AYURVEDIC MANAGEMENT OF BADHIRYA (CONDUCTIVE HEARING LOSS)-A CASE STUDY

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ABSTRACT

Hearing loss is partial or complete inability to receive and interpretation of sound stimuli in unilateral or bilateral ear. On the basis of its pathogenesis, Hearing loss is categorized in to Conductive, Sensorineural and mixed. Childhood hearing loss can be a debilitating condition that affects 1 to 6 per 1,000 newborns to a significant degree, physically, mentally and socially. Among them, Conductive hearing loss is most common hearing loss in children which accounts 85 to 90 percentage of childhood hearing loss in India. Such high prevalence warrants close attention because it is widely acknowledged that the first 36 months after the birth represent a critical period in cognitive and linguistic development. In the Ayurvedic classics, Shrotrendriya (one of the pancha Gyanendriya) is seat of Vayu and Aakshatatwa and is nourished by Tarpaka-Kapha. The interchangeable term of Hearing loss in Ayurveda is BADHIRYA. In Modern Medicine, there is range of medical and surgical intervention to manage the conductive hearing loss even though which has its own limitation. Ayurveda also have protocol for the management of hearing loss. So, presented case was managed with as per the protocol (Karnapoorana and as per the guidelines of Pratishyayawatchikitsa) prescribed in Badhiryachikitsa in Ayurveda. The result of this case study assessed with Pure tone audiometry and Tympanometry before and after treatment. The present paper discusses a case of conductive hearing loss and its management in Ayurveda.

KEYWORDS: Badhirya, Conductive Hearing loss, Karna Purana.

INTRODUCTION

Deafness and Hearing loss are interchangeable term. According to the WHO, hearing loss refers to the partial or total inability to hear sound in one or both ears. People with hearing loss make up a significant 5.3% of the world’s population [1]. The statistics are alarming – 360 million populations in the world suffer from disabling hearing loss [2]. The prevalence and incidence of hearing impairment in India also are substantially high. In India, 63 million people (6.3%) suffer from significant auditory loss [3]. The high burden of deafness globally and in India is largely preventable and avoidable. The prevalence of deafness in south-East Asia ranges from 4.6% to 8.8% [4]. On the basis of survey carried out in CMC Vellore, it is estimated that in India 14,
58,000 children of 5-14 years with hearing loss needing treatment. Conductive hearing loss is the most common cause of hearing impairment, especially in children. The “conductive” component of the problem describes the blockage of sounds from reaching the sensory cells of the inner ear. In conductive hearing loss, the inner ear functions normally, but sound vibrations are blocked from passage through the ear canal, ear drum or across the tiny bones located in the middle ear. Patients with conductive hearing loss hear bone-conducted sounds presented with a small vibrator to the skull better (louder) than sounds presented through earphones.

Table: 1- Causes of Conductive hearing loss

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<tr>
<th>Causes of Conductive hearing loss</th>
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<tr>
<td>Congenital</td>
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<tr>
<td>- Microtia/ atresis</td>
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<td>- Tympanic membrane abnormalities</td>
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<td>- Ossicular malformations</td>
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<tr>
<td>Acquired</td>
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<tr>
<td>- Infection ( acute otitis media, otitis externa, ossicular erosion)</td>
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<td>- Otitis media with effusion</td>
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<td>- Foreign body (including cerumen)</td>
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<td>- Cholesteatoma</td>
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<tr>
<td>- Trauma (Ossicular disruption, tympanic membrane perforation)</td>
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Conductive hearing loss is usually mild to moderate in degree, may occur in one or both ears at the same time, and in most cases is correctable by relatively minor medical or surgical treatments. More significant conductive hearing loss may be associated with skull and/or facial malformations, which require technical surgery to correct.

According to Ayurveda when the vitiated *Vayu* with *Kapha* covers the *Shabdavahashira* in *Shrotendriya* and people ignores this condition so long or don’t do proper treatment on time and eventually *Badhirya* will happen.
Case Report:
A female child of 8 yrs., residents of Bangalore visited to here in our shalakya tantra opd in SDM College of Ayurveda and Hospital, Hassan with the complaining of reduced hearing since childhood associated with frequent cold allergy.
According to key informant (parents) she had pain in ear with pus discharge in bilateral ear when she was 2 years of age. Grommet insertion was done for drainage of pus in the middle ear and to maintain the patency of middle ear. Her pain in ear and pus discharge from bilateral ear had subsided after the treatment.
But gradually she has been suffering from reduced hearing. For her reduced hearing parents took her to different ENT hospital in Banglaore but her problem hasn't solved.
So, parents took her to SDM College of Ayurveda and Hospital Hassan, for the treatment of hearing problem.

General examination:
- Pallor- Nil
- Icterus- Nil
- Lymphadenopathy- Not palpable
- Clubbing- Nil
- Cyanosis- Nil
- Oedema- Nil
- pulse- 78 bpm
- Respiratory rate- 18 episodes/ min.
- weight- 25 kg

Systemic Examination:
- CNS – intact
- CVS- S1S2M0
- R S- Bilateral equal air entry in the chest with Normal vesicular sound heard.
- GIT- Bowel sound regular

Not any abnormality detected in locomotors and ophthalmic system.

Local Examination:\[^6^];

External Ear:

Pinna and the surrounding area:
Size: Normal (No microtia, macrotia)
Shape: Normal
No swelling, redness, vesicle (in concha and retroauricular groove), scars.
No ulceration or neoplasm.
No sinus, fistula, and scar over the retro auricular area and over mastoid.
No tragus tenderness.
No thickness of pinna, no raised temperature of pinna.

Mastoid:

External auditory canal:
Examination without pinna: No wax, debris, discharge and polyp and swelling of external auditory canal.
Examination with speculum:
Aural canal: dry and normal. No wax, discharge, benign and malignant growth and sagging of posterosuperior area found.

Examination of tympanic membrane:
Colour: pearly white.
Transparent: Semitransparent
Surface: Cone of light seen. No vesicles and perforation.
Position: Obliquely set at the medial end of the meatus.

Functional Examination:

1. Tuning fork test
   • Rinnies test negative in bilateral ear.
   • Webber test lateralized to left ear.

On examination:

- Bilateral pinna, external auditory canal are normal.
- Otoscopy revealed the bilateral tympanic membrane normal. No discharge, growth and perforation.

Tuning fork test

- Rinnies test negative in bilateral ear.
- Webber test lateralized to left ear.

Lab Investigation:

Pure Tone Audiometry Report:
Right ear: 53 dB, Moderate conductive hearing loss.
Left ear: 58 dB, moderately severe conductive hearing loss.

Treatment:
- **Samshodhananarkarma**\(^7\)
  Amapachana with tab chitrakadi vati 1 tid and Panchakola phanta 25ml-25ml-25ml.
  Sadhyovirechana with 30 ml nimbamrutadi eranda taila.
- **Nasya karma**\(^8\)
  Mukhabhyanga with shatapaka taila.
  Nasya with Anu taila 6-6 drops.
- **Shiro Pichu**\(^9\) done with Brahmi choorna, Bala choorna, jatamansi choorna with Shatapaka Taila once in a day.
- **Karna purana**\(^10\) with Shatapaka Taila done for 9 days.
- **Shamana Aushadhi**
  Sarivadi vati\(^11\) 1 tid after food
- She discharged on her 12 day of admission with promising result of hearing, speech reading, and eye contact. Her associated symptoms of cold allergy were also relieved

Assessment

Table no.2 – Audiometry and Tympanometry report Before treatment
RESULTS

During the 12 days of course of treatment patient has noticed series of improvement in general health as well as improved hearing level. On her first follow up i.e after the 15 days of discharge patient came with report which reveals significant changes in tympanometry and audiometry.

Her tympanometry report before the treatment was C type (Dysfunctional Eustachian tube) and after the treatment it has become A Type (Normal reading) in bilateral ear. Audiometry report of the before treatment left ear has 58 db hearing loss and after the treatment it has improved to 48 db.

As such graph value not changed in Audiometry report of Right ear.
DISCUSSION

Hearing loss is a most crucial factor to affect the quality of life of individual. Hearing loss has widespread etiological factors which evolve from any adverse condition of intrauterine life to post natal life. So, Hearing loss may be Congenital as well as acquired condition of hearing apparatus. The management of Hearing loss includes the treatment of underlying cause to the implant surgery. Procedures include cleaning of the external auditory canal, making patent of Eustachian tube, drainage of pus from middle ear, audiotry aids to the implant surgery.

As per the Ayurveda classic, Badhirya is a NANATMAJA vata vikara. It is a Bheshaja sadhya disease. The management of Badhirya in Ayurveda is ranges from snigdha sneha pana, Sarvanga abhyanga, Sneha virechana, Nadi sweda, Karna poorana, Nasya, Murdha basti, Mastiskya karma, Basti karma, NAVA PRATISHYAYA CHIKITSA, Sheshma Shamsodhana with vamana, and as per the line of management of VATAVYADHI.

The rational approach will be carried out after the assessment of Nidana, Dosha, Dushya, lakshna, samprapti and prakruti of patient through the selection of combination of above mentioned chikitsa.

Conductive hearing loss is most common in children. Conductive hearing loss is due to pathology of external auditory canal, tympanic membrane, middle ear (Ossicular dysfunction) and Eustachian tube. Dysfunctional Eustachian tube is one of the prime factors for hearing loss. On the basis of pathogenesis of hearing loss the management protocol in Ayurveda can be optimized in the following way.

<table>
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<tr>
<th>Grade of impairment</th>
<th>Audiometric ISO value</th>
<th>Impairment description</th>
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<tbody>
<tr>
<td>(0) Minimal / Slight/(Borderline normal)</td>
<td>25 or &lt;25 dbHL (in better ear)</td>
<td>No or very slight hearing problems. Able to hear whispers</td>
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<tr>
<td>(1) Mild</td>
<td>26-40 db (HL in better ear)</td>
<td>Able to hear and repeat words spoken in normal voice at 1 metre</td>
</tr>
<tr>
<td>(2) Moderate</td>
<td>41-60 db (HL in better ear)</td>
<td>Able to hear and repeat words using raised voice at 1 metre</td>
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<td>(3) severe</td>
<td>61-80 db HL (in better ear)</td>
<td>Able to hear some words when shouted into better ear</td>
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<tr>
<td>(4) profound</td>
<td>81 or &gt;81 db HL (in better ear)</td>
<td>Unable to hear and understand even a shouted voice</td>
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</table>

Table no. 4 WHO Grades of Hearing impairment
Types of Hearing loss | Protocol
--- | ---
Conductive | Navapratishya vata chikitsa
Sensorineural | Vatavyadhivata chikitsa, rasayana chikitsa
Mixed | Pratishhayahara, Vatavyadhi and Rasayana chikitsa

Table no. 5 Hypothesized line of management of Badhirya

Here in this case study Ama Pachana done with tab Chitrakadi vati and Panchakola Phanta, Snehavirechan adopted with Nimbaamrutadi ernada taila to eliminate the Shleshmanubandhat of vyadhi. Nasya karma done with AnuTaila for pacification of aggravated Vata and Shleshma Dosha. As the term karna poorana is implied for Badhirya so karna poorana done with shatapaka taila which is Balay, vatashamka and rasayan. Sharivadi vati has administered as a Shamana Aushadhi. Within the short period of time patient is symptomatically and objectively improved except improvement in the right audiometric value.

CONCLUSION

Proper assessment and understanding of the severity of diseases and patients as well in the contemporary aspect and Ayurvedic parameter is need of hour. This study has shown ray of hope if in early stage of hearing loss is intervened with prompt measures the extent of hearing loss can be checked and reversed with Ayurvedic medicine with no economic burden and surgical procedures related risk. Hence Hearing loss can be managed with treating underlying pathology by adopting Pratishyaya hara chikitsa, Vatavyadhi gata chikitsa, Nasya, Murdha chikitsa and Karnapurana.

REFERENCES


