/01/2024 to 1/06/2024), follow up for 6 months at the interval of 15 days.

Treatment 1/01/2024 to 1/06/2024	Medicine	Mode of administration	Duration
Oral administration	Sarivadi Vati	1 Vati of 250 mg thrice a day with lukewarm water or milk after a meal.	6 months
Karnapurana	Bilwadi Taila	Approx. 24-26 drops (1ml). For 15 days with a 3- day interval	6 months (2 sittings in 1 month).
Nasya Karma	AnuTaila	6-6 drops each nostril for 7 days with a 3- days interval	6 months (3 sittings in 1 month).

Pathya - Apathya (do's and don'ts)

The patient was advised to follow *Pathya Apathya* during the whole treatment duration.

Pathya Vihara

Avyayama (avoidance of exercise), Ashirahsnana (Avoid head bath), Brahmacharya (celibacy), Abhashana (avoid excessive talking), Agni Santapa

Pathya Ahara

Godhuma (wheat), Shali (rice), Mudga (green gram), Yava (barley), Puranaghrita (ghee), Patola (bottle gourd), Shigru (drum stick), Lava, Mayura (peacock), Harina, Kukkuta

Apathya Vihara

Danta Kastha (brushing teeth with a hard brush made out of tender branches), Sirahsnaana (head bath), Vyayama (heavy exercise), Shoka, Shrama (Physical exertion)

Apathya Ahara

Ruksha Kashaaya Bhojana, Pravata (windstorm) and Shitodaka (drinking cold water)

DISCUSSION

According to the Acharyas, Shrotrendriya originates from Akasha Mahabhoota. Shabda (sound) travels through Vata while in the presence of Akasha Mahabhuta (space). Through Shrottendriya Adhishthana (Karna), Shrottendriya transmits the sound to Shravana Buddhi, which is responsible for the perception of sound. Thus, Vata plays an important role in normal hearing procedures. According to Aacharya Sushruta, vitiated Vata and Kapha Doshas reside in Shabdanuvaha Srotasa or Sira and cause Badhirya (SNHL).

The "Vata Vyadhi Chikitsa^[7]" and Rasayana Chikitsa (rejuvenation therapy) can be implemented as the management of Badhirya. These principles probably help in the regeneration and repair of damaged hair cells, which have improved hearing. As Acharyas has mentioned, different kinds of treatments are used in the management of Badhirya (SNHL), like Ghritapana, Rasayana Sevana, Nasya, Snehana, Swedana, Snehavirechana, Sirobasti, Karnapurana, Jalaukavacharana, etc., but Karnapurana and Nasya are the most prescribed procedures in the management of Badhirya (SNHL).

As mentioned earlier, the signs and symptoms of hearing loss can be correlated with *Badhirya* in *Ayurveda*. *Badhirya* is due to the vitiation of *Vata* and *Kapha Dosha*. *Anu Taila Nasya* scratches out the *Kapha Dosha* from *Shira* and improves the function of *Indriyas (Karna Indriya)*, thereby clearing the *Srotorodha*. *Anu Taila* was planned, which pacifies the aggravated *Vata Dosha* in the head and helps to normalize the function of the central nervous system by nourishing the nervous system and balancing the circulation of blood in the sense organs, including the ear.

Shringataka Marma in Shira is the junction of all sense organs like the eye, ear, nose, and tongue, and any medicine applied over this area targets the vitiated doshas related to all sense organs and helps in the nourishment of nerves connecting to these areas. Karnapurana is one of the treatments mentioned for all Karnarogas. Karnapurana with Bilwadi Taila has the Vatashamaka property and maintains normal hearing

capacity, as quoted by Acharya Charaka. "Na Karnaroga Vatothaha Nochchav Shrutihi, Na Badiryam Syannityam Karna Tarpanaat."^[12] Sarivadi Vati removes Shrotorodha and does Vatanulomana also It is the best Rasayana Dravya for Shravnendriya Vikara.

RESULTS

Before the start of the treatment on December 30, 2023, the audiometry report was done, which showed severe mixed hearing loss in the right ear and moderately severe sensory neural hearing loss in the left ear. After six months of treatment protocol, the patient got excellent results in subjective criteria. Now she was able to hear from one room to another, feeling relieved in her complaints and repeated Audiometry was done after treatment on June 1, 2024, which showed moderate sensory neural hearing loss in both ears.

Table 6: On Examination of Ear After Treatment (1/06/2024)

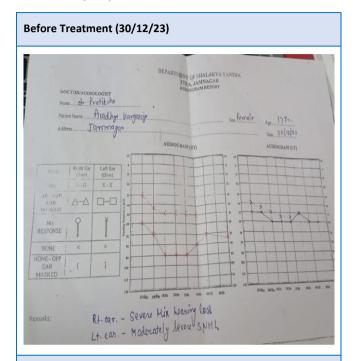
Otoscopic examination	Rt. Ear	Lt. Ear	
EAC	Clear	Clear	
Tympanic membrane	Intact and Normal	Intact and Normal	
Tunnic Fork Test			
a. Rinne's test	AC>BC	AC>BC	
b. Weber's test	The sound lateralized towards right ear.	-	
Audiometry	Moderate sensory neural hearing loss	Moderate sensory neural hearing loss	

CONCLUSION

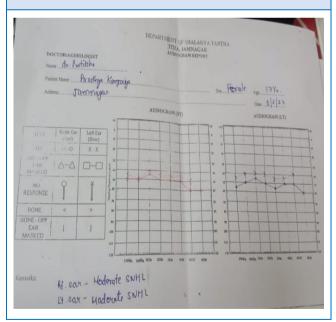
In sensory neural hearing loss, "Vata Vyadhi Chikitsa" and Rasayana therapy can be implemented as a management method. Anu Taila Nasya, Bilwadi Taila Karnapurana, and Sarivadi Vati orally have provided excellent improvement in the present case. Thus, this case study indicates effective management of

Ayurvedic oral medicine and procedures to treat *Badhirya* (sensory neural hearing loss).

Audiometry Report of Patient



After Treatment (1/06/24)



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